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D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

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Coleman F. Buckhouse, MD

MAY 23 2007

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: AFVR Directive
United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #29678 and 29679
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Report received May 15, 2007
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced report and agrees with you contractor that additional Aggressive Fluid/Vapor Recovery (AFVR) events are required to reduce the levels of free phase product at the facility and the residence across Congress Street.

The initial Aggressive Fluid/Vapor Recovery (AFVR) events at monitoring well MW-2 on site and at monitoring wells MW-10 and MW-11 the residence across Congress Street should begin immediately upon receipt of this letter. The subsequent two AFVR events at each location should be conducted approximately 45 days after the previous pair of events. Cost agreement numbers 29678 and 29679 have been approved for the amount shown on the enclosed cost agreement form for the aforementioned scope of work. **A report of findings and the associated invoices are to be submitted 15 days after the third AFVR events are completed.** The AFVR Report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR event, noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air temperature, general weather conditions during each AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from monitoring well MW-4, MW-6R, MW-12, MW-13, MW-14 and MW-15 as a minimum. Any wells containing free phase product should be gauged at the beginning and end of each AFVR event. Disposal manifests for the AFVR event should be included as part of the final report.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.

UST PROGRAM
DOCKETING #

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for each pair of AFVR events may be submitted to the UST Program with an interim AFVR report. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and up to 2,000 gallons of groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report.

On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Two Approved Cost Agreements (ACA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical (with enc.)

Approved Cost Agreement 29678

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		A EQUIPMENT	3.0000	550.00	1,650.00
		B PERSONNEL	3.0000	275.00	825.00
17 DISPOSAL					
		A2 WASTEWATER - PUMPING TEST	2,000.0000	0.60	1,200.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	13,515.00	2,027.25
23 EFR					
		A 8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C OFF GAS TREATMENT	24.0000	35.00	840.00
			Total Amount		15,542.25

Approved Cost Agreement 29679

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		A EQUIPMENT	3.0000	550.00	1,650.00
		B PERSONNEL	3.0000	275.00	825.00
17 DISPOSAL					
		A2 WASTEWATER - PUMPING TEST	2,000.0000	0.60	1,200.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	13,515.00	2,027.25
23 EFR					
		A 8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C OFF GAS TREATMENT	24.0000	35.00	840.00
			Total Amount		15,542.25

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

UST
AUG 2 5 2009
PROGRAM

August 20, 2009

Mr. Justin Koon, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Koon:

As per our earlier telephone conversation, please find attached AFVR summary reports for Monitor Wells MW-16 and MW-10. These events were conducted as part of the recently completed groundwater activities at the former United Exxon. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Bob Bolton
Environmental Division Manager

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST
DOCKET
OTCA

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

June 2, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On June 2, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-16 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:15am and ending at 4:15pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 234 gallons of liquids were removed during the event. Of that approximately 18 gallons was free product.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Carlton Sawyer

Facility Address: 401 North Congress St. Winnsboro, SC Date: 2 Jun 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-16	MW	MW-	MW-	HUM	PPM	FLOW	TEMP
8:15am	4	24				73.6	876	180	76.2
8:45am	4	24				61.1	2314	270	89.8
9:15am	4	24				56.7	2184	290	94.2
9:45am	4	24				52.6	1671	290	99.8
10:15am	4	24				51.9	1729	280	102.5
10:45am	4	24				53.6	1987	270	106.3
11:15am	4	24				56.7	2119	260	109.1
11:45am	4	24				51.2	1976	280	120.4
12:15pm	4	24				53.8	1824	270	131.6
12:45pm	4	24				55.1	1699	270	148.1
1:15pm	4	24				56.7	1733	270	158.0
1:45pm	4	24				54.3	1667	260	158.0
2:15pm	4	24				53.1	1429	280	158.0
2:45pm	4	24				52.9	1721	270	158.0
3:15pm	4	24				51.6	1676	290	158.0
3:45pm	4	24				52.7	1564	270	158.0
4:15pm	4	24				51.4	1723	290	158.0

Well Gauging Data:			Before AFVR Event			After AFVR Event			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-16			44.96	45.36		0	46.32		

Comments: 8 hour AFVR with Carbon unit

Total of gallons 234 of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 2 Jun 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-16	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Carlton Sawyer		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0		876	157	2.8	1.4
	8:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2314	235	11.1	5.5
	9:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2184	252	11.3	5.6
	9:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1671	252	8.6	8.6
	10:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1729	244	8.6	8.6
	10:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1987	235	9.5	9.5
	11:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2119	226	9.8	4.9
	11:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1976	244	9.8	4.9
	12:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1824	235	8.7	4.4
	12:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1699	235	8.1	4.1
	1:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1733	235	8.3	4.2
	1:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1667	226	7.7	3.9
	2:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1429	244	7.1	3.6
	2:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1721	235	8.3	4.1
	3:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1676	252	8.6	4.3
	3:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1564	235	7.5	3.8
	4:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1723	252	8.9	4.4

Extraction Well	Stinger Depth	Breather Port
MW-16		

Hydrocarbons Removed (vapor):	86	Pounds
Hydrocarbons Removed (liquids):	18	Gallons
Total Hydrocarbons Removed:	29	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	234	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 234 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 803-957-9176

4. Waste Tracking Number: 290917

5. Generator's Name and Mailing Address: United Exxon, 401 North Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name

U.S. EPA ID Number

7. Transporter 2 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SCD987598331

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL			APPX 234	GAL	
	2. Oily water					
	3.					
	4.					

13. Special Handling Instructions and Additional Information: 18 gals free product

In Case of Emergency Call: 803-957-9175 A&D (SC Job #88795

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Na

Signature

Month 6 Day 2 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Carlton B. Sawyer

Signature

Month 6 Day 2 Year 09

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Zovatto

Signature

Month 6 Day 2 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

June 16, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On June 16, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-10 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 487 gallons of liquids were removed during the event. No free product recovered.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Clay Sims

Facility Address: 401 North Congress St. Winnsboro, SC Date: 16 Jun 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-10	MW	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	12				67.6	234	190	148.7
8:30am	4	12				69.4	286	205	158.7
9:00am	4	12				64.3	226	205	161.0
9:30am	4	12				70.9	312	210	158.0
10:00am	4	12				62.3	268	205	149.8
10:30am	4	12				67.4	364	205	157.4
11:00am	4	12				80.1	24.3	208	149.4
11:30am	4	12				18.6	38.5	539	164.0
12:00pm	4	12				19.4	48.6	440	152
12:30pm	4	12				30.1	32.4	400	159
1:00pm	4	12				17.6	41.3	420	167
1:30pm	4	12				18.9	57.3	512	162
2:00pm	4	12				27.6	80.1	359	165
2:30pm	4	12				28.8	43.6	381	163
3:00pm	4	12				19.6	56.1	411	198
3:30pm	4	12				23.1	37.6	588	176
4:00pm	4	12				29.8	51.6	488	162

Well Gauging Data:			**Before AFVR Event**			**After AFVR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-10			0	47.0		0	45.10		

Comments: 8 hour AFVR with Carbon unit

Total of 487 gallons of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 16 Jun 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-10	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Clay Sims		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0		234	165	0.8	0.4
	8:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	286	178	1.0	0.5
	9:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	226	178	0.8	0.4
	9:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	312	183	1.2	1.2
	10:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	268	178	1.0	1.0
	10:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	364	178	1.3	1.3
	11:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	24.3	181	0.1	0.0
	11:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	38.5	469	0.4	0.2
	12:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	48.6	383	0.4	0.2
	12:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	32.4	348	0.2	0.1
	1:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	41.3	365	0.3	0.2
	1:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	57.3	445	0.5	0.3
	2:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	80.1	312	0.5	0.3
	2:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	43.6	331	0.3	0.1
	3:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	56	358	0.4	0.2
	3:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	38	512	0.4	0.2
	4:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	51.6	425	0.4	0.2

Extraction Well	Stinger Depth	Breather Port
MW-10		

Hydrocarbons Removed (vapor):	7	Pounds
Hydrocarbons Removed (liquids):	0	Gallons
Total Hydrocarbons Removed:	1	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	487	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 487 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:
2. Page 1 of 1
3. Emergency Response Phone: 803-957-9175
4. Waste Tracking Number: 29167

5. Generator's Name and Mailing Address
United Exxon
801 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC
U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	1	TT	487 gal		No product
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information
In Case of Emergency Call: 803-957-9175
A&D (SC Job #58796

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature:
Month 6 Day 16 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Clay Sims (Clay Sims)
Signature:
Month 6 Day 16 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: James Lovett
Signature:
Month 6 Day 16 Year 09

GENERATOR

UST
FEB 2 6 2015
PROGRAM

Cardno
Shaping the Future

February 24, 2015

Cardno

400 Northeast Drive
Unit Q
Columbia, SC 29203

Phone +1 803 735 0003
Fax +1 803 735 0443
www.cardno.com

www.cardno.com

Mr. Read S. Miner, P.G., Hydrogeologist, Project Manager
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
UST Management Division
2600 Bull Street
Columbia, South Carolina 29201

UST
100 tech
DOCKETING

RE: Groundwater Monitoring Report
Former United Oil (United Exxon)
401 North Congress Street, Winnsboro, South Carolina
Fairfield County
UST Permit ID #11760; CA #48948
Cardno Project No. 14.25384.0012

Dear Mr. Miner:

Cardno, on behalf of Keenan Oil Company, Inc., is submitting the enclosed Groundwater Monitoring Report for the **Former United Oil** site. This report is in accordance with the South Carolina Department of Health and Environmental Control (SCDHEC) directive letter dated October 21, 2014, and documents investigative procedures, field activities, and laboratory analytical results for the December 18, 2014 and December 19, 2014 groundwater sampling event. If you have any questions or require additional information, please contact the Cardno project manager for the site, Jesse Keeffe, at (803) 735-0003.

Sincerely,
Cardno

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cc: Mr. Billy Keenan, President, Keenan Oil Company, Inc.

Groundwater Monitoring Report
Former United Oil
401 North Congress Street, Winnsboro, South Carolina
Fairfield County
UST Permit ID #11760; CA #48948
Cardno Project No. 14.25384.0012

Prepared By:

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Submitted To:

State of South Carolina
Department of Health and Environmental Control
Bureau of Land and Waste Management
UST Management Division
Corrective Action Section
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Columbia, South Carolina 29201

On Behalf Of:

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Underground Storage Tank Site Rehabilitation Contractor Certification No. 313

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1.0 INTRODUCTION

Cardno was retained by Keenan Oil Company, Inc. to perform environmental consulting services at the former United Exxon facility (site). Cardno has completed monitoring and sampling activities at the site located at U.S. Highway 321 (North Congress Street) and Evans Street, in Winnsboro, Fairfield County, South Carolina (UST Permit #11760). A site topographic map is presented as ***Figure 1*** and a site map depicting pertinent features is presented as ***Figure 2***. The activities were authorized by the South Carolina Department of Health and Environmental Control's (SCDHEC) issuance of a sampling directive for the site dated October 21, 2014. The scope of services included a groundwater sampling event, laboratory testing, and report preparation. The results of the groundwater sampling event, along with recommendations, are included herein.

2.0 SITE DESCRIPTION

2.1 Site Characterization

The site is currently a retail propane gas facility that is owned by Keenan Energy Company c/o Pope Oil Company, Inc., P. O. Box 727, Winnsboro, South Carolina, 29180 (contact number: 803-256-0667). The site is located at the northern intersection of U.S. Highway 321 (North Congress Street) and Evans Street in Winnsboro, Fairfield County, South Carolina. The latitude of the site is 34.386831° and the longitude is -81.088758°. Surrounding properties include residential property, wooded areas, and commercial businesses. Underground storage tanks (USTs) are not in use at the facility.

2.2 Site Background

The release was reported on August 1, 1997. SCDHEC issued a directive for the preparation of a Site Specific Work Plan (SSWP) contractor addendum (SSWP) for a comprehensive sampling event. On October 12, 2014, Cardno submitted the SSWP which was approved by the SCDHEC on October 13, 2014. On October 21, 2014, SCDHEC issued a Groundwater Sampling Directive requesting the completion of a groundwater sampling event at the site. Per SCDHEC's request, this report documents a groundwater sampling event conducted on December 18, 2014 and December 19, 2014.

3.0 GROUNDWATER CHARACTERIZATION

3.1 Groundwater Levels

On December 18, 2014, groundwater levels were gauged in monitoring wells 11760 MW-1, 11760 MW-2, 11760 MW-3, 11760 MW-4R, 11760 MW-5, 11760 MW-6R, 11760 MW-7, 11760 MW-8, 11760 MW-9R, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-17, 11760 MW-18, 11760 MW-19, 11760 MW-20, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-26, 11760 MW-27, 11760 MW-28, 11760 MW-29, 11760 DW-1, and 11760 DW-2. An oil/water interface probe was used to measure the depths to water and free-phase product, which was present in monitoring wells 11760 MW-2, 11760 MW-28, and 11760 MW-29. In addition, monitoring well 11760 MW-7 was found to be silted in at approximately 50 to 52 feet and therefore fry. Depths were measured from the top of the well casings. The locations of the monitoring wells are shown in ***Figure 2***. Monitoring well construction details and current groundwater elevation data are included in ***Table 1***. A groundwater elevation contour map based on the December 18, 2014 data is presented as ***Figures 3***. Groundwater flow direction is in a southeastern direction across the site with an estimated hydraulic gradient of 0.023 feet per foot (as measured between monitoring well 11760 MW-10 and 11760 MW-13).

3.2 Groundwater Quality

On December 18, 2014 and December 19, 2014, groundwater samples were collected from monitoring wells 11760 MW-1, 11760 MW-3, 11760 MW-4R, 11760 MW-5, 11760 MW-6R, 11760 MW-7, 11760 MW-8, 11760 MW-9R, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-17, 11760 MW-18, 11760 MW-19, 11760 MW-20, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-26, 11760 MW-27, 11760 DW-1, 11760 DW-2, and surface water sample 11760 CK-1. Groundwater samples were not collected from monitoring wells 11760 MW-2, 11760 MW-28, and 11760 MW-29 as these wells contained free product. Additionally, monitor well 11760 MW-7 was found to be dry and filled with sediment at the screen depth of the well. New disposable polyethylene bailers were used for the collection of the water samples from monitoring wells. The groundwater monitoring wells were purged of three casing volumes, bailed for dryness, or until field parameters reached ten percent equilibrium prior to sample collection. During groundwater collection, Cardno collected pH, specific conductivity, water temperature, and dissolved oxygen measurements. These measurements for each

well are recorded in the field data information sheets included in ***Appendix A***. New disposable nitrile gloves were used to maintain sample integrity during the sampling process.

The groundwater and quality assurance samples were transported under chain of custody to Accutest Laboratories [500 Ambassador Caffery Parkway, Scott, Louisiana 70583, South Carolina Laboratory Certification Number 73004001, (337) 237-4775]. The groundwater samples were analyzed for the volatile organic compounds benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, 1,2-dichloroethane (1,2 DCA) and the 8 oxygenates by EPA Method 8260B. Additionally the samples were analyzed for 1,2-dibromoethane (EDB) by EPA method 8011. Copies of the laboratory analytical results for groundwater quality and chain-of-custody documentation are included in ***Appendix B.***

Groundwater analytical results for the December 18, 2014 and December 19, 2014 sampling events are summarized in ***Table 2***. The groundwater samples that exceeded the SCDHEC RBSLs are summarized as follows:

- Benzene — 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-27, and 11760 DW-2;
- Toluene — 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-16, and 11760 MW-27;
- Ethylbenzene — 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-15, 11760 MW-16, and 11760 MW-27;
- Xylenes — 11760 MW-11, 11760 MW-13, 11760 MW-16, and 11760 MW-27;
- MTBE — 11760 MW-18, 11760 MW-21, and 11760 MW-27;
- Naphthalene — 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-22, 11760 MW-25, 11760 MW-27, and 11760 DW-2;
- EDB — 11760 MW-27;
- Diisopropyl ether — 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13,

11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-25, 11760 MW-27, and 11760 DW-2;

- Tert-Butyl Alcohol 11760 MW-13, 11760 MW-16, 11760 MW-18, and 11760 MW-27;
- Tert-Amyl Alcohol 11760 MW-3, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-22, 11760 MW-25, 11760 MW-27, and 11760 DW-2.

A chemicals of concern (CoC) in groundwater map is included as ***Figure 4***. Historical groundwater analytical results are summarized in ***Table 3***. All purge water was filtered through a granular activated carbon unit for proper disposal. A waste disposal certificate for the purge water is included in ***Appendix C***.

4.0 DATA VALIDATION AND USABILITY

4.1 Data Validation

To ensure adherence to the methodologies described in the SSWP, a contractor checklist (SCDHEC Programmatic QAPP Appendix K) was completed and is included in ***Appendix D.***

4.2 Quality Assurance Analysis

The project sample design, field procedures, and laboratory data were reviewed for quality assurance and data usability using the six data quality indicators (DQIs) described in Section A7 of the SCDHEC Programmatic QAPP requirements. The results of the quality assurance analysis are described below.

4.3 Precision

The precision of the laboratory data was evaluated by comparing the relative percent difference (RPD) between using a sample and a field duplicate sample. The sample locations were selected based on previous analytical results. Field duplicate sample DUP-1 was collected from monitoring well 11760 MW-14 as well as field duplicate same DUP-2 was collected from monitoring well 11760 MW-15 and submitted for analysis of BTEX, MTBE, naphthalene, 1,2-DCA, the 8 oxygenates, and EDB. The RPD was calculated using the formula:

$$PD\ (\%) = Absolute\ value\ of \left(\frac{(C_S - C_D)}{((C_S - C_D)/2)}\right) x\ 100$$

Where: C_S = Concentration of the sample

C_D = Concentration of the duplicate sample

The RPDs were compared to the limits established in Appendix E of the SCDHEC Programmatic QAPP. The results of the Precision Analysis are included in ***Table 4***. The RPD indicates all sampled wells are within the acceptable range between the well samples and duplicate samples with the exception of Xylenes, Naphthalene, 3,3-Dimethyl-1-butanol, Tert-butyl alcohol, and Tert-amyl alcohol. Please refer to ***Appendix E*** for a Project Status update.

4.4 Bias

Bias analysis of the data can indicate accuracy of the laboratory measurement system. The results of the analysis of the trip blank indicate that there were no sources of error in the sampling process, preservation, handling, sample preparation and analytical techniques. The results of the bias analysis of the field and trip blanks are included in ***Table 4***.

4.5 Representativeness

The site monitoring well network was designed to allow representative samples to be collected from the site and the surrounding area. Field personnel have been instructed to log data, label containers, and enter samples on the chains-of-custody immediately upon collection to reduce potential for sample location or other representativeness errors. Proper preservation techniques, including preservative use and immediate icing of samples are also employed. Samples were collected and analyzed in accordance with the QAPP. The data collected and presented in this report meet the QAPP criteria for representativeness.

4.6 Completeness

The dataset meets the completeness criteria based on the purpose of the sampling event because each available monitoring well that did not contain free product and which could be located was sampled. The purpose of the sampling event was to monitor the petroleum impact to groundwater.

4.7 Comparability

The results of laboratory analysis of groundwater at the site between November 2, 1998 and December 19, 2014 are included in this report. The samples were collected using the same field protocols, analyzed using the same EPA Methods, and the data is reported in micrograms per Liter (µg/L) to allow for easy comparison. In general, trends of impact conditions show that effects of natural migration and attenuation of impact are consistent with a petroleum release in the South Carolina geographic setting. Concentrations between individual monitoring events show modest changes reflective of natural attenuation or reasonable data fluctuations from sorption and desorption effects during water level changes or from other natural variations. The comparability criteria have generally been met.

4.8 Method Sensitivity

Laboratory method detection limits and reporting limits were reviewed and compared to the limits established in Appendix E of the SCDHEC Programmatic QAPP. The results of the Method Sensitivity analysis are included in ***Table 4***. The analytical dataset met the QAPP sensitivity limits, except for laboratory dilution factors of 5x at monitoring well 11760 MW-3, 20x/200x at monitoring wells 11760 MW-10 and 11760 MW-12, 50x/200x at monitoring well 11760 MW-11, 10x/200x at monitoring wells 11760 MW-14 and 11760 MW-15, 20x/500x at monitoring wells 11760 MW-13, 11760 MW-16 and 11760 MW-27, 20x at monitoring wells 11760 MW-18 and 11760 MW-23, 10x at monitoring wells 11760 MW-21 and 11760 DW-2, and 50x at monitoring wells 11760 MW-22 and 11760 MW-25, respectively.

5.0 SUMMARY

During this reporting period Cardno conducted monitoring well sampling at the site. Based on field activities and laboratory results Cardno concludes the following:

- Groundwater flow direction is in a south to southeastern direction across the site with an estimated hydraulic gradient of 0.023 feet per foot (as measured between monitoring wells 11760 MW-10 and 11760 MW-13);
- Free product was detected in monitoring wells 11760 MW-2, 11760 MW-28, and 11760 MW-29 at an approximate thickness of 0.01 feet during the December 18, 2014 gauging event;
- Benzene exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-27, and 11760 DW-2;
- Toluene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-16, and 11760 MW-27;
- Ethylbenzene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-15, 11760 MW-16, and 11760 MW-27;
- Xylenes exceeded its RBSL in monitoring wells 11760 MW-11, 11760 MW-13, 11760 MW-16 and 11760 MW-27;
- MTBE exceeded its RBSL in monitoring wells 11760 MW-18, 11760 MW-21, and 11760 MW-27;
- Naphthalene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-22, 11760 MW-23, 11760 MW-25, 11760 MW-27, and 11760 DW-2;
- EDB exceeded its RBSL in monitoring well 11760 MW-27;
- Diisopropyl ether exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-25, 11760 MW-27, and 11760 DW-2;
- Tert-butyl alcohol exceeded its RBSL in monitoring wells 11760 MW-13, 11760 MW-16, 11760 MW-18, and 11760 MW-27;

- Tert-amyl alcohol exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-16, 11760 MW-18, 11760 MW-22, 11760 MW-25, 11760 MW-27, and 11760 DW-2;

Based on the groundwater results, overall contaminant concentrations do appear to be decreasing. Cardno recommends replacing damaged monitoring well 11760 MW-7. Cardno also recommends that a series of aggressive fluid vapor recovery (AFVR) events be conducted at monitoring wells 11760 MW-2, 11760 MW-28, and 11760 MW-29 to further reduce groundwater CoC and remove the presence of free product in these monitoring wells.

TABLES

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-1	12/18/14	96 54	48	33-48	NP	NP	40 28	56 26
	09/05/13				NP	NP	40 52	56 02
	02/24/10				NP	NP	42 53	54 01
	07/16/09				NP	NP	43.2	45 86
	09/22/08				NP	NP	44 34	52 20
	01/14/08				NP	NP	43 59	52 95
	04/19/07				NP	NP	40 79	55 75
	08/21/06				NP	NP	43 28	53 26
	06/27/05				NP	NP	41 56	54 98
	3/82005				NP	NP	42 33	54 21
11760 MW-2	12/18/14	98 17	54	39-54	49 76	0 01	49 77	48 40
	09/05/13				50 94	0 09	51 03	47 14
	02/24/10				NP	NP	51 69	46 48
	07/16/09				NP	NP	52 31	45 86
	09/22/08				NP	NP	52 66	45 51
	01/14/08				NP	NP	51 81	46 36
	04/19/07				NP	NP	49 93	48.24
	08/21/06				NP	NP	51 76	46 41
	06/27/05				NP	NP	50 12	48.05
	3/82005				NP	NP	50 87	47 30
11760 MW-3	12/18/14	95 81	45	30-45	NP	NP	41 64	54 17
	09/05/13				NP	NP	42 22	53.59
	02/24/10				NP	NP	44 24	51 57
	07/16/09				NP	NP	44 82	50 99
	09/22/08				NP	NP	Dry	Not Applicable
	01/14/08				NP	NP	Dry	Not Applicable
	04/19/07				NP	NP	42 51	53 30
	08/21/06				NP	NP	44 78	51 03
	06/27/05				NP	NP	42 98	52 83
	3/82005				NP	NP	43 74	52 07
11760 MW-4	12/18/14	100 46	45	30-45	NP	NP	Dry	Not Applicable
	09/05/13				NP	NP	Dry	Not Applicable
	02/24/10				NP	NP	Dry	Not Applicable
	07/16/09				NP	NP	Dry	Not Applicable
	09/22/08				NP	NP	Dry	Not Applicable
	01/14/08				NP	NP	Dry	Not Applicable
	04/19/07				NP	NP	Dry	Not Applicable
	08/21/06				NP	NP	Dry	Not Applicable
	06/27/05				NP	NP	Dry	Not Applicable
	03/08/05				NP	NP	Dry	Not Applicable
11760 MW-4R	12/18/14	98 14	60	40-60	NP	NP	46 39	51 75
	09/05/13				NP	NP	47.12	51 02
	02/24/10				NP	NP	48 56	49 58
	07/16/09				NP	NP	49 24	48 90
	09/22/08				NP	NP	49 94	48.20
	01/14/08				NP	NP	49 18	48 96
	04/19/07				NP	NP	46 97	51 17
	08/21/06				NP	NP	49 06	49 08
	06/27/05				NP	NP	47 34	50 80
11760 MW-5	12/18/14	94 41	45	30-45	NP	NP	39 81	54 60
	09/05/13				NP	NP	40 31	54 10
	02/24/10				NP	NP	42 43	51 98
	07/16/09				NP	NP	43 17	51 24
	09/22/08				NP	NP	44 05	50 36
	01/14/08				NP	NP	43 23	51 18
	04/19/07				NP	NP	40 69	53 72
	08/21/06				NP	NP	43 07	51 34
	06/27/05				NP	NP	41 23	53 18
	03/08/05				NP	NP	41 91	52 50
11760 MW-6R	12/18/14	103 91	65	45-65	NP	NP	55 47	48 44
	09/05/13				NP	NP	56 76	47.15
	02/24/10				NP	NP	57 27	46 64
	07/16/09				NP	NP	58 04	45 87
	09/22/08				NP	NP	58 37	45 54
	01/14/08				NP	NP	57.44	46 47
	04/19/07				NP	NP	55.45	48 46
	08/21/06				NP	NP	57.37	46 54
	06/27/05				NP	NP	55.67	48 24

(1). Depth to water measured from top of casing
(2) Depth to water corrected for presence of product using density corrective factor of 0 73 g/cc
(3) NP: free product not present
(4) Unk = Unknown

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-7	12/18/14	102 34	52	37-52	NP	NP	Dry	Not Applicable
	09/05/13				NP	NP	Dry	Not Applicable
	02/24/10				NP	NP	Dry	Not Applicable
	07/16/09				NP	NP	Dry	Not Applicable
	09/22/08				NP	NP	Dry	Not Applicable
	01/14/08				NP	NP	Dry	Not Applicable
	04/19/07				NP	NP	50 60	51 74
	08/21/06				NP	NP	Dry	Not Applicable
	06/27/05				NP	NP	50 68	51 66
	03/08/05				NP	NP	51 54	50 80
11760 MW-8	12/18/14	97.63	45	30-45	NP	NP	39 92	57 71
	09/05/13				NP	NP	40 34	57 29
	02/24/10				NP	NP	42 34	55 29
	07/16/09				NP	NP	43 04	54 59
	09/22/08				NP	NP	44 05	53 58
	01/14/08				NP	NP	43 30	54 33
	04/19/07				NP	NP	40 62	57 01
	08/21/06				NP	NP	43 01	54 62
	06/27/05				NP	NP	41 43	56 20
	03/08/05				NP	NP	42 22	55 41
11760 MW-9R	12/18/14	101.13	65	45-65	NP	NP	51 79	49 34
	09/05/13				NP	NP	53 18	47.95
	02/24/10				NP	NP	53 66	47 47
	07/16/09				NP	NP	54 27	46 86
	09/22/08				NP	NP	54 59	46.54
	01/14/08				NP	NP	43 30	54 33
	04/19/07				NP	NP	51 80	49 33
	08/21/06				NP	NP	53 47	47 66
	06/27/05				NP	NP	51.75	49 38
11760 MW-10	12/18/14	88 26	50	35-50	NP	NP	45 43	42 83
	09/05/13				NP	NP	45 95	42 31
	02/24/10				NP	NP	46 90	41.36
	07/16/09				NP	0 25	47.10	41.16
	09/22/08				NP	0.33	47 66	40.60
	01/14/08				NP	NP	47 23	41 03
	04/19/07				NP	NP	45 71	42 55
	08/21/06				NP	NP	46 98	41 28
	06/27/05				NP	NP	45 46	42 80
	03/08/05				NP	0 42	46 33	41 93
11760 MW-11	12/18/14	70 63	38	23-38	NP	NP	31 53	39 10
	09/05/13				NP	NP	31 60	39 03
	02/24/10				NP	NP	32 67	37 96
	07/16/09				NP	NP	33 22	37 41
	09/22/08				NP	0 04	33 51	37 12
	01/14/08				NP	0 02	33 01	37 62
	04/19/07				NP	NP	31 53	39 10
	08/21/06				NP	0 02	32 69	37 94
	06/27/05				NP	NP	31 42	39 21
	03/08/05				NP	0 15	32 02	38.61
11760 MW-12	12/18/14	81 21	50	35-50	NP	NP	38 88	42 33
	09/05/13				NP	NP	39 70	41 51
	02/24/10				NP	NP	40 13	41 08
	07/16/09				NP	NP	40 59	40 62
	09/22/08				NP	NP	40 87	40 34
	01/14/08				NP	NP	40 04	41 17
	04/19/07				NP	NP	38 66	42 55
	08/21/06				NP	NP	40 11	41 10
	06/27/05				NP	NP	38 64	42.57
	03/08/05				NP	NP	39 28	41.93
11760 MW-13	12/18/14	81 02	50	35-50	NP	NP	40 58	40 44
	09/05/13				NP	NP	40 89	40 13
	02/24/10				NP	0 13	41 91	39 11
	07/16/09				NP	0 29	42 25	38 77
	09/22/08				NP	0 11	42 75	38 27
	01/14/08				NP	0 23	42 15	38 87
	04/19/07				NP	NP	40 74	40 28
	08/21/06				NP	NP	41 96	39.06
	06/27/05				NP	NP	40 64	40 38
	03/08/05				NP	NP	41 26	39 76

(1): Depth to water measured from top of casing
(2) Depth to water corrected for presence of product using density corrective factor of 0 73 g/cc
(3): NP free product not present
(4) Unk = Unknown

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-14	12/18/14	69 55	40	20-40	NP	NP	33 25	36 30
	09/05/13				NP	NP	33 31	36 24
	02/24/10				NP	NP	34 19	35 36
	07/16/09				NP	NP	34 58	34 97
	09/22/08				NP	NP	34.99	34 56
	01/14/08				NP	NP	34 55	35 00
	04/19/07				NP	NP	33.34	36 21
	08/21/06				NP	NP	34.23	35 32
	06/27/05				NP	NP	33 17	36 38
	03/08/05				NP	NP	33.53	36.02
11760 MW-15	12/18/14	72 06	40	20-40	NP	NP	34 73	37 33
	09/05/13				NP	NP	31 82	40 24
	02/24/10				NP	NP	35 82	36 24
	07/16/09				NP	NP	36 21	35 85
	09/22/08				NP	NP	36 64	35 42
	01/14/08				NP	NP	36 21	35 85
	04/19/07				NP	NP	34 89	37 17
	08/21/06				NP	NP	35 94	36 12
	06/27/05				NP	NP	34 86	37 20
	03/08/05				NP	NP	35 31	36 75
11760 MW-16	12/18/14	85 19	50	30-50	NP	NP	42 32	42 87
	09/05/13				NL	NL	NL	Not Applicable
	02/24/10				NP	NP	43 29	41 90
	07/16/09				NP	NP	44 12	41 07
	09/22/08				NP	0 06	44 44	40 75
	01/14/08				NP	NP	43 60	41 59
	04/19/07				NP	NP	42 16	43 03
	08/21/06				NP	NP	45 60	39 59
	06/27/05				NP	NP	41 81	43.38
	03/08/05				NP	0 04	42 77	42 42
11760 MW-17	12/18/14	85 66	50	35-50	NP	NP	35 08	50 58
	09/05/13				NP	NP	35 65	50 01
	02/24/10				NP	NP	37 59	48 07
	07/16/09				NP	NP	38 64	47 02
	09/22/08				NP	NP	39 47	46 19
	01/14/08				NP	NP	38 39	47 27
	04/19/07				NP	NP	36.08	49 58
	08/21/06				NP	NP	38 44	47.22
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-18	12/18/14	80.83	50	35-50	NP	NA	38.94	41.89
	09/05/13				NP	NA	39 77	41.06
	02/24/10				NP	NA	39 68	41 15
	07/16/09				NP	NP	40 6	40 23
	09/22/08				NP	NP	40 92	39 91
	01/14/08				NP	NP	40 03	40 80
	04/19/07				NP	NP	38 65	42 18
	08/21/06				NP	NP	40 16	40 67
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-19	12/18/14	82 27	46	31-46	NP	NA	38 47	43 80
	09/05/13				NP	NP	38 55	43 72
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	41 39	40 88
	09/22/08				NP	NP	42 18	40 09
	01/14/08				NP	NP	41 14	41 13
	04/19/07				NP	NP	38 97	43 30
	08/21/06				NP	NP	41 28	40 99
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-20	12/18/14	81 44	46	31-46	NP	NP	38 48	42 96
	09/05/13				NP	NP	38 55	42.89
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	41.3	40 14
	09/22/08				NP	NP	42 1	39 34
	01/14/08				NP	NP	41 08	40 36
	04/19/07				NP	NP	39.02	42 42
	08/21/06				NP	NP	41 21	40 23
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA

(1) Depth to water measured from top of casing
(2) Depth to water corrected for presence of product using density corrective factor of 0 73 g/cc
(3) NP free product not present
(4) Unk = Unknown

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product, ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-21	12/19/14	67.4	40	25-40	NP	NP	26 02	41.38
	09/05/13				NP	NP	26 82	40 58
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	27 58	39 82
	09/22/08				NP	NP	27 88	39 52
	01/14/08				NP	NP	27 11	40 29
	04/19/07				NP	NP	25 74	41 66
	08/21/06				NP	NP	27 14	40 26
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-22	12/19/14	65 12	40	20-40	NP	NP	31 06	34 06
	09/05/13				NP	NP	31 18	33 94
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	32 32	32 80
	09/22/08				NP	NP	32 69	32 43
	01/14/08				NP	NP	32 29	32 83
	04/19/07				NP	NP	31 31	33 81
	08/21/06				NP	NP	32.11	33 01
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-23	12/19/14	62 15	40	20-40	NP	NP	30 16	31 99
	09/05/13				NP	NP	30 31	31 84
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	32 06	30 09
	09/22/08				NP	NP	31 4	30 75
	01/14/08				NP	NP	31 11	31 04
	04/19/07				NP	NP	30 37	31.78
	08/21/06				NP	NP	30 98	31 17
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-24	12/19/14	49 5	25	10-25	NP	NP	18 11	31 39
	09/05/13				NP	NP	18 21	31 29
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	41 3	40 14
	09/22/08				NP	NP	42 1	39 34
	01/14/08				NP	NP	41 08	40 36
	04/19/07				NP	NP	39.02	42.42
	08/21/06				NP	NP	41.21	40.23
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-25	12/19/14	41 63	23	8-23	NP	NP	13.41	28 22
	09/05/13				NP	NP	13.44	28 19
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	14 43	27 20
	09/22/08				NP	NP	14 52	27 11
	01/14/08				NP	NP	14 29	27 34
	04/19/07				NP	NP	13 69	27 94
	08/21/06				NP	NP	14 26	27 37
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-26	12/18/14	43 83	35	15-35	NP	NP	17 72	26 11
	09/05/13				NP	NP	17 79	26 04
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	18 23	25 60
	09/22/08				NP	NP	18 29	25.54
	01/14/08				NP	NP	18 36	25 47
	04/19/07				NP	NP	17.94	25 89
	08/21/06				NA	NA	NA	NA
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-27	12/18/14	98 43	60	40-60	NP	NP	50 86	47 57
	09/06/13				NP	NP	52 03	46 40
11760 MW-28	12/18/14	97 11	60	40-60	NP	Heavy Sheen	48 71	48 40
	09/06/13				NP	NP	49 92	47 19
11760 MW-29	12/18/14	97 88	60	40-60	49 25	0 01	49 26	48 62
	09/06/13				50 55	0 03	50 57	47 31
11760 DW-1	12/19/14	98 62	80	75-80	NP	NP	50 19	48 43
	09/05/13				NP	NP	51.63	46 99
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	52 89	45 73
	09/22/08				NP	NP	53 27	45 35
	01/14/08				NP	NP	52 1	46 52
	04/19/07				NP	NP	50 61	48 01
	08/21/06				NP	NP	52 24	46 38
	06/27/05				NA	NA	50 63	47 99
	03/08/05				NA	NA	51 31	47 31

(1)· Depth to water measured from top of casing
(2) Depth to water corrected for presence of product using density corrective factor of 0 73 g/cc
(3)· NP. free product not present
(4)· Unk = Unknown

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 DW-2	12/19/14	64 1	80	75-80	NP	NP	31 86	32 24
	09/05/13				NP	NP	32 03	32 07
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	33.09	32 01
	09/22/08				NP	NP	33 42	31 68
	01/14/08				NP	NP	32 96	32 14
	04/19/07				NP	NP	33 02	32 08
	08/21/06				NP	NP	32 83	32 27
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA

(1) Depth to water measured from top of casing
(2) Depth to water corrected for presence of product using density corrective factor of 0 73 g/cc
(3) NP free product not present
(4) Unk = Unknown

Table 2
Groundwater Analytical Results
Former United Oil
401 North Congress Street
Winnsboro, Fairfield County, South Carolina
UST Permit #11760

Well ID	Sample Date	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	Naph-thalene	EDB	1,2-DCA	3,3-Dimethyl-1-butanol	Di-isopropyl ether	Ethanol	tert-Butyl alcohol	tert-Amyl alcohol	tert-Amyl methyl ether	Ethyl tert-butyl ether	tert-Butyl formate
11760 MW-1	12/18/2014	<1 00	<1 00	<1.00	<1 00	<1 00	<1 00	<0 0196	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-2	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP
11760 MW-3	12/18/2014	**123**	4 32	29 9	67 1	2 65	10 4	<0 0198	<5 00	73 1	**260**	<100	<25.0	**302**	<5 00	<5 00	<25 0
11760 MW-4R	12/18/2014	<1.00	<1 00	<1 00	<1 00	<1 00	<1 00	<0 0198	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-5	12/18/2014	<1.00	<1.00	<1 00	<1 00	<1 00	<1 00	<0 0198	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-6R	12/18/2014	<1 00	<1.00	<1 00	<1 00	<1 00	<1 00	<0 0201	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-7	12/18/2014	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI
11760 MW-8	12/18/2014	<1.00	<1 00	<1 00	<1 00	<1 00	<1 00	<0 0201	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-9R	12/18/2014	<1.00	<1.00	<1 00	<1 00	<1 00	<1 00	<0 0204	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5.00	<25 0
11760 MW-10	12/18/2014	**5620**	**4810**	**3530**	5190	<20.0	**1060**	<0 0200	<100	1120	**2700**	<2000	<500	<500	<100	<100	<500
11760 MW-11	12/18/2014	**7650**	**8440**	**5470**	**25400**	<50 0	**1480**	<0.0199	<250	1550	**6210**	<5000	<1250	**6450**	<250	<250	<1250
11760 MW-12	12/18/2014	**2100**	454	**988**	5360	<20 0	**693**	<0 0202	<100	2490	**3210**	<2000	<500	**11200**	<100	<100	<500
11760 MW-13	12/18/2014	**9960**	**31900**	**4140**	**23600**	<20 0	**1160**	0.0406	<100	3340	**8430**	<2000	**3100**	**14900**	<100	<100	<500
11760 MW-14	12/18/2014	**4440**	105	25 9	107	<10 0	**509**	<0 0201	<50 0	1180	**3300**	<1000	1320	**6940**	<50 0	<50 0	<250
11760 MW-15	12/18/2014	**7060**	**4390**	**872**	4160	<10 0	**368**	<0 0201	<50 0	2760	**4830**	<1000	<250	**5880**	<50 0	<50 0	<250
11760 MW-16	12/18/2014	**4490**	**7940**	**3210**	**22200**	<20 0	**2060**	<0 0203	<100	2400	**2720**	<2000	**3410**	**10200**	<100	<100	<500
11760 MW-17	12/18/2014	<1 00	<1 00	<1 00	<1 00	<1.00	<1 00	<0 0199	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-18	12/18/2014	**577**	42 3	347	**1840**	**3400**	**164**	<0 0199	<5 00	2640	**2080**	<100	**3500**	**13800**	<5 00	<5 00	<25 0
11760 MW-19	12/18/2014	<1.00	<1 00	0 530	2 71	<1 00	1 28	<0 0201	<5 00	36 3	<5 00	<100	58 3	173	<5 00	<5 00	<25 0
11760 MW-20	12/18/2014	<1 00	<1 00	<1 00	<1 00	<1.00	<1 00	<0 0205	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-21	12/19/2014	**9.70**	0 710	1 26	0 550	**1920**	8 49	<0 0196	<5 00	468	**1900**	<100	353	<250	43 8	<5 00	<25 0
11760 MW-22	12/19/2014	**3140**	32 4	2 63	27 4	16 6	**291**	<0 0204	<5 00	443	**2970**	<100	434	**2550**	<5 00	<5 00	<25 0
11760 MW-23	12/19/2014	**141**	<1.00	<1.00	<1 00	<1 00	10 2	<0 0206	<5 00	34 8	**1500**	<100	77 0	<25 0	<5 00	<5 00	<25 0
11760 MW-24	12/19/2014	**149**	<1.00	<1.00	<1 00	1 55	15 7	<0 0204	<5 00	14 7	<5 00	<100	49 6	<25 0	<5 00	<5 00	<25 0
11760 MW-25	12/19/2014	**1660**	<1 00	<1 00	<1 00	17 7	**39.3**	<0 0205	<5 00	229	**3550**	<100	408	**1770**	<5 00	<5 00	<25 0
11760 MW-26	12/18/2014	<1 00	<1 00	<1 00	<1.00	<1 00	<1 00	<0 0165	<5 00	<25 0	<5 00	<100	<25 0	<25 0	<5 00	<5 00	<25 0
11760 MW-27	12/18/2014	**17500**	**6560**	**3540**	**11700**	**20900**	**1420**	**0 113**	<100	20700	**16300**	<2000	**23900**	**125000**	<100	<100	<500
11760 MW-28	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP
11760 MW-29	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP
11760 DW-1	12/19/2014	0 800	<1 00	<1 00	<1 00	<1 00	<1 00	<0 0201	<5 00	<25 0	1 04	<100	<25 0	7 01	<1 00	<5 00	<25 0
11760 DW-2	12/19/2014	**115**	<10 0	<10 0	<10 0	<10.0	**34.8**	<0 0205	<50 0	201	**1140**	<1000	<250	**1560**	<10.0	<50 0	<250
11760 CK-1	12/18/2014	1 16	<1 00	<1 00	<1 00	<1 00	1 95	<0.0200	<5 00	<25 0	<5 00	<100	16 7	45 6	<5 00	<5 00	<25.0
RBSL		**5**	**1,000**	**700**	**10,000**	**40**	**25**	**0.05**	**NE**	**NE**	**150**	**10,000**	**1,400**	**240**	**128**	**47**	**NE**

Notes
1. Units = µg/L
2 MTBE = Methyl Tertiary Butyl Ether
3 "<" = Not detected at or above the laboratory reporting limit
4. J = Result is less than the Reporting Limit but greater than or equal to the Method detection limit
5. RBSL = May 15, 2001 Risk Based Screening Level
6 Bold concentrations equal or exceed the corresponding RBSL
7 NE = Not established
8 NSP = Well not sampled-due to free product
9 NSD = Well not sampled-dry
10 NSI = Well not sampled-inaccessable due to well being silted in
11 NA = Not Analyzed due to heavy emulsion of the samples and solvent during extraction
12 3,3-Dimethyl-1-butanol = Ethyl tert-butyl alcohol

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**
11780-MW-1	12/18/2015	0	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0196
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0 03
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0 022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0 019
	3/8/2005	0	<5	<5	<5	15	<5	**42**	<0 02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0 02
	1/11/2001	0	<1.0	<1.0	<1 0	<1.0	<5.0	<5 0	**<1.0**
	11/2/1998	0	<1.0	<1.0	<1.0	7.77	<5.0	23.8	<0.05
11780-MW-2	12/18/2015	0.01	Not Sampled - Free Product						
	9/5/2013	0.09	Not Sampled - Free Product						
	2/24/2010	0.32	NS	NS	NS	NS	NS	NS	NS
	7/16/2009	1 57	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0 18	NS	NS	NS	NS	NS	NS	NS
	1/15/2008	0.27	**14000**	**48000**	**5900**	**33000**	**43000**	**<2500**	**54**
	4/19/2007	0 03	**11000**	**31000**	**4400**	**24400**	**34000**	**1400**	**52**
	8/21/2006	0.3	NS	NS	NS	NS	NS	NS	NS
	6/27/2005	0 02	NS	NS	NS	NS	NS	NS	NS
	3/8/2005	0.2	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0 33	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	**15900**	**90700**	**4800**	**26700**	**82000**	**840**	**127**
	11/2/1998	0	**23100**	**89000**	**5380**	**27380**	**227000**	**2140**	**78.65**
11780-MW-3	12/18/2015	0	**123**	4.32	29 9	67 1	2.65	10.4	<0.0198
	9/5/2013	0	**110**	<1	1 6	3.6	1.4	<5	<0.022
	2/24/2010	0	3.4	<1	<1	<2	<1	<5	<0 04
	7/16/2009	NA	Not Sampled – Not enough water for sample collection.						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/20/2007	0	**28**	1.3	<1	2 11	<1	<5	<0.02
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	0	**110**	<5	<5	<5	<5	<5	<0 019
	3/8/2005	0	**123**	10	18	16	<5	<5	<0 02
	8/20/2003	0	**385**	<25	<25	<25	<25	<25	<0 02
	1/11/2001	0	**434**	288	182	146	**89.9**	12.9	**<1.0**
	11/2/1998	0	**2260**	52.7	215	889	**<50**	<50	<0.02
11780-MW-4	12/18/2015	NA	Not Sampled – Dry Well						
	9/5/2013	NA	Not Sampled – Dry Well						
	2/24/2010	NA	Not Sampled – Dry Well						
	7/16/2009	NA	Not Sampled – Dry Well						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/20/2007	NA	Not Sampled – Dry Well						
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	NA	Not Sampled – Dry Well						
	3/8/2005	NA	Not Sampled – Dry Well						
	8/20/2003	NA	Not Sampled – Dry Well						
	1/11/2001	NA	Not Sampled – Dry Well						
	11/2/1998	0	**1781**	610	311	1921	<10	**40**	**<10**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-4R	12/18/2015	0	<1.00	<1.00	<1 00	<1.00	<1 00	<1.00	<0.0198
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	3 7	<1	0.56	<2	<1	<5	<0.04
	7/17/2009	0	**7.6**	<1	<1	2.5	<1	<5	<0.021
	9/22/2008	0	4.2	<1	<1	<1	<1	<5	<0.021
	1/15/2008	0	**9.8**	<1	1 4	1.8	<1	<5	<0 02
	4/19/2007	0	2.4	<1	1.2	2	4 4	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
11780-MW-5	12/18/2015	0	<1.00	<1 00	<1 00	<1.00	<1.00	<1.00	<0 0198
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0 021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0 02
	4/20/2007	0	<1	1.8	<1	1.43	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0 02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0 02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	<1.0	<1 0	<1 0	<1.0	<5 0	<5 0	**<1.0**
	11/2/1998	0	<5	<5	<5	<15	<1.0	<5.0	**<1.0**
11780-MW-6	12/18/2015	Well Abandoned 05/17/2006							
	9/5/2013	Well Abandoned 05/17/2006							
	6/27/2005	Well Abandoned 05/17/2006							
	3/8/2005	0	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0 02
	1/11/2001	0	2.4	19.3	2 6	8.3	<5 0	<5 0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**
11780-MW-6R	12/18/2015	0	<1.00	<1.00	<1.00	<1.00	<1 00	<1 00	<0.0201
	9/5/2013	0	<1	1.2	<1	<2	1	<5	<0 026
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0 023
	9/22/2008	0	<1	6.3	1.5	5.3	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0 02
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
11780-MW-7	12/18/2015	NA	Not Sampled – Dry Well						
	9/5/2013	NA	Not Sampled – Dry Well						
	2/24/2010	NA	Not Sampled – Dry Well						
	7/16/2009	NA	Not Sampled – Dry Well						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0 019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1 4	13	3.1	5	<5 0	<5.0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE 3
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Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-8	12/18/2015	0	<1.00	<1.00	<1.00	<1.00	<1 00	<1.00	<0 0201
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0 022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0 02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0 019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0 02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1	9.2	1.9	3.5	<5.0	<5.0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**
11780-MW-9	12/18/2015	Well Abandoned 05/17/2006							
	9/5/2013	Well Abandoned 05/17/2006							
	6/27/2005	Well Abandoned 05/17/2006							
	3/8/2005	0	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	NS	NS	NS	NS	NS	NS	NS
	11/2/1998	0	<1.0	2.1	<1 0	<1.0	<1.0	<5.0	**<1.0**
11780-MW-9R	12/18/2015	0	<1.00	<1.00	<1.00	<1.00	<1 00	<1.00	<0.0204
	9/5/2013	0	<1	1.7	<1	<2	<1	<5	<0 022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0 021
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0 02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0 02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0 019
11780-MW-10	12/18/2015	0	**5620**	**4810**	**3530**	5190	<20 0	**1060**	<0.0200
	9/5/2013	0	**9300**	**33000**	**8300**	**34700**	<100	**2400**	<0.022
	2/24/2010	0	**5200**	**3900**	**2400**	5500	<20	**590**	<0.04
	7/16/2009	0.25	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0.33	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0	**8400**	**9000**	**3300**	**10100**	**<500**	**<2500**	<0 02
	4/19/2007	0	**5400**	22	<20	238	**170**	**350**	<0 02
	8/21/2006	0	**5800**	**3700**	**1700**	3620	**<100**	**410**	<0.02
	6/27/2005	0	**6000**	**2400**	**1900**	3300	**<1000**	**<1000**	<0 019
	3/8/2005	0.42	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	Sheen	**8010**	**8770**	**2310**	7200	**<250**	**774**	<0.02
	1/11/2001	0	**8950**	**49000**	**8550**	**49000**	22	**3300**	**<500**
	11/2/1998	0	**11200**	**30800**	**3360**	**15500**	**<100**	**766**	**<100**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
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Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-11	12/18/2015	0	**7650**	**8440**	**5470**	**25400**	<50 0	**1480**	<0 0199
	9/5/2013	0	**8500**	**7100**	**3800**	**15800**	<50	**960**	<0 021
	2/24/2010	0	**6500**	**13,000**	**2100**	8900	**<100**	**720**	<0.04
	7/16/2009	0	**6100**	**16000**	**3100**	**15800**	28	**1400**	<0 021
	9/22/2008	0.04	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0.02	**8700**	**21000**	**4600**	**24600**	**<500**	**<2500**	<0 02
	4/19/2007	0	**6500**	**13000**	**2800**	**16100**	**790**	**1700**	<0.02
	8/21/2006	0.02	NS	NS	NS	NS	NS	NS	NS
	6/27/2005	0	**5900**	**25000**	**5100**	**31400**	**<2500**	**3000**	**0.34**
	3/8/2005	0 15	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	1.95	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	**8000**	**11800**	**3470**	**16400**	31	**1440**	**<100**
	11/2/1998	0	**6280**	**15600**	**2390**	**10800**	**<100**	**617**	**<50**
11780-MW-12	12/18/2015	0	**2100**	454	**988**	5360	<20.0	**693**	<0 0202
	9/5/2013	0	**1300**	130	130	720	**83**	**190**	<0.022
	2/24/2010	0	**1600**	5 5	6 7	20	**86**	**160**	<0 04
	7/16/2009	0	**3300**	<10	16	66	**100**	**310**	<0.021
	9/22/2008	0	**370**	<1	<1	8 8	12	**35**	<0 021
	1/14/2008	0	**5700**	<100	<100	140	**<100**	**<500**	<0.02
	4/19/2007	0	**6600**	**4800**	**2500**	7800	<20	**970**	<0 02
	8/21/2006	0	**5800**	<100	<100	<100	**<100**	**250**	<0 02
	6/27/2005	0	**8200**	7 7	6 9	52 2	**210**	**410**	<0 019
	3/8/2005	0	**7680**	264	52	315	**195**	**173**	<0 02
11780-MW-13	12/18/2015	0	**9960**	**31900**	**4140**	**23600**	<20.0	**1160**	0.0406
	9/5/2013	0	**6500**	**21000**	**5700**	**22600**	39	**2200**	<0 022
	2/24/2010	0 13	NS	NS	NS	NS	NS	NS	NS
	7/16/2009	0 29	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0 11	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0 23	**9900**	**27000**	**3500**	**24800**	**<2000**	**<10000**	**0.073**
	4/19/2007	0	**8300**	**23000**	**3200**	**22100**	**410**	**1500**	<0 02
	8/21/2006	0	**7300**	**36000**	**3400**	**20600**	**<100**	**1200**	**0.19**
	6/27/2005	0	**8600**	**61000**	**2100**	**13000**	**<250**	**620**	<0 019
	3/8/2005	0	**13300**	**33600**	**2880**	**16600**	**<100**	**700**	**0.08**
11780-MW-14	12/18/2015	0	**4440**	105	25 9	107	<10.0	**509**	<0.0201
	9/5/2013	0							
	2/24/2010	0	**4400**	45	<20	<40	14	**240**	<0 04
	7/16/2009	0	**4400**	76	<20	68	<20	**280**	<0 022
	9/22/2008	0	**4100**	59	<20	<20	<20	**290**	<0 021
	1/14/2008	0	**4500**	74	<50	51	**<50**	**300**	<0 02
	4/19/2007	0	**5100**	100	<20	74	<20	**300**	<0 019
	8/21/2006	0	**6100**	<100	<100	<100	**<100**	**260**	<0 02
	6/27/2005	0	**4500**	<100	<100	<100	**<100**	**170**	**0.11**
	3/8/2005	0	**6390**	<125	<125	<125	**<125**	**234**	<0 02

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Former United Oil - Winnsboro, South Carolina
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Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-15	12/18/2015	0	**7060**	**4390**	**872**	4160	<10.0	**368**	<0.0201
	9/5/2013	0	**4900**	69	<10	41	**14**	**260**	<0.022
	2/24/2010	0	**2600**	42	15	<20	11	**140**	<0 04
	7/16/2009	0	**2300**	42	11	25	11	**150**	<0 022
	9/22/2008	0	**2800**	54	18	<10	18	**270**	<0 021
	1/14/2008	0	**2900**	<50	<50	<50	**<50**	**250**	<0 02
	4/19/2007	0	**3300**	52	3 5	29 5	<1	**240**	<0 02
	8/21/2006	0	**2400**	49	5 2	63	<5	**120**	<0 02
	6/27/2005	0	**680**	13	<5	9 4	<5	**63**	<0 019
	3/8/2005	0	**11400**	182	<50	96	**<50**	**485**	<0 02
11780-MW-16	12/18/2015	0	**4490**	**7940**	**3210**	**22200**	<20.0	**2060**	<0 0203
	9/5/2013	NA	Could Not Locate						
	2/24/2010	0	**5600**	**5100**	**1400**	**10,200**	27	**790**	<0 04
	7/16/2009	0	**5500**	**22000**	**4600**	**27500**	**<100**	**2700**	<0.022
	9/22/2008	0 06	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0	**8100**	**14000**	**4400**	**27100**	**<1000**	**<5000**	<0.02
	4/19/2007	0	**7200**	**14000**	**4000**	**23000**	**410**	**2300**	<0 02
	8/21/2006	0	**6700**	<100	<100	<100	**<100**	**230**	<0 02
	6/27/2005	0	**9400**	**28000**	**4800**	**31700**	**<2500**	**3200**	<0.019
	3/8/2005	0 04	NS	NS	NS	NS	NS	NS	NS
11780-MW-17	12/18/2015	0	<1.00	<1 00	<1.00	<1.00	<1.00	<1.00	<0.0199
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0 022
	2/24/2010	0	<1	<1	<1	<2	<1	1 5	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0 022
	9/22/2008	0	3.9	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0 02
	4/20/2007	0	<1	<1	<1	<1	5 7	<5	<0 02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0 02
11780-MW-18	12/18/2015	0	**577**	42 3	347	1840	**3400**	**164**	<0.0199
	9/5/2013	0	**370**	150	260	1280	**2300**	**71**	<0 021
	2/24/2010	0	**630**	**1100**	190	2090	**2600**	**77**	<0 04
	7/16/2009	0	**280**	560	92	560	**2300**	**67**	**0.092**
	9/22/2008	0	**270**	390	85	340	**2600**	**98**	<0.022
	1/14/2008	0	**630**	**1800**	270	1440	**2700**	**<500**	0 033
	4/19/2007	0	**1700**	**1800**	470	2750	**3200**	**250**	**0.055**
	8/21/2006	0	**550**	610	49	570	**1200**	**66**	**0.1**
11780-MW-19	12/18/2015	0	<1.00	<1.00	0.530	2.71	<1.00	1 28	<0.0201
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0 04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0 022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0 02
	4/20/2007	0	<1	<1	<1	1 3	5 1	<5	<0 02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0 02

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
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Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-20	12/18/2015	0	<1.00	<1 00	<1.00	<1.00	<1 00	<1.00	<0.0205
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0 04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0 021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0 022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0 02
	4/20/2007	0	<1	<1	<1	<1	4 2	<5	<0 02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0 02
11780-MW-21	12/18/2015	0	**9.70**	0.710	1.26	0.550	**1920**	8.49	<0.0196
	9/5/2013	0	**12**	1.5	1	<2	**840**	11	<0.022
	2/25/2010	0	**7.3**	9.6	36	199	**100**	**140**	<0.04
	7/16/2009	0	**33**	<5	<5	<10	**460**	<25	<0.022
	9/23/2008	0	**74**	<10	<10	<10	**890**	**49***	<0.022
	1/14/2008	0	**210**	14	3	10.8	**1100**	**77**	<0.02
	4/20/2007	0	**70**	<50	<50	177	**440**	**<250**	<0.02
	8/21/2006	0	**240**	19	<5	26 2	**910**	**110**	<0.02
11780-MW-22	12/18/2015	0	**3140**	32 4	2 63	27.4	16 6	**291**	<0.0204
	9/5/2013	0	**1700**	13	1 3	13.8	16	**120**	<0.021
	2/25/2010	0	**1700**	<10	<10	<20	11	**120**	<0 04
	7/16/2009	0	**1600**	<5	<5	12	13	**110**	<0.022
	9/23/2008	0	**980**	<10	<10	<10	12	**64**	<0.022
	1/14/2008	0	**1700**	<50	<50	<50	**<50**	**<250**	<0 02
	4/20/2007	0	**1400**	5.6	1.2	17.5	9.7	**68**	<0.02
	8/21/2006	0	**5000**	<100	<100	<100	**<100**	**180**	<0.02
11780-MW-23	12/18/2015	0	**141**	<1.00	<1.00	<1.00	<1.00	10.2	<0.0206
	9/5/2013	0	**1900**	<1	<1	<2	21	**73**	<0 021
	2/25/2010	0	**1500**	<1	<1	<2	13	**50**	<0.04
	7/16/2009	0	**1400**	<10	<10	<20	15	**<50**	<0 022
	9/23/2008	0	**1800**	<10	<10	<10	13	**94**	<0.022
	1/14/2008	0	**3100**	<50	<50	<50	**<50**	**<250**	<0.02
	4/20/2007	0	**3100**	<1	1	7.17	12	**110**	<0.02
	8/21/2006	0	**230**	<5	<5	<5	<5	<5	<0.02
11780-MW-24	12/18/2015	0	**149**	<1.00	<1.00	<1.00	1 55	15.7	<0.0204
	9/5/2013	0	**60**	<5	<5	<5	<5	<5	<0.021
	2/25/2010	0	<1	<1	<1	<2	<1	<5	<0 04
	7/16/2009	0	**97**	<1	<1	<2	<1	<5	<0.023
	9/23/2008	0	**230**	<1	<1	<1	<1	17	<0.022
	1/14/2008	0	**400**	<1	<1	<1	<1	21	<0.02
	4/20/2007	0	**240**	<1	<1	1.7	<1	**31**	<0 02
	8/21/2006	0	**390**	<5	<5	<5	<5	**26**	<0 02

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
RBSL		NA	5	1000	700	10000	40	25	0.05
11780-MW-25	12/18/2015	0	**1660**	<1.00	<1.00	<1 00	17 7	**39.3**	<0.0205
	9/5/2013	0	**260**	<5	<5	<10	<5	<25	<0.021
	2/25/2010	0	**34**	<1	<1	<2	<1	6.6	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/23/2008	0	**660**	<5	<5	<5	<5	**47**	<0 022
	1/14/2008	0	**400**	<10	<10	<10	<10	**<50**	<0.02
	4/20/2007	0	**430**	<1	<1	1	<1	**26**	<0.02
	8/21/2006	0	**700**	<5	<5	7 7	<5	**35**	<0 02
11780-MW-26	12/18/2015	0	<1.00	<1.00	<1 00	<1.00	<1.00	<1.00	<0.0165
	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/25/2010	0	<1	<1	<1	<2	<1	<5	<0 04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/23/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0 021
11780-MW-27	12/18/2015	0	**17500**	**6560**	**3540**	**11700**	**20900**	**1420**	**0.113**
	9/5/2013	0	**14000**	**3200**	**2700**	5300	**14000**	**720**	<0.021
	2/25/2010	0 08	Not Sampled - Free Product						
11780-MW-28	12/18/2015	Heavy Sheen	Not Sampled - Free Product						
	9/5/2013	0	**14000**	**45000**	**8700**	**48000**	**18000**	**4000**	**12**
	2/25/2010	0	**13,000**	**64,000**	**9100**	**51,000**	**38,000**	**4400**	**5.2**
11780-MW-29	12/18/2015	0 01	Not Sampled - Free Product						
	9/5/2013	0.03	Not Sampled - Free Product						
	2/25/2010	0 02	Not Sampled - Free Product						
11780-DW-1	12/18/2015	0	0.800	<1.00	<1.00	<1.00	<1 00	<1 00	<0.0201
	9/5/2013	0	<1	4.3	<1	4.6	<1	<5	<0.021
	2/25/2010	0	0 62	14	2 8	55	<1	<5	<0 04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	1.1	20	4.7	29 3	<1	<5	<0.022
	1/15/2008	0	<1	140	130	720	<1	**110**	**0.086**
	4/19/2007	0	<1	<1	<1	<1	4	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	8	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1	9.9	<1 0	3 1	<5.0	<5.0	<1.0
	11/2/1998	0	<5.0	<5 0	<5.0	<15	<5.0	<5 0	<5.0
11780-DW-2	12/18/2015	0	**115**	<10 0	<10.0	<10.0	<10 0	**34.8**	<0.0205
	9/5/2013	0	<1	<1	<1	<2	4.6	<5	<0.021
	2/25/2010	0	4.3	<1	<1	<2	9	6.9	<0.04
	7/16/2009	0	**83**	<1	<1	<1	8.3	6.2	<0.023
	9/23/2008	0	<1	<1	<1	<1	8.6	<5	<0.022
	1/15/2008	0	**34**	<1	<1	<1	7.7	<5	<0 02
	4/20/2007	0	**440**	<1	<1	<1	11	**27**	<0.02
	8/21/2006	0	**450**	<5	<5	<5	5.9	25	<0.02

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

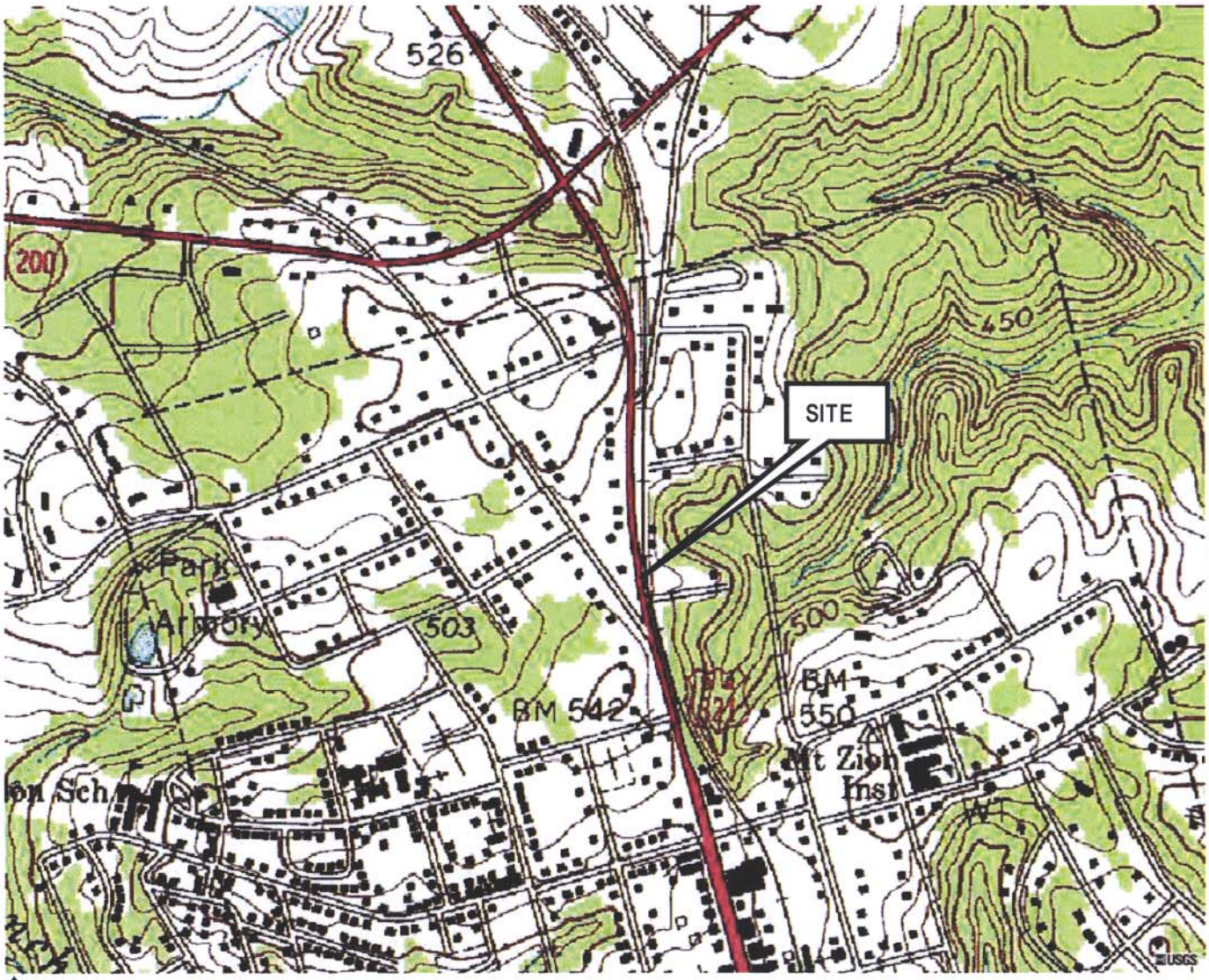
Table 4
Data Quality Indicator Analysis
Former United Oil
401 North Congress Street
Winnsboro, Fairfield County, South Carolina
UST Permit #11760

Well Location	Sample Date	Petroleum Constituents (ug/L)								Oxygenates (ug/L)								Comments / Notes
		Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene (8260)	1,2-Dibromoethane (EDB)	1,2 - Dichloroethane	3,3-Dimethyl-1-butanol	Diisopropyl ether	Ethanol	t-Butyl alcohol	tert-Amyl alcohol	tert-Amyl methyl ether	ethyl tert-Butyl ether	tert-Butyl formate	
Precision Analysis																		
Precision Limit (RPD %)		**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	
11760 MW-14	12/18/2014	4440	105	25.9	107	<10.0	509	<0.0201	<50.0	1180	3300	<1000	1320	6940	<50.0	<50.0	<250	Xylenes, Naphthalene, 3,3-Dimethyl-1-butanol, T-Butyl Alcohol, and Tert-Amyl Alcohol constituents above 20% RPD
DUP-1	12/18/2014	5260	104	25	74.5	<50.0	187	<0.0198	<250	1460	3940	<5000	874	3480	<250	<250	<1250	
RPD (%)		17%	1%	4%	36%	---	93%	---	---	21%	18%	---	41%	66%	---	---	---	
11760 MW-15	12/18/2014	7060	4390	872	4160	<10.0	368	<0.0201	<50.0	2760	4830	<1000	<250	5880	<50.0	<50.0	<250	
DUP-2	12/18/2014	8280	3650	912	3800	12.6	1190	<0.0198	<5.00	2960	5730	<100	<25	12300	<5.00	<5.00	<25.0	
RPD (%)		16%	18%	4%	9%	---	106%	---	---	7%	17%	---	---	71%	---	---	---	
Bias Analysis																		
Field Blank-1	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	No Errors Indicated
Field Blank-2	12/19/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	No Errors Indicated
Trip Blank-1	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	No Errors Indicated
Trip Blank-2	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	No Errors Indicated
Method Sensitivity																		
Sensitivity Limits (GW - µg/L)		**<1**	**<1**	**<1**	**<1**	**<1**	**<1**	**<0.021**	**<5**	**<25**	**<5**	**<100**	**<25**	**<25**	**<5**	**<5**	**<25**	
11760 MW-1	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0196	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-2	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	
11760 MW-3	12/18/2014	123	4.32	29.9	67.1	2.65	10.4	<0.0198	<5.00	73.1	260	<100	<25.0	302	<5.00	<5.00	<25.0	Dilution Factor 5x
11760 MW-4R	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0198	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-5	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0198	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-6R	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-7	12/18/2014	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	NSI	
11760 MW-8	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-9R	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0204	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-10	12/18/2014	5620	4810	3530	5190	<20.0	1060	<0.0200	<100	1120	2700	<2000	<500	<500	<100	<100	<500	Dilution Factor 20x, 200x
11760 MW-11	12/18/2014	7650	8440	5470	25400	<50.0	1480	<0.0199	<250	1550	6210	<5000	<1250	6450	<250	<250	<1250	Dilution Factor 50x, 500x
11760 MW-12	12/18/2014	2100	454	988	5360	<20.0	693	<0.0202	<100	2490	3210	<2000	<500	11200	<100	<100	<500	Dilution Factor 20x, 200x
11760 MW-13	12/18/2014	9960	31900	4140	23600	<20.0	1160	0.0406	<100	3340	8430	<2000	3100	14900	<100	<100	<500	Dilution Factor 20x, 500x
11760 MW-14	12/18/2014	4440	105	25.9	107	<10.0	509	<0.0201	<50.0	1180	3300	<1000	1320	6940	<50.0	<50.0	<250	Dilution Factor 10x, 200x
11760 MW-15	12/18/2014	7060	4390	872	4160	<10.0	368	<0.0201	<50.0	2760	4830	<1000	<250	5880	<50.0	<50.0	<250	Dilution Factor 10x, 200x
11760 MW-16	12/18/2014	4490	7940	3210	22200	<20.0	2060	<0.0203	<100	2400	2720	<2000	3410	10200	<100	<100	<500	Dilution Factor 20x, 500x
11760 MW-17	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0199	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-18	12/18/2014	577	42.3	347	1840	3400	164	<0.0199	<5.00	2640	2080	<100	3500	13800	<5.00	<5.00	<25.0	Dilution Factor 20x
11760 MW-19	12/18/2014	<1.00	<1.00	0.530	2.71	<1.00	1.28	<0.0201	<5.00	36.3	<5.00	<100	58.3	173	<5.00	<5.00	<25.0	
11760 MW-20	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0205	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-21	12/19/2014	9.70	0.710	1.26	0.550	1920	8.49	<0.0196	<5.00	468	1900	<100	353	<250	43.8	<5.00	<25.0	Dilution Factor 10x
11760 MW-22	12/19/2014	3140	32.4	2.63	27.4	16.6	291	<0.0204	<5.00	443	2970	<100	434	2550	<5.00	<5.00	<25.0	Dilution Factor 50x
11760 MW-23	12/19/2014	141	<1.00	<1.00	<1.00	<1.00	10.2	<0.0206	<5.00	34.8	1500	<100	77.0	<25.0	<5.00	<5.00	<25.0	Dilution Factor 20x
11760 MW-24	12/19/2014	149	<1.00	<1.00	<1.00	1.55	15.7	<0.0204	<5.00	14.7	<5.00	<100	49.6	<25.0	<5.00	<5.00	<25.0	
11760 MW-25	12/19/2014	1660	<1.00	<1.00	<1.00	17.7	39.3	<0.0205	<5.00	229	3550	<100	408	1770	<5.00	<5.00	<25.0	Dilution Factor 50x
11760 MW-26	12/18/2014	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0165	<5.00	<25.0	<5.00	<100	<25.0	<25.0	<5.00	<5.00	<25.0	
11760 MW-27	12/18/2014	17500	6560	3540	11700	20900	1420	0.113	<100	20700	16300	<2000	23900	125000	<100	<100	<500	Dilution Factor 20x, 500x
11760 MW-28	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	
11760 MW-29	12/18/2014	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	NSP	
11760 DW-1	12/19/2014	0.800	<1.00	<1.00	<1.00	<1.00	<1.00	<0.0201	<5.00	<25.0	1.04	<100	<25.0	7.01	<1.00	<5.00	<25.0	
11760 DW-2	12/19/2014	115	<10.0	<10.0	<10.0	<10.0	34.8	<0.0205	<50.0	201	1140	<1000	<250	1560	<10.0	<50.0	<250	Dilution Factor 10x
11760 CK-1	12/18/2014	1.16	<1.00	<1.00	<1.00	<1.00	1.95	<0.0200	<5.00	<25.0	<5.00	<100	16.7	45.6	<5.00	<5.00	<25.0	

Notes:

1. Concentrations in µg/L (micrograms per liter)
2. "<" = Not present above analytical method detection limit (detection limit in µg/l)
3. J = Estimated result
4. NA = Not Analyzed due to heavy emulsion of the samples and solvent during extraction
5. --- = No Data
6. NSP = Not Sampled due to Free Product
7. NSI = Not Sampled - Inaccessible due to well being silted in
8. 3,3-Dimethyl-1-butanol = Ethyl tert-butyl alcohol

FIGURES



↑N

Figure 1: Site Location Map
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Cardno ATC
Shaping the Future

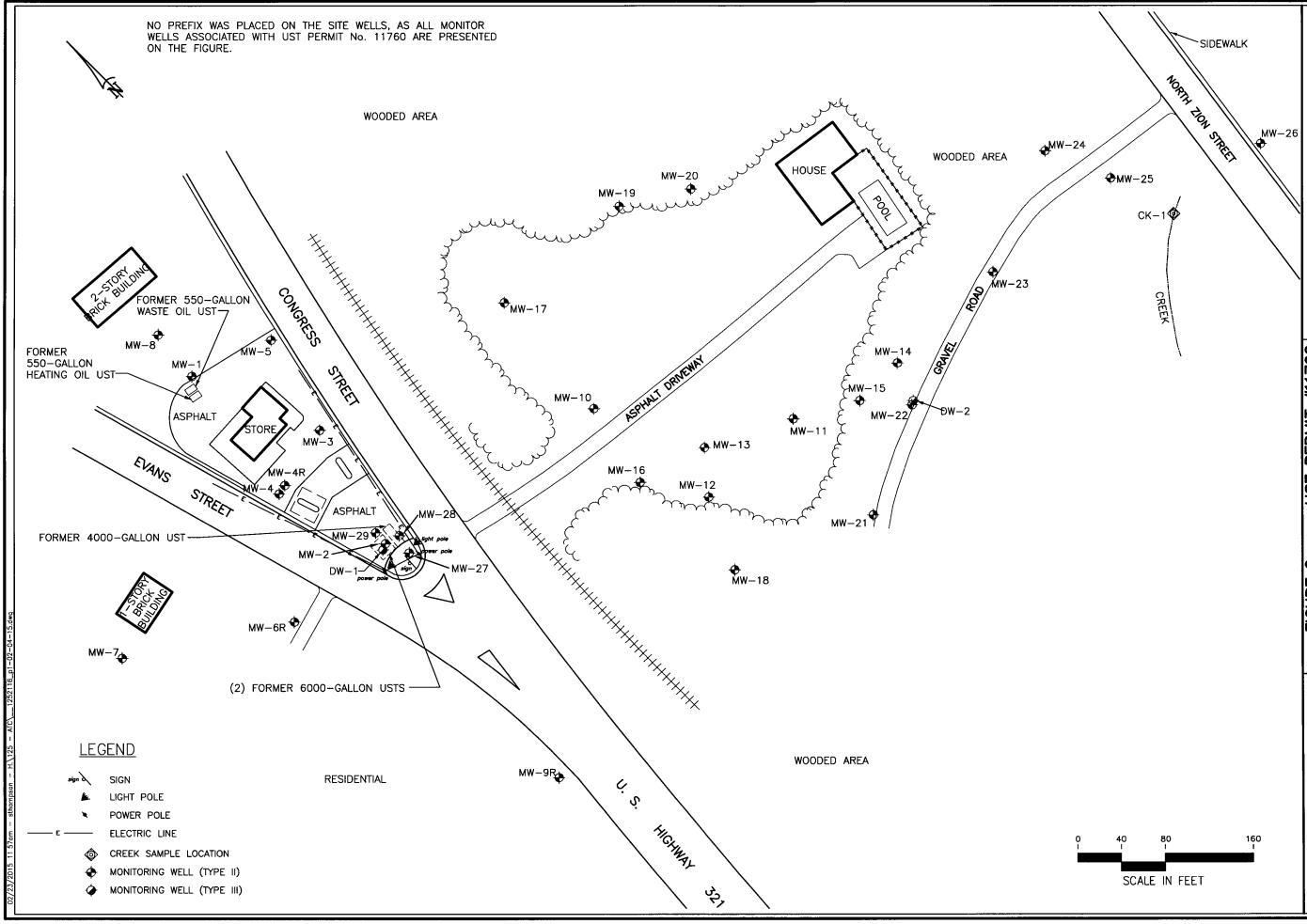
400 Northeast Drive, Unit Q
Columbia, South Carolina
P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

NO PREFIX WAS PLACED ON THE SITE WELLS, AS ALL MONITOR WELLS ASSOCIATED WITH UST PERMIT No. 11760 ARE PRESENTED ON THE FIGURE.



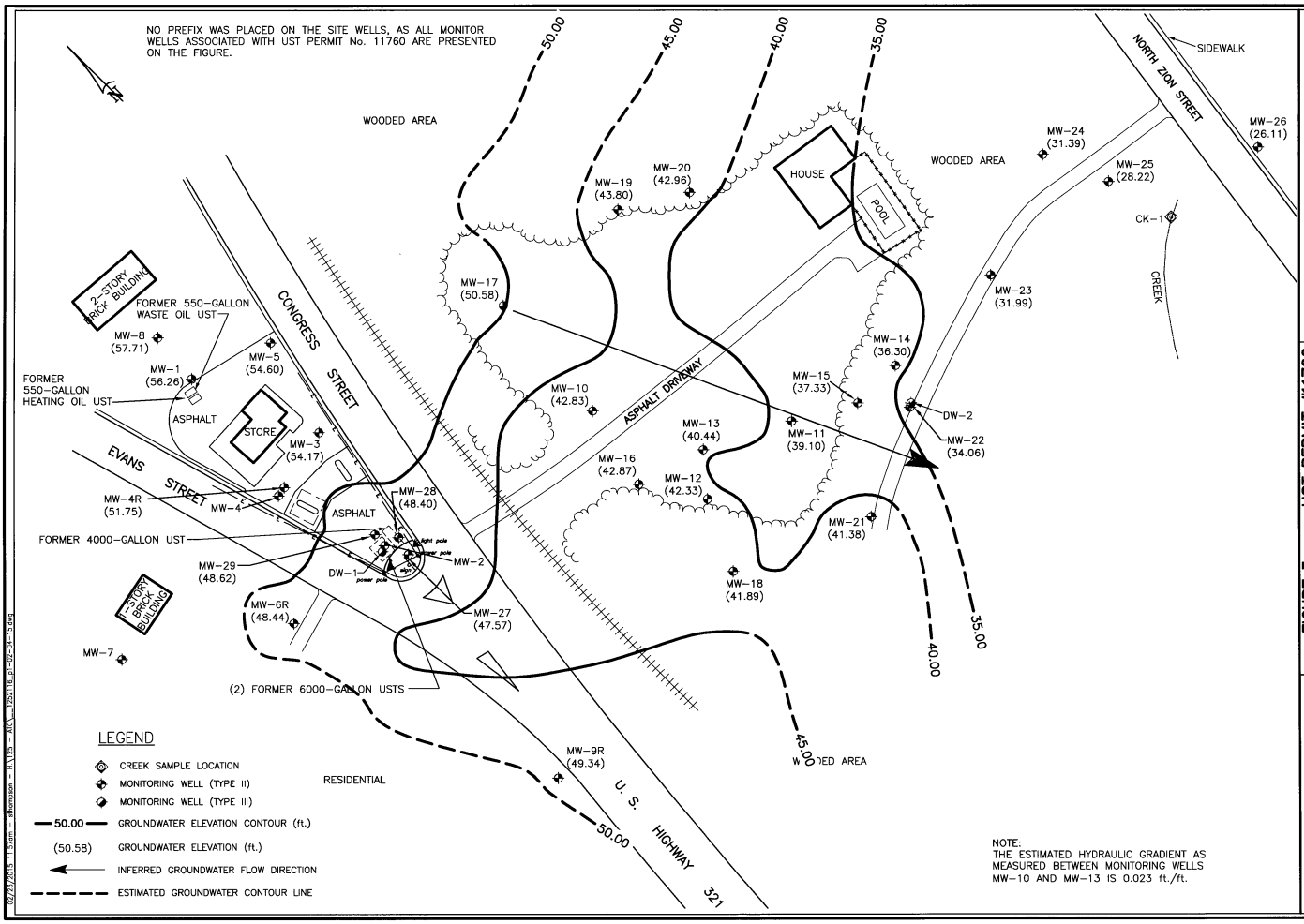
NOTES:

TITLE **FIGURE 2** **UST PERMIT #11760**
SITE MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE 1252116.dwg | TYPE CODE | PREP. BY JK | REV. BY | SCALE 1"=80' | DATE 02-04-2015 | PROJECT NO. 14.25384.0012

Gardno
Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

02/23/2015 11:57am - dthompson - J:\12 - AIG_ 1252116_p1-02-04-15.dwg



NOTES:

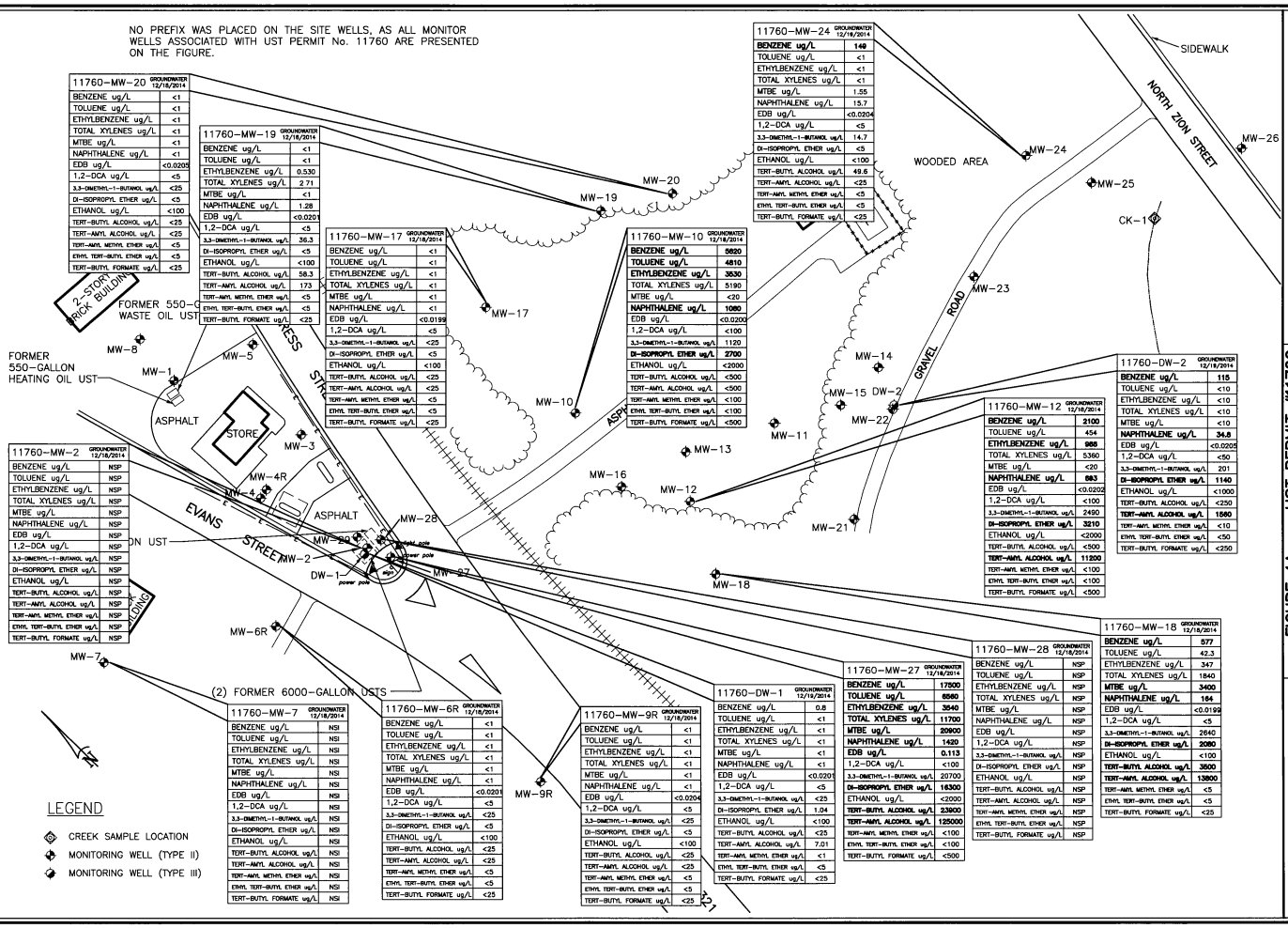
TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		JK		1"=80'	03-23-2010	14.25384.0012

Gardno
Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

02/23/2010 11:37am - sthompson - H:\T25 - AUL_1252116.g - 02-04-13.dwg

NO PREFIX WAS PLACED ON THE SITE WELLS, AS ALL MONITOR WELLS ASSOCIATED WITH UST PERMIT No. 11760 ARE PRESENTED ON THE FIGURE.



11760-MW-20	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0205
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-19	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	0.530
TOTAL XYLENES ug/L	2.71
MTBE ug/L	<1
NAPHTHALENE ug/L	1.28
EDB ug/L	<0.0201
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	36.3
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	58.3
TERT-AMYL ALCOHOL ug/L	173
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-17	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0199
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-10	GROUNDWATER 12/18/2014
BENZENE ug/L	**5820**
TOLUENE ug/L	**4810**
ETHYLBENZENE ug/L	**3530**
TOTAL XYLENES ug/L	5190
MTBE ug/L	<20
NAPHTHALENE ug/L	**1060**
EDB ug/L	<0.0200
1,2-DCA ug/L	<100
3,3-DIMETHYL-1-BUTANOL ug/L	1120
DI-ISOPROPYL ETHER ug/L	**2700**
ETHANOL ug/L	<2000
TERT-BUTYL ALCOHOL ug/L	<500
TERT-AMYL ALCOHOL ug/L	<500
TERT-AMYL METHYL ETHER ug/L	<100
ETHYL TERT-BUTYL ETHER ug/L	<100
TERT-BUTYL FORMATE ug/L	<500

11760-MW-24	GROUNDWATER 12/18/2014
BENZENE ug/L	**149**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	1.55
NAPHTHALENE ug/L	15.7
EDB ug/L	<0.0204
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	14.7
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	49.6
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-DW-2	GROUNDWATER 12/18/2014
BENZENE ug/L	**115**
TOLUENE ug/L	<10
ETHYLBENZENE ug/L	<10
TOTAL XYLENES ug/L	<10
MTBE ug/L	<10
NAPHTHALENE ug/L	**34.8**
EDB ug/L	<0.0205
1,2-DCA ug/L	<50
3,3-DIMETHYL-1-BUTANOL ug/L	201
DI-ISOPROPYL ETHER ug/L	**1140**
ETHANOL ug/L	<1000
TERT-BUTYL ALCOHOL ug/L	<250
TERT-AMYL ALCOHOL ug/L	**1560**
TERT-AMYL METHYL ETHER ug/L	<10
ETHYL TERT-BUTYL ETHER ug/L	<50
TERT-BUTYL FORMATE ug/L	<250

11760-MW-12	GROUNDWATER 12/18/2014
BENZENE ug/L	**2100**
TOLUENE ug/L	454
ETHYLBENZENE ug/L	**988**
TOTAL XYLENES ug/L	5360
MTBE ug/L	<20
NAPHTHALENE ug/L	**883**
EDB ug/L	<0.0202
1,2-DCA ug/L	<100
3,3-DIMETHYL-1-BUTANOL ug/L	2490
DI-ISOPROPYL ETHER ug/L	**3210**
ETHANOL ug/L	<2000
TERT-BUTYL ALCOHOL ug/L	<500
TERT-AMYL ALCOHOL ug/L	**11200**
TERT-AMYL METHYL ETHER ug/L	<100
ETHYL TERT-BUTYL ETHER ug/L	<100
TERT-BUTYL FORMATE ug/L	<500

11760-MW-2	GROUNDWATER 12/18/2014
BENZENE ug/L	NSP
TOLUENE ug/L	NSP
ETHYLBENZENE ug/L	NSP
TOTAL XYLENES ug/L	NSP
MTBE ug/L	NSP
NAPHTHALENE ug/L	NSP
EDB ug/L	NSP
1,2-DCA ug/L	NSP
3,3-DIMETHYL-1-BUTANOL ug/L	NSP
DI-ISOPROPYL ETHER ug/L	NSP
ETHANOL ug/L	NSP
TERT-BUTYL ALCOHOL ug/L	NSP
TERT-AMYL ALCOHOL ug/L	NSP
TERT-AMYL METHYL ETHER ug/L	NSP
ETHYL TERT-BUTYL ETHER ug/L	NSP
TERT-BUTYL FORMATE ug/L	NSP

11760-MW-18	GROUNDWATER 12/18/2014
BENZENE ug/L	**577**
TOLUENE ug/L	42.3
ETHYLBENZENE ug/L	347
TOTAL XYLENES ug/L	1840
MTBE ug/L	**3400**
NAPHTHALENE ug/L	**164**
EDB ug/L	<0.0199
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	2640
DI-ISOPROPYL ETHER ug/L	**2080**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	**3500**
TERT-AMYL ALCOHOL ug/L	**13800**
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-28	GROUNDWATER 12/18/2014
BENZENE ug/L	NSP
TOLUENE ug/L	NSP
ETHYLBENZENE ug/L	NSP
TOTAL XYLENES ug/L	NSP
MTBE ug/L	NSP
NAPHTHALENE ug/L	NSP
EDB ug/L	NSP
1,2-DCA ug/L	NSP
3,3-DIMETHYL-1-BUTANOL ug/L	NSP
DI-ISOPROPYL ETHER ug/L	NSP
ETHANOL ug/L	NSP
TERT-BUTYL ALCOHOL ug/L	NSP
TERT-AMYL ALCOHOL ug/L	NSP
TERT-AMYL METHYL ETHER ug/L	NSP
ETHYL TERT-BUTYL ETHER ug/L	NSP
TERT-BUTYL FORMATE ug/L	NSP

11760-MW-27	GROUNDWATER 12/18/2014
BENZENE ug/L	**17500**
TOLUENE ug/L	**6560**
ETHYLBENZENE ug/L	**3540**
TOTAL XYLENES ug/L	**11700**
MTBE ug/L	**20900**
NAPHTHALENE ug/L	**1420**
EDB ug/L	**0.113**
1,2-DCA ug/L	<100
3,3-DIMETHYL-1-BUTANOL ug/L	20700
DI-ISOPROPYL ETHER ug/L	**16300**
ETHANOL ug/L	<2000
TERT-BUTYL ALCOHOL ug/L	**23900**
TERT-AMYL ALCOHOL ug/L	**125000**
TERT-AMYL METHYL ETHER ug/L	<100
ETHYL TERT-BUTYL ETHER ug/L	<100
TERT-BUTYL FORMATE ug/L	<500

11760-DW-1	GROUNDWATER 12/19/2014
BENZENE ug/L	0.8
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0201
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	1.04
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	7.01
TERT-AMYL METHYL ETHER ug/L	<1
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-9R	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0204
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-6R	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0201
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-7	GROUNDWATER 12/18/2014
BENZENE ug/L	NSI
TOLUENE ug/L	NSI
ETHYLBENZENE ug/L	NSI
TOTAL XYLENES ug/L	NSI
MTBE ug/L	NSI
NAPHTHALENE ug/L	NSI
EDB ug/L	NSI
1,2-DCA ug/L	NSI
3,3-DIMETHYL-1-BUTANOL ug/L	NSI
DI-ISOPROPYL ETHER ug/L	NSI
ETHANOL ug/L	NSI
TERT-BUTYL ALCOHOL ug/L	NSI
TERT-AMYL ALCOHOL ug/L	NSI
TERT-AMYL METHYL ETHER ug/L	NSI
ETHYL TERT-BUTYL ETHER ug/L	NSI
TERT-BUTYL FORMATE ug/L	NSI

LEGEND

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NSP = NOT SAMPLED DUE TO FREE PRODUCT

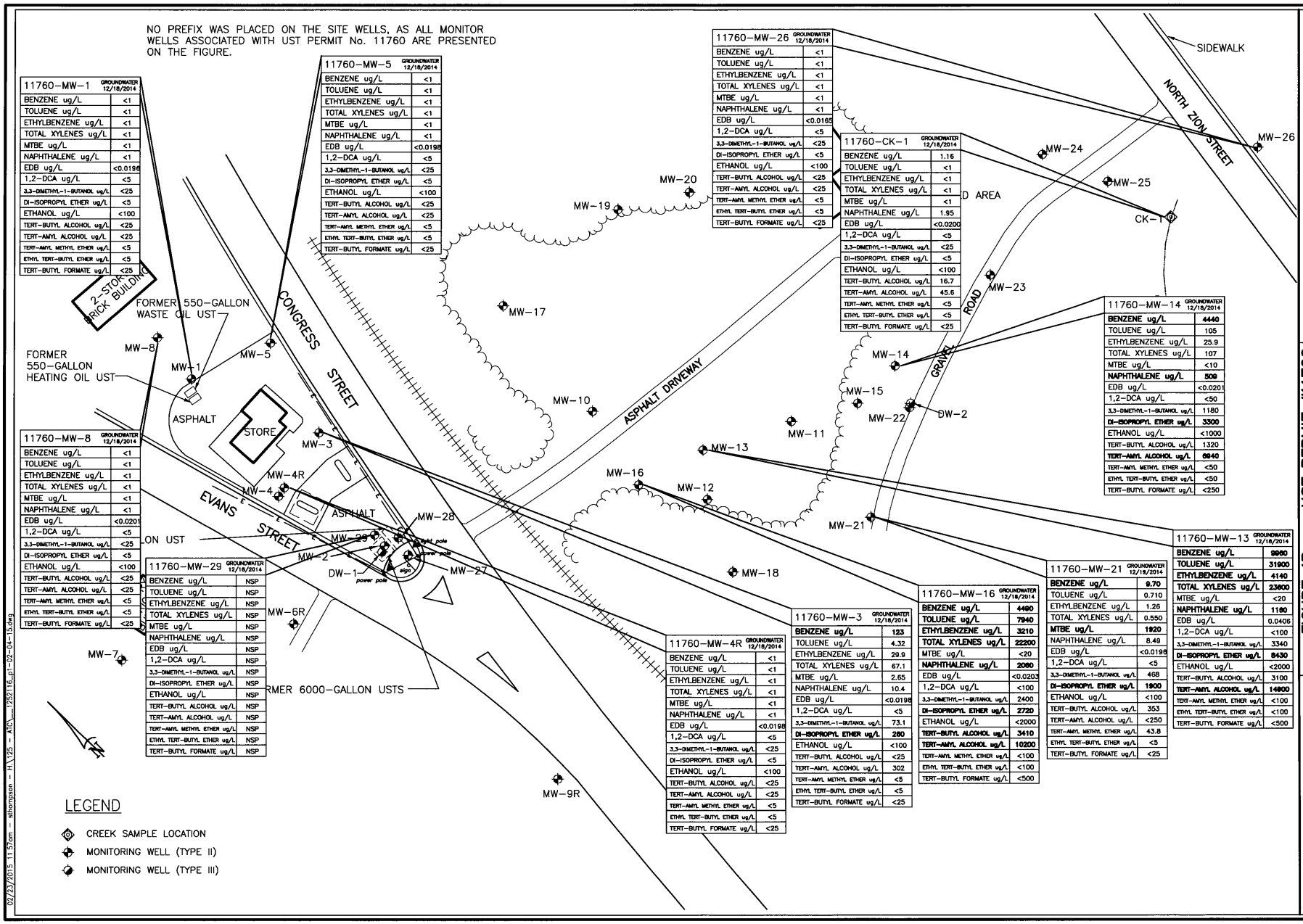
TITLE **FIGURE 4A UST PERMIT #11760**
CHEMICALS OF CONCERN IN GROUNDWATER MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE: 1252116.dwg | TYPE CODE | PREP. BY: JK | REV. BY | SCALE: 1"=80' | DATE: 03-23-2010 | PROJECT NO: 14.25384.0012

Gardno Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

02/23/2015 11:57am - shampson - R:\125 - AIG\ - 1252116.g1-02-04-15.dwg

NO PREFIX WAS PLACED ON THE SITE WELLS, AS ALL MONITOR WELLS ASSOCIATED WITH UST PERMIT No. 11760 ARE PRESENTED ON THE FIGURE.



11760-MW-1	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0198
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-5	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0198
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-26	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0165
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-CK-1	GROUNDWATER 12/18/2014
BENZENE ug/L	1.16
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	1.95
EDB ug/L	<0.0200
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	16.7
TERT-AMYL ALCOHOL ug/L	45.6
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-14	GROUNDWATER 12/18/2014
BENZENE ug/L	**4440**
TOLUENE ug/L	105
ETHYLBENZENE ug/L	25.9
TOTAL XYLENES ug/L	107
MTBE ug/L	<10
NAPHTHALENE ug/L	**509**
EDB ug/L	<0.0201
1,2-DCA ug/L	<50
3,3-DIMETHYL-1-BUTANOL ug/L	1180
DI-ISOPROPYL ETHER ug/L	**3300**
ETHANOL ug/L	<1000
TERT-BUTYL ALCOHOL ug/L	1320
TERT-AMYL ALCOHOL ug/L	**6940**
TERT-AMYL METHYL ETHER ug/L	<50
ETHYL TERT-BUTYL ETHER ug/L	<50
TERT-BUTYL FORMATE ug/L	<250

11760-MW-8	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0201
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-29	GROUNDWATER 12/18/2014
BENZENE ug/L	NSP
TOLUENE ug/L	NSP
ETHYLBENZENE ug/L	NSP
TOTAL XYLENES ug/L	NSP
MTBE ug/L	NSP
NAPHTHALENE ug/L	NSP
EDB ug/L	NSP
1,2-DCA ug/L	NSP
3,3-DIMETHYL-1-BUTANOL ug/L	NSP
DI-ISOPROPYL ETHER ug/L	NSP
ETHANOL ug/L	NSP
TERT-BUTYL ALCOHOL ug/L	NSP
TERT-AMYL ALCOHOL ug/L	NSP
TERT-AMYL METHYL ETHER ug/L	NSP
ETHYL TERT-BUTYL ETHER ug/L	NSP
TERT-BUTYL FORMATE ug/L	NSP

11760-MW-4R	GROUNDWATER 12/18/2014
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<1
EDB ug/L	<0.0198
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	<25
DI-ISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-3	GROUNDWATER 12/18/2014
BENZENE ug/L	**123**
TOLUENE ug/L	4.32
ETHYLBENZENE ug/L	29.9
TOTAL XYLENES ug/L	67.1
MTBE ug/L	2.65
NAPHTHALENE ug/L	10.4
EDB ug/L	<0.0198
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	73.1
DI-ISOPROPYL ETHER ug/L	**280**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	<25
TERT-AMYL ALCOHOL ug/L	302
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-16	GROUNDWATER 12/18/2014
BENZENE ug/L	**4490**
TOLUENE ug/L	**7940**
ETHYLBENZENE ug/L	**3210**
TOTAL XYLENES ug/L	**22200**
MTBE ug/L	<20
NAPHTHALENE ug/L	**2060**
EDB ug/L	<0.0203
1,2-DCA ug/L	<100
3,3-DIMETHYL-1-BUTANOL ug/L	2400
DI-ISOPROPYL ETHER ug/L	**2720**
ETHANOL ug/L	<2000
TERT-BUTYL ALCOHOL ug/L	**3410**
TERT-AMYL ALCOHOL ug/L	**10200**
TERT-AMYL METHYL ETHER ug/L	<100
ETHYL TERT-BUTYL ETHER ug/L	<100
TERT-BUTYL FORMATE ug/L	<500

11760-MW-21	GROUNDWATER 12/18/2014
BENZENE ug/L	**9.70**
TOLUENE ug/L	0.710
ETHYLBENZENE ug/L	1.26
TOTAL XYLENES ug/L	0.550
MTBE ug/L	**1920**
NAPHTHALENE ug/L	8.49
EDB ug/L	<0.0198
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	468
DI-ISOPROPYL ETHER ug/L	**1900**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	353
TERT-AMYL ALCOHOL ug/L	<250
TERT-AMYL METHYL ETHER ug/L	43.8
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-13	GROUNDWATER 12/18/2014
BENZENE ug/L	**9960**
TOLUENE ug/L	**31900**
ETHYLBENZENE ug/L	**4140**
TOTAL XYLENES ug/L	**23600**
MTBE ug/L	<20
NAPHTHALENE ug/L	**1160**
EDB ug/L	0.0406
1,2-DCA ug/L	<100
3,3-DIMETHYL-1-BUTANOL ug/L	3340
DI-ISOPROPYL ETHER ug/L	**8430**
ETHANOL ug/L	<2000
TERT-BUTYL ALCOHOL ug/L	3100
TERT-AMYL ALCOHOL ug/L	**14800**
TERT-AMYL METHYL ETHER ug/L	<100
ETHYL TERT-BUTYL ETHER ug/L	<100
TERT-BUTYL FORMATE ug/L	<500

NOTES:
1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NSP = NOT SAMPLED DUE TO FREE PRODUCT

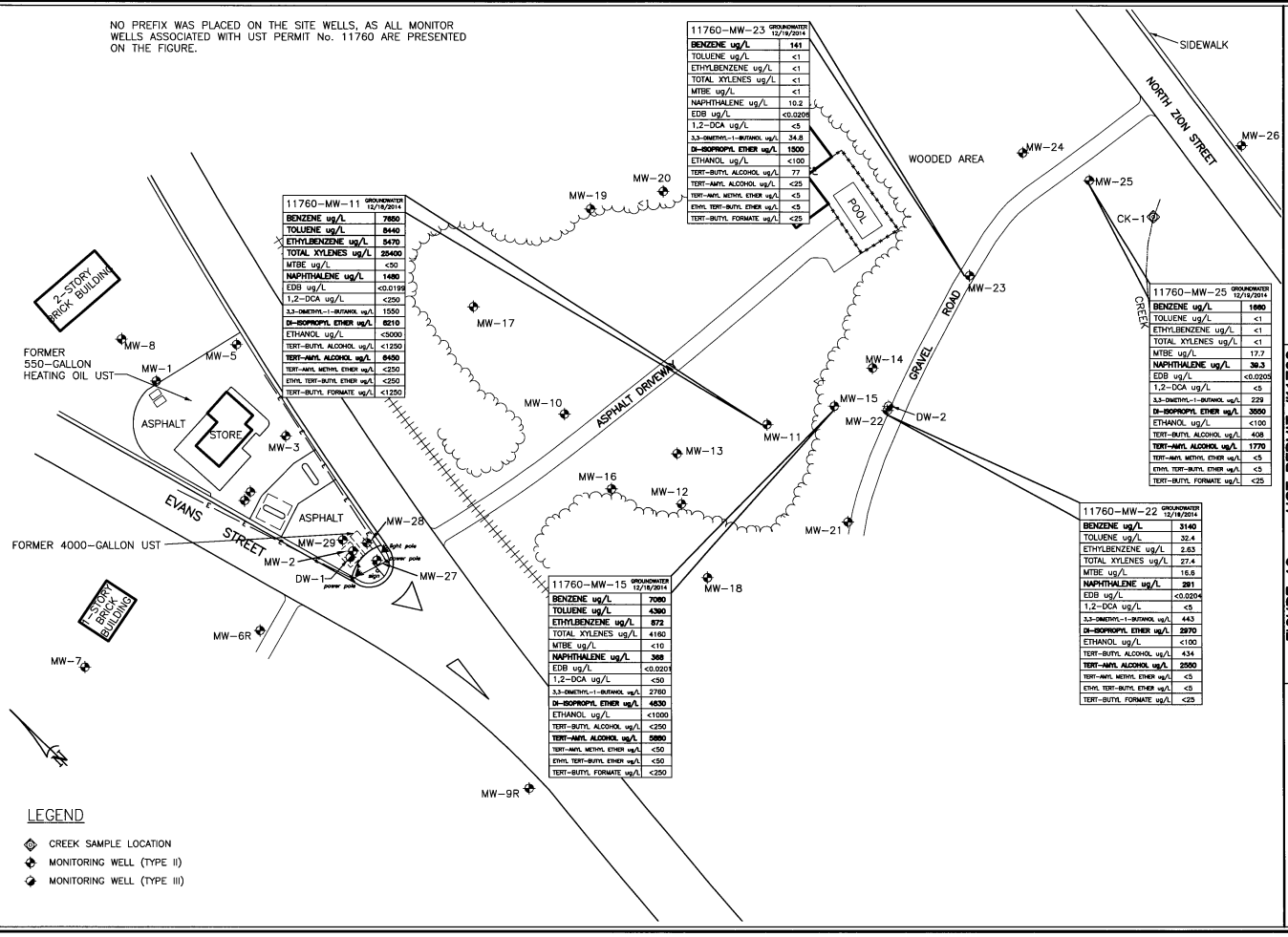
TITLE **FIGURE 4B** **UST PERMIT #11760**
CHEMICALS OF CONCERN IN GROUNDWATER MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE 1252116.dwg | TYPE CODE | PREP. BY JK | REV. BY | SCALE 1"=80' | DATE 03-23-2010 | PROJECT NO. 14.25384.0012

Gardno Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

02/23/2015 11:57am - sthompson - H:\125 - AIC__125\116_p1-02-04-15.dwg

NO PREFIX WAS PLACED ON THE SITE WELLS, AS ALL MONITOR WELLS ASSOCIATED WITH UST PERMIT No. 11760 ARE PRESENTED ON THE FIGURE.



11760-MW-11	GROUNDWATER 12/18/2014
BENZENE ug/L	**7650**
TOLUENE ug/L	**8440**
ETHYLBENZENE ug/L	**5470**
TOTAL XYLENES ug/L	**25400**
MTBE ug/L	<50
NAPHTHALENE ug/L	**1480**
EDB ug/L	<0.0199
1,2-DCA ug/L	<250
3,3-DIMETHYL-1-BUTANOL ug/L	1550
DI-ISOPROPYL ETHER ug/L	**5210**
ETHANOL ug/L	<3000
TERT-BUTYL ALCOHOL ug/L	<1250
TERT-AMYL ALCOHOL ug/L	**8450**
TERT-AMYL METHYL ETHER ug/L	<250
ETHYL TERT-BUTYL ETHER ug/L	<250
TERT-BUTYL FORMATE ug/L	<1250

11760-MW-23	GROUNDWATER 12/19/2014
BENZENE ug/L	**141**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	10.2
EDB ug/L	<0.0206
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	34.8
DI-ISOPROPYL ETHER ug/L	**1500**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	77
TERT-AMYL ALCOHOL ug/L	<25
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-25	GROUNDWATER 12/19/2014
BENZENE ug/L	**1680**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	17.7
NAPHTHALENE ug/L	**39.3**
EDB ug/L	<0.0205
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	229
DI-ISOPROPYL ETHER ug/L	**3550**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	408
TERT-AMYL ALCOHOL ug/L	**1770**
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-22	GROUNDWATER 12/18/2014
BENZENE ug/L	**3140**
TOLUENE ug/L	32.4
ETHYLBENZENE ug/L	2.63
TOTAL XYLENES ug/L	27.4
MTBE ug/L	16.6
NAPHTHALENE ug/L	**291**
EDB ug/L	<0.0204
1,2-DCA ug/L	<5
3,3-DIMETHYL-1-BUTANOL ug/L	443
DI-ISOPROPYL ETHER ug/L	**2970**
ETHANOL ug/L	<100
TERT-BUTYL ALCOHOL ug/L	434
TERT-AMYL ALCOHOL ug/L	**2550**
TERT-AMYL METHYL ETHER ug/L	<5
ETHYL TERT-BUTYL ETHER ug/L	<5
TERT-BUTYL FORMATE ug/L	<25

11760-MW-15	GROUNDWATER 12/18/2014
BENZENE ug/L	**7060**
TOLUENE ug/L	**4390**
ETHYLBENZENE ug/L	**872**
TOTAL XYLENES ug/L	4160
MTBE ug/L	<10
NAPHTHALENE ug/L	**368**
EDB ug/L	<0.0201
1,2-DCA ug/L	<50
3,3-DIMETHYL-1-BUTANOL ug/L	2760
DI-ISOPROPYL ETHER ug/L	**4530**
ETHANOL ug/L	<1000
TERT-BUTYL ALCOHOL ug/L	<250
TERT-AMYL ALCOHOL ug/L	**5880**
TERT-AMYL METHYL ETHER ug/L	<50
ETHYL TERT-BUTYL ETHER ug/L	<50
TERT-BUTYL FORMATE ug/L	<250

Gardno
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TITLE **FIGURE 4C UST PERMIT #11760**
CHEMICALS OF CONCERN IN GROUNDWATER MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

SCALE	DATE	PROJECT NO.
1"=80'	03-23-2010	14.25384.0012

REV. BY	PREP. BY	TYPE CODE	CAD FILE
	JK		1252116.dwg

NOTES:
1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NSP = NOT SAMPLED DUE TO FREE PRODUCT

02/23/2015 11:52am - sthompson - R:\125 - AUC__125211\6_p1-02-04-15.dwg

APPENDIX A

FIELD DATA INFORMATION SHEETS

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOELE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-1

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 48 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 40.28 ft.

Length of Water Column (LWC=TWD-DGW) 7.72 ft.

1 Csg. Volume (LWC*C)= 7.72 X 0.163 = 1.26 gals.
3 Csg. Volumes = 3 X 1.26 = 3.78 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.34	2.67	4.0				
Time (military)	9:02	9:06	9:10	9:14				9:14
pH (s.u.)	6.95	5.32	5.02	5.08				
Specific Cond. (umhos/cm)	341	270	261	259				
Water Temp (°C)	13.55	16.63	17.10	17.63				
Turbidity (*)	503	1000+	1000+	1000+				
D.O. Reading	8.43	5.29	5.01	4.41				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-3

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 45 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 41.64 ft.

Length of Water Column (LWC=TWD-DGW) 3.36 ft.

1 Csg. Volume (LWC*C)= 3.36 X 0.163 = 0.55 gals.
3 Csg. Volumes = 3 X 0.55 = 1.65 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.25 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		0.55	1.10					
Time (military)	9:20	9:23	9:26					09:26
pH (s.u.)	5.78	5.32	6.07					
Specific Cond. (umhos/cm)	659	632	663					
Water Temp (°C)	19.18	19.09	20.00					
Turbidity (*)	1000+	1000+	1000+					
D.O. Reading	2.73	2.32	2.44					

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Purged Dry after 1.25 Gallons

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-4R

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 46.39 ft.

Length of Water Column (LWC=TWD-DGW) 13.61 ft.

1 Csg. Volume (LWC*C)= 13.61 X 0.163 = 2.22 gals.
3 Csg. Volumes = 3 X 2.22 = 6.66 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 6.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		2.25	4.5	6.75				
Time (military)	9:24	9:30	9:36	9:41				09:41
pH (s.u.)	5.81	5.45	5.36	5.41				
Specific Cond. (umhos/cm)	196	137	133	132				
Water Temp (°C)	19.27	19.19	19.32	19.05				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	5.01	5.74	5.86	5.14				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-5

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 45 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 39.81 ft.

Length of Water Column (LWC=TWD-DGW) 5.19 ft.

1 Csg. Volume (LWC*C)= 5.19 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	11:07							1110
pH (s.u.)	6.53							5.93
Specific Cond. (umhos/cm)	64							114
Water Temp (°C)	19.54							19.64
Turbidity (*)	10							30
D.O. Reading	8.96							6.84

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ____ °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by ____ Received by ____
Date / Time ____ Date / Time ____

Well #: MW-6R

Well Diameter (D) 2 inch or ____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 65 ft.
Depth to Free Product (DFP) ____ ft.
Depth to GW (DGW) 55.47 ft.

Length of Water Column (LWC=TWD-DGW) 9.53 ft.

1 Csg. Volume (LWC*C)= 9.53 X 0.163 = 1.5 gals.
3 Csg. Volumes = 3 X 1.5 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	10:08							1010
pH (s.u.)	6.92							6.23
Specific Cond. (umhos/cm)	502							163
Water Temp (°C)	18.15							17.49
Turbidity (*)	10							25
D.O. Reading	6.04							11.25

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-8

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 45 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 39.92 ft.

Length of Water Column (LWC=TWD-DGW) 5.08 ft.

1 Csg. Volume (LWC*C)= 5.08 X 0.163 = 0.83 gals.
3 Csg. Volumes = 3 X 0.83 = 2.50 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.50 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		0.85	1.68	2.5				
Time (military)	11:11	11:14	11:17	11:20				1120
pH (s.u.)	6.31	6.19	6.13	5.79				5.76
Specific Cond. (umhos/cm)	.110	.112	.115	.112				.111
Water Temp (°C)	18.43	18.40	18.34	18.16				18.15
Turbidity (*)	5	10	10	25				25
D.O. Reading	11.87	11.68	11.18	10.91				10.85

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-9R

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 65 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 57.79 ft.

Length of Water Column (LWC=TWD-DGW) 8.21 ft.

1 Csg. Volume (LWC*C)= 8.21 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.0						
Time (military)	9:36	9:40						0940
pH (s.u.)	7.33	7.01						6.67
Specific Cond. (umhos/cm)	96	96						106
Water Temp (°C)	14.63	17.32						16.79
Turbidity (*)	5	25						25
D.O. Reading	12.38	10.11						7.23

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-10

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 45.43 ft.

Length of Water Column (LWC=TWD-DGW) 4.57 ft.

1 Csg. Volume (LWC*C)= 4.57 X 0.163 = 0.74 gals.
3 Csg. Volumes = 3 X 0.74 = 2.22 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.25 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		0.75	1.5	2.25				
Time (military)	13:21	13:24	13:28	13:31				13:31
pH (s.u.)	6.47	6.44	6.43	6.39				
Specific Cond. (umhos/cm)	628	617	618	617				
Water Temp (°C)	16.53	16.96	16.76	16.83				
Turbidity (*)	549	680	570	1000+				
D.O. Reading	3.96	3.41	3.03	8.93				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-11

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 38 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.53 ft.

Length of Water Column (LWC=TWD-DGW) 6.47 ft.

1 Csg. Volume (LWC*C)= 6.47 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.0						
Time (military)	13:02	13:05						1305
pH (s.u.)	6.89	6.92						6.71
Specific Cond. (umhos/cm)	732	438						403
Water Temp (°C)	16.63	16.97						16.83
Turbidity (*)	5	15						30
D.O. Reading	4.08	9.23						8.02

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-12

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.88 ft.

Length of Water Column (LWC=TWD-DGW) 11.12 ft.

1 Csg. Volume (LWC*C)= 11.12 X 0.163 = 1.50 gals.
3 Csg. Volumes = 3 X 1.50 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.50	3.0					
Time (military)	12:11	12:16	12:20					1220
pH (s.u.)	5.81	6.39	6.26					4.28
Specific Cond. (umhos/cm)	278	184	177					174
Water Temp (°C)	15.75	17.45	16.02					17.48
Turbidity (*)	5	20	25					30
D.O. Reading	5.62	5.95	4.09					7.19

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-13

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) ft.
Depth to GW (DGW) 40.58 ft.

Length of Water Column (LWC=TWD-DGW) 9.42 ft.

1 Csg. Volume (LWC*C)= 9.42 X 0.163 = 1.5 gals.
3 Csg. Volumes = 3 X 1.5 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.50	3.0	4.50				
Time (military)	12:42	12:46	12:51	12:55				1255
pH (s.u.)	6.73	6.75	6.60	6.54				6.53
Specific Cond. (umhos/cm)	.538	.480	4.96	.500				4.98
Water Temp (°C)	17.76	17.62	17.61	17.60				16.92
Turbidity (*)	5	5	10	15				20
D.O. Reading	7.13	4.50	4.48	4.02				4.00

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ____ °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by ____ Received by ____
Date / Time ____ Date / Time ____

Well #: MW-14

Well Diameter (D) 2 inch or ____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) ____ ft.
Depth to GW (DGW) 33.25 ft.

Length of Water Column (LWC=TWD-DGW) 6.75 ft.

1 Csg. Volume (LWC*C)= 6.75 X 0.163 = 1.10 gals.
3 Csg. Volumes = 3 X 1.10 = 3.30 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.15	2.30	3.5				11:16
Time (military)	11:02	11:07	11:11	11:16				
pH (s.u.)	6.21	6.02	5.97	5.98				
Specific Cond. (umhos/cm)	420	410	421	433				
Water Temp (°C)	15.59	16.16	16.43	16.62				
Turbidity (*)	191	1000+	1000+	1000+				
D.O. Reading	5.60	6.44	5.79	5.74				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: DUP-1 Taken at 11:19

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-15

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 34.73 ft.

Length of Water Column (LWC=TWD-DGW) 5.27 ft.

1 Csg. Volume (LWC*C)= 5.27 X 0.163 = 0.85 gals.
3 Csg. Volumes = 3 X 0.85 = 2.55 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		0.85	1.70	2.75				11:55
Time (military)	11:46	11:49	11:52	11:55				
pH (s.u.)	6.14	5.89	6.03	6.09				
Specific Cond. (umhos/cm)	328	552	665	694				
Water Temp (°C)	15.64	16.15	16.30	16.44				
Turbidity (")	401	760	1000+	1000+				
D.O. Reading	10.42	4.42	6.88	3.88				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: DUP-2 Taken At 11:59

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRAMET, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-16

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 42.32 ft.

Length of Water Column (LWC=TWD-DGW) 7.68 ft.

1 Csg. Volume (LWC*C)= 7.68 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	12:48							1250
pH (s.u.)	6.07							6.26
Specific Cond. (umhos/cm)	537							[illegible]
Water Temp (°C)	17.68							16.81
Turbidity (*)	5							30
D.O. Reading	7.18							5.06

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FORCE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-17

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 35.08 ft.

Length of Water Column (LWC=TWD-DGW) 14.92 ft.

1 Csg. Volume (LWC*C)= 14.92 X 0.163 = 2.0 gals.
3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 10 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		2.0	4.0	6.0	8.0	10.0		
Time (military)	14:07	14:12	14:17	14:23	14:28	14:33		14:35
pH (s.u.)	6.61	6.46	6.38	6.32	6.09	6.02		6.33
Specific Cond. (umhos/cm)	232	225	201	237	233	239		126
Water Temp (°C)	17.45	16.44	17.18	17.07	17.49	17.33		16.83
Turbidity (*)	5	15	20	25	25	25		25
D.O. Reading	14.96	7.97	8.64	9.53	9.06	13.28		7.26

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FORCE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-18

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.94 ft.

Length of Water Column (LWC=TWD-DGW) 10.06 ft.

1 Csg. Volume (LWC*C)= 10.06 X 0.163 = 1.50 gals.
3 Csg. Volumes = 3 X 1.50 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.50	3.15	5.0				
Time (military)	12:19	12:24	12:29	12:33				1233
pH (s.u.)	6.32	6.40	6.49	6.55				6.66
Specific Cond. (umhos/cm)	.547	.550	.563	.565				.568
Water Temp (°C)	17.28	17.58	17.62	16.62				16.02
Turbidity (*)	5	10	10	20				25
D.O. Reading	6.00	5.80	4.06	5.44				5.52

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-19

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 46 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.47 ft.

Length of Water Column (LWC=TWD-DGW) 7.53 ft.

1 Csg. Volume (LWC*C)= 7.53 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	13:23							1325
pH (s.u.)	6.79							6.36
Specific Cond. (umhos/cm)	125							189
Water Temp (°C)	16.76							16.70
Turbidity (*)	5							25
D.O. Reading	12.09							8.77

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-20

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 46 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.48 ft.

Length of Water Column (LWC=TWD-DGW) 7.52 ft.

1 Csg. Volume (LWC*C)= 7.52 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 1.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	13:38							1340
pH (s.u.)	6.42							6.46
Specific Cond. (umhos/cm)	.153							.153
Water Temp (°C)	17.03							16.98
Turbidity (*)	10							18
D.O. Reading	[illegible]							9.93

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-21

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 26.02 ft.

Length of Water Column (LWC=TWD-DGW) 13.98 ft.

1 Csg. Volume (LWC*C)= 13.98 X 0.163 = 2.28 gals.
3 Csg. Volumes = 3 X 2.28 = 6.84 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 7.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		2.30	4.65	7.0				
Time (military)	9:41	9:48	9:55	10:01				10:01
pH (s.u.)	5.59	6.01	5.59	5.64				
Specific Cond. (umhos/cm)	486	512	462	479				
Water Temp (°C)	14.68	14.99	15.73	15.62				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	4.0	3.88	4.26	5.44				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-22

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.06 ft.

Length of Water Column (LWC=TWD-DGW) 8.94 ft.

1 Csg. Volume (LWC*C)= 8.94 X 0.163 = 1.46 gals.
3 Csg. Volumes = 3 X 1.46 = 4.38 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.50 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.50	3.0	4.50				
Time (military)	10:17	10:22	10:27	10:31				10:31
pH (s.u.)	5.51	5.50	5.64	5.75				
Specific Cond. (umhos/cm)	238	251	301	498				
Water Temp (°C)	16.01	16.16	16.26	16.41				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	3.32	4.74	3.99	3.63				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-23

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 30.16 ft.

Length of Water Column (LWC=TWD-DGW) 9.84 ft.

1 Csg. Volume (LWC*C)= 9.84 X 0.163 = 1.60 gals.
3 Csg. Volumes = 3 X 1.60 = 4.80 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.65	3.3	5.0				
Time (military)	11:13	11:19	11:24	11:29				11:29
pH (s.u.)	5.96	5.85	5.77	5.69				
Specific Cond. (umhos/cm)	454	456	457	458				
Water Temp (°C)	16.18	16.36	16.25	16.40				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	6.85	6.21	5.74	5.32				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ____ °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by ____ Received by ____
Date / Time ____ Date / Time ____

Well #: MW-24

Well Diameter (D) 2 inch or ____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 25 ft.
Depth to Free Product (DFP) ____ ft.
Depth to GW (DGW) 18.11 ft.

Length of Water Column (LWC=TWD-DGW) 6.89 ft.

1 Csg. Volume (LWC*C)= 6.89 X 0.163 = 1.12 gals.
3 Csg. Volumes = 3 X 1.12 = 3.36 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.50 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.20	2.35	3.50				
Time (military)	10:58	11:02	11:07	11:11				11:11
pH (s.u.)	5.76	5.81	5.78	5.70				
Specific Cond. (umhos/cm)	5.22	5.76	5.16	4.99				
Water Temp (°C)	16.00	16.27	16.21	16.40				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	4.12	10.25	10.10	7.33				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12- 19 -14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-2S

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 23 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 13.41 ft.

Length of Water Column (LWC=TWD-DGW) 9.59 ft.

1 Csg. Volume (LWC*C)= 9.59 X 0.163 = 1.56 gals.
3 Csg. Volumes = 3 X 1.56 = 4.69 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.60	3.2	4.75				
Time (military)	10:05	10:11	10:16	10:21				10:21
pH (s.u.)	5.74	5.54	5.57	5.62				
Specific Cond. (umhos/cm)	263	274	267	278				
Water Temp (°C)	15.78	15.84	15.91	15.70				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	3.73	3.58	3.84	3.83				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-26

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 35 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 17.72 ft.

Length of Water Column (LWC=TWD-DGW) 17.28 ft.

1 Csg. Volume (LWC*C)= 17.28 X 0.163 = 2.82 gals.
3 Csg. Volumes = 3 X 2.82 = 8.46 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		2.85						
Time (military)	15:08	15:13						15:19
pH (s.u.)	6.42	5.87						5.89
Specific Cond. (umhos/cm)	277	291						291
Water Temp (°C)	18.00	17.49						17.46
Turbidity (*)	379	1000+						1000+
D.O. Reading	7.01	4.16						4.12

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Purged Dry after 5.5 Gallons

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12- 18 -14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-27

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 50.86 ft.

Length of Water Column (LWC=TWD-DGW) 9.14 ft.

1 Csg. Volume (LWC*C)= 9.14 X 0.163 = 1.5 gals.
3 Csg. Volumes = 3 X 1.5 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		1.50						
Time (military)	9:30	9:35						0940
pH (s.u.)	6.83	6.64					6.5[illegible]	[illegible]
Specific Cond. (umhos/cm)	883	497					45[illegible]	[illegible]
Water Temp (°C)	16.97	20.26					[illegible]	[illegible]
Turbidity (*)	5	15					[illegible]	[illegible]
D.O. Reading	6.47	10.37					[illegible]6	

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-18-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW-28

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) 48.70 ft.
Depth to GW (DGW) 48.71 ft.

Length of Water Column (LWC=TWD-DGW) 11.29 ft.

1 Csg. Volume (LWC*C)= 11.29 X 0.163 = 2.0 gals.
3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	9:43							0945
pH (s.u.)	6.64							
Specific Cond. (umhos/cm)	.623							
Water Temp (°C)	19.61							
Turbidity (*)	~~[illegible]~~ 5							
D.O. Reading	9.35							

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Free product in Bailed when I was pre[illegible], Not [illegible]

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature °F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: [redacted] DW-1

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 80 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 50.19 ft.

Length of Water Column (LWC=TWD-DGW) 29.81 ft.

1 Csg. Volume (LWC*C)= 29.81 x 0.163 = 4.86 gals.
3 Csg. Volumes = 3 x 4.86 = 14.58 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 14.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		4.90	9.80	14.75				
Time (military)	11:42	11:49	11:55	12:01				12:01
pH (s.u.)	6.54	6.14	6.06	6.03				
Specific Cond. (umhos/cm)	161	155	154	155				
Water Temp (°C)	18.36	19.12	19.21	19.23				
Turbidity (*)	61	70	77	63				
D.O. Reading	7.37	9.47	9.29	8.53				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 12-19-14
Field Personnel C. HAMILTON, C. STRANGE, W. FOGLE
General Weather Conditions
Ambient Air Temperature ° F

Facility Name FORMER UNITED OIL Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: DW-2

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 80 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.86 ft.

Length of Water Column (LWC=TWD-DGW) 48.14 ft.

1 Csg. Volume (LWC*C)= 48.14 X 0.163 = 7.85 gals.
3 Csg. Volumes = 3 X 7.85 = 23.55 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 23.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)		7.90	15.85	23.75				
Time (military)	9:56	10:02	10:11	10:19				10:19
pH (s.u.)	6.31	5.86	5.96	5.88				
Specific Cond. (umhos/cm)	329	224	222	219				
Water Temp (°C)	14.46	15.81	16.00	16.29				
Turbidity (*)	1000+	1000+	1000+	1000+				
D.O. Reading	5.04	3.75	6.27	4.06				

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

APPENDIX B

LABORATORY ANALYTICAL RESULTS

Analytical Report 499393

for

Cardno-ATC

Project Manager: Fred Lyke

Former United Oil UST# 11760

31-DEC-14

Collected By: Client

XENCO Laboratories
Florida Testing Services, LLC

6017 Financial Dr., Norcross, GA 30071
Ph:(770) 449-8800 Fax:(770) 449-5477

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

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XENCO Laboratories
Florida Testing Services, LLC

31-DEC-14

Project Manager: **Fred Lyke**
Cardno-ATC
400 Northeast Drive
Unit Q
Columbia, SC 29203

Reference: XENCO Report No(s): **499393**
Former United Oil UST# 11760
Project Address:

Fred Lyke:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 499393. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 499393 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Mike Kimmel
Client Services Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
11760 MW-1	W	12-18-14 09:14		499393-001
11760 MW-3	W	12-18-14 09:26		499393-002
11760 MW-4R	W	12-18-14 09:41		499393-003
11760 MW-5	W	12-18-14 11:10		499393-004
11760 MW-6R	W	12-18-14 10:10		499393-005
11760 MW-8	W	12-18-14 11:20		499393-006
11760 MW-9R	W	12-18-14 09:40		499393-007
11760 MW-10	W	12-18-14 13:31		499393-008
11760 MW-11	W	12-18-14 13:05		499393-009
11760 MW-12	W	12-18-14 12:20		499393-010
11760 MW-13	W	12-18-14 12:58		499393-011
11760 MW-14	W	12-18-14 11:16		499393-012
11760 MW-15	W	12-18-14 11:55		499393-013
11760 MW-16	W	12-18-14 12:50		499393-014
11760 MW-17	W	12-18-14 14:35		499393-015
11760 MW-18	W	12-18-14 12:33		499393-016
11760 MW-19	W	12-18-14 13:25		499393-017
11760 MW-20	W	12-18-14 13:40		499393-018
11760 MW-21	W	12-19-14 10:01		499393-019
11760 MW-22	W	12-19-14 10:31		499393-020
11760 MW-23	W	12-19-14 11:29		499393-021
11760 MW-24	W	12-19-14 11:11		499393-022
11760 MW-25	W	12-19-14 10:21		499393-023
11760 MW-26	W	12-18-14 15:19		499393-024
11760 MW-27	W	12-18-14 09:45		499393-025
11760 DW-1	W	12-19-14 12:01		499393-026
11760 DW-2	W	12-19-14 10:19		499393-027
11760 CK-1	W	12-18-14 14:31		499393-028
11760 DUP-1	W	12-18-14 11:19		499393-029
11760 DUP-2	W	12-18-14 11:59		499393-030
11760 Field Blank-1	W	12-18-14 09:31		499393-031
11760 Field Blank-2	W	12-19-14 12:21		499393-032
11760 Trip Blank-1	W	12-18-14 08:00		499393-033
11760 Trip Blank-2	W	12-18-14 08:00		499393-034

CASE NARRATIVE

Client Name: Cardno-ATC
Project Name: Former United Oil UST# 11760

Project ID:
Work Order Number(s): *499393*

Report Date: *31-DEC-14*
Date Received: *12/20/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-958439 Select VOCs by SW-846 8260B
Ethyl tert-butyl alcohol RPD was outside laboratory control limits.
Samples affected are: 499393-027, -019, -021, -012, -013, -010, -008, -009

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

XENCO Laboratories
Florida Testing Services, LLC

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-3**
Lab Sample Id : 499393-002

Matrix : Ground Water
Date Collected : 12.18.14 09.26
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.22.14 07.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	123	ug/L	12.22.14 17.26		1
Ethyl tert-butyl alcohol	590-36-3	73.1	ug/L	12.22.14 17.26		1
Ethylbenzene	100-41-4	29.9	ug/L	12.22.14 17.26		1
Methyl tert-butyl ether	1634-04-4	2.65	ug/L	12.22.14 17.26		1
Naphthalene	91-20-3	10.4	ug/L	12.22.14 17.26		1
tert-Amyl alcohol	75-85-4	302	ug/L	12.22.14 17.26		1
Toluene	108-88-3	4.32	ug/L	12.22.14 17.26		1
m,p-Xylenes	179601-23-1	62.9	ug/L	12.22.14 17.26		1
o-Xylene	95-47-6	4.15	ug/L	12.22.14 17.26		1
Xylenes, Total	1330-20-7	67.1	ug/L	12.22.14 17.26		1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	260	ug/L	12.24.14 19.14		5

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-10**
Lab Sample Id : 499393-008

Matrix : Ground Water
Date Collected : 12.18.14 13.31
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	2700	ug/L	12.24.14 22.09		20
Ethyl tert-butyl alcohol	590-36-3	1120	ug/L	12.24.14 22.09	F	20
Ethylbenzene	100-41-4	3530	ug/L	12.24.14 22.09		20
Naphthalene	91-20-3	1060	ug/L	12.24.14 22.09		20
m,p-Xylenes	179601-23-1	3760	ug/L	12.24.14 22.09		20
o-Xylene	95-47-6	1430	ug/L	12.24.14 22.09		20
Xylenes, Total	1330-20-7	5190	ug/L	12.24.14 22.09		20

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.26.14 10.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	5620	ug/L	12.26.14 17.42		200
Toluene	108-88-3	4810	ug/L	12.26.14 17.42		200

Sample Id : **11760 MW-11**
Lab Sample Id : 499393-009

Matrix : Ground Water
Date Collected : 12.18.14 13.05
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	6210	ug/L	12.24.14 23.41		50
Ethyl tert-butyl alcohol	590-36-3	1550	ug/L	12.24.14 23.41	F	50
Ethylbenzene	100-41-4	5470	ug/L	12.24.14 23.41		50
Naphthalene	91-20-3	1480	ug/L	12.24.14 23.41		50
tert-Amyl alcohol	75-85-4	6450	ug/L	12.24.14 23.41		50
m,p-Xylenes	179601-23-1	17900	ug/L	12.24.14 23.41		50
o-Xylene	95-47-6	7480	ug/L	12.24.14 23.41		50
Xylenes, Total	1330-20-7	25400	ug/L	12.24.14 23.41		50

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.26.14 10.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	7650	ug/L	12.26.14 18.38		500
Toluene	108-88-3	8440	ug/L	12.26.14 18.38		500

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-12**
Lab Sample Id : 499393-010

Matrix : Ground Water
Date Collected : 12.18.14 12.20
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	2100	ug/L	12.24.14 22.40		20
Ethyl tert-butyl alcohol	590-36-3	2490	ug/L	12.24.14 22.40	F	20
Ethylbenzene	100-41-4	988	ug/L	12.24.14 22.40		20
Naphthalene	91-20-3	693	ug/L	12.24.14 22.40		20
tert-Amyl alcohol	75-85-4	11200	ug/L	12.24.14 22.40		20
Toluene	108-88-3	454	ug/L	12.24.14 22.40		20
m,p-Xylenes	179601-23-1	3880	ug/L	12.24.14 22.40		20
o-Xylene	95-47-6	1480	ug/L	12.24.14 22.40		20
Xylenes, Total	1330-20-7	5360	ug/L	12.24.14 22.40		20

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.26.14 10.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	3210	ug/L	12.26.14 18.10		200

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-13**
Lab Sample Id : 499393-011

Matrix : Ground Water
Date Collected : 12.18.14 12.58
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : EDB by EPA 8011
Seq Number 958600

Prep Method: SW8011P
Date Prep: 12.23.14 08.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	0.0406	ug/L	12.30.14 09.03		1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	3340	ug/L	12.22.14 14.25		20
Naphthalene	91-20-3	1160	ug/L	12.22.14 14.25		20
tert-Amyl alcohol	75-85-4	14900	ug/L	12.22.14 14.25		20
tert-Butyl alcohol	75-65-0	3100	ug/L	12.22.14 14.25		20

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	9960	ug/L	12.24.14 16.43		500
Diisopropyl ether	108-20-3	8430	ug/L	12.24.14 16.43		500
Ethylbenzene	100-41-4	4140	ug/L	12.24.14 16.43		500
Toluene	108-88-3	31900	ug/L	12.24.14 16.43		500
m,p-Xylenes	179601-23-1	16000	ug/L	12.24.14 16.43		500
o-Xylene	95-47-6	7590	ug/L	12.24.14 16.43		500
Xylenes, Total	1330-20-7	23600	ug/L	12.24.14 16.43		500

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-14**
Lab Sample Id : 499393-012

Matrix : Ground Water
Date Collected : 12.18.14 11.16
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	1180	ug/L	12.24.14 20.37	F	10
Ethylbenzene	100-41-4	25.9	ug/L	12.24.14 20.37		10
Naphthalene	91-20-3	509	ug/L	12.24.14 20.37		10
tert-Amyl alcohol	75-85-4	6940	ug/L	12.24.14 20.37		10
tert-Butyl alcohol	75-65-0	1320	ug/L	12.24.14 20.37		10
Toluene	108-88-3	105	ug/L	12.24.14 20.37		10
m,p-Xylenes	179601-23-1	71.1	ug/L	12.24.14 20.37		10
o-Xylene	95-47-6	35.5	ug/L	12.24.14 20.37		10
Xylenes, Total	1330-20-7	107	ug/L	12.24.14 20.37		10

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.26.14 10.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	4440	ug/L	12.26.14 16.45		200
Diisopropyl ether	108-20-3	3300	ug/L	12.26.14 16.45		200

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-15**
Lab Sample Id : 499393-013

Matrix : Ground Water
Date Collected : 12.18.14 11.55
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	2760	ug/L	12.24.14 21.07	F	10

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.26.14 10.37

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	7060	ug/L	12.26.14 17.14		200
Diisopropyl ether	108-20-3	4830	ug/L	12.26.14 17.14		200
Ethylbenzene	100-41-4	872	ug/L	12.26.14 17.14		200
Naphthalene	91-20-3	368	ug/L	12.26.14 17.14		200
tert-Amyl alcohol	75-85-4	5880	ug/L	12.26.14 17.14		200
Toluene	108-88-3	4390	ug/L	12.26.14 17.14		200
m,p-Xylenes	179601-23-1	2960	ug/L	12.26.14 17.14		200
o-Xylene	95-47-6	1200	ug/L	12.26.14 17.14		200
Xylenes, Total	1330-20-7	4160	ug/L	12.26.14 17.14		200

XENCO Laboratories
Florida Testing Services, LLC

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-16**
Lab Sample Id : 499393-014

Matrix : Ground Water
Date Collected : 12.18.14 12.50
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	2400	ug/L	12.22.14 14.55		20
Naphthalene	91-20-3	2060	ug/L	12.22.14 14.55		20
tert-Amyl alcohol	75-85-4	10200	ug/L	12.22.14 14.55		20
tert-Butyl alcohol	75-65-0	3410	ug/L	12.22.14 14.55		20

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	4490	ug/L	12.24.14 15.48		500
Diisopropyl ether	108-20-3	2720	ug/L	12.24.14 15.48		500
Ethylbenzene	100-41-4	3210	ug/L	12.24.14 15.48		500
Toluene	108-88-3	7940	ug/L	12.24.14 15.48		500
m,p-Xylenes	179601-23-1	15400	ug/L	12.24.14 15.48		500
o-Xylene	95-47-6	6770	ug/L	12.24.14 15.48		500
Xylenes, Total	1330-20-7	22200	ug/L	12.24.14 15.48		500

Sample Id : **11760 MW-18**
Lab Sample Id : 499393-016

Matrix : Ground Water
Date Collected : 12.18.14 12.33
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	577	ug/L	12.22.14 15.57		20
Diisopropyl ether	108-20-3	2080	ug/L	12.22.14 15.57		20
Ethyl tert-butyl alcohol	590-36-3	2640	ug/L	12.22.14 15.57		20
Ethylbenzene	100-41-4	347	ug/L	12.22.14 15.57		20
Methyl tert-butyl ether	1634-04-4	3400	ug/L	12.22.14 15.57		20
Naphthalene	91-20-3	164	ug/L	12.22.14 12.01		1
tert-Amyl alcohol	75-85-4	13800	ug/L	12.22.14 15.57		20
tert-Butyl alcohol	75-65-0	3500	ug/L	12.22.14 15.57		20
Toluene	108-88-3	42.3	ug/L	12.22.14 12.01		1
m,p-Xylenes	179601-23-1	1660	ug/L	12.22.14 15.57		20
o-Xylene	95-47-6	178	ug/L	12.22.14 12.01		1
Xylenes, Total	1330-20-7	1840	ug/L	12.22.14 15.57		20

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-19**
Lab Sample Id : 499393-017

Matrix : Ground Water
Date Collected : 12.18.14 13.25
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	36.3	ug/L	12.22.14 12.29		1
Ethylbenzene	100-41-4	0.530	ug/L	12.22.14 12.29	J	1
Naphthalene	91-20-3	1.28	ug/L	12.22.14 12.29		1
tert-Amyl alcohol	75-85-4	173	ug/L	12.22.14 12.29		1
tert-Butyl alcohol	75-65-0	58.3	ug/L	12.22.14 12.29		1
m,p-Xylenes	179601-23-1	2.71	ug/L	12.22.14 12.29		1
Xylenes, Total	1330-20-7	2.71	ug/L	12.22.14 12.29		1

Sample Id : **11760 MW-21**
Lab Sample Id : 499393-019

Matrix : Ground Water
Date Collected : 12.19.14 10.01
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.22.14 07.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	9.70	ug/L	12.22.14 17.53		1
Ethyl tert-butyl alcohol	590-36-3	468	ug/L	12.22.14 17.53		1
Ethylbenzene	100-41-4	1.26	ug/L	12.22.14 17.53		1
Naphthalene	91-20-3	8.49	ug/L	12.22.14 17.53		1
tert-Amyl methyl ether	994-05-8	43.8	ug/L	12.22.14 17.53		1
tert-Butyl alcohol	75-65-0	353	ug/L	12.22.14 17.53		1
Toluene	108-88-3	0.710	ug/L	12.22.14 17.53	J	1
m,p-Xylenes	179601-23-1	0.550	ug/L	12.22.14 17.53	J	1
Xylenes, Total	1330-20-7	0.550	ug/L	12.22.14 17.53	J	1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	1900	ug/L	12.24.14 21.38		10
Methyl tert-butyl ether	1634-04-4	1920	ug/L	12.24.14 21.38		10

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-22**
Lab Sample Id : 499393-020

Matrix : Ground Water
Date Collected : 12.19.14 10.31
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.22.14 07.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Ethyl tert-butyl alcohol	590-36-3	443	ug/L	12.22.14 16.58		1
Ethylbenzene	100-41-4	2.63	ug/L	12.22.14 16.58		1
Methyl tert-butyl ether	1634-04-4	16.6	ug/L	12.22.14 16.58		1
tert-Butyl alcohol	75-65-0	434	ug/L	12.22.14 16.58		1
Toluene	108-88-3	32.4	ug/L	12.22.14 16.58		1
m,p-Xylenes	179601-23-1	20.8	ug/L	12.22.14 16.58		1
o-Xylene	95-47-6	6.59	ug/L	12.22.14 16.58		1
Xylenes, Total	1330-20-7	27.4	ug/L	12.22.14 16.58		1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	3140	ug/L	12.24.14 17.43		50
Diisopropyl ether	108-20-3	2970	ug/L	12.24.14 17.43		50
Naphthalene	91-20-3	291	ug/L	12.24.14 17.43		50
tert-Amyl alcohol	75-85-4	2550	ug/L	12.24.14 17.43		50

Sample Id : **11760 MW-23**
Lab Sample Id : 499393-021

Matrix : Ground Water
Date Collected : 12.19.14 11.29
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	141	ug/L	12.22.14 13.26		1
Ethyl tert-butyl alcohol	590-36-3	34.8	ug/L	12.22.14 13.26		1
Naphthalene	91-20-3	10.2	ug/L	12.22.14 13.26		1
tert-Butyl alcohol	75-65-0	77.0	ug/L	12.22.14 13.26		1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Diisopropyl ether	108-20-3	1500	ug/L	12.24.14 23.10		20

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Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-24**
Lab Sample Id : 499393-022

Matrix : Ground Water
Date Collected : 12.19.14 11.11
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958274

Prep Method: SW5030B
Date Prep: 12.22.14 07.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	149	ug/L	12.22.14 11.56		1
Ethyl tert-butyl alcohol	590-36-3	14.7	ug/L	12.22.14 11.56	J	1
Methyl tert-butyl ether	1634-04-4	1.55	ug/L	12.22.14 11.56		1
Naphthalene	91-20-3	15.7	ug/L	12.22.14 11.56		1
tert-Butyl alcohol	75-65-0	49.6	ug/L	12.22.14 11.56		1

Sample Id : **11760 MW-25**
Lab Sample Id : 499393-023

Matrix : Ground Water
Date Collected : 12.19.14 10.21
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958478

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1660	ug/L	12.24.14 18.44		50
Diisopropyl ether	108-20-3	3550	ug/L	12.24.14 18.44		50
Ethyl tert-butyl alcohol	590-36-3	229	ug/L	12.24.14 13.58		1
Methyl tert-butyl ether	1634-04-4	17.7	ug/L	12.24.14 13.58		1
Naphthalene	91-20-3	39.3	ug/L	12.24.14 13.58		1
tert-Amyl alcohol	75-85-4	1770	ug/L	12.24.14 18.44		50
tert-Butyl alcohol	75-65-0	408	ug/L	12.24.14 13.58		1

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 MW-27**
Lab Sample Id : 499393-025

Matrix : Ground Water
Date Collected : 12.18.14 09.45
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : EDB by EPA 8011
Seq Number 958577

Prep Method: SW8011P
Date Prep: 12.22.14 14.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	0.113	ug/L	12.29.14 23.33		1

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Naphthalene	91-20-3	1420	ug/L	12.22.14 15.26		20
m,p-Xylenes	179601-23-1	7790	ug/L	12.22.14 15.26		20

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	17500	ug/L	12.24.14 16.15		500
Diisopropyl ether	108-20-3	16300	ug/L	12.24.14 16.15		500
Ethyl tert-butyl alcohol	590-36-3	20700	ug/L	12.24.14 16.15		500
Ethylbenzene	100-41-4	3540	ug/L	12.24.14 16.15		500
Methyl tert-butyl ether	1634-04-4	20900	ug/L	12.24.14 16.15		500
tert-Amyl alcohol	75-85-4	125000	ug/L	12.24.14 16.15		500
tert-Butyl alcohol	75-65-0	23900	ug/L	12.24.14 16.15		500
Toluene	108-88-3	6560	ug/L	12.24.14 16.15		500
o-Xylene	95-47-6	3860	ug/L	12.24.14 16.15		500
Xylenes, Total	1330-20-7	11700	ug/L	12.24.14 16.15		500

Sample Id : **11760 DW-1**
Lab Sample Id : 499393-026

Matrix : Ground Water
Date Collected : 12.19.14 12.01
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958478

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	0.800	ug/L	12.24.14 13.04	J	1
Diisopropyl ether	108-20-3	1.04	ug/L	12.24.14 13.04	J	1
tert-Amyl alcohol	75-85-4	7.01	ug/L	12.24.14 13.04	J	1

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 DW-2**
Lab Sample Id : 499393-027

Matrix : Ground Water
Date Collected : 12.19.14 10.19
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958439

Prep Method: SW5030B
Date Prep: 12.24.14 12.29

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	115	ug/L	12.24.14 19.36		10
Diisopropyl ether	108-20-3	1140	ug/L	12.24.14 19.36		10
Ethyl tert-butyl alcohol	590-36-3	201	ug/L	12.24.14 19.36	JF	10
Naphthalene	91-20-3	34.8	ug/L	12.24.14 19.36		10
tert-Amyl alcohol	75-85-4	1560	ug/L	12.24.14 19.36		10

Sample Id : **11760 CK-1**
Lab Sample Id : 499393-028

Matrix : Ground Water
Date Collected : 12.18.14 14.31
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958478

Prep Method: SW5030B
Date Prep: 12.24.14 08.25

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	1.16	ug/L	12.24.14 14.25		1
Naphthalene	91-20-3	1.95	ug/L	12.24.14 14.25		1
tert-Amyl alcohol	75-85-4	45.6	ug/L	12.24.14 14.25		1
tert-Butyl alcohol	75-65-0	16.7	ug/L	12.24.14 14.25	J	1

Hits Summary 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id : **11760 DUP-1**
Lab Sample Id : 499393-029

Matrix : Ground Water
Date Collected : 12.18.14 11.19
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	5260	ug/L	12.22.14 18.24		50
Diisopropyl ether	108-20-3	3940	ug/L	12.22.14 18.24		50
Ethyl tert-butyl alcohol	590-36-3	1460	ug/L	12.22.14 18.24		50
Ethylbenzene	100-41-4	25	ug/L	12.22.14 18.24	J	50
Naphthalene	91-20-3	187	ug/L	12.22.14 18.24		50
tert-Amyl alcohol	75-85-4	3480	ug/L	12.22.14 18.24		50
tert-Butyl alcohol	75-65-0	874	ug/L	12.22.14 18.24	J	50
Toluene	108-88-3	104	ug/L	12.22.14 18.24		50
m,p-Xylenes	179601-23-1	74.5	ug/L	12.22.14 18.24	J	50
o-Xylene	95-47-6	22	ug/L	12.22.14 18.24	J	50
Xylenes, Total	1330-20-7	74.5	ug/L	12.22.14 18.24		50

Sample Id : **11760 DUP-2**
Lab Sample Id : 499393-030

Matrix : Ground Water
Date Collected : 12.18.14 11.59
Date Received : 12.20.14 10.00

% Moisture :

Analytical Method : Select VOCs by SW-846 8260B
Seq Number 958253

Prep Method: SW5030B
Date Prep: 12.22.14 07.26

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	8280	ug/L	12.22.14 17.54		50
Diisopropyl ether	108-20-3	5730	ug/L	12.22.14 17.54		50
Ethyl tert-butyl alcohol	590-36-3	2960	ug/L	12.22.14 17.54		50
Ethylbenzene	100-41-4	912	ug/L	12.22.14 17.54		50
Methyl tert-butyl ether	1634-04-4	12.6	ug/L	12.22.14 17.21		1
Naphthalene	91-20-3	1190	ug/L	12.22.14 17.54		50
tert-Amyl alcohol	75-85-4	12300	ug/L	12.22.14 17.54		50
Toluene	108-88-3	3650	ug/L	12.22.14 17.54		50
m,p-Xylenes	179601-23-1	2620	ug/L	12.22.14 17.54		50
o-Xylene	95-47-6	1180	ug/L	12.22.14 17.54		50
Xylenes, Total	1330-20-7	3800	ug/L	12.22.14 17.54		50

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Sample Id: **11760 MW-1** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-001 Date Collected: 12.18.14 09.14

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0196	0 00588	ug/L	12.30.14 03.54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	111	%	60-140	12 30 14 03.54	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: 4124 Date Prep: 12.26.14 10.37
Seq Number: 958485

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 26 14 16.17	U	1
Benzene	71-43-2	U	1 00	0.160	ug/L	12 26 14 16 17	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 26 14 16 17	U	1
Ethanol	64-17-5	U	100	8.00	ug/L	12 26.14 16 17	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 26.14 16 17	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12.26.14 16.17	U	1
Ethylbenzene	100-41-4	U	1.00	0.190	ug/L	12 26 14 16 17	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0.180	ug/L	12 26 14 16 17	UH	1
Naphthalene	91-20-3	U	1.00	0 220	ug/L	12 26 14 16.17	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 26 14 16.17	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 26.14 16 17	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1.00	ug/L	12 26.14 16.17	U	1
tert-Butyl formate	762-75-4	U	25.0	1 00	ug/L	12 26.14 16 17	U	1
Toluene	108-88-3	U	1 00	0.140	ug/L	12 26 14 16 17	U	1
m,p-Xylenes	179601-23-1	U	2 00	0.510	ug/L	12 26 14 16.17	U	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12.26 14 16 17	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 26 14 16.17	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	90	%	53-159	12.26 14 16 17	
4-Bromofluorobenzene	460-00-4	107	%	30-186	12 26.14 16 17	
Toluene-D8	2037-26-5	85	%	70-130	12 26 14 16 17	

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Sample Id: **11760 MW-3** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-002 Date Collected: 12.18.14 09.26

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0198	0 00595	ug/L	12.30.14 04.18	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	86	%	60-140	12.30.14 04 18	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 17.26	U	1
Benzene	71-43-2	**123**	1.00	0 160	ug/L	12 22 14 17.26		1
Diisopropyl ether	108-20-3	**260**	25.0	0 400	ug/L	12.24.14 19.14		5
Ethanol	64-17-5	U	100	8 00	ug/L	12.22 14 17 26	UF	1
Ethyl tert-butyl alcohol	590-36-3	**73.1**	25 0	1 10	ug/L	12 22 14 17 26		1
Ethyl tert-butyl ether	637-92-3	U	5 00	0.300	ug/L	12 22 14 17 26	U	1
Ethylbenzene	100-41-4	**29.9**	1 00	0.190	ug/L	12 22.14 17.26		1
Methyl tert-butyl ether	1634-04-4	**2.65**	1 00	0 180	ug/L	12 22 14 17 26		1
Naphthalene	91-20-3	**10.4**	1.00	0 220	ug/L	12 22.14 17.26		1
tert-Amyl alcohol	75-85-4	**302**	25 0	1 10	ug/L	12 22 14 17.26		1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22 14 17.26	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22.14 17.26	U	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 22 14 17 26	U	1
Toluene	108-88-3	**4.32**	1 00	0 140	ug/L	12 22 14 17 26		1
m,p-Xylenes	179601-23-1	**62.9**	2 00	0.510	ug/L	12 22 14 17 26		1
o-Xylene	95-47-6	**4.15**	1 00	0 200	ug/L	12.22.14 17.26		1
Xylenes, Total	1330-20-7	**67.1**	1.00	0 200	ug/L	12.22 14 17.26		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	106	%	53-159	12 22 14 17 26	
4-Bromofluorobenzene	460-00-4	103	%	30-186	12 22 14 17 26	
Toluene-D8	2037-26-5	100	%	70-130	12.22.14 17.26	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-4R** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-003 Date Collected: 12.18.14 09.41

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0198	0 00595	ug/L	12 30.14 05 29	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	103	%	60-140	12 30 14 05 29	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 15.08	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12 22.14 15.08	U	1
Diisopropyl ether	108-20-3	U	5.00	0 0800	ug/L	12 22 14 15 08	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22 14 15.08	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22.14 15 08	U	1
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12.22.14 15.08	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 22 14 15 08	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0.180	ug/L	12 22 14 15 08	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22 14 15 08	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12.22.14 15.08	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22 14 15.08	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22 14 15 08	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 22 14 15 08	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12 22.14 15 08	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 22 14 15 08	U	1
o-Xylene	95-47-6	U	1.00	0.200	ug/L	12 22 14 15 08	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22 14 15.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	114	%	53-159	12.22 14 15 08	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12.22 14 15 08	
Toluene-D8	2037-26-5	99	%	70-130	12 22 14 15 08	

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Cardno-ATC, Columbia, SC

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Sample Id: **11760 MW-5** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-004 Date Collected: 12.18.14 11.10

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0198	0.00594	ug/L	12 30 14 05 53	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	60-140	12 30 14 05 53	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 15.35	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12 22 14 15.35	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 22 14 15 35	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12.22 14 15.35	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1.10	ug/L	12 22 14 15 35	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0.300	ug/L	12.22.14 15.35	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 22 14 15 35	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0 180	ug/L	12 22 14 15 35	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22 14 15 35	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1.10	ug/L	12 22 14 15.35	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12 22 14 15 35	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22.14 15 35	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12.22 14 15 35	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12.22 14 15 35	U	1
m,p-Xylenes	179601-23-1	U	2.00	0 510	ug/L	12.22 14 15 35	U	1
o-Xylene	95-47-6	U	1 00	0.200	ug/L	12 22 14 15 35	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22 14 15.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	117	%	53-159	12.22 14 15 35	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12.22.14 15.35	
Toluene-D8	2037-26-5	99	%	70-130	12 22 14 15 35	

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Cardno-ATC, Columbia, SC

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Sample Id: **11760 MW-6R** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-005 Date Collected: 12.18.14 10.10

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0201	0 00604	ug/L	12 30 14 06.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	117	%	60-140	12 30 14 06 41	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 12 51	U	1
Benzene	71-43-2	U	1 00	0.160	ug/L	12.22.14 12 51	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 22 14 12 51	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22 14 12 51	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22 14 12 51	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0.300	ug/L	12 22 14 12 51	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 22 14 12 51	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12.22 14 12.51	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12.22.14 12 51	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 22 14 12 51	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0.300	ug/L	12 22 14 12 51	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22.14 12 51	U	1
tert-Butyl formate	762-75-4	U	25.0	1 00	ug/L	12 22.14 12 51	UXF	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12.22.14 12.51	U	1
m,p-Xylenes	179601-23-1	U	2 00	0.510	ug/L	12 22 14 12 51	U	1
o-Xylene	95-47-6	U	1 00	0.200	ug/L	12.22.14 12 51	U	1
Xylenes, Total	1330-20-7	U	1.00	0 200	ug/L	12 22 14 12 51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	113	%	53-159	12 22 14 12.51	
4-Bromofluorobenzene	460-00-4	106	%	30-186	12 22 14 12 51	
Toluene-D8	2037-26-5	101	%	70-130	12.22 14 12 51	

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Sample Id: **11760 MW-8** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-006 Date Collected: 12.18.14 11.20

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0201	0.00604	ug/L	12 30 14 07 04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	60-140	12 30.14 07.04	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22.14 14 40	U	1
Benzene	71-43-2	U	1 00	0 160	ug/L	12 22 14 14 40	U	1
Diisopropyl ether	108-20-3	U	5.00	0 0800	ug/L	12 22 14 14 40	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22.14 14.40	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22 14 14 40	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 22 14 14.40	U	1
Ethylbenzene	100-41-4	U	1 00	0.190	ug/L	12.22 14 14 40	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12 22 14 14 40	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22 14 14 40	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 22.14 14 40	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12.22.14 14.40	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12.22 14 14 40	U	1
tert-Butyl formate	762-75-4	U	25.0	1 00	ug/L	12 22 14 14 40	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12 22 14 14 40	U	1
m,p-Xylenes	179601-23-1	U	2.00	0.510	ug/L	12 22 14 14 40	U	1
o-Xylene	95-47-6	U	1.00	0 200	ug/L	12 22 14 14 40	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22 14 14 40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	114	%	53-159	12 22 14 14 40	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12 22 14 14 40	
Toluene-D8	2037-26-5	100	%	70-130	12 22 14 14 40	

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Sample Id: **11760 MW-9R** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-007 Date Collected: 12.18.14 09.40

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0204	0.00613	ug/L	12 30 14 07 28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	60-140	12 30 14 07.28	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: JOL % Moisture:
Analyst: JOL Date Prep: 12.24.14 08.25
Seq Number: 958478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 24 14 13 31	U	1
Benzene	71-43-2	U	1 00	0 160	ug/L	12.24.14 13 31	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 24.14 13 31	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12.24 14 13 31	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1.10	ug/L	12 24 14 13 31	U	1
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12 24 14 13 31	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 24 14 13.31	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0 180	ug/L	12 24.14 13 31	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 24.14 13.31	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12.24.14 13 31	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 24.14 13 31	U	1
tert-Butyl alcohol	75-65-0	U	25.0	1.00	ug/L	12 24.14 13 31	U	1
tert-Butyl formate	762-75-4	U	25.0	1 00	ug/L	12 24 14 13 31	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12 24.14 13 31	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 24.14 13.31	U	1
o-Xylene	95-47-6	U	1.00	0 200	ug/L	12 24.14 13.31	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 24 14 13.31	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	99	%	53-159	12 24 14 13 31	
4-Bromofluorobenzene	460-00-4	91	%	30-186	12 24 14 13.31	
Toluene-D8	2037-26-5	94	%	70-130	12 24.14 13 31	

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Sample Id: **11760 MW-10** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-008 Date Collected: 12.18.14 13.31

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0200	0 00599	ug/L	12 30 14 07 52	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	87	%	60-140	12 30 14 07 52	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	100	3 60	ug/L	12 24.14 22 09	U	20
Benzene	71-43-2	**5620**	200	32 0	ug/L	12 26 14 17 42		200
Diisopropyl ether	108-20-3	**2700**	100	1 60	ug/L	12 24 14 22 09		20
Ethanol	64-17-5	U	2000	160	ug/L	12 24 14 22 09	U	20
Ethyl tert-butyl alcohol	590-36-3	**1120**	500	22 0	ug/L	12 24 14 22 09	F	20
Ethyl tert-butyl ether	637-92-3	U	100	6 00	ug/L	12 24.14 22.09	U	20
Ethylbenzene	100-41-4	**3530**	20.0	3.80	ug/L	12 24 14 22 09		20
Methyl tert-butyl ether	1634-04-4	U	20.0	3 60	ug/L	12 24 14 22 09	U	20
Naphthalene	91-20-3	**1060**	20 0	4 40	ug/L	12 24 14 22 09		20
tert-Amyl alcohol	75-85-4	U	500	22.0	ug/L	12 24 14 22.09	U	20
tert-Amyl methyl ether	994-05-8	U	100	6 00	ug/L	12 24.14 22.09	U	20
tert-Butyl alcohol	75-65-0	U	500	20.0	ug/L	12 24 14 22 09	U	20
tert-Butyl formate	762-75-4	U	500	20 0	ug/L	12 24 14 22 09	U	20
Toluene	108-88-3	**4810**	200	28.0	ug/L	12 26 14 17 42		200
m,p-Xylenes	179601-23-1	**3760**	40.0	10 2	ug/L	12 24.14 22 09		20
o-Xylene	95-47-6	**1430**	20 0	4 00	ug/L	12 24 14 22 09		20
Xylenes, Total	1330-20-7	**5190**	20 0	4 00	ug/L	12 24 14 22 09		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	94	%	53-159	12.24.14 22 09	
4-Bromofluorobenzene	460-00-4	110	%	30-186	12 24 14 22 09	
Toluene-D8	2037-26-5	97	%	70-130	12 24.14 22 09	

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Sample Id: **11760 MW-11** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-009 Date Collected: 12.18.14 13.05

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0199	0 00597	ug/L	12 30.14 08 16	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	60-140	12 30 14 08 16	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	250	9 00	ug/L	12.24 14 23 41	U	50
Benzene	71-43-2	**7650**	500	80 0	ug/L	12 26.14 18.38		500
Diisopropyl ether	108-20-3	**6210**	250	4.00	ug/L	12.24.14 23.41		50
Ethanol	64-17-5	U	5000	400	ug/L	12 24 14 23.41	U	50
Ethyl tert-butyl alcohol	590-36-3	**1550**	1250	55 0	ug/L	12 24.14 23 41	F	50
Ethyl tert-butyl ether	637-92-3	U	250	15 0	ug/L	12 24 14 23.41	U	50
Ethylbenzene	100-41-4	**5470**	50.0	9 50	ug/L	12 24.14 23.41		50
Methyl tert-butyl ether	1634-04-4	U	50.0	9.00	ug/L	12 24 14 23 41	U	50
Naphthalene	91-20-3	**1480**	50 0	11.0	ug/L	12 24 14 23 41		50
tert-Amyl alcohol	75-85-4	**6450**	1250	55 0	ug/L	12 24 14 23.41		50
tert-Amyl methyl ether	994-05-8	U	250	15.0	ug/L	12 24 14 23.41	U	50
tert-Butyl alcohol	75-65-0	U	1250	50.0	ug/L	12 24 14 23.41	U	50
tert-Butyl formate	762-75-4	U	1250	50 0	ug/L	12.24.14 23 41	U	50
Toluene	108-88-3	**8440**	500	70 0	ug/L	12 26.14 18.38		500
m,p-Xylenes	179601-23-1	**17900**	100	25 5	ug/L	12.24.14 23.41		50
o-Xylene	95-47-6	**7480**	50 0	10 0	ug/L	12 24 14 23 41		50
Xylenes, Total	1330-20-7	**25400**	50 0	10 0	ug/L	12 24 14 23 41		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	98	%	53-159	12 24 14 23.41	
4-Bromofluorobenzene	460-00-4	108	%	30-186	12 24 14 23.41	
Toluene-D8	2037-26-5	99	%	70-130	12.24.14 23 41	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-12** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-010 Date Collected: 12.18.14 12.20

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0202	0 00606	ug/L	12 30 14 08.40	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	71	%	60-140	12 30 14 08 40	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	100	3.60	ug/L	12 24 14 22 40	U	20
Benzene	71-43-2	**2100**	20 0	3 20	ug/L	12.24 14 22 40		20
Diisopropyl ether	108-20-3	**3210**	1000	16 0	ug/L	12.26 14 18 10		200
Ethanol	64-17-5	U	2000	160	ug/L	12 24 14 22 40	U	20
Ethyl tert-butyl alcohol	590-36-3	**2490**	500	22 0	ug/L	12 24 14 22 40	F	20
Ethyl tert-butyl ether	637-92-3	U	100	6 00	ug/L	12 24 14 22.40	U	20
Ethylbenzene	100-41-4	**988**	20.0	3.80	ug/L	12.24.14 22.40		20
Methyl tert-butyl ether	1634-04-4	U	20 0	3.60	ug/L	12 24.14 22 40	U	20
Naphthalene	91-20-3	**693**	20 0	4 40	ug/L	12 24 14 22 40		20
tert-Amyl alcohol	75-85-4	**11200**	500	22 0	ug/L	12 24.14 22 40		20
tert-Amyl methyl ether	994-05-8	U	100	6.00	ug/L	12.24 14 22 40	U	20
tert-Butyl alcohol	75-65-0	U	500	20 0	ug/L	12 24 14 22 40	U	20
tert-Butyl formate	762-75-4	U	500	20 0	ug/L	12 24 14 22 40	U	20
Toluene	108-88-3	**454**	20.0	2.80	ug/L	12 24.14 22.40		20
m,p-Xylenes	179601-23-1	**3880**	40 0	10 2	ug/L	12 24 14 22 40		20
o-Xylene	95-47-6	**1480**	20 0	4 00	ug/L	12.24.14 22 40		20
Xylenes, Total	1330-20-7	**5360**	20.0	4 00	ug/L	12 24 14 22 40		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	95	%	53-159	12 24 14 22 40	
4-Bromofluorobenzene	460-00-4	109	%	30-186	12 24 14 22.40	
Toluene-D8	2037-26-5	98	%	70-130	12 24.14 22 40	

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Former United Oil UST# 11760

Sample Id: **11760 MW-13** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-011 Date Collected: 12.18.14 12.58

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	**0.0406**	0 0199	0 00598	ug/L	12 30 14 09.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	61	%	60-140	12 30 14 09.03	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	100	3 60	ug/L	12 22 14 14 25	U	20
Benzene	71-43-2	**9960**	500	80.0	ug/L	12.24.14 16 43		500
Diisopropyl ether	108-20-3	**8430**	2500	40 0	ug/L	12 24 14 16 43		500
Ethanol	64-17-5	U	2000	160	ug/L	12 22 14 14 25	U	20
Ethyl tert-butyl alcohol	590-36-3	**3340**	500	22 0	ug/L	12.22 14 14 25		20
Ethyl tert-butyl ether	637-92-3	U	100	6 00	ug/L	12 22 14 14 25	U	20
Ethylbenzene	100-41-4	**4140**	500	95 0	ug/L	12 24.14 16.43		500
Methyl tert-butyl ether	1634-04-4	U	20 0	3 60	ug/L	12 22 14 14 25	U	20
Naphthalene	91-20-3	**1160**	20 0	4.40	ug/L	12 22.14 14 25		20
tert-Amyl alcohol	75-85-4	**14900**	500	22 0	ug/L	12 22 14 14 25		20
tert-Amyl methyl ether	994-05-8	U	100	6 00	ug/L	12 22 14 14.25	U	20
tert-Butyl alcohol	75-65-0	**3100**	500	20 0	ug/L	12 22 14 14 25		20
tert-Butyl formate	762-75-4	U	500	20 0	ug/L	12 22 14 14.25	U	20
Toluene	108-88-3	**31900**	500	70 0	ug/L	12 24 14 16 43		500
m,p-Xylenes	179601-23-1	**16000**	1000	255	ug/L	12 24 14 16 43		500
o-Xylene	95-47-6	**7590**	500	100	ug/L	12.24.14 16.43		500
Xylenes, Total	1330-20-7	**23600**	500	100	ug/L	12.24 14 16 43		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	98	%	53-159	12 22 14 14 25	
4-Bromofluorobenzene	460-00-4	107	%	30-186	12.22 14 14 25	
Toluene-D8	2037-26-5	92	%	70-130	12 22 14 14.25	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-14** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-012 Date Collected: 12.18.14 11.16

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0201	0 00604	ug/L	12 30 14 09 27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	74	%	60-140	12 30 14 09.27	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	50.0	1 80	ug/L	12 24 14 20 37	U	10
Benzene	71-43-2	**4440**	200	32 0	ug/L	12.26 14 16 45		200
Diisopropyl ether	108-20-3	**3300**	1000	16 0	ug/L	12.26 14 16.45		200
Ethanol	64-17-5	U	1000	80 0	ug/L	12 24 14 20 37	U	10
Ethyl tert-butyl alcohol	590-36-3	**1180**	250	11 0	ug/L	12 24 14 20 37	F	10
Ethyl tert-butyl ether	637-92-3	U	50 0	3 00	ug/L	12 24 14 20 37	U	10
Ethylbenzene	100-41-4	**25.9**	10.0	1 90	ug/L	12 24.14 20.37		10
Methyl tert-butyl ether	1634-04-4	U	10.0	1 80	ug/L	12 24.14 20.37	U	10
Naphthalene	91-20-3	**509**	10 0	2 20	ug/L	12 24.14 20 37		10
tert-Amyl alcohol	75-85-4	**6940**	250	11 0	ug/L	12 24 14 20.37		10
tert-Amyl methyl ether	994-05-8	U	50.0	3 00	ug/L	12 24 14 20 37	U	10
tert-Butyl alcohol	75-65-0	**1320**	250	10 0	ug/L	12 24 14 20 37		10
tert-Butyl formate	762-75-4	U	250	10 0	ug/L	12 24.14 20 37	U	10
Toluene	108-88-3	**105**	10 0	1 40	ug/L	12 24 14 20 37		10
m,p-Xylenes	179601-23-1	**71.1**	20 0	5 10	ug/L	12 24 14 20 37		10
o-Xylene	95-47-6	**35.5**	10.0	2 00	ug/L	12.24.14 20 37		10
Xylenes, Total	1330-20-7	**107**	10 0	2 00	ug/L	12 24.14 20.37		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	100	%	53-159	12 24 14 20 37	
4-Bromofluorobenzene	460-00-4	107	%	30-186	12 24 14 20 37	
Toluene-D8	2037-26-5	97	%	70-130	12 24.14 20.37	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-15** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-013 Date Collected: 12.18.14 11.55

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0201	0.00603	ug/L	12.30 14 09 51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	68	%	60-140	12.30.14 09 51	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	50.0	1 80	ug/L	12 24 14 21 07	U	10
Benzene	71-43-2	**7060**	200	32 0	ug/L	12 26 14 17.14		200
Diisopropyl ether	108-20-3	**4830**	1000	16 0	ug/L	12 26 14 17.14		200
Ethanol	64-17-5	U	1000	80 0	ug/L	12 24.14 21.07	U	10
Ethyl tert-butyl alcohol	590-36-3	**2760**	250	11 0	ug/L	12 24 14 21 07	F	10
Ethyl tert-butyl ether	637-92-3	U	50.0	3 00	ug/L	12 24 14 21 07	U	10
Ethylbenzene	100-41-4	**872**	200	38 0	ug/L	12 26 14 17 14		200
Methyl tert-butyl ether	1634-04-4	U	10 0	1 80	ug/L	12 24.14 21.07	U	10
Naphthalene	91-20-3	**368**	200	44.0	ug/L	12.26 14 17 14		200
tert-Amyl alcohol	75-85-4	**5880**	5000	220	ug/L	12 26 14 17.14		200
tert-Amyl methyl ether	994-05-8	U	50.0	3.00	ug/L	12 24 14 21 07	U	10
tert-Butyl alcohol	75-65-0	U	250	10 0	ug/L	12 24 14 21 07	U	10
tert-Butyl formate	762-75-4	U	250	10 0	ug/L	12 24 14 21.07	U	10
Toluene	108-88-3	**4390**	200	28.0	ug/L	12 26 14 17.14		200
m,p-Xylenes	179601-23-1	**2960**	400	102	ug/L	12.26 14 17 14		200
o-Xylene	95-47-6	**1200**	200	40 0	ug/L	12 26 14 17 14		200
Xylenes, Total	1330-20-7	**4160**	200	40 0	ug/L	12 26 14 17 14		200

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	84	%	53-159	12 24 14 21.07	
4-Bromofluorobenzene	460-00-4	107	%	30-186	12 24 14 21.07	
Toluene-D8	2037-26-5	96	%	70-130	12.24 14 21.07	

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Sample Id: **11760 MW-16** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-014 Date Collected: 12.18.14 12.50

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0203	0 00608	ug/L	12 30.14 10.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	91	%	60-140	12 30.14 10.15	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	100	3 60	ug/L	12.22.14 14 55	U	20
Benzene	71-43-2	**4490**	500	80.0	ug/L	12 24.14 15.48		500
Diisopropyl ether	108-20-3	**2720**	2500	40.0	ug/L	12 24 14 15.48		500
Ethanol	64-17-5	U	2000	160	ug/L	12 22 14 14 55	U	20
Ethyl tert-butyl alcohol	590-36-3	**2400**	500	22 0	ug/L	12 22 14 14.55		20
Ethyl tert-butyl ether	637-92-3	U	100	6 00	ug/L	12 22 14 14 55	U	20
Ethylbenzene	100-41-4	**3210**	500	95 0	ug/L	12 24.14 15.48		500
Methyl tert-butyl ether	1634-04-4	U	20 0	3 60	ug/L	12 22 14 14 55	U	20
Naphthalene	91-20-3	**2060**	20.0	4 40	ug/L	12 22 14 14 55		20
tert-Amyl alcohol	75-85-4	**10200**	500	22.0	ug/L	12 22.14 14.55		20
tert-Amyl methyl ether	994-05-8	U	100	6 00	ug/L	12.22 14 14 55	U	20
tert-Butyl alcohol	75-65-0	**3410**	500	20.0	ug/L	12 22 14 14 55		20
tert-Butyl formate	762-75-4	U	500	20 0	ug/L	12 22 14 14 55	U	20
Toluene	108-88-3	**7940**	500	70.0	ug/L	12 24.14 15.48		500
m,p-Xylenes	179601-23-1	**15400**	1000	255	ug/L	12 24 14 15 48		500
o-Xylene	95-47-6	**6770**	500	100	ug/L	12 24.14 15 48		500
Xylenes, Total	1330-20-7	**22200**	500	100	ug/L	12 24 14 15 48		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	93	%	53-159	12 22.14 14.55	
4-Bromofluorobenzene	460-00-4	103	%	30-186	12.22 14 14 55	
Toluene-D8	2037-26-5	93	%	70-130	12 22.14 14 55	

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Sample Id: **11760 MW-17** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-015 Date Collected: 12.18.14 14.35

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0199	0.00598	ug/L	12 30.14 11.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	105	%	60-140	12 30.14 11.03	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 11.33	U	1
Benzene	71-43-2	U	1 00	0 160	ug/L	12 22.14 11 33	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 22 14 11 33	U	1
Ethanol	64-17-5	U	100	8.00	ug/L	12 22 14 11.33	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22.14 11 33	U	1
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12.22.14 11 33	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 22 14 11 33	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0.180	ug/L	12 22 14 11 33	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22.14 11.33	U	1
tert-Amyl alcohol	75-85-4	U	25.0	1 10	ug/L	12 22 14 11.33	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0.300	ug/L	12.22 14 11.33	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1.00	ug/L	12 22 14 11.33	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 22 14 11.33	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 22 14 11 33	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 22.14 11 33	U	1
o-Xylene	95-47-6	U	1.00	0 200	ug/L	12.22.14 11 33	U	1
Xylenes, Total	1330-20-7	U	1.00	0 200	ug/L	12.22.14 11.33	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	145	%	53-159	12.22.14 11.33	
4-Bromofluorobenzene	460-00-4	110	%	30-186	12 22 14 11 33	
Toluene-D8	2037-26-5	94	%	70-130	12 22 14 11.33	

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Former United Oil UST# 11760

Sample Id: **11760 MW-18** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-016 Date Collected: 12.18.14 12.33

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0199	0 00597	ug/L	12 30 14 11 27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	60-140	12 30 14 11 27	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 12 01	U	1
Benzene	71-43-2	**577**	20.0	3.20	ug/L	12 22 14 15.57		20
Diisopropyl ether	108-20-3	**2080**	100	1 60	ug/L	12.22.14 15 57		20
Ethanol	64-17-5	U	100	8.00	ug/L	12 22 14 12 01	U	1
Ethyl tert-butyl alcohol	590-36-3	**2640**	500	22 0	ug/L	12 22 14 15 57		20
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12.22.14 12.01	U	1
Ethylbenzene	100-41-4	**347**	20 0	3.80	ug/L	12.22.14 15.57		20
Methyl tert-butyl ether	1634-04-4	**3400**	20 0	3 60	ug/L	12.22 14 15 57		20
Naphthalene	91-20-3	**164**	1.00	0.220	ug/L	12 22 14 12 01		1
tert-Amyl alcohol	75-85-4	**13800**	500	22 0	ug/L	12 22 14 15 57		20
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12 22 14 12 01	U	1
tert-Butyl alcohol	75-65-0	**3500**	500	20 0	ug/L	12 22 14 15 57		20
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12.22 14 12 01	U	1
Toluene	108-88-3	**42.3**	1 00	0.140	ug/L	12.22 14 12 01		1
m,p-Xylenes	179601-23-1	**1660**	40 0	10.2	ug/L	12 22 14 15 57		20
o-Xylene	95-47-6	**178**	1.00	0.200	ug/L	12 22.14 12.01		1
Xylenes, Total	1330-20-7	**1840**	1.00	0 200	ug/L	12 22 14 15 57		20

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	106	%	53-159	12 22.14 12.01	
4-Bromofluorobenzene	460-00-4	106	%	30-186	12 22.14 12.01	
Toluene-D8	2037-26-5	92	%	70-130	12 22 14 12 01	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-19** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-017 Date Collected: 12.18.14 13.25

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0201	0.00604	ug/L	12 30 14 11 50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	60-140	12 30.14 11 50	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 12 29	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12.22.14 12.29	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 22 14 12 29	U	1
Ethanol	64-17-5	U	100	8.00	ug/L	12 22.14 12 29	U	1
Ethyl tert-butyl alcohol	590-36-3	**36.3**	25 0	1.10	ug/L	12.22.14 12.29		1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 22 14 12 29	U	1
Ethylbenzene	100-41-4	**0.530**	1.00	0.190	ug/L	12.22.14 12.29	J	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0 180	ug/L	12.22.14 12.29	U	1
Naphthalene	91-20-3	**1.28**	1.00	0 220	ug/L	12.22.14 12 29		1
tert-Amyl alcohol	75-85-4	**173**	25 0	1.10	ug/L	12 22 14 12 29		1
tert-Amyl methyl ether	994-05-8	U	5.00	0.300	ug/L	12 22 14 12 29	U	1
tert-Butyl alcohol	75-65-0	**58.3**	25 0	1 00	ug/L	12 22 14 12 29		1
tert-Butyl formate	762-75-4	U	25.0	1.00	ug/L	12.22.14 12 29	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12.22.14 12 29	U	1
m,p-Xylenes	179601-23-1	**2.71**	2 00	0.510	ug/L	12 22 14 12 29		1
o-Xylene	95-47-6	U	1.00	0.200	ug/L	12 22 14 12 29	U	1
Xylenes, Total	1330-20-7	**2.71**	1 00	0 200	ug/L	12 22 14 12 29		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	105	%	53-159	12.22 14 12 29	
4-Bromofluorobenzene	460-00-4	110	%	30-186	12 22.14 12.29	
Toluene-D8	2037-26-5	94	%	70-130	12 22 14 12 29	

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Former United Oil UST# 11760

Sample Id: **11760 MW-20** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-018 Date Collected: 12.18.14 13.40

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0205	0.00615	ug/L	12 30 14 12 14	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	60-140	12 30 14 12 14	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: JOL % Moisture:
Analyst: JOL Date Prep: 12.24.14 08.25
Seq Number: 958478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 24 14 12 37	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12.24.14 12 37	U	1
Diisopropyl ether	108-20-3	U	5 00	0.0800	ug/L	12 24 14 12 37	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 24 14 12 37	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1.10	ug/L	12 24 14 12 37	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 24 14 12 37	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 24 14 12 37	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12.24.14 12.37	U	1
Naphthalene	91-20-3	U	1.00	0 220	ug/L	12 24.14 12 37	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 24 14 12 37	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12 24 14 12 37	U	1
tert-Butyl alcohol	75-65-0	U	25.0	1.00	ug/L	12 24 14 12 37	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 24 14 12 37	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 24 14 12.37	U	1
m,p-Xylenes	179601-23-1	U	2.00	0 510	ug/L	12.24.14 12 37	U	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12 24 14 12.37	U	1
Xylenes, Total	1330-20-7	U	1 00	0.200	ug/L	12 24.14 12 37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	98	%	53-159	12 24.14 12 37	
4-Bromofluorobenzene	460-00-4	92	%	30-186	12.24 14 12.37	
Toluene-D8	2037-26-5	94	%	70-130	12.24.14 12 37	

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Sample Id: **11760 MW-21** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-019 Date Collected: 12.19.14 10.01

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0196	0 00588	ug/L	12 29 14 21 10	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	83	%	60-140	12 29 14 21 10	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 17 53	U	1
Benzene	71-43-2	**9.70**	1 00	0.160	ug/L	12 22 14 17 53		1
Diisopropyl ether	108-20-3	**1900**	50 0	0.800	ug/L	12 24 14 21 38		10
Ethanol	64-17-5	U	100	8 00	ug/L	12 22.14 17.53	UF	1
Ethyl tert-butyl alcohol	590-36-3	**468**	25 0	1 10	ug/L	12 22 14 17 53		1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 22 14 17.53	U	1
Ethylbenzene	100-41-4	**1.26**	1.00	0 190	ug/L	12 22.14 17.53		1
Methyl tert-butyl ether	1634-04-4	**1920**	10.0	1 80	ug/L	12.24.14 21.38		10
Naphthalene	91-20-3	**8.49**	1 00	0 220	ug/L	12 22 14 17 53		1
tert-Amyl alcohol	75-85-4	U	250	11 0	ug/L	12 24 14 21 38	U	10
tert-Amyl methyl ether	994-05-8	**43.8**	5 00	0 300	ug/L	12 22 14 17 53		1
tert-Butyl alcohol	75-65-0	**353**	25 0	1 00	ug/L	12.22.14 17.53		1
tert-Butyl formate	762-75-4	U	25.0	1.00	ug/L	12 22 14 17 53	U	1
Toluene	108-88-3	**0.710**	1.00	0 140	ug/L	12 22 14 17 53	J	1
m,p-Xylenes	179601-23-1	**0.550**	2.00	0.510	ug/L	12 22 14 17.53	J	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12 22.14 17 53	U	1
Xylenes, Total	1330-20-7	**0.550**	1 00	0.200	ug/L	12 22 14 17 53	J	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	111	%	53-159	12 22 14 17 53	
4-Bromofluorobenzene	460-00-4	101	%	30-186	12 22 14 17.53	
Toluene-D8	2037-26-5	99	%	70-130	12 22 14 17.53	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-22** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-020 Date Collected: 12.19.14 10.31

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0204	0.00613	ug/L	12 29.14 21 34	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	81	%	60-140	12 29.14 21.34	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 16 58	U	1
Benzene	71-43-2	**3140**	50 0	8 00	ug/L	12.24.14 17 43		50
Diisopropyl ether	108-20-3	**2970**	250	4 00	ug/L	12 24 14 17 43		50
Ethanol	64-17-5	U	100	8 00	ug/L	12 22 14 16 58	UF	1
Ethyl tert-butyl alcohol	590-36-3	**443**	25.0	1 10	ug/L	12 22 14 16.58		1
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12 22 14 16 58	U	1
Ethylbenzene	100-41-4	**2.63**	1.00	0 190	ug/L	12 22 14 16 58		1
Methyl tert-butyl ether	1634-04-4	**16.6**	1 00	0 180	ug/L	12 22 14 16 58		1
Naphthalene	91-20-3	**291**	50 0	11.0	ug/L	12 24 14 17 43		50
tert-Amyl alcohol	75-85-4	**2550**	1250	55 0	ug/L	12 24 14 17 43		50
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22.14 16.58	U	1
tert-Butyl alcohol	75-65-0	**434**	25 0	1 00	ug/L	12 22 14 16 58		1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 22 14 16 58	U	1
Toluene	108-88-3	**32.4**	1 00	0 140	ug/L	12 22.14 16.58		1
m,p-Xylenes	179601-23-1	**20.8**	2 00	0.510	ug/L	12 22 14 16 58		1
o-Xylene	95-47-6	**6.59**	1 00	0 200	ug/L	12 22 14 16.58		1
Xylenes, Total	1330-20-7	**27.4**	1.00	0 200	ug/L	12 22 14 16 58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	101	%	53-159	12 22 14 16 58	
4-Bromofluorobenzene	460-00-4	103	%	30-186	12 22 14 16 58	
Toluene-D8	2037-26-5	99	%	70-130	12 22.14 16.58	

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Sample Id: **11760 MW-23** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-021 Date Collected: 12.19.14 11.29

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0206	0 00617	ug/L	12 29.14 21 58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	95	%	60-140	12 29.14 21.58	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22 14 13 26	U	1
Benzene	71-43-2	**141**	1 00	0 160	ug/L	12.22 14 13.26		1
Diisopropyl ether	108-20-3	**1500**	100	1 60	ug/L	12 24 14 23 10		20
Ethanol	64-17-5	U	100	8.00	ug/L	12.22.14 13.26	U	1
Ethyl tert-butyl alcohol	590-36-3	**34.8**	25 0	1 10	ug/L	12 22 14 13.26		1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 22 14 13 26	U	1
Ethylbenzene	100-41-4	U	1.00	0.190	ug/L	12.22 14 13.26	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0.180	ug/L	12 22 14 13 26	U	1
Naphthalene	91-20-3	**10.2**	1 00	0 220	ug/L	12 22 14 13 26		1
tert-Amyl alcohol	75-85-4	U	25.0	1 10	ug/L	12.22.14 13 26	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0.300	ug/L	12.22.14 13.26	U	1
tert-Butyl alcohol	75-65-0	**77.0**	25 0	1 00	ug/L	12 22 14 13 26		1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 22 14 13 26	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 22 14 13 26	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12.22 14 13 26	U	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12.22.14 13.26	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22 14 13 26	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	102	%	53-159	12 22 14 13.26	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12.22.14 13.26	
Toluene-D8	2037-26-5	97	%	70-130	12 22 14 13.26	

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Sample Id: **11760 MW-24** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-022 Date Collected: 12.19.14 11.11

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0204	0.00611	ug/L	12.29 14 22 21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	60-140	12 29 14 22 21	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22.14 11 56	U	1
Benzene	71-43-2	**149**	1 00	0 160	ug/L	12.22.14 11 56		1
Diisopropyl ether	108-20-3	U	5 00	0.0800	ug/L	12 22.14 11.56	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22 14 11 56	UF	1
Ethyl tert-butyl alcohol	590-36-3	**14.7**	25.0	1 10	ug/L	12 22 14 11 56	J	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0.300	ug/L	12 22 14 11 56	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 22.14 11.56	U	1
Methyl tert-butyl ether	1634-04-4	**1.55**	1.00	0 180	ug/L	12 22.14 11.56		1
Naphthalene	91-20-3	**15.7**	1.00	0 220	ug/L	12 22 14 11 56		1
tert-Amyl alcohol	75-85-4	U	25.0	1 10	ug/L	12 22 14 11 56	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0.300	ug/L	12 22.14 11.56	U	1
tert-Butyl alcohol	75-65-0	**49.6**	25 0	1 00	ug/L	12.22 14 11 56		1
tert-Butyl formate	762-75-4	U	25.0	1.00	ug/L	12 22 14 11 56	U	1
Toluene	108-88-3	U	1.00	0.140	ug/L	12 22 14 11.56	U	1
m,p-Xylenes	179601-23-1	U	2 00	0.510	ug/L	12.22 14 11.56	U	1
o-Xylene	95-47-6	U	1 00	0.200	ug/L	12 22 14 11 56	U	1
Xylenes, Total	1330-20-7	U	1.00	0 200	ug/L	12 22.14 11.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	107	%	53-159	12.22.14 11 56	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12 22 14 11 56	
Toluene-D8	2037-26-5	101	%	70-130	12 22 14 11 56	

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Sample Id: **11760 MW-25** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-023 Date Collected: 12.19.14 10.21

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0205	0 00614	ug/L	12 29 14 22 45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	66	%	60-140	12 29.14 22.45	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: JOL % Moisture:
Analyst: JOL Date Prep: 12.24.14 08.25
Seq Number: 958478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 24 14 13 58	U	1
Benzene	71-43-2	**1660**	50.0	8.00	ug/L	12 24.14 18 44		50
Diisopropyl ether	108-20-3	**3550**	250	4 00	ug/L	12 24.14 18.44		50
Ethanol	64-17-5	U	100	8.00	ug/L	12 24 14 13 58	U	1
Ethyl tert-butyl alcohol	590-36-3	**229**	25 0	1 10	ug/L	12 24 14 13 58		1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 24 14 13 58	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 24.14 13.58	U	1
Methyl tert-butyl ether	1634-04-4	**17.7**	1.00	0 180	ug/L	12.24.14 13.58		1
Naphthalene	91-20-3	**39.3**	1 00	0.220	ug/L	12 24 14 13 58		1
tert-Amyl alcohol	75-85-4	**1770**	1250	55 0	ug/L	12 24 14 18 44		50
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12.24.14 13.58	U	1
tert-Butyl alcohol	75-65-0	**408**	25.0	1 00	ug/L	12 24 14 13.58		1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 24 14 13.58	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 24 14 13 58	U	1
m,p-Xylenes	179601-23-1	U	2.00	0.510	ug/L	12.24 14 13 58	U	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12.24.14 13.58	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 24.14 13 58	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	92	%	53-159	12 24 14 13 58	
4-Bromofluorobenzene	460-00-4	89	%	30-186	12 24 14 13 58	
Toluene-D8	2037-26-5	93	%	70-130	12 24 14 13 58	

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Former United Oil UST# 11760

Sample Id: **11760 MW-26** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-024 Date Collected: 12.18.14 15.19

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0165	0.00496	ug/L	12 29.14 23.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	82	%	60-140	12 29.14 23 09	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0.180	ug/L	12 22 14 13.54	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12 22 14 13 54	U	1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 22 14 13 54	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22 14 13.54	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25.0	1 10	ug/L	12.22.14 13 54	U	1
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12 22 14 13 54	U	1
Ethylbenzene	100-41-4	U	1 00	0 190	ug/L	12 22 14 13 54	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0.180	ug/L	12 22 14 13 54	U	1
Naphthalene	91-20-3	U	1 00	0.220	ug/L	12 22 14 13 54	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 22 14 13 54	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22 14 13 54	U	1
tert-Butyl alcohol	75-65-0	U	25.0	1 00	ug/L	12.22 14 13.54	U	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 22 14 13 54	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 22.14 13 54	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 22 14 13 54	U	1
o-Xylene	95-47-6	U	1 00	0.200	ug/L	12 22 14 13.54	U	1
Xylenes, Total	1330-20-7	U	1 00	0.200	ug/L	12.22.14 13 54	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	104	%	53-159	12.22 14 13.54	
4-Bromofluorobenzene	460-00-4	111	%	30-186	12.22.14 13.54	
Toluene-D8	2037-26-5	95	%	70-130	12 22 14 13 54	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 MW-27** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-025 Date Collected: 12.18.14 09.45

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	**0.113**	0 0201	0 00602	ug/L	12 29 14 23 33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	120	%	60-140	12 29 14 23 33	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	100	3.60	ug/L	12 22.14 15.26	U	20
Benzene	71-43-2	**17500**	500	80.0	ug/L	12.24.14 16.15		500
Diisopropyl ether	108-20-3	**16300**	2500	40 0	ug/L	12 24 14 16 15		500
Ethanol	64-17-5	U	2000	160	ug/L	12.22 14 15.26	U	20
Ethyl tert-butyl alcohol	590-36-3	**20700**	12500	550	ug/L	12.24.14 16.15		500
Ethyl tert-butyl ether	637-92-3	U	100	6.00	ug/L	12 22 14 15 26	U	20
Ethylbenzene	100-41-4	**3540**	500	95 0	ug/L	12.24.14 16.15		500
Methyl tert-butyl ether	1634-04-4	**20900**	500	90.0	ug/L	12 24.14 16.15		500
Naphthalene	91-20-3	**1420**	20 0	4.40	ug/L	12.22.14 15.26		20
tert-Amyl alcohol	75-85-4	**125000**	12500	550	ug/L	12 24 14 16 15		500
tert-Amyl methyl ether	994-05-8	U	100	6 00	ug/L	12 22.14 15.26	U	20
tert-Butyl alcohol	75-65-0	**23900**	12500	500	ug/L	12 24.14 16.15		500
tert-Butyl formate	762-75-4	U	500	20 0	ug/L	12.22 14 15.26	U	20
Toluene	108-88-3	**6560**	500	70 0	ug/L	12 24 14 16.15		500
m,p-Xylenes	179601-23-1	**7790**	40 0	10.2	ug/L	12 22 14 15.26		20
o-Xylene	95-47-6	**3860**	500	100	ug/L	12 24 14 16 15		500
Xylenes, Total	1330-20-7	**11700**	40.0	10 2	ug/L	12 24 14 16 15		500

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	87	%	53-159	12 22 14 15 26	
4-Bromofluorobenzene	460-00-4	111	%	30-186	12 22 14 15 26	
Toluene-D8	2037-26-5	94	%	70-130	12 22.14 15 26	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 DW-1** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-026 Date Collected: 12.19.14 12.01

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0201	0 00602	ug/L	12 29 14 23 57	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	73	%	60-140	12 29 14 23 57	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: JOL % Moisture:
Analyst: JOL Date Prep: 12.24.14 08.25
Seq Number: 958478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 24.14 13 04	U	1
Benzene	71-43-2	**0.800**	1 00	0 160	ug/L	12 24 14 13.04	J	1
Diisopropyl ether	108-20-3	**1.04**	5 00	0 0800	ug/L	12 24 14 13.04	J	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 24 14 13.04	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 24.14 13 04	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12.24 14 13 04	U	1
Ethylbenzene	100-41-4	U	1.00	0.190	ug/L	12 24.14 13.04	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12 24 14 13 04	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 24 14 13 04	U	1
tert-Amyl alcohol	75-85-4	**7.01**	25 0	1 10	ug/L	12 24 14 13.04	J	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 24 14 13 04	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12.24 14 13 04	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12 24 14 13 04	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12 24.14 13 04	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 24.14 13.04	U	1
o-Xylene	95-47-6	U	1.00	0.200	ug/L	12 24 14 13.04	U	1
Xylenes, Total	1330-20-7	U	1 00	0.200	ug/L	12.24 14 13 04	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	99	%	53-159	12.24 14 13 04	
4-Bromofluorobenzene	460-00-4	90	%	30-186	12.24.14 13 04	
Toluene-D8	2037-26-5	92	%	70-130	12 24 14 13 04	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 DW-2** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-027 Date Collected: 12.19.14 10.19

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0205	0.00614	ug/L	12 30.14 00 20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	65	%	60-140	12 30 14 00 20	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MWE Date Prep: 12.24.14 12.29
Seq Number: 958439

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	50 0	1 80	ug/L	12.24.14 19 36	U	10
Benzene	71-43-2	**115**	10 0	1.60	ug/L	12 24.14 19 36		10
Diisopropyl ether	108-20-3	**1140**	50.0	0 800	ug/L	12 24 14 19 36		10
Ethanol	64-17-5	U	1000	80.0	ug/L	12 24 14 19 36	U	10
Ethyl tert-butyl alcohol	590-36-3	**201**	250	11.0	ug/L	12 24 14 19 36	JF	10
Ethyl tert-butyl ether	637-92-3	U	50 0	3.00	ug/L	12 24 14 19.36	U	10
Ethylbenzene	100-41-4	U	10.0	1.90	ug/L	12 24.14 19.36	U	10
Methyl tert-butyl ether	1634-04-4	U	10 0	1.80	ug/L	12.24.14 19.36	U	10
Naphthalene	91-20-3	**34.8**	10 0	2 20	ug/L	12 24 14 19 36		10
tert-Amyl alcohol	75-85-4	**1560**	250	11 0	ug/L	12.24.14 19.36		10
tert-Amyl methyl ether	994-05-8	U	50 0	3.00	ug/L	12 24.14 19.36	U	10
tert-Butyl alcohol	75-65-0	U	250	10 0	ug/L	12 24 14 19 36	U	10
tert-Butyl formate	762-75-4	U	250	10 0	ug/L	12 24 14 19 36	U	10
Toluene	108-88-3	U	10.0	1 40	ug/L	12 24 14 19 36	U	10
m,p-Xylenes	179601-23-1	U	20.0	5 10	ug/L	12 24.14 19.36	U	10
o-Xylene	95-47-6	U	10 0	2 00	ug/L	12 24.14 19.36	U	10
Xylenes, Total	1330-20-7	U	10 0	2 00	ug/L	12 24 14 19 36	U	10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	108	%	53-159	12 24.14 19.36	
4-Bromofluorobenzene	460-00-4	110	%	30-186	12.24.14 19.36	
Toluene-D8	2037-26-5	99	%	70-130	12.24 14 19.36	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 CK-1** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-028 Date Collected: 12.18.14 14.31

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0200	0 00599	ug/L	12 30.14 00.44	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	79	%	60-140	12 30 14 00 44	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: JOL % Moisture:
Analyst: JOL Date Prep: 12.24.14 08.25
Seq Number: 958478

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0.180	ug/L	12 24 14 14.25	U	1
Benzene	71-43-2	**1.16**	1.00	0 160	ug/L	12 24 14 14 25		1
Diisopropyl ether	108-20-3	U	5 00	0 0800	ug/L	12 24 14 14 25	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 24 14 14 25	U	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12.24 14 14 25	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 24 14 14 25	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 24 14 14.25	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12.24 14 14.25	U	1
Naphthalene	91-20-3	**1.95**	1 00	0 220	ug/L	12 24.14 14 25		1
tert-Amyl alcohol	75-85-4	**45.6**	25 0	1.10	ug/L	12 24 14 14 25		1
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12 24 14 14 25	U	1
tert-Butyl alcohol	75-65-0	**16.7**	25.0	1 00	ug/L	12 24 14 14 25	J	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 24 14 14 25	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12.24 14 14 25	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 24 14 14 25	U	1
o-Xylene	95-47-6	U	1.00	0 200	ug/L	12 24 14 14 25	U	1
Xylenes, Total	1330-20-7	U	1.00	0.200	ug/L	12.24 14 14 25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	97	%	53-159	12 24 14 14 25	
4-Bromofluorobenzene	460-00-4	91	%	30-186	12.24.14 14.25	
Toluene-D8	2037-26-5	93	%	70-130	12 24 14 14 25	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 DUP-1** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-029 Date Collected: 12.18.14 11.19

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0.0198	0.00595	ug/L	12 30 14 01.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	75	%	60-140	12.30.14 01 08	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	250	9 00	ug/L	12.22.14 18 24	U	50
Benzene	71-43-2	**5260**	50 0	8 00	ug/L	12.22 14 18 24		50
Diisopropyl ether	108-20-3	**3940**	250	4 00	ug/L	12 22 14 18 24		50
Ethanol	64-17-5	U	5000	400	ug/L	12 22 14 18 24	U	50
Ethyl tert-butyl alcohol	590-36-3	**1460**	1250	55 0	ug/L	12 22.14 18 24		50
Ethyl tert-butyl ether	637-92-3	U	250	15 0	ug/L	12 22 14 18.24	U	50
Ethylbenzene	100-41-4	**25**	50.0	9.50	ug/L	12 22 14 18 24	J	50
Methyl tert-butyl ether	1634-04-4	U	50 0	9 00	ug/L	12 22 14 18 24	U	50
Naphthalene	91-20-3	**187**	50 0	11 0	ug/L	12.22.14 18.24		50
tert-Amyl alcohol	75-85-4	**3480**	1250	55 0	ug/L	12 22 14 18 24		50
tert-Amyl methyl ether	994-05-8	U	250	15.0	ug/L	12.22.14 18.24	U	50
tert-Butyl alcohol	75-65-0	**874**	1250	50 0	ug/L	12.22.14 18.24	J	50
tert-Butyl formate	762-75-4	U	1250	50 0	ug/L	12 22 14 18 24	U	50
Toluene	108-88-3	**104**	50 0	7 00	ug/L	12 22 14 18 24		50
m,p-Xylenes	179601-23-1	**74.5**	100	25 5	ug/L	12 22 14 18 24	J	50
o-Xylene	95-47-6	**22**	50 0	10.0	ug/L	12 22 14 18.24	J	50
Xylenes, Total	1330-20-7	**74.5**	50.0	10 0	ug/L	12 22.14 18 24		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	90	%	53-159	12 22 14 18 24	
4-Bromofluorobenzene	460-00-4	113	%	30-186	12 22 14 18 24	
Toluene-D8	2037-26-5	96	%	70-130	12.22 14 18 24	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 DUP-2** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-030 Date Collected: 12.18.14 11.59

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: VIC Date Prep: 12.22.14 14.00
Seq Number: 958577

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0198	0 00594	ug/L	12.30.14 01.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	85	%	60-140	12 30 14 01 32	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.26
Seq Number: 958253

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 17 21	U	1
Benzene	71-43-2	**8280**	50.0	8 00	ug/L	12 22 14 17 54		50
Diisopropyl ether	108-20-3	**5730**	250	4.00	ug/L	12 22 14 17 54		50
Ethanol	64-17-5	U	100	8 00	ug/L	12.22.14 17.21	U	1
Ethyl tert-butyl alcohol	590-36-3	**2960**	1250	55.0	ug/L	12 22 14 17 54		50
Ethyl tert-butyl ether	637-92-3	U	5.00	0 300	ug/L	12 22 14 17 21	U	1
Ethylbenzene	100-41-4	**912**	50 0	9.50	ug/L	12 22 14 17 54		50
Methyl tert-butyl ether	1634-04-4	**12.6**	1 00	0 180	ug/L	12 22 14 17 21		1
Naphthalene	91-20-3	**1190**	50 0	11 0	ug/L	12 22 14 17.54		50
tert-Amyl alcohol	75-85-4	**12300**	1250	55 0	ug/L	12 22 14 17.54		50
tert-Amyl methyl ether	994-05-8	U	5.00	0 300	ug/L	12 22 14 17.21	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22 14 17 21	U	1
tert-Butyl formate	762-75-4	U	25 0	1.00	ug/L	12.22 14 17 21	U	1
Toluene	108-88-3	**3650**	50.0	7.00	ug/L	12 22 14 17 54		50
m,p-Xylenes	179601-23-1	**2620**	100	25 5	ug/L	12 22 14 17 54		50
o-Xylene	95-47-6	**1180**	50 0	10.0	ug/L	12.22.14 17 54		50
Xylenes, Total	1330-20-7	**3800**	50 0	10.0	ug/L	12 22 14 17.54		50

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	103	%	53-159	12 22.14 17 21	
4-Bromofluorobenzene	460-00-4	103	%	30-186	12 22 14 17 21	
Toluene-D8	2037-26-5	91	%	70-130	12.22.14 17 21	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 Field Blank-1** Matrix: Ground Water Date Received:12.20.14 10.00

Lab Sample Id: 499393-031 Date Collected: 12.18.14 09.31

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P

Tech: TIMWEL % Moisture:

Analyst: CLAR Date Prep: 12.23.14 08.30

Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0201	0 00604	ug/L	12.30.14 12 38	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	113	%	60-140	12 30 14 12 38	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B

Tech: MWE % Moisture:

Analyst: MLA Date Prep: 12.22.14 07.25

Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 16.02	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12 22.14 16.02	U	1
Diisopropyl ether	108-20-3	U	5.00	0.0800	ug/L	12 22.14 16.02	U	1
Ethanol	64-17-5	U	100	8.00	ug/L	12 22.14 16 02	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22.14 16 02	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12 22.14 16 02	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 22.14 16 02	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0.180	ug/L	12 22.14 16.02	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12.22 14 16 02	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12 22 14 16.02	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22 14 16 02	U	1
tert-Butyl alcohol	75-65-0	U	25.0	1 00	ug/L	12 22 14 16 02	U	1
tert-Butyl formate	762-75-4	U	25.0	1 00	ug/L	12.22.14 16.02	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12.22.14 16.02	U	1
m,p-Xylenes	179601-23-1	U	2.00	0.510	ug/L	12 22 14 16 02	U	1
o-Xylene	95-47-6	U	1 00	0 200	ug/L	12 22 14 16.02	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22.14 16.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	114	%	53-159	12.22 14 16 02	
4-Bromofluorobenzene	460-00-4	106	%	30-186	12 22 14 16.02	
Toluene-D8	2037-26-5	101	%	70-130	12 22 14 16 02	

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Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 Field Blank-2** Matrix: Ground Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-032 Date Collected: 12.19.14 12.21

Analytical Method: EDB by EPA 8011 Prep Method: SW8011P
Tech: TIMWEL % Moisture:
Analyst: CLAR Date Prep: 12.23.14 08.30
Seq Number: 958600

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dibromoethane	106-93-4	U	0 0202	0 00607	ug/L	12 30 14 13.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	108	%	60-140	12 30.14 13.02	

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 16 30	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12.22 14 16 30	U	1
Diisopropyl ether	108-20-3	U	5 00	0.0800	ug/L	12.22.14 16.30	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12.22.14 16 30	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25.0	1 10	ug/L	12.22 14 16 30	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0.300	ug/L	12 22 14 16 30	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 22 14 16 30	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0 180	ug/L	12.22 14 16 30	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22 14 16 30	U	1
tert-Amyl alcohol	75-85-4	U	25.0	1 10	ug/L	12 22 14 16 30	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12.22 14 16 30	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1.00	ug/L	12 22.14 16.30	U	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 22.14 16 30	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 22 14 16 30	U	1
m,p-Xylenes	179601-23-1	U	2 00	0 510	ug/L	12 22 14 16 30	U	1
o-Xylene	95-47-6	U	1.00	0 200	ug/L	12.22 14 16 30	U	1
Xylenes, Total	1330-20-7	U	1.00	0 200	ug/L	12.22 14 16 30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	118	%	53-159	12.22 14 16.30	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12.22 14 16 30	
Toluene-D8	2037-26-5	101	%	70-130	12 22 14 16 30	

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 Trip Blank-1** Matrix: Water Date Received:12.20.14 10.00
Lab Sample Id: 499393-033 Date Collected: 12.18.14 08.00

Analytical Method: Select VOCs by SW-846 8260B Prep Method: SW5030B
Tech: MWE % Moisture:
Analyst: MLA Date Prep: 12.22.14 07.25
Seq Number: 958274

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5.00	0 180	ug/L	12 22 14 11 28	U	1
Benzene	71-43-2	U	1.00	0 160	ug/L	12 22.14 11.28	U	1
Diisopropyl ether	108-20-3	U	5.00	0 0800	ug/L	12 22 14 11 28	U	1
Ethanol	64-17-5	U	100	8 00	ug/L	12 22.14 11.28	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25 0	1 10	ug/L	12 22 14 11 28	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12.22.14 11.28	U	1
Ethylbenzene	100-41-4	U	1.00	0.190	ug/L	12 22 14 11.28	U	1
Methyl tert-butyl ether	1634-04-4	U	1.00	0 180	ug/L	12 22 14 11.28	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22 14 11 28	U	1
tert-Amyl alcohol	75-85-4	U	25 0	1 10	ug/L	12.22 14 11 28	U	1
tert-Amyl methyl ether	994-05-8	U	5 00	0 300	ug/L	12 22 14 11 28	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12.22 14 11 28	U	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 22 14 11 28	U	1
Toluene	108-88-3	U	1.00	0 140	ug/L	12 22 14 11 28	U	1
m,p-Xylenes	179601-23-1	U	2 00	0.510	ug/L	12 22.14 11 28	U	1
o-Xylene	95-47-6	U	1 00	0.200	ug/L	12 22 14 11 28	U	1
Xylenes, Total	1330-20-7	U	1 00	0 200	ug/L	12 22.14 11.28	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	113	%	53-159	12.22 14 11 28	
4-Bromofluorobenzene	460-00-4	105	%	30-186	12.22 14 11 28	
Toluene-D8	2037-26-5	101	%	70-130	12 22 14 11 28	

XENCO Laboratories
Florida Testing Services, LLC

Certificate of Analytical Results 499393

Cardno-ATC, Columbia, SC

Former United Oil UST# 11760

Sample Id: **11760 Trip Blank-2**
Lab Sample Id: 499393-034

Matrix: Water
Date Collected: 12.18.14 08.00

Date Received:12.20.14 10.00

Analytical Method: Select VOCs by SW-846 8260B
Tech: MWE
Analyst: MLA
Seq Number: 958274

Date Prep: 12.22.14 07.25

Prep Method: SW5030B
% Moisture:

Parameter	Cas Number	Result	RL	MDL	Units	Analysis Date	Flag	Dil
1,2-Dichloroethane	107-06-2	U	5 00	0 180	ug/L	12 22.14 11 00	U	1
Benzene	71-43-2	U	1 00	0 160	ug/L	12 22.14 11.00	U	1
Diisopropyl ether	108-20-3	U	5.00	0.0800	ug/L	12.22.14 11 00	U	1
Ethanol	64-17-5	U	100	8.00	ug/L	12 22 14 11 00	UF	1
Ethyl tert-butyl alcohol	590-36-3	U	25.0	1.10	ug/L	12.22 14 11 00	U	1
Ethyl tert-butyl ether	637-92-3	U	5 00	0 300	ug/L	12.22 14 11 00	U	1
Ethylbenzene	100-41-4	U	1.00	0 190	ug/L	12 22.14 11 00	U	1
Methyl tert-butyl ether	1634-04-4	U	1 00	0.180	ug/L	12 22.14 11.00	U	1
Naphthalene	91-20-3	U	1 00	0 220	ug/L	12 22.14 11 00	U	1
tert-Amyl alcohol	75-85-4	U	25.0	1 10	ug/L	12.22 14 11 00	U	1
tert-Amyl methyl ether	994-05-8	U	5.00	0.300	ug/L	12.22 14 11 00	U	1
tert-Butyl alcohol	75-65-0	U	25 0	1 00	ug/L	12 22 14 11 00	U	1
tert-Butyl formate	762-75-4	U	25 0	1 00	ug/L	12 22.14 11 00	U	1
Toluene	108-88-3	U	1 00	0 140	ug/L	12 22 14 11 00	U	1
m,p-Xylenes	179601-23-1	U	2.00	0.510	ug/L	12.22.14 11.00	U	1
o-Xylene	95-47-6	U	1.00	0.200	ug/L	12 22 14 11.00	U	1
Xylenes, Total	1330-20-7	U	1.00	0 200	ug/L	12 22 14 11 00	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,2-Dichloroethane-D4	17060-07-0	114	%	53-159	12.22.14 11 00	
4-Bromofluorobenzene	460-00-4	106	%	30-186	12 22 14 11 00	
Toluene-D8	2037-26-5	101	%	70-130	12 22.14 11 00	

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **EDB by EPA 8011** Prep Method: SW8011P
Seq Number: 958577 Matrix: Water Date Prep: 12.22.14
MB Sample Id: 666282-1-BLK LCS Sample Id: 666282-1-BKS LCSD Sample Id: 666282-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dibromoethane	<0.00600	0 150	0.152	101	0.155	103	60-140	2	30	ug/L	12 29.14 15:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	114		103		102		60-140	%	12 29.14 15:59

Analytical Method: **EDB by EPA 8011** Prep Method: SW8011P
Seq Number: 958600 Matrix: Water Date Prep: 12.23.14
MB Sample Id: 666283-1-BLK LCS Sample Id: 666283-1-BKS LCSD Sample Id: 666283-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dibromoethane	<0.00600	0.150	0 146	97	0.143	95	60-140	2	30	ug/L	12 30.14 03 07	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	106		97		100		60-140	%	12.30 14 03 07

Analytical Method: **EDB by EPA 8011** Prep Method: SW8011P
Seq Number: 958577 Matrix: Ground Water Date Prep: 12.22.14
Parent Sample Id: 499392-003 MS Sample Id: 499392-003 S MSD Sample Id: 499392-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dibromoethane	<0.00615	0.154	0 156	101	0 165	108	60-140	6	30	ug/L	12 29 14 17 59	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	98		104		60-140	%	12 29 14 17:59

Analytical Method: **EDB by EPA 8011** Prep Method: SW8011P
Seq Number: 958600 Matrix: Ground Water Date Prep: 12.23.14
Parent Sample Id: 499393-002 MS Sample Id: 499393-002 S MSD Sample Id: 499393-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dibromoethane	<0 00597	0 149	0 121	81	0.162	109	60-140	29	30	ug/L	12.30.14 04.42	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	88		86		60-140	%	12 30.14 04:42

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958274 Matrix: Water Date Prep: 12.22.14
MB Sample Id: 666268-1-BLK LCS Sample Id: 666268-1-BKS LCSD Sample Id: 666268-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50 0	55.5	111	55.6	111	70-130	0	20	ug/L	12 22 14 08 44	
Benzene	<0 160	50 0	49.6	99	51 0	102	80-120	3	20	ug/L	12 22 14 08 44	
Diisopropyl ether	<0 0800	50.0	46.5	93	53 9	108	65-135	15	20	ug/L	12 22.14 08:44	
Ethanol	<8 00	2000	1600	80	2250	113	65-135	34	20	ug/L	12 22 14 08 44	F
Ethyl tert-butyl alcohol	<1 10	500	475	95	492	98	40-140	4	20	ug/L	12.22.14 08.44	
Ethyl tert-butyl ether	<0 300	50.0	46 9	94	50.6	101	65-135	8	20	ug/L	12 22 14 08 44	
Ethylbenzene	<0 190	50.0	50 0	100	50 2	100	75-125	0	20	ug/L	12.22.14 08.44	
Methyl tert-butyl ether	<0.180	100	102	102	106	106	65-125	4	20	ug/L	12 22 14 08 44	
Naphthalene	<0.220	50.0	56.7	113	53.3	107	55-140	6	20	ug/L	12 22 14 08 44	
tert-Amyl alcohol	<1 10	500	508	102	536	107	40-140	5	20	ug/L	12 22 14 08 44	
tert-Amyl methyl ether	<0 300	50 0	49.5	99	50 4	101	65-135	2	20	ug/L	12.22 14 08 44	
tert-Butyl alcohol	<1.00	500	517	103	600	120	65-135	15	20	ug/L	12.22 14 08 44	
tert-Butyl formate	<1 00	500	256	51	255	51	40-140	0	20	ug/L	12.22 14 08 44	
Toluene	<0 140	50 0	50.1	100	49.4	99	75-120	1	20	ug/L	12.22 14 08 44	
m,p-Xylenes	<0 510	100	101	101	98 1	98	75-130	3	20	ug/L	12.22 14 08 44	
o-Xylene	<0.200	50.0	53.9	108	49 8	100	80-120	8	20	ug/L	12 22 14 08 44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	113		97		103		53-159	%	12 22.14 08 44
4-Bromofluorobenzene	104		100		103		30-186	%	12 22 14 08 44
Toluene-D8	98		93		98		70-130	%	12 22.14 08:44

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958253 Matrix: Water Date Prep: 12.22.14
MB Sample Id: 666256-1-BLK LCS Sample Id: 666256-1-BKS LCSD Sample Id: 666256-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0.180	50 0	52 2	104	50.9	102	70-130	3	20	ug/L	12 22.14 08:44	
Benzene	<0 160	50 0	49.6	99	46 7	93	80-120	6	20	ug/L	12 22.14 08 44	
Diisopropyl ether	<0 0800	50 0	51 7	103	47.8	96	65-135	8	20	ug/L	12 22 14 08 44	
Ethanol	<8 00	2000	1520	76	1390	70	65-135	9	20	ug/L	12 22 14 08 44	
Ethyl tert-butyl alcohol	<1.10	500	490	98	448	90	40-140	9	20	ug/L	12 22 14 08 44	
Ethyl tert-butyl ether	<0 300	50 0	57.9	116	59.6	119	65-135	3	20	ug/L	12 22 14 08.44	
Ethylbenzene	<0 190	50 0	51 1	102	49.5	99	75-125	3	20	ug/L	12 22 14 08 44	
Methyl tert-butyl ether	<0 180	100	114	114	119	119	65-125	4	20	ug/L	12 22 14 08 44	
Naphthalene	<0 220	50 0	42 8	86	42 2	84	55-140	1	20	ug/L	12 22 14 08 44	
tert-Amyl alcohol	<1.10	500	509	102	457	91	40-140	11	20	ug/L	12 22 14 08 44	
tert-Amyl methyl ether	<0 300	50 0	56.6	113	54 0	108	65-135	5	20	ug/L	12 22 14 08 44	
tert-Butyl alcohol	<1 00	500	452	90	492	98	65-135	8	20	ug/L	12.22 14 08 44	
tert-Butyl formate	<1 00	500	289	58	287	57	40-140	1	20	ug/L	12.22 14 08:44	
Toluene	<0.140	50 0	47.3	95	44.0	88	75-120	7	20	ug/L	12.22 14 08 44	
m,p-Xylenes	<0.510	100	103	103	97 6	98	75-130	5	20	ug/L	12.22 14 08.44	
o-Xylene	<0.200	50.0	52 8	106	50 7	101	80-120	4	20	ug/L	12.22.14 08.44	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	117		106		111		53-159	%	12 22.14 08:44
4-Bromofluorobenzene	109		92		90		30-186	%	12 22 14 08:44
Toluene-D8	97		99		94		70-130	%	12 22.14 08:44

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958478 Matrix: Water Date Prep: 12.24.14
MB Sample Id: 666390-1-BLK LCS Sample Id: 666390-1-BKS LCSD Sample Id: 666390-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50 0	52.7	105	52.1	104	70-130	1	20	ug/L	12 24 14 09:53	
Benzene	<0.160	50 0	47 6	95	45.5	91	80-120	5	20	ug/L	12 24 14 09.53	
Diisopropyl ether	<0 0800	50 0	45 4	91	42.7	85	65-135	6	20	ug/L	12 24 14 09.53	
Ethanol	<8 00	2000	1740	87	1610	81	65-135	8	20	ug/L	12 24 14 09.53	
Ethyl tert-butyl alcohol	<1 10	500	448	90	404	81	40-140	10	20	ug/L	12 24 14 09 53	
Ethyl tert-butyl ether	<0 300	50 0	44.8	90	43 4	87	65-135	3	20	ug/L	12 24.14 09.53	
Ethylbenzene	<0.190	50 0	49 1	98	47 9	96	75-125	2	20	ug/L	12 24.14 09.53	
Methyl tert-butyl ether	<0 180	100	98.9	99	93 8	94	65-125	5	20	ug/L	12 24.14 09.53	
Naphthalene	<0 220	50.0	53 4	107	53.7	107	55-140	1	20	ug/L	12 24.14 09 53	
tert-Amyl alcohol	<1 10	500	504	101	448	90	40-140	12	20	ug/L	12 24 14 09.53	
tert-Amyl methyl ether	<0.300	50.0	47.4	95	45 0	90	65-135	5	20	ug/L	12 24.14 09 53	
tert-Butyl alcohol	<1 00	500	582	116	509	102	65-135	13	20	ug/L	12 24 14 09 53	
tert-Butyl formate	<1 00	250	218	87	226	90	40-140	4	20	ug/L	12.24 14 09 53	
Toluene	<0.140	50 0	47.5	95	46 2	92	75-120	3	20	ug/L	12.24.14 09.53	
m,p-Xylenes	<0 510	100	98 3	98	96.9	97	75-130	1	20	ug/L	12 24 14 09 53	
o-Xylene	<0.200	50.0	51 2	102	49 9	100	80-120	3	20	ug/L	12 24.14 09 53	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	99		97		98		53-159	%	12 24 14 09:53
4-Bromofluorobenzene	90		94		92		30-186	%	12 24.14 09:53
Toluene-D8	92		92		92		70-130	%	12 24.14 09 53

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B

Seq Number: 958439 Matrix: Water Date Prep: 12.24.14

MB Sample Id: 666368-1-BLK LCS Sample Id: 666368-1-BKS LCSD Sample Id: 666368-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50 0	48.9	98	58.0	116	70-130	17	20	ug/L	12.24 14 13 58	
Benzene	<0.160	50.0	51.9	104	58 9	118	80-120	13	20	ug/L	12 24.14 13 58	
Diisopropyl ether	<0 0800	50.0	57.5	115	58.2	116	65-135	1	20	ug/L	12 24 14 13.58	
Ethanol	<8 00	2000	2190	110	2210	111	65-135	1	20	ug/L	12 24.14 13 58	
Ethyl tert-butyl alcohol	<1 10	500	508	102	625	125	40-140	21	20	ug/L	12 24 14 13 58	F
Ethyl tert-butyl ether	<0 300	50.0	57.4	115	57.7	115	65-135	1	20	ug/L	12 24 14 13 58	
Ethylbenzene	<0 190	50.0	47.5	95	57 2	114	75-125	19	20	ug/L	12 24.14 13.58	
Methyl tert-butyl ether	<0 180	100	125	125	102	102	65-125	20	20	ug/L	12 24.14 13·58	
Naphthalene	<0 220	50.0	56 8	114	56.5	113	55-140	1	20	ug/L	12 24.14 13 58	
tert-Amyl alcohol	<1.10	500	508	102	608	122	40-140	18	20	ug/L	12.24.14 13.58	
tert-Amyl methyl ether	<0 300	50 0	47 7	95	57.9	116	65-135	19	20	ug/L	12 24.14 13 58	
tert-Butyl alcohol	<1 00	500	510	102	512	102	65-135	0	20	ug/L	12.24.14 13 58	
tert-Butyl formate	<1 00	500	287	57	289	58	40-140	1	20	ug/L	12 24 14 13·58	
Toluene	<0.140	50.0	50.0	100	59 7	119	75-120	18	20	ug/L	12 24 14 13 58	
m,p-Xylenes	<0 510	100	92 8	93	111	111	75-130	18	20	ug/L	12 24 14 13 58	
o-Xylene	<0 200	50.0	46 4	93	55.9	112	80-120	19	20	ug/L	12 24 14 13 58	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	106		97		96		53-159	%	12 24 14 13·58
4-Bromofluorobenzene	111		92		91		30-186	%	12 24 14 13 58
Toluene-D8	98		79		98		70-130	%	12 24 14 13 58

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B

Seq Number: 958485 Matrix: Water Date Prep: 12.26.14

MB Sample Id: 666400-1-BLK LCS Sample Id: 666400-1-BKS LCSD Sample Id: 666400-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50.0	43.1	86	43 4	87	70-130	1	20	ug/L	12 26 14 12 04	
Benzene	<0.160	50 0	52.1	104	53 6	107	80-120	3	20	ug/L	12 26 14 12·04	
Diisopropyl ether	<0 0800	50 0	58 3	117	59 6	119	65-135	2	20	ug/L	12 26 14 12 04	
Ethanol	<8 00	2000	1670	84	2070	104	65-135	21	20	ug/L	12 26 14 12.04	F
Ethyl tert-butyl alcohol	<1.10	500	494	99	511	102	40-140	3	20	ug/L	12 26 14 12 04	
Ethyl tert-butyl ether	<0 300	50 0	62.1	124	62 7	125	65-135	1	20	ug/L	12 26 14 12 04	
Ethylbenzene	<0 190	50 0	51.0	102	51.5	103	75-125	1	20	ug/L	12 26 14 12.04	
Methyl tert-butyl ether	<0 180	100	117	117	126	126	65-125	7	20	ug/L	12 26 14 12 04	H
Naphthalene	<0.220	50 0	45.1	90	46.3	93	55-140	3	20	ug/L	12 26 14 12 04	
tert-Amyl alcohol	<1 10	500	461	92	474	95	40-140	3	20	ug/L	12 26 14 12 04	
tert-Amyl methyl ether	<0 300	50.0	55 1	110	55 3	111	65-135	0	20	ug/L	12 26 14 12·04	
tert-Butyl alcohol	<1 00	500	473	95	474	95	65-135	0	20	ug/L	12 26 14 12 04	
tert-Butyl formate	<1 00	500	310	62	313	63	40-140	1	20	ug/L	12 26 14 12 04	
Toluene	<0 140	50 0	48 6	97	49 1	98	75-120	1	20	ug/L	12 26 14 12.04	
m,p-Xylenes	<0.510	100	105	105	106	106	75-130	1	20	ug/L	12 26 14 12 04	
o-Xylene	<0 200	50 0	53 9	108	54 9	110	80-120	2	20	ug/L	12.26.14 12 04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	88		80		81		53-159	%	12 26 14 12·04
4-Bromofluorobenzene	111		94		91		30-186	%	12.26.14 12.04
Toluene-D8	92		93		91		70-130	%	12.26 14 12 04

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958274 Matrix: Ground Water Date Prep: 12.22.14
Parent Sample Id: 499393-005 MS Sample Id: 499393-005 S MSD Sample Id: 499393-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50.0	56.2	112	56 3	113	55-141	0	20	ug/L	12 22 14 18:20	
Benzene	<0.160	50 0	51.8	104	51 6	103	77-118	0	20	ug/L	12 22 14 18:20	
Diisopropyl ether	<0 0800	50.0	55.2	110	54 6	109	59-148	1	20	ug/L	12 22 14 18:20	
Ethanol	<8 00	2000	1960	98	2180	109	38-162	11	20	ug/L	12 22 14 18 20	
Ethyl tert-butyl alcohol	<1.10	500	380	76	456	91	17-136	18	20	ug/L	12 22 14 18:20	
Ethyl tert-butyl ether	<0 300	50 0	51 1	102	50.7	101	66-135	1	20	ug/L	12 22 14 18:20	
Ethylbenzene	<0 190	50 0	51.3	103	50.2	100	66-127	2	20	ug/L	12.22.14 18.20	
Methyl tert-butyl ether	<0 180	100	107	107	108	108	58-141	1	20	ug/L	12 22.14 18.20	
Naphthalene	<0.220	50.0	49.5	99	52.7	105	30-148	6	20	ug/L	12 22 14 18 20	
tert-Amyl alcohol	<1 10	500	563	113	506	101	40-140	11	20	ug/L	12 22 14 18:20	
tert-Amyl methyl ether	<0 300	50.0	51 1	102	49.9	100	56-136	2	20	ug/L	12 22 14 18:20	
tert-Butyl alcohol	<1 00	500	483	97	581	116	65-135	18	20	ug/L	12 22 14 18 20	
tert-Butyl formate	<1 00	500	157	31	120	24	25-148	27	20	ug/L	12 22.14 18 20	XF
Toluene	<0 140	50.0	50 2	100	49.4	99	65-123	2	20	ug/L	12 22.14 18.20	
m,p-Xylenes	<0 510	100	99.4	99	98.3	98	65-126	1	20	ug/L	12 22.14 18.20	
o-Xylene	<0 200	50 0	50 2	100	49.5	99	64-123	1	20	ug/L	12 22 14 18 20	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	104		106		53-159	%	12 22.14 18 20
4-Bromofluorobenzene	104		104		30-186	%	12 22.14 18.20
Toluene-D8	99		97		70-130	%	12 22.14 18:20

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958253 Matrix: Ground Water Date Prep: 12.22.14
Parent Sample Id: 499393-015 MS Sample Id: 499393-015 S MSD Sample Id: 499393-015 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50.0	42 5	85	41.6	83	55-141	2	20	ug/L	12 22 14 18:53	
Benzene	<0 160	50 0	50 0	100	48.3	97	77-118	3	20	ug/L	12 22 14 18 53	
Diisopropyl ether	<0.0800	50 0	52 4	105	51.5	103	59-148	2	20	ug/L	12 22 14 18 53	
Ethanol	<8 00	2000	1910	96	1860	93	38-162	3	20	ug/L	12 22 14 18 53	
Ethyl tert-butyl alcohol	<1.10	500	407	81	403	81	17-136	1	20	ug/L	12 22 14 18 53	
Ethyl tert-butyl ether	<0.300	50 0	54.9	110	54.3	109	66-135	1	20	ug/L	12 22.14 18 53	
Ethylbenzene	<0 190	50.0	47.2	94	46 1	92	66-127	2	20	ug/L	12 22.14 18 53	
Methyl tert-butyl ether	<0 180	100	138	138	119	119	58-141	15	20	ug/L	12 22.14 18 53	
Naphthalene	<0 220	50.0	38 7	77	39.3	79	30-148	2	20	ug/L	12 22.14 18.53	
tert-Amyl alcohol	<1.10	500	418	84	419	84	40-140	0	20	ug/L	12.22 14 18:53	
tert-Amyl methyl ether	<0 300	50.0	50 3	101	49.2	98	56-136	2	20	ug/L	12 22.14 18:53	
tert-Butyl alcohol	<1.00	500	438	88	450	90	65-135	3	20	ug/L	12.22.14 18 53	
tert-Butyl formate	<1 00	500	274	55	272	54	25-148	1	20	ug/L	12 22 14 18 53	
Toluene	<0 140	50.0	45 0	90	44.3	89	65-123	2	20	ug/L	12 22 14 18 53	
m,p-Xylenes	<0.510	100	93 4	93	93 3	93	65-126	0	20	ug/L	12 22 14 18:53	
o-Xylene	<0 200	50 0	49.0	98	47 4	95	64-123	3	20	ug/L	12 22 14 18 53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	91		90		53-159	%	12 22.14 18 53
4-Bromofluorobenzene	99		98		30-186	%	12.22 14 18 53
Toluene-D8	94		93		70-130	%	12.22.14 18 53

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B

Seq Number: 958478 Matrix: Ground Water Date Prep: 12.24.14

Parent Sample Id: 499393-007 MS Sample Id: 499393-007 S MSD Sample Id: 499393-007 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50 0	59 8	120	59 2	118	55-141	1	20	ug/L	12 24 14 19:41	
Benzene	<0 160	50.0	53.8	108	52 7	105	77-118	2	20	ug/L	12.24 14 19 41	
Diisopropyl ether	<0 0800	50 0	49.4	99	49.8	100	59-148	1	20	ug/L	12 24.14 19.41	
Ethanol	<8.00	2000	1680	84	1740	87	38-162	4	20	ug/L	12 24 14 19 41	
Ethyl tert-butyl alcohol	<1 10	500	387	77	410	82	17-136	6	20	ug/L	12 24 14 19.41	
Ethyl tert-butyl ether	<0.300	50.0	50 4	101	50 6	101	66-135	0	20	ug/L	12 24.14 19.41	
Ethylbenzene	<0 190	50.0	51 7	103	51.3	103	66-127	1	20	ug/L	12 24.14 19:41	
Methyl tert-butyl ether	<0 180	100	114	114	112	112	58-141	2	20	ug/L	12 24.14 19.41	
Naphthalene	<0 220	50.0	52.0	104	59.0	118	30-148	13	20	ug/L	12 24.14 19 41	
tert-Amyl alcohol	<1 10	500	475	95	488	98	40-140	3	20	ug/L	12 24 14 19.41	
tert-Amyl methyl ether	<0 300	50.0	50 5	101	50.7	101	56-136	0	20	ug/L	12.24.14 19.41	
tert-Butyl alcohol	<1 00	500	561	112	596	119	65-135	6	20	ug/L	12 24 14 19 41	
tert-Butyl formate	<1.00	250	121	48	126	50	25-148	4	20	ug/L	12.24 14 19.41	
Toluene	<0.140	50 0	51.6	103	51.2	102	65-123	1	20	ug/L	12 24 14 19 41	
m,p-Xylenes	<0.510	100	105	105	103	103	65-126	2	20	ug/L	12 24 14 19 41	
o-Xylene	<0.200	50 0	54.3	109	53.1	106	64-123	2	20	ug/L	12.24 14 19 41	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	98		98		53-159	%	12 24 14 19.41
4-Bromofluorobenzene	92		92		30-186	%	12 24 14 19:41
Toluene-D8	91		92		70-130	%	12.24.14 19:41

XENCO Laboratories
Florida Testing Services, LLC

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B
Seq Number: 958439 Matrix: Ground Water Date Prep: 12.24.14
Parent Sample Id: 499405-002 MS Sample Id: 499405-002 S MSD Sample Id: 499405-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0.180	50 0	56.7	113	57 0	114	55-141	1	20	ug/L	12.25 14 00 09	
Benzene	<0 160	50.0	56 1	112	58 5	117	77-118	4	20	ug/L	12 25.14 00 09	
Diisopropyl ether	<0 0800	50 0	59 1	118	58 2	116	59-148	2	20	ug/L	12 25 14 00 09	
Ethanol	<8.00	2000	2170	109	1970	99	38-162	10	20	ug/L	12 25 14 00 09	
Ethyl tert-butyl alcohol	<1.10	500	529	106	537	107	17-136	2	20	ug/L	12 25.14 00 09	
Ethyl tert-butyl ether	<0 300	50.0	56.6	113	57.3	115	66-135	1	20	ug/L	12 25 14 00 09	
Ethylbenzene	<0 190	50 0	56.4	113	54.8	110	66-127	3	20	ug/L	12 25 14 00.09	
Methyl tert-butyl ether	<0 180	100	120	120	126	126	58-141	5	20	ug/L	12 25.14 00:09	
Naphthalene	3 19	50 0	54 6	103	53 5	101	30-148	2	20	ug/L	12.25.14 00 09	
tert-Amyl alcohol	<1.10	500	525	105	525	105	40-140	0	20	ug/L	12 25.14 00 09	
tert-Amyl methyl ether	<0 300	50 0	55 3	111	55 7	111	56-136	1	20	ug/L	12 25 14 00 09	
tert-Butyl alcohol	<1.00	500	523	105	507	101	65-135	3	20	ug/L	12 25.14 00 09	
tert-Butyl formate	<1.00	500	283	57	287	57	25-148	1	20	ug/L	12.25.14 00 09	
Toluene	<0 140	50.0	58 4	117	59.2	118	65-123	1	20	ug/L	12 25.14 00 09	
m,p-Xylenes	<0 510	100	111	111	107	107	65-126	4	20	ug/L	12 25 14 00 09	
o-Xylene	<0 200	50.0	55 2	110	54 4	109	64-123	1	20	ug/L	12 25 14 00 09	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	96		97		53-159	%	12 25.14 00 09
4-Bromofluorobenzene	99		99		30-186	%	12 25 14 00 09
Toluene-D8	97		96		70-130	%	12 25.14 00 09

QC Summary 499393

Cardno-ATC

Former United Oil UST# 11760

Analytical Method: **Select VOCs by SW-846 8260B** Prep Method: SW5030B

Seq Number: 958485 Matrix: Ground Water Date Prep: 12.26.14

Parent Sample Id: 499581-001 MS Sample Id: 499581-001 S MSD Sample Id: 499581-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
1,2-Dichloroethane	<0 180	50.0	43 9	88	45 2	90	55-141	3	20	ug/L	12.26 14 20 33	
Benzene	<0 160	50.0	51 2	102	52 7	105	77-118	3	20	ug/L	12.26 14 20 33	
Diisopropyl ether	<0.0800	50 0	56 7	113	59 3	119	59-148	4	20	ug/L	12 26 14 20 33	
Ethanol	<8 00	2000	1920	96	2050	103	38-162	7	20	ug/L	12 26 14 20.33	
Ethyl tert-butyl alcohol	<1.10	500	450	90	497	99	17-136	10	20	ug/L	12 26 14 20:33	
Ethyl tert-butyl ether	<0 300	50 0	60.1	120	61 7	123	66-135	3	20	ug/L	12 26.14 20.33	
Ethylbenzene	<0.190	50 0	49.6	99	50 7	101	66-127	2	20	ug/L	12 26 14 20 33	
Methyl tert-butyl ether	<0 180	100	164	164	134	134	58-141	20	20	ug/L	12 26 14 20 33	X
Naphthalene	<0 220	50.0	45 5	91	46 6	93	30-148	2	20	ug/L	12 26 14 20.33	
tert-Amyl alcohol	<1 10	500	478	96	518	104	40-140	8	20	ug/L	12 26 14 20 33	
tert-Amyl methyl ether	<0 300	50.0	53 5	107	56.2	112	56-136	5	20	ug/L	12.26.14 20:33	
tert-Butyl alcohol	<1 00	500	773	155	706	141	65-135	9	20	ug/L	12.26.14 20:33	X
tert-Butyl formate	<1 00	500	300	60	308	62	25-148	3	20	ug/L	12 26.14 20:33	
Toluene	0 570	50 0	48 2	95	49.5	98	65-123	3	20	ug/L	12 26 14 20.33	
m,p-Xylenes	0 860	100	102	101	104	103	65-126	2	20	ug/L	12 26 14 20 33	
o-Xylene	0.670	50 0	52 0	103	54 4	107	64-123	5	20	ug/L	12 26 14 20 33	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,2-Dichloroethane-D4	85		84		53-159	%	12.26 14 20 33
4-Bromofluorobenzene	96		97		30-186	%	12.26 14 20 33
Toluene-D8	90		91		70-130	%	12 26 14 20:33

WO# 199393

PAGE 1 OF 3

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

LSR-F005.00

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job # 1

Client / Reporting Information

Company Name: CARDNO
Street Address: 400 NORTHEAST DRIVE SUITE G
City, State, Zip: COLUMBIA, SC 29203
Project Contact: FRED LYKE
E-mail:
Phone #: 803-735-0003
Fax #:
Sampler(s) Name(s): C. HAMILTON, C. STRANGE, W. FOGLE, J. Monaghan
Phone #: CS

Project Information

Project Name: FORMER UNITED OIL VST# 11760
Street: 401 NORTH CONGRESS ST
City, State: WINNSBORO SC
Project #:
Client Purchase Order #:
Project Manager: FRED LYKE

Billing Information (if different from Report to)

Company Name:
Street Address:
City, State, Zip:
Attention:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260B (BTEX, MTBE, MAH, 12 OXYGENATES)	8011 (EDB)
	11760 MW-1	12-18-14	09:14	CS	GW	6	6												3	3
	MW-3		09:26																	
	MW-4R		09:41																	
	MW-5		11:10																	
	MW-6R		10:10																	
	MW-8		11:20																	
	MW-9R		09:40																	
	MW-10		13:31																	
	MW-11		13:05																	
	MW-12		12:20																	
	MW-13		12:58																	
	MW-14		11:16																	

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

LAB USE ONLY

Turnaround Time (Business days)

- [x] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

To Zenco

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	12-19-14 17:00	1 [signature] 12-19-14 17:00	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ]

On Ice: Y Cooler Temp. 1.3

Final 1.000

WO# 499393

PAGE 2 OF 3

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

LSR-F005.00

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

Client / Reporting Information

Company Name: CARDNO
Street Address: 400 NORTHEAST DRIVE SUITE Q.
City / State / Zip: COLUMBIA, SC 29203
Project Contact: FRED LYKE
E-mail:
Phone #: 803-735-0003
Fax #:
Sampler(s) Name(s): C. HAMILTON, C. STRANGE, W. POGLE, J. Monaghan
Phone #:

Project Information

Project Name: FORMER UNITED OIL VST # 11760
Street: 401 NORTH CONGRESS ST.
City / State: WINNSBORO SC
Project #:
Client Purchase Order #:
Project Manager: FRED LYKE

Billing Information (if different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analyses: 8260 B (BTEX, MTBE, NAPH, 1,2 DCA + 6 OXYGENATES); 8011 (EDB)

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260 B	8011 (EDB)	LAB USE ONLY
	11760 MW-15	12-18-14	11:55	CS	GW	6	6												3	3	
	MW-16		12:50																		
	MW-17		14:35																		
	MW-18		12:33																		
	MW-19		13:25																		
	MW-20		13:40																		
	MW-21	12-19-14	10:01																		
	MW-22	12-19-14	10:31																		
	MW-23	12-19-14	11:29																		
	MW-24	12-19-14	11:11																		
	MW-25	12-19-14	10:21																		
	MW-26	12-18-14	15:19																		

Turnaround Time (Business days)

- [x] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

To Zenco

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
[signature] 12-19-14	17:00	[signature] 12-19-14 17:00	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ]

On Ice: ✓ Cooler Temp. 1.3 °C

WO # 499393

CHAIN OF CUSTODY

LSR-F005.00

ACCUTEST LABORATORIES

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
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FED-EX Tracking #	Bottle Order Control #
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Street Address: 400 NORTH EAST DRIVE SUITE G
City / State / Zip: COLUMBIA, SC 29203
Project Contact / E-mail: FRED LYKE
Phone #: 803-735-0003 / Fax #:
Sampler(s) Name(s) / Phone #: C. HAMILTON, C. STRANGE, W. FOGLE [redacted] CS
J. Monaghan

Project Information

Project Name: FORMER UNITED OIL UST # 11760
Street: 401 NORTH CONGRESS ST
City / State: WINNSBORO SC
Project #:
Client Purchase Order #:
Project Manager: FRED LYKE
Attention:

Billing Information (if different from Report to)

Company Name:
Street Address:
City / State / Zip:

Requested Analyses

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	8260 B (BTEX, MTBE, MAPA, 1,2 DCA + 8 OXYGENATES)	6011 (EDB)
	11760 MW-27	12-18-14	09:40	CS	GW	6	6												6	6
	~~MW-28~~	~~12-18-14~~																		
	DW-1	12-19-14	12:01	CS																
	DW-2	12-19-14	10:19	CS																
	CK-1	12-18-14	14:31	CS	SW															
	DUP-1		11:19	CS	GW															
	DUP-2		11:59	CS																
	FIELD BLANK-1		09:31	CS	FB															
	FIELD BLANK-2	12-19-14	12:21	CS																
	~~FIELD BLANK-3~~																			
	TRIP BLANK-1	12-18-14	08:00	TB	TB	3	3												3	
	TRIP BLANK-2	12-18-14	08:00	TB		3	3												3	

C.M.H. CS

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

LAB USE ONLY

Turnaround Time (Business days)

- [x] Standard
- [ ] 5 Day *RUSH*
- [ ] 4 Day *RUSH*
- [ ] 3 Day *RUSH*
- [ ] 2 Day *RUSH*
- [ ] 1 Day *EMERGENCY*

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C"
- [ ] TRRP
- [ ] EDD Format
- [ ] Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

To Zenco

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
12-19-14	17:00	12-19-14 17:00	2		2
Relinquished by Sampler: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	[ ] Intact [ ] Not intact	Preserved where applicable [ ]

On Ice [x] Cooler Temp. 1.3 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Cardno-ATC

Date/ Time Received: 12/20/2014 10:00:00 AM

Work Order #: 499393

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : #61

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.3	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6 *Custody Seals Signed and dated?	**Yes**	
#7 *Chain of Custody present?	**Yes**	
#8 Sample instructions complete on Chain of Custody?	**Yes**	
#9 Any missing/extra samples?	**No**	Received MW-28, did not receive MW-27
#10 Chain of Custody signed when relinquished/ received?	**Yes**	
#11 Chain of Custody agrees with sample label(s)?	**Yes**	
#12 Container label(s) legible and intact?	**Yes**	
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**	
#14 Samples in proper container/ bottle?	**Yes**	
#15 Samples properly preserved?	**Yes**	
#16 Sample container(s) intact?	**Yes**	
#17 Sufficient sample amount for indicated test(s)?	**Yes**	
#18 All samples received within hold time?	**Yes**	
#19 Subcontract of sample(s)?	**No**	
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**Yes**	
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**	
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**	

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Dario Lagunas Date: 12/20/2014

Checklist reviewed by: Mike Kimmel Date: 12/22/2014

APPENDIX C

DISPOSAL CERTIFICATE

Cardno
Shaping the Future

February 24, 2015

Cardno

400 Northeast Drive
Unit Q
Columbia, SC 29203

Phone +1 803 735 0003
Fax +1 803 735 0443
www.cardno.com

www.cardno.com

Re: Treatment of Purge Water
Former United Oil
Winnsboro, Fairfield County, South Carolina
UST Permit #11760

To Whom It May Concern:

Cardno submits this letter as certification of treatment of purge water at the **Former United Oil** facility complied with the adsorption use of portable activated carbon units for the treatment of small volumes of suspected petroleum hydrocarbon contaminated groundwater. Water is treated on site with pour through\up flow treatment container filled with activated carbon. The carbon will be replaced or reactivated at 8,000 gallons of treated water or once total organic compound exceed manufacture conditions of 3.5 pounds. Data concerning gallons treated or adsorption capacity is available upon request. Should you have any questions or require additional information, please contact me at 735-0003.

The water obtained from development \sampling the groundwater monitoring wells at the site was treated with activated carbon. A total of **128.5** gallons of water was treated at the site on December 18, 2014 and December 19, 2014.

Free phase hydrocarbons were detected in monitoring wells 11760 MW-2, 11760 MW-28, and 11760 MW-29.

Cardno maintains records of treated water.

The carbon will be replaced or reactivated every 8,000 gallons.

Petroleum hydrocarbons analytical results from the site wells report Benzene concentrations at 17,500 parts per billion (ppb) or less and total BTEX concentrations at 39,300 ppb or less.

Recommendations issued by SCDHEC and the manufacturer have and will be followed.

Development\sampling purge water from all wells is mixed before treatment with the activated carbon.

Cardno

Braden Belding

Braden Belding
Staff Geologist

APPENDIX D

SCDHEC QAPP APPENDIX K

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Are Facility Name, Permit #, and address provided?	X		
2	Is UST Owner/Operator name, address, & phone number provided?	X		
3	Are name, address, & phone number of current property owner provided?	X		
4	Are the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	X		
5	Are the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	X		
6	Are the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	X		
7	Has the facility history been summarized?	X		
8	Has the regional geology and hydrogeology been described?			X
9	Are the receptor survey results provided as required?			X
10	Has current use of the site and adjacent land been described?	X		
11	Has the site-specific geology and hydrogeology been described?			X
12	Has the primary soil type been described?			X
13	Have field screening results been described?			X
14	Has a description of the soil sample collection and preservation been detailed?			X
15	Has the field screening methodology and procedure been detailed?			X
16	Has the monitoring well installation and development dates been provided?			X
17	Has the method of well development been detailed?			X
18	Has justification been provided for the locations of the monitoring wells?			X
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	X		
20	Has the groundwater sampling methodology been detailed?	X		
21	Have the groundwater sampling dates and groundwater measurements been provided?	X		
22	Has the purging methodology been detailed?	X		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	X		
24	If free-product is present, has the thickness been provided?	X		
25	Does the report include a brief discussion of the assessment done and the results?	X		
26	Does the report include a brief discussion of the aquifer evaluation and results?			X
27	Does the report include a brief discussion of the fate & transport models used?			X

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			X
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			X
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			X
31	Have recommendations for further action been provided and explained?	X		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			X
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	X		
34	Has the current and historical laboratory data been provided in tabular format?	X		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			X
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			X
37	Has the topographic map been provided with all required elements? (Figure 1)	X		
38	Has the site base map been provided with all required elements? (Figure 2)	X		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	X		
40	Has the site potentiometric map been provided? (Figure 5)	X		
41	Have the geologic cross-sections been provided? (Figure 6)			X
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			X
43	Has the site survey been provided and include all necessary elements? (Appendix A)		X	
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	X		
45	Is the laboratory performing the analyses properly certified?	X		
46	Has the tax map been included with all necessary elements? (Appendix C)			X
47	Have the soil boring/field screening logs been provided? (Appendix D)			X
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			X
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			X
50	Have the disposal manifests been provided? (Appendix G)	X		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			X
52	Has all fate and transport modeling been provided? (Appendix I)			X
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			X
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	X		

Explanation for missing and incomplete information

The directive and QAPP for this site involves the work done for a Groundwater Monitoring Report. Any information that was not required or approved in the QAPP for the scope of work was not included.

APPENDIX E

SCDHEC QAPP APPENDIX M

UST Permit #

(Facility Name)

Date	Current Status	Deficiency	Corrective Action Taken	Date Deficiency resolved
1-28-2015	Laboratory Analyses	Xylenes, Naphthalene, 3,3-Dimethylbutanol, Tert butyl alcohol, and Tert amyl alcohol exceeded 20% Precision Limit	Lab review showed no inconsistencies (See email response)	2-28-2015

Comments:

Jesse Keeffe

From: Mike Kimmel <mike.kimmel@xenco.com>
Sent: Wednesday, January 28, 2015 1:24 PM
To: Jesse Keeffe
Cc: jesse.keeffe@cardno.com; Braden Belding
Subject: Re: United Oil Data

I had the lab director double check the values reported for MW-14 and Dup 1 and MW-15 and Dup 2. The values reported are correct.

Between MW-14 and Dup 1: On the Dup-1 sample the internal standard for the analysis was almost twice as high as in MW-14, but still within method control limits. A higher internal standard will bias the results lower. Also the dilutions used to run and report the final results were different between the two samples which will effect the results to some extent. The last item to point out is that a sample with dilutions that are run to get a target analyte within calibration range of the instrument: As the amount of dilution increases up, the Percentage RPD between the different diluted runs will increase.

Between MW-15 and Dup #2: The dilutions used to run and report the final results for these two samples were different, which will effect the results to some extent. As above, as the amount of dilution increases up, the Percentage RPD between the different diluted runs will increase.

I hope that answers your questions on the aboved referenced samples. If you have any further questions, please feel free to contact me.

On Wed, Jan 28, 2015 at 8:54 AM, Jesse Keeffe <jesse.keeffe@atcassociates.com> wrote:

Here is the table of the results.

Thanks Mike,

Jesse

Jesse Keeffe
PROJECT MANAGER
CARDNO ATC
Cardno
Shaping the Future
Phone (+1) 803-735-0003 Ext. 109 Fax (+1) 803-735-0443 Mobile (+1) 803-760-8797
Address 400 Northeast Drive, Unit Q, Columbia, SC 29203
Email jesse.keeffe@cardno.com Web www.cardnoatc.com - www.cardno.com

This email and its attachments may contain confidential and/or privileged information for the sole use of the intended recipient(s). All electronically supplied data must be checked against an applicable hardcopy version which shall be the only document which Cardno warrants accuracy. If you are not the intended recipient, any use, distribution or copying of the information contained in this email and its attachments is strictly prohibited. If you have received this email in error, please

Groundwater Monitoring Report
Former United Oil (United Exxon)
401 North Congress Street
Winnsboro, Fairfield County, South Carolina
UST Permit #11760; CA #48948
Cardno Project #14.25384.0012

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 01 2009

BILLY KEENAN
KEENAN OIL COMPANY, INC.
3923 WEST BELTLINE BOULEVARD
COLUMBIA, SC 29204

Re: **AFVR, Well Replacement, & Groundwater Sampling Directive**
Former United Exxon, 401 North Congress Street, Winnsboro, SC 29180
UST Permit # 11760; CA# 36932 (Rel. 2) & 36933 (Rel. 3); MWA# UMW-23084
Releases 2 and 3 reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the file and the next necessary scope of work is to install three (3) new monitoring wells in the vicinity of MW-2 as recommended. After installation of new wells, conduct four (4) Aggressive Fluid/Vapor Recovery (AFVR) events to remove free phase product from monitoring wells. These events should be performed on the newly installed monitoring wells as well as MW2 and MW13. Approximately one (1) month after completion of the AFVR events, a comprehensive groundwater sampling event should be completed to obtain current data.

Samples from all monitoring wells should be collected and analyzed for BTEX, naphthalene, MTBE, and 1,2-DCA by EPA method 8260B, EDB by EPA Method 8011, and lead by EPA method 6010. Purging will not be required for existing monitoring wells where the water table is bracketed by the screen. Please have your contractor request low detection limits/reporting levels for all analyses. The use of "J" values is encouraged. Note that a non-detect analysis where the detection limit/reporting level exceeds the risk-based screening level (RBSL) is inconclusive. In this case, SUPERB payment may be denied since the analysis cannot be used as the basis for a decision.

Cost Agreement # 36932 and 36933 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. The AFVR, well installation, and groundwater sampling activities may proceed immediately upon receipt of this letter. The AFVR/Groundwater Sampling Report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR event started and ended, ambient air temperature, and general weather conditions during the AFVR event.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the events. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).
- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.

UST DOCKET

- A table documenting the free product thickness in each well before and after the recovery events.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Historical and current groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.
- Boring logs and 1903 forms for the well installation

Magnehelic gauges must be installed on the extraction wells and monitoring wells immediately surrounding the extraction wells. The AFVR should be completed by establishing a vacuum on the subsurface through the existing monitoring wells. The unit must be capable of providing a minimum airflow of 250 cubic feet per minute (CPM) at 25 inches Mercury vacuum. An airtight seal must be established on the top of each extraction well. Drop tubes inserted in the well(s) should have an inside diameter of at least one (1) inch and should initially be installed six inches below the bottom of the product or the top of the well screen whichever is deeper. The drop tubes should be lowered deeper in the well only if the well exhibits slow recovery (repeatedly goes dry) or if it is deemed necessary to establish a steeper hydraulic gradient to enhance free product migration toward the well. The goal is to maximize the recovery of free product and petroleum vapors in the capillary fringe and minimize the recovery of ground water.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

An AFVR/groundwater monitoring report and invoice are due within 90 days from the date of this letter. Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference **UST Permit # 11760**. If you have any questions, please feel free to contact me by phone at (803) 896-6649, by fax at (803) 896-6245, or email at koonjt@dhec.sc.gov.

Sincerely,

Justin Koon, EIT
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Cost Agreement
Monitoring well approval
Site Map (Proposed Locations of New Monitoring Wells)

cc: ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ enc)
Technical File (w/ enc)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Approval

Approval is hereby granted to: ATC Associates, Inc.
(On behalf of): Mr. Keenan
Facility: Former Exxon United 401 N. Congress St., Winnsboro, SC 29180
UST Permit Number: 11760
County: Fairfield

This approval is for the installation of three (3) groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.
5. If any of the information provided to the Department changes, notification to Justin Koon (tel: (803) 896-6649 or e-mail: koonjt@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.
7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **August 26, 2009** **Approval #:** **UMW-23084**

Justin Koon

Justin Koon, EIT
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

Approved Cost Agreement 36932

Facility: 11760 UNITED EXXON
KOONJT
PO Number:

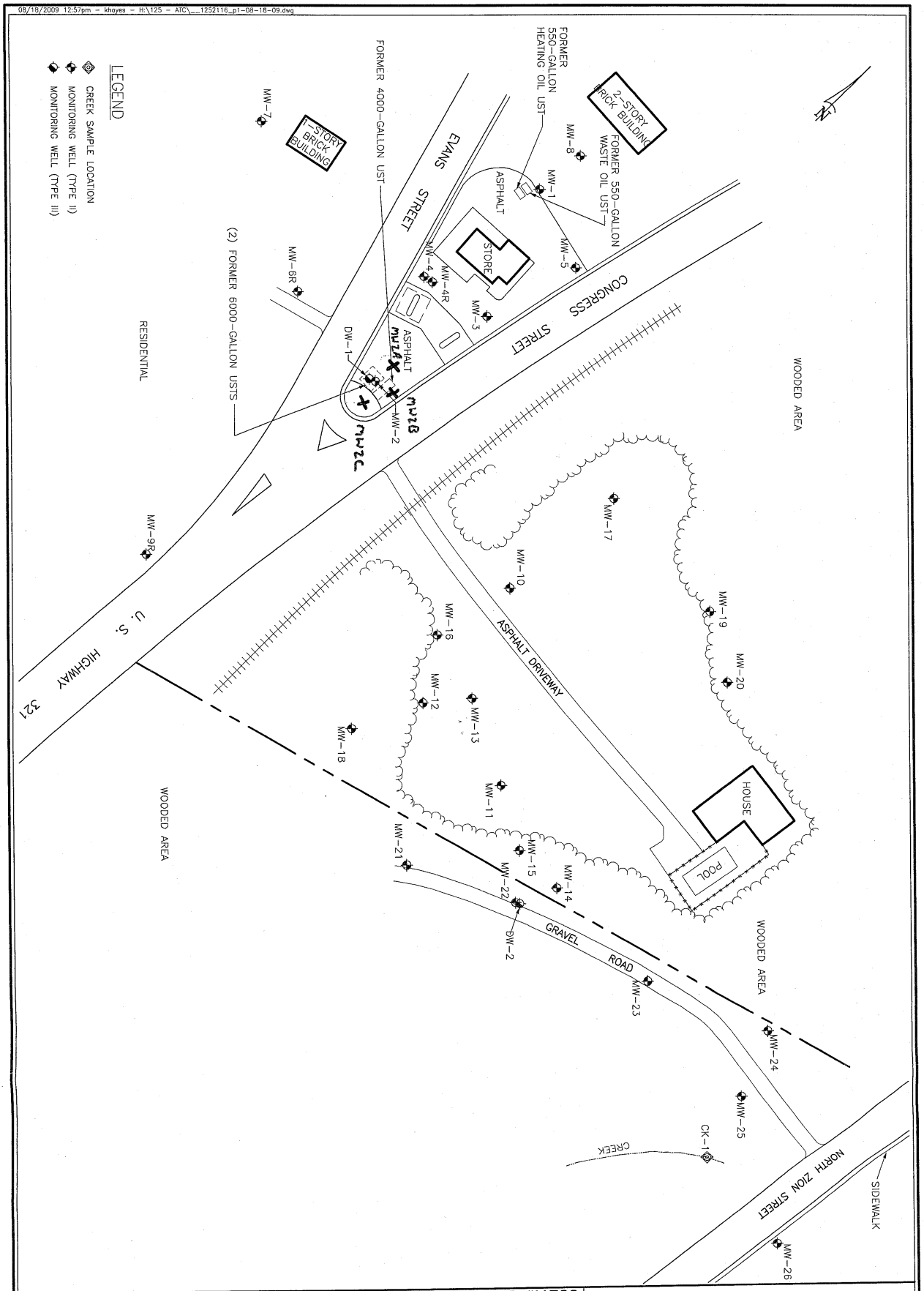
Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	2.5000	575.00	1,437.50
		B	PERSONNEL	3.0000	290.00	870.00
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	90.0000	38.00	3,420.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	2.5000	55.00	137.50
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	12.0000	35.00	420.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	15.0000	100.00	1,500.00
		BB	1,2-DCA	15.0000	10.75	161.25
		E	LEAD	15.0000	20.00	300.00
		F	EDB	15.0000	55.00	825.00
16 SUBSEQUENT SURVEY						
			SUBSEQUENT SURVEY	0.5000	260.00	130.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	2.5000	90.00	225.00
		A2	WASTEWATER - PUMPING TEST	2,500.0000	0.60	1,500.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	17,498.75	2,624.81
23 EFR						
		A	8 HOUR EVENT	2.0000	3,000.00	6,000.00
		C	OFF GAS TREATMENT	16.0000	35.00	560.00
				Total Amount		20,123.56

Approved Cost Agreement 36933

Facility: 11760 UNITED EXXON
KOONJT
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		A EQUIPMENT	2.5000	575.00	1,437.50
		B PERSONNEL	3.0000	290.00	870.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	90.0000	38.00	3,420.00
10 SAMPLE COLLECTION					
		A GROUND WATER	2.5000	55.00	137.50
		C WATER SUPPLY	0.5000	25.00	12.50
		D GROUNDWATER NO-PURGE	12.0000	35.00	420.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	15.0000	100.00	1,500.00
		BB 1,2-DCA	15.0000	10.75	161.25
		E LEAD	15.0000	20.00	300.00
		F EDB	15.0000	55.00	825.00
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	0.5000	260.00	130.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	2.5000	90.00	225.00
		A2 WASTEWATER - PUMPING TEST	2,500.0000	0.60	1,500.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	17,498.75	2,624.81
23 EFR					
		A 8 HOUR EVENT	2.0000	3,000.00	6,000.00
		C OFF GAS TREATMENT	16.0000	35.00	560.00
			Total Amount		20,123.56

08/18/2009 12:57pm - khoyes - H:\125 - ATC__1252116_p1-08-18-09.dwg



NOTES:

TITLE FIGURE 2 UST PERMIT #11760

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		BB		1"=80'	08-18-2009	14.25384.0012

ATC ASSOCIATES INC.
Engineering Individual Solutions

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PROGRAM

March 31, 2010

Mr. Justin Koon, EIT
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Koon:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Johnny Horn
Staff Geologist

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

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GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
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Johnny Horn, Staff Geologist

Frederick H. Lyke, PG #1055

March 31, 2010

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1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities that included four aggressive fluid vapor recovery (AFVR) events, at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated September 1, 2009. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Monitor Well Installations

On October 1, 2009, ATC personnel oversaw monitor well installations by Mr. Mike McConahey, a licensed South Carolina well driller. Mr. McConahey, using a track mounted drill rig, installed three (3) shallow groundwater monitor wells identified as MW-27, MW-28, and MW-29. The referenced monitor wells were each installed to an approximate depth of 60 below ground surface. Monitor Wells MW-27, MW-28, and MW-29 were installed adjacent to Monitor Well MW-2.

The newly installed shallow monitor wells were used as new extraction points for the AFVR events. Soil samples were collected for lithologic descriptions during the installation of the monitor wells. Monitor well locations are depicted in Figure 2.

The monitor wells are constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. Each shallow monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2.0 feet above the top of the screen and followed by approximately 5.0 feet of bentonite pellets, which were hydrated. The

remainder of the boring was grouted to land surface. The monitor wells were completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. Following installations, each monitor well was developed with a clean, centrifugal pump to remove any fine materials that may impede the flow of groundwater into the well. Monitor well construction details and lithologic descriptions are presented in Appendix B.

2.2 AFVR Events

On October 6, 2009, ATC personnel oversaw AFVR activities at Monitor Wells MW-2, MW-27, MW-28, and MW-29 by Shamrock Environmental Corporation personnel. This AFVR event was conducted for eight hours, and approximately 78 gallons of liquid were removed from the monitor wells. On October 27, 2009, ATC personnel oversaw AFVR activities at Monitor Wells MW-2, MW-27, MW-28, and MW-29 by Shamrock Environmental Corporation personnel. The AFVR event was conducted for eight hours with approximately 289 gallons of liquid being removed from the monitor wells. On November 17, 2009, ATC personnel oversaw AFVR activities at Monitor Wells MW-2, MW-27, MW-28, and MW-29 by Shamrock Environmental Corporation personnel. This AFVR event was conducted for eight hours with approximately 505 gallons of liquid being removed from the monitor wells. On January 19, 2010, ATC personnel oversaw AFVR activities with off-gas treatment at Monitor Wells MW-10 and MW-13 by Shamrock Environmental Corporation personnel. This AFVR event was conducted for eight hours with approximately 586 gallons of liquid being removed from the monitor wells. Detailed summaries of the AFVR events are presented in Appendix C.

2.2 Site Hydrogeology

During the February 24, 2010, gauging event, approximately 0.32 feet, 0.13 feet, 0.08 feet, and 0.02 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2, MW-13, MW-27, and MW-29, respectively. Groundwater flow direction is toward the south and east with a hydraulic gradient of 0.0294 feet per foot, as measured between Monitor Wells MW-8 and

MW-26. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.3 Groundwater Sampling and Analysis

On February 24-25, 2010, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-3, MW-4R, MW-5, MW-6R, MW-8, MW-9R, MW-10, MW-11, MW-12, MW-14 through MW-26, MW-28, DW-1, and DW-2. A surface water sample, identified as CK-1, was collected from the headwaters of McCulley Creek. Specifically, this sample was collected near Monitor Well MW-25. Samples were not collected from Monitor Wells MW-4 and MW-7 since these wells were dry. Also, samples were not collected from Monitor Wells MW-2, MW-13, MW-27, and MW-29 due to the presence of LPH at these wells. New, disposable nitrile gloves were used to maintain sample integrity during the sampling process. A new, disposable polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells DW-1 and DW-2 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since each well's screen properly bracketed the water table. Field measurements are presented in Appendix D. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), naphthalene, and 1,2-dichloroethane (1,2-DCA) by EPA method 8260B; lead by EPA method 6010C; and 1,2-dibromoethane (EDB) by EPA method 8011.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected benzene concentrations at Monitor Wells MW-3, MW-4R, MW-10 through MW-12, MW-14 through MW-16, MW-18, MW-21 through MW-23, MW-25, MW-28, DW-1, and DW-2. Toluene concentrations were detected at Monitor Wells MW-10 through MW-12, MW-14 through MW-16, MW-18, MW-21, MW-28, and DW-1. Ethylbenzene concentrations were detected at Monitor Wells MW-4R, MW-10 through MW-12, MW-15, MW-16, MW-18, MW-21, MW-28, and DW-1. Xylenes concentrations were detected at Monitor Wells MW-10 through MW-12, MW-16, MW-18, MW-21, MW-28, and DW-1. MTBE concentrations were detected at Monitor Wells MW-12, MW-14 through MW-16, MW-18, MW-21 through MW-23, MW-28, DW-2, and surface water sample CK-1. MTBE concentrations may exist at Monitor Well MW-11; however, a high dilution factor caused results to be less than detection limits at this location. Naphthalene concentrations were detected at Monitor Wells MW-10 through MW-12, MW-14 through MW-18, MW-21 through MW-23, MW-25, MW-28, and DW-2. 1,2-DCA concentrations were detected at Monitor Wells MW-3, MW-4R, and MW-18. EDB concentrations were detected at Monitor Well MW-28. Lead concentrations were detected at Monitor Wells MW-1, MW-5, MW-10, MW-11, MW-14, MW-15, MW-17 through MW-21, MW-23, MW-25, and MW-28.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 µg/l at Monitor Wells MW-10 through MW-12, MW-14 through MW-16, MW-18, MW-21 through MW-23, MW-25, and MW-28. Toluene concentrations were detected greater than its respective RBSL of 1000 at Monitor Wells MW-10, MW-11, MW-16, MW-18, and MW-28. Ethylbenzene concentrations were detected greater than its respective RBSL of 700 µg/l at Monitor Wells MW-10, MW-11, MW-16, and MW-28. Xylenes concentrations were detected greater than its respective RBSL of 10,000 µg/l at Monitor Wells MW-16 and MW-28. MTBE concentrations were detected greater than its RBSL of 40 µg/l at Monitor Wells MW-12, MW-18, MW-21, and MW-28. It is probable that MTBE concentrations exist greater than its RBSL at Monitor Well MW-11 due to a high dilution factor that yielded results less than

100 μg/l. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Monitor Wells MW-10 through MW-12, MW-14 through MW-16, MW-18, MW-21 through MW-23, and MW-28. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Well MW-28. Groundwater laboratory analytical results are summarized in Table II and Figures 4A-4C. Laboratory analytical results and chain-of-custody are presented in Appendix E.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Three shallow monitor wells (identified as MW-27, MW-28, and MW-29) were installed during the current assessment activities.
- During the current assessment activities, three AFVR events were conducted at Monitor Wells MW-2, MW-27, MW-28, and MW-29. One AFVR event was conducted at Monitor Wells MW-10 and MW-13.
- Groundwater flow at the site is in a southern to eastern direction with a hydraulic gradient of 0.0294 feet per foot, as measured between Monitor Wells MW-8 and MW-26.
- During the February 24, 2010, gauging event, approximately 0.32 feet, 0.13 feet, 0.08 feet, and 0.02 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2, MW-13, MW-27, and MW-29.
- During the current assessment activities, a groundwater sample (identified as CK-1) was collected from the headwaters of McCulley Creek that is located hydraulically down-gradient from the site. Analytical results for this sample detected MTBE concentrations of 16 μg/l.
- Total BTEX concentrations have increased at Monitor Wells MW-15, MW-18, MW-21, MW-22, MW-23, MW-25, and DW-1 since the previous sampling event of July 2009; however, total BTEX concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. MTBE concentrations have increased at Monitor Wells MW-18, DW-2, and Sample CK-1 since the previous sampling event; however, MTBE concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. Naphthalene concentrations have increased at Monitor Wells MW-18, MW-21, MW-22, MW-25, and

DW-2 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. EDB concentrations have decreased or remained below detection limits at all sampled wells since the previous sampling event. Additionally, lead was not sampled for during the previous sampling event. No comparison can be made regarding Monitor Wells MW-2, MW-3, MW-4, MW-7, MW-10, and MW-13 because they were not sampled during the previous sampling event.

During the February 24, 2010 gauging event, LPH was no longer detected at Monitor Well MW-10. However, LPH continues to exist at Monitor Wells MW-2 and MW-13 at thicknesses of 0.32 feet and 0.13 feet. Additionally, LPH exists at extraction Monitor Wells MW-27 and MW-29 at thicknesses of 0.08 feet and 0.02 feet. Due to these findings, ATC recommends three AFVR events (approximately three weeks apart) should be conducted at MW-2, MW-10, MW-13, MW-27, MW-28, and MW-29 to continue to remove LPH and lower chemicals of concern.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., August 18, 2009, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	2/24/2010	96.54	42.53	0	48	15	54.01
MW-2	2/24/2010	98.17	51.69*	0.32	54	15	46.48
MW-3	2/24/2010	95.81	44.24	0	45	15	51.57
MW-4	2/24/2010	98.52	Dry	NA	45	15	NA
MW-4R	2/24/2010	98.14	48.56	0	60	20	49.58
MW-5	2/24/2010	94.41	42.43	0	45	15	51.98
MW-6R	2/24/2010	103.91	57.27	0	65	20	46.64
MW-7	2/24/2010	102.34	Dry	NA	52	15	NA
MW-8	2/24/2010	97.63	42.34	0	45	15	55.29
MW-9R	2/24/2010	101.13	53.66	0	65	20	47.47
MW-10	2/24/2010	88.26	46.90	0	50	15	41.36
MW-11	2/24/2010	70.63	32.67	0	38	15	37.96
MW-12	2/24/2010	81.21	40.13	0	50	15	41.08
MW-13	2/24/2010	81.02	41.91*	0.13	50	15	39.11
MW-14	2/24/2010	69.55	34.19	0	40	20	35.36
MW-15	2/24/2010	72.06	35.82	0	40	20	36.24
MW-16	2/24/2010	85.19	43.29	0	50	20	41.90
MW-17	2/24/2010	85.66	37.59	0	50	15	48.07
MW-18	2/24/2010	80.83	39.68	0	50	15	41.15

LPH = Liquid Phase Hydrocarbons; NA = Not Applicable

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE I (continued) Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-19	2/24/2010	82.27	40.04	0	46	15	42.23
MW-20	2/24/2010	81.44	39.99	0	46	15	41.45
MW-21	2/24/2010	67.40	26.39	0	40	15	41.01
MW-22	2/24/2010	65.12	31.81	0	40	20	33.31
MW-23	2/24/2010	62.15	30.64	0	40	20	31.51
MW-24	2/24/2010	49.50	18.46	0	25	15	31.04
MW-25	2/24/2010	41.63	13.56	0	23	15	28.07
MW-26	2/24/2010	43.83	17.61	0	35	20	26.22
MW-27	2/24/2010	98.43	52.54*	0.08	60	15	45.89
MW-28	2/24/2010	97.11	49.59	0	60	15	47.52
MW-29	2/24/2010	97.88	51.20*	0.02	60	15	46.68
DW-1	2/24/2010	98.62	50.62	0	80	5	48.00
DW-2	2/24/2010	65.10	32.58	0	80	5	32.52

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II Groundwater Analytical Results, dated February 24-25, 2010 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4[1] (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7[1] (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
Free Product Thickness	NA	None	0.32'	None	NA	None	None	None	NA	None	None
Benzene	5	<1	NS	3.4	NS	3.7	<1	<1	NS	<1	<1
Toluene	1000	<1	NS	<1	NS	<1	<1	<1	NS	<1	<1
Ethylbenzene	700	<1	NS	<1	NS	0.56	<1	<1	NS	<1	<1
Xylenes	10000	<2	NS	<2	NS	<2	<2	<2	NS	<2	<2
Total BTEX	NA	<5	NA	<7.4	NA	<7.26	<5	<5	NA	<5	<5
MTBE	40	<1	NS	<1	NS	<1	<1	<1	NS	<1	<1
Naphthalene	25	<5	NS	<5	NS	<5	<5	<5	NS	<5	<5
EDB	0.05	<0.03	NS	<0.04	NS	<0.04	<0.04	<0.04	NS	<0.04	<0.04
Lead	15	3.98	NS	NS*	NS	<10	4.73	<10	NS	<10	<10
1,2-DCA	NA	<1	NS	12	NS	9.7	<1	<1	NS	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; [1]Monitor Wells MW-4 and MW-7 are Dry
*Monitor Well MW-3 would not significantly recharge to allow sampling for Lead analysis

TABLE II (continued) Groundwater Analytical Results, dated February 24-25, 2010 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
Free Product Thickness	NA	None	None	None	0.13'	None	None	None	None	None	None
Benzene	5	**5200**	**6500**	**1600**	NS	**4400**	**2600**	**5600**	<1	**630**	<1
Toluene	1000	**3900**	**13,000**	5.5	NS	45	42	**5100**	<1	**1100**	<1
Ethylbenzene	700	**2400**	**2100**	6.7	NS	<20	15	**1400**	<1	190	<1
Xylenes	10000	5500	8900	20	NS	<40	<20	**10,200**	<2	2090	<2
Total BTEX	NA	17,000	30,500	1632.2	NA	<4505	<2677	22,300	<5	4010	<5
MTBE	40	<20	**<100**	**86**	NS	14	11	27	<1	**2600**	<1
Naphthalene	25	**590**	**720**	**160**	NS	**240**	**140**	**790**	1.5	**77**	<5
EDB	0.05	<0.04	<0.04	<0.04	NS	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Lead	15	2.85	5.86	<10	NS	6.5	3.13	<10	3.63	7.83	3.94
1,2-DCA	NA	<20	<100	<10	NS	<20	<10	<20	<1	17	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled.

TABLE II (continued) Groundwater Analytical Results, dated February 24-25, 2010 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	MW-26 (µg/l)	MW-27 (µg/l)	MW-28 (µg/l)	MW-29 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	0.08'	None	0.02'
Benzene	5	<1	**7.3**	**1700**	**1500**	<1	**34**	<1	NS	**13,000**	NS
Toluene	1000	<1	9.6	<10	<1	<1	<1	<1	NS	**64,000**	NS
Ethylbenzene	700	<1	36	<10	<1	<1	<1	<1	NS	**9100**	NS
Xylenes	10000	<2	199	<20	<2	<2	<2	<2	NS	**51,000**	NS
Total BTEX	NA	<5	251.9	<1740	<1504	<5	<38	<5	NA	137,100	NA
MTBE	40	<1	**100**	11	13	<1	<1	<1	NS	**38,000**	NS
Naphthalene	25	<5	**140**	**120**	**50**	<5	6.6	<5	NS	**4400**	NS
EDB	0.05	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04	NS	**5.2**	NS
Lead	15	2.68	4.57	<10	3.13	<10	5.41	<10	NS	3.23	NS
1,2-DCA	NA	<1	<1	<10	<1	<1	<1	<1	NS	<200	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled.

TABLE II (continued) Groundwater Analytical Results, dated February 24-25, 2010 Former United Exxon / Winnsboro, South Carolina				
Chemical of Concern	RBSL (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None
Benzene	5	0.62	4.3	<1
Toluene	1000	14	<1	<1
Ethylbenzene	700	2.8	<1	<1
Xylenes	10000	55	<2	<2
Total BTEX	NA	72.42	<8.3	<5
MTBE	40	<1	9	16
Naphthalene	25	<5	6.9	<5
EDB	0.05	<0.04	<0.04	<0.04
Lead	15	<10	<10	<10
1,2-DCA	NA	<1	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable

TABLE III
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-1	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.03
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	15	<30	<5	**42**	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	7.77	<10.77	<5.0	23.8	<0.05
MW-2	2/24/2010	0.32	NS	NS	NS	NS	NA	NS	NS	NS
	07/16/2009	1.57	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.18	NS	NS	NS	NS	NA	NS	NS	NS
	01/15/2008	0.27	**14000**	**48000**	**5900**	**33000**	100900	**43000**	**<2500**	**54**
	04/19/2007	0.03	**11000**	**31000**	**4400**	**24400**	70800	**34000**	**1400**	**52**
	08/21/2006	0.30	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.20	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**15900**	**90700**	**4800**	**26700**	138100	**82000**	**840**	**127**
	11/02/1998	0.00	**23100**	**89000**	**5380**	**27380**	144860	**227000**	**2140**	**78.65**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-3	2/24/2010	0.00	3.4	<1	<1	<2	<7.4	<1	<5	<0.04
	07/16/2009	NA	Not Sampled – Not enough water for sample collection.							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/20/2007	0.00	**28**	1.3	<1	2.11	<32.41	<1	<5	<0.02
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	0.00	**110**	<5	<5	<5	<125	<5	<5	<0.019
	03/08/2005	0.00	**123**	10	18	16	167	<5	<5	<0.02
	08/20/2003	0.00	**385**	<25	<25	<25	<460	<25	<25	<0.02
	01/11/2001	0.00	**434**	288	·182	146	1050	**89.9**	12.9	**<1.0**
	11/02/1998	0.00	**2260**	52.7	215	889	3416.7	**<50**	<50	<0.02
MW-4	2/24/2010	NA	Not Sampled – Dry Well							
	07/16/2009	NA	Not Sampled – Dry Well							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/20/2007	NA	Not Sampled – Dry Well							
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	NA	Not Sampled – Dry Well							
	03/08/2005	NA	Not Sampled – Dry Well							
	08/20/2003	NA	Not Sampled – Dry Well							
	01/11/2001	NA	Not Sampled – Dry Well							
	11/02/1998	0.00	**1781**	610	311	1921	4623	<10	**40**	**<10**
MW-4R	2/24/2010	0.00	3.7	<1	0.56	<2	<7.26	<1	<5	<0.04
	07/17/2009	0.00	**7.6**	<1	<1	2.5	<12.1	<1	<5	<0.021
	09/22/2008	0.00	4.2	<1	<1	<1	<7.2	<1	<5	<0.021
	01/15/2008	0.00	**9.8**	<1	1.4	1.8	<14.0	<1	<5	<0.02
	04/19/2007	0.00	2.4	<1	1.2	2	<6.6	4.4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-5	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	1.8	<1	1.43	<5.23	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5	<5	<5	<15	<30	<1.0	<5.0	**<1.0**
MW-6	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	2.4	19.3	2.6	8.3	32.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-6R	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.023
	09/22/2008	0.00	<1	6.3	1.5	5.3	<14.1	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-7	2/24/2010	NA	Not Sampled – Dry Well							
	07/16/2009	NA	Not Sampled – Dry Well							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.4	13.0	3.1	5.0	22.5	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-8	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.2	1.9	3.5	15.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-9	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	<1.0	2.1	<1.0	<1.0	<5.1	<1.0	<5.0	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-9R	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-10	2/24/2010	0.00	**5200**	**3900**	**2400**	5500	**17,000**	<20	**590**	<0.04
	07/16/2009	0.25	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.00	**8400**	**9000**	**3300**	**10100**	30800	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**5400**	22	<20	238	<5680	**170**	**350**	<0.02
	08/21/2006	0.00	**5800**	**3700**	**1700**	3620	14820	**<100**	**410**	<0.02
	06/27/2005	0.00	**6000**	**2400**	**1900**	3300	13600	**<1000**	**<1000**	<0.019
	03/08/2005	0.42	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	Sheen	**8010**	**8770**	**2310**	7200	26290	**<250**	**774**	<0.02
	01/11/2001	0.00	**8950**	**49000**	**8550**	**49000**	115500	22	**3300**	**<500**
	11/02/1998	0.00	**11200**	**30800**	**3360**	**15500**	60860	**<100**	**766**	**<100**
MW-11	2/24/2010	0.00	**6500**	**13,000**	**2100**	8900	30,500	**<100**	**720**	<0.04
	07/16/2009	0.00	**6100**	**16000**	**3100**	**15800**	41000	28	**1400**	<0.021
	09/22/2008	0.04	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.02	**8700**	**21000**	**4600**	**24600**	58900	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**6500**	**13000**	**2800**	**16100**	38400	**790**	**1700**	<0.02
	08/21/2006	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**5900**	**25000**	**5100**	**31400**	67400	**<2500**	**3000**	**0.34**
	03/08/2005	0.15	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	1.95	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**8000**	**11800**	**3470**	**16400**	39670	31	**1440**	**<100**
	11/02/1998	0.00	**6280**	**15600**	**2390**	**10800**	35070	**<100**	**617**	**<50**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l; Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results; Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-12	2/24/2010	0.00	**1600**	5.5	6.7	20	1632.2	**86**	**160**	<0.04
	07/16/2009	0.00	**3300**	<10	16	66	<3392	**100**	**310**	<0.021
	09/22/2008	0.00	**370**	<1	<1	8.8	<380.8	12	**35**	<0.021
	01/14/2008	0.00	**5700**	<100	<100	140	<6040	**<100**	**<500**	<0.02
	04/19/2007	0.00	**6600**	**4800**	**2500**	7800	21700	<20	**970**	<0.02
	08/21/2006	0.00	**5800**	<100	<100	<100	<6100	**<100**	**250**	<0.02
	06/27/2005	0.00	**8200**	7.7	6.9	52.2	8266.8	**210**	**410**	<0.019
	03/08/2005	0.00	**7680**	264	52	315	8311	**195**	**173**	<0.02
MW-13	2/24/2010	0.13	NS	NS	NS	NS	NA	NS	NS	NS
	07/16/2009	0.29	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.11	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.23	**9900**	**27000**	**3500**	**24800**	65200	**<2000**	**<10000**	**0.073**
	04/19/2007	0.00	**8300**	**23000**	**3200**	**22100**	56600	**410**	**1500**	<0.02
	08/21/2006	0.00	**7300**	**36000**	**3400**	**20600**	67300	**<100**	**1200**	**0.19**
	06/27/2005	0.00	**8600**	**61000**	**2100**	**13000**	84700	**<250**	**620**	<0.019
	03/08/2005	0.00	**13300**	**33600**	**2880**	**16600**	66380	**<100**	**700**	**0.08**
MW-14	2/24/2010	0.00	**4400**	45	<20	<40	<4505	14	**240**	<0.04
	07/16/2009	0.00	**4400**	76	<20	68	<4564	<20	**280**	<0.022
	09/22/2008	0.00	**4100**	59	<20	<20	<4199	<20	**290**	<0.021
	01/14/2008	0.00	**4500**	74	<50	51	<4675	**<50**	**300**	<0.02
	04/19/2007	0.00	**5100**	100	<20	74	<5294	<20	**300**	<0.019
	08/21/2006	0.00	**6100**	<100	<100	<100	<6400	**<100**	**260**	<0.02
	06/27/2005	0.00	**4500**	<100	<100	<100	<4800	**<100**	**170**	**0.11**
	03/08/2005	0.00	**6390**	<125	<125	<125	<6765	**<125**	**234**	<0.02
MW-15	2/24/2010	0.00	**2600**	42	15	<20	<2677	11	**140**	<0.04
	07/16/2009	0.00	**2300**	42	11	25	2378	11	**150**	<0.022
	09/22/2008	0.00	**2800**	54	18	<10	<2882	18	**270**	<0.021
	01/14/2008	0.00	**2900**	<50	<50	<50	<3050	**<50**	**250**	<0.02
	04/19/2007	0.00	**3300**	52	3.5	29.5	3385	<1	**240**	<0.02
	08/21/2006	0.00	**2400**	49	5.2	63	2517.2	<5	**120**	<0.02
	06/27/2005	0.00	**680**	13	<5	9.4	<707.4	<5	**63**	<0.019
	03/08/2005	0.00	**11400**	182	<50	96	<11728	**<50**	**485**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l; Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results; Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-16	2/24/2010	0.00	**5600**	**5100**	**1400**	**10,200**	22,300	27	**790**	<0.04
	07/16/2009	0.00	**5500**	**22000**	**4600**	**27500**	59600	**<100**	**2700**	<0.022
	09/22/2008	0.06	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.00	**8100**	**14000**	**4400**	**27100**	53600	**<1000**	**<5000**	<0.02
	04/19/2007	0.00	**7200**	**14000**	**4000**	**23000**	48200	**410**	**2300**	<0.02
	08/21/2006	0.00	**6700**	<100	<100	<100	<7000	**<100**	**230**	<0.02
	06/27/2005	0.00	**9400**	**28000**	**4800**	**31700**	73900	**<2500**	**3200**	<0.019
	03/08/2005	0.04	NS	NS	NS	NS	NA	NS	NS	NS
MW-17	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	1.5	<0.04
	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	3.9	<1	<1	<1	<6.9	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	5.7	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-18	2/24/2010	0.00	**630**	**1100**	190	2090	4010	**2600**	**77**	<0.04
	07/16/2009	0.00	**280**	560	92	560	1492	**2300**	**67**	**0.092**
	09/22/2008	0.00	**270**	390	85	340	1085	**2600**	**98**	<0.022
	01/14/2008	0.00	**630**	**1800**	270	1440	4140	**2700**	**<500**	0.033
	04/19/2007	0.00	**1700**	**1800**	470	2750	6720	**3200**	**250**	**0.055**
	08/21/2006	0.00	**550**	610	49	570	1779	**1200**	**66**	**0.1**
MW-19	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	1.3	<4.3	5.1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-20	2/24/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	4.2	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL. *denotes estimated result.

TABLE III (continued) Historical Groundwater Analytical Results; Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-21	2/25/2010	0.00	**7.3**	9.6	36	199	251.9	**100**	**140**	<0.04
	07/16/2009	0.00	**33**	<5	<5	<10	<53	**460**	<25	<0.022
	09/23/2008	0.00	**74**	<10	<10	<10	<104	**890**	**49***	<0.022
	01/14/2008	0.00	**210**	14	3	10.8	237.8	**1100**	**77**	<0.02
	04/20/2007	0.00	**70**	<50	<50	177	<347	**440**	**<250**	<0.02
	08/21/2006	0.00	**240**	19	<5	26.2	<290.2	**910**	**110**	<0.02
MW-22	2/25/2010	0.00	**1700**	<10	<10	<20	<1740	11	**120**	<0.04
	07/16/2009	0.00	**1600**	<5	<5	12	<1622	13	**110**	<0.022
	09/23/2008	0.00	**980**	<10	<10	<10	<1010	12	**64**	<0.022
	01/14/2008	0.00	**1700**	<50	<50	<50	<1850	**<50**	**<250**	<0.02
	04/20/2007	0.00	**1400**	5.6	1.2	17.5	1424.3	9.7	**68**	<0.02
	08/21/2006	0.00	**5000**	<100	<100	<100	<5300	**<100**	**180**	<0.02
MW-23	2/25/2010	0.00	**1500**	<1	<1	<2	<1504	13	**50**	<0.04
	07/16/2009	0.00	**1400**	<10	<10	<20	<1440	15	**<50**	<0.022
	09/23/2008	0.00	**1800**	<10	<10	<10	<1830	13	**94**	<0.022
	01/14/2008	0.00	**3100**	<50	<50	<50	<3250	**<50**	**<250**	<0.02
	04/20/2007	0.00	**3100**	<1	1	7.17	<3109.17	12	**110**	<0.02
	08/21/2006	0.00	**230**	<5	<5	<5	<245	<5	<5	<0.02
MW-24	2/25/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/16/2009	0.00	**97**	<1	<1	<2	<101	<1	<5	<0.023
	09/23/2008	0.00	**230**	<1	<1	<1	<233	<1	17	<0.022
	01/14/2008	0.00	**400**	<1	<1	<1	<403	<1	21	<0.02
	04/20/2007	0.00	**240**	<1	<1	1.7	<243.7	<1	**31**	<0.02
	08/21/2006	0.00	**390**	<5	<5	<5	<405	<5	**26**	<0.02
MW-25	2/25/2010	0.00	**34**	<1	<1	<2	<38	<1	6.6	<0.04
	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/23/2008	0.00	**660**	<5	<5	<5	<675	<5	**47**	<0.022
	01/14/2008	0.00	**400**	<10	<10	<10	<430	<10	**<50**	<0.02
	04/20/2007	0.00	**430**	<1	<1	1	<433	<1	**26**	<0.02
	08/21/2006	0.00	**700**	<5	<5	7.7	<717.7	<5	**35**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l; * = estimated results.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-26	2/25/2010	0.00	<1	<1	<1	<2	<5	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/23/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
MW-27	2/25/2010	0.08	NS	NS	NS	NS	NA	NS	NS	NS
MW-28	2/25/2010	0.00	**13,000**	**64,000**	**9100**	**51,000**	137,100	**38,000**	**4400**	**5.2**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-29	2/25/2010	0.02	NS	NS	NS	NS	NA	NS	NS	NS
DW-1	2/25/2010	0.00	0.62	14	2.8	55	72.42	<1	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	1.1	20	4.7	29.3	55.1	<1	<5	<0.022
	01/15/2008	0.00	<1	140	130	720	<991	<1	**110**	**0.086**
	04/19/2007	0.00	<1	<1	<1	<1	<4	4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	8	<5	<5	<23	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.9	<1.0	3.1	<15.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5.0	<5.0	<5.0	<15	<30.0	<5.0	<5.0	**<5.0**
DW-2	2/25/2010	0.00	4.3	<1	<1	<2	<8.3	9	6.9	<0.04
	07/16/2009	0.00	**83**	<1	<1	<1	<86	8.3	6.2	<0.023
	09/23/2008	0.00	<1	<1	<1	<1	<4	8.6	<5	<0.022
	01/15/2008	0.00	**34**	<1	<1	<1	<37	7.7	<5	<0.02
	04/20/2007	0.00	**440**	<1	<1	<1	<443	11	**27**	<0.02
	08/21/2006	0.00	**450**	<5	<5	<5	<465	5.9	25	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
CK-1	2/25/2010	0.00	<1	<1	<1	<2	<5	16	<5	<0.04
	07/17/2009	0.00	<1	<1	<1	<2	<5	13	<5	<0.022
	09/23/2008	0.00	<1	<1	<1	<1	<4	5.8	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	16	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	15	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	<5	<5	<5	<5	<20	8	<5	<0.02
	08/20/2003	0.00	**15**	<5	<5	<5	<30	**295**	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	1.2	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<5.0	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

FIGURES

↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

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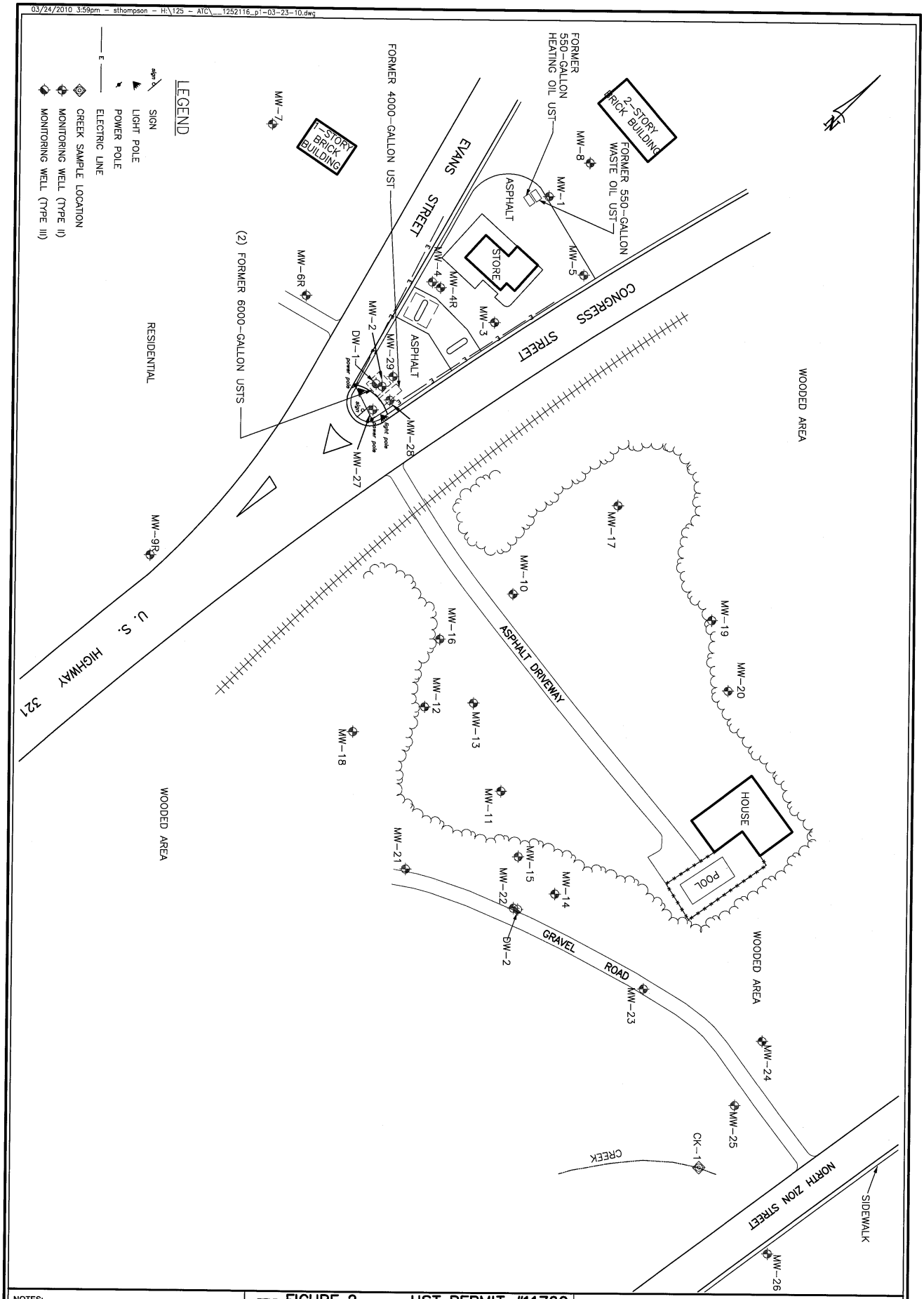

NOTES:

TITLE **FIGURE 2** **UST PERMIT #11760**

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
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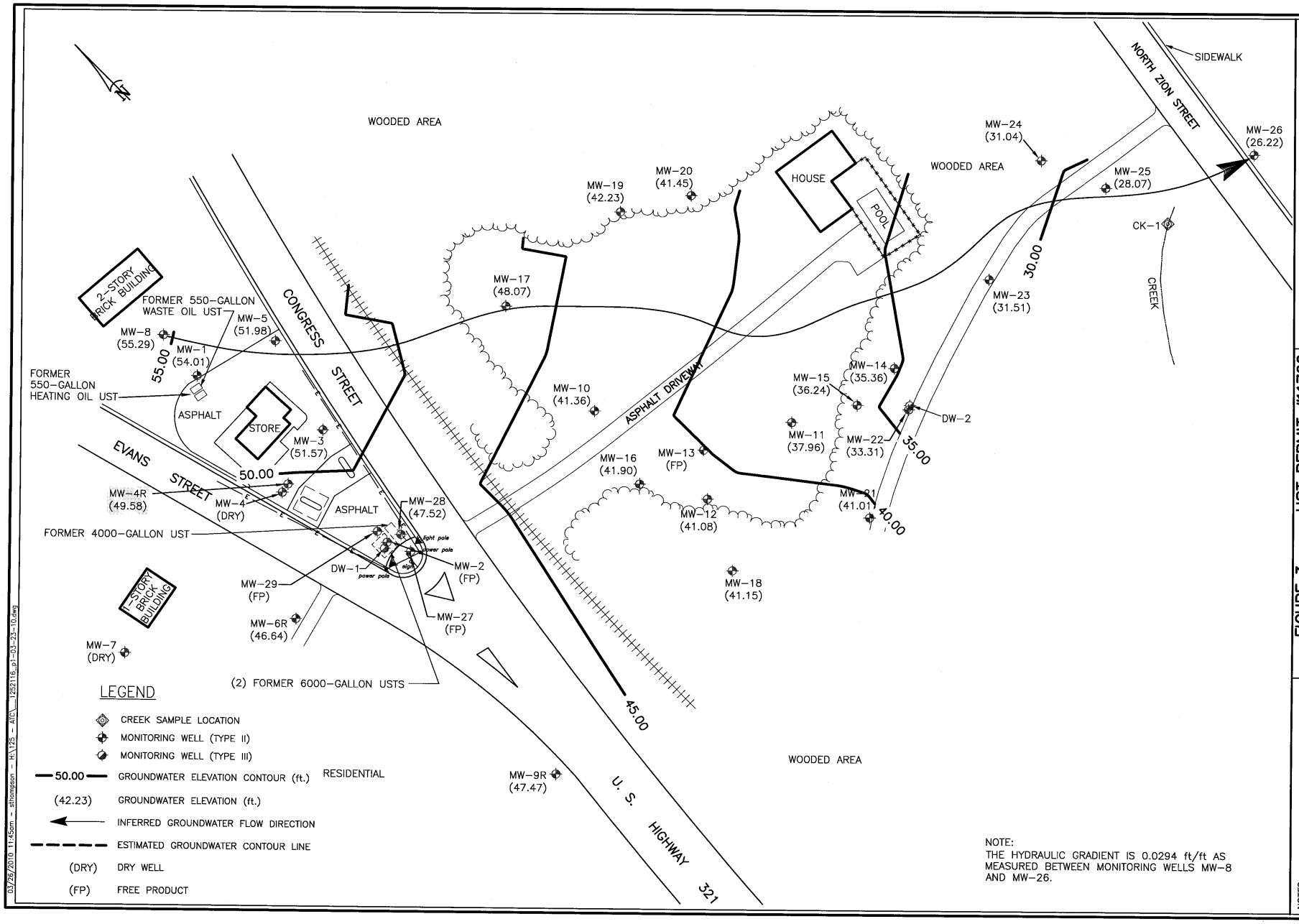

NOTE:
THE HYDRAULIC GRADIENT IS 0.0294 ft/ft AS MEASURED BETWEEN MONITORING WELLS MW-8 AND MW-26.

NOTES:

TITLE **FIGURE 3** UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
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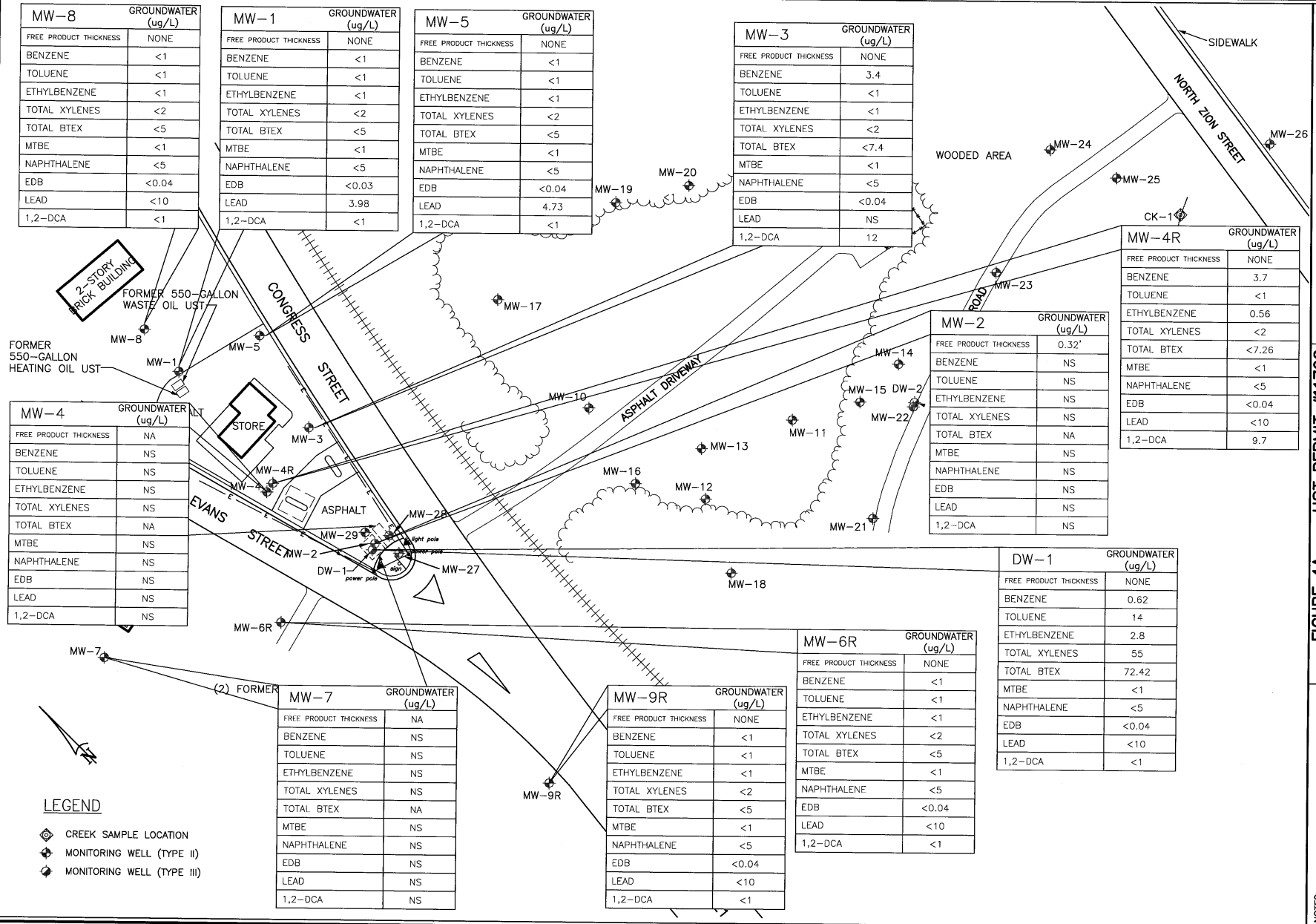

MW-8	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.03
LEAD	3.98
1,2-DCA	<1

MW-5	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	4.73
1,2-DCA	<1

MW-3	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	3.4
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<7.4
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	NS
1,2-DCA	12

MW-4R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	3.7
TOLUENE	<1
ETHYLBENZENE	0.56
TOTAL XYLENES	<2
TOTAL BTEX	<7.26
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	9.7

MW-2	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	0.32'
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

MW-4	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NA
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

DW-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	0.62
TOLUENE	14
ETHYLBENZENE	2.8
TOTAL XYLENES	55
TOTAL BTEX	72.42
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-6R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-7	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NA
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

MW-9R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

NOTES:
1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NA = NOT APPLICABLE
3. NS = NOT SAMPLED

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

TITLE **FIGURE 4A UST PERMIT #11760**
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
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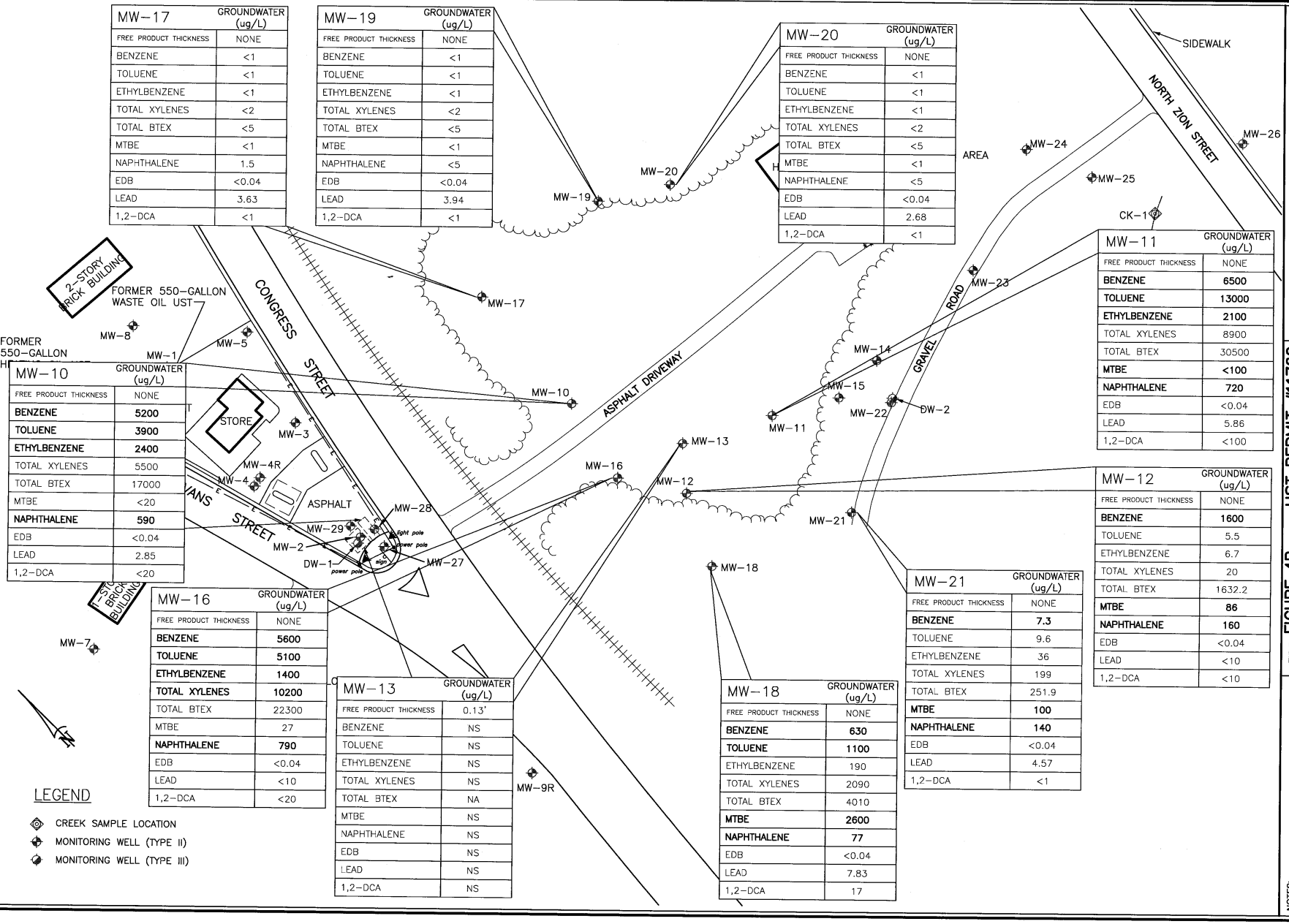

MW-17	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	1.5
EDB	<0.04
LEAD	3.63
1,2-DCA	<1

MW-19	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	3.94
1,2-DCA	<1

MW-20	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	2.68
1,2-DCA	<1

MW-11	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**6500**
TOLUENE	**13000**
ETHYLBENZENE	**2100**
TOTAL XYLENES	8900
TOTAL BTEX	30500
MTBE	**<100**
NAPHTHALENE	**720**
EDB	<0.04
LEAD	5.86
1,2-DCA	<100

MW-10	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**5200**
TOLUENE	**3900**
ETHYLBENZENE	**2400**
TOTAL XYLENES	5500
TOTAL BTEX	17000
MTBE	<20
NAPHTHALENE	**590**
EDB	<0.04
LEAD	2.85
1,2-DCA	<20

MW-12	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**1600**
TOLUENE	5.5
ETHYLBENZENE	6.7
TOTAL XYLENES	20
TOTAL BTEX	1632.2
MTBE	**86**
NAPHTHALENE	**160**
EDB	<0.04
LEAD	<10
1,2-DCA	<10

MW-16	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**5600**
TOLUENE	**5100**
ETHYLBENZENE	**1400**
TOTAL XYLENES	**10200**
TOTAL BTEX	22300
MTBE	27
NAPHTHALENE	**790**
EDB	<0.04
LEAD	<10
1,2-DCA	<20

MW-13	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	0.13'
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

MW-18	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**630**
TOLUENE	**1100**
ETHYLBENZENE	190
TOTAL XYLENES	2090
TOTAL BTEX	4010
MTBE	**2600**
NAPHTHALENE	**77**
EDB	<0.04
LEAD	7.83
1,2-DCA	17

MW-21	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**7.3**
TOLUENE	9.6
ETHYLBENZENE	36
TOTAL XYLENES	199
TOTAL BTEX	251.9
MTBE	**100**
NAPHTHALENE	**140**
EDB	<0.04
LEAD	4.57
1,2-DCA	<1

LEGEND

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NA = NOT APPLICABLE
3. NS = NOT SAMPLED

TITLE FIGURE 4B UST PERMIT #11760
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE 1252116.dwg | TYPE CODE | PREP. BY JH | REV. BY | SCALE 1"=80' | DATE 03-23-2010 | PROJECT NO. 14.25384.0012

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

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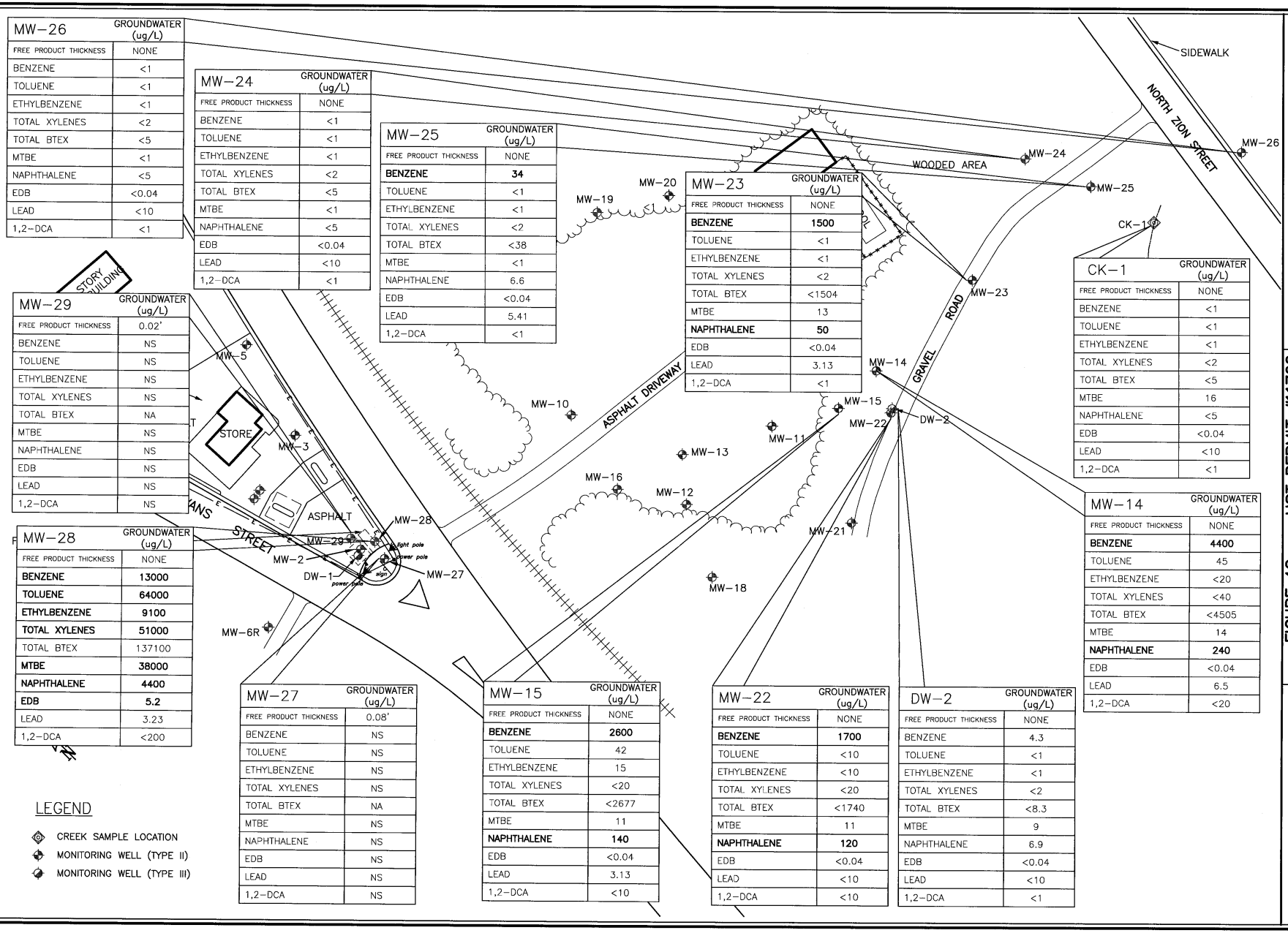

MW-26	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-24	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-25	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**34**
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<38
MTBE	<1
NAPHTHALENE	6.6
EDB	<0.04
LEAD	5.41
1,2-DCA	<1

MW-23	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**1500**
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<1504
MTBE	13
NAPHTHALENE	**50**
EDB	<0.04
LEAD	3.13
1,2-DCA	<1

CK-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<5
MTBE	16
NAPHTHALENE	<5
EDB	<0.04
LEAD	<10
1,2-DCA	<1

MW-29	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	0.02'
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

MW-28	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**13000**
TOLUENE	**64000**
ETHYLBENZENE	**9100**
TOTAL XYLENES	**51000**
TOTAL BTEX	137100
MTBE	**38000**
NAPHTHALENE	**4400**
EDB	**5.2**
LEAD	3.23
1,2-DCA	<200

MW-14	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**4400**
TOLUENE	45
ETHYLBENZENE	<20
TOTAL XYLENES	<40
TOTAL BTEX	<4505
MTBE	14
NAPHTHALENE	**240**
EDB	<0.04
LEAD	6.5
1,2-DCA	<20

MW-27	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	0.08'
BENZENE	NS
TOLUENE	NS
ETHYLBENZENE	NS
TOTAL XYLENES	NS
TOTAL BTEX	NA
MTBE	NS
NAPHTHALENE	NS
EDB	NS
LEAD	NS
1,2-DCA	NS

MW-15	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**2600**
TOLUENE	42
ETHYLBENZENE	15
TOTAL XYLENES	<20
TOTAL BTEX	<2677
MTBE	11
NAPHTHALENE	**140**
EDB	<0.04
LEAD	3.13
1,2-DCA	<10

MW-22	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**1700**
TOLUENE	<10
ETHYLBENZENE	<10
TOTAL XYLENES	<20
TOTAL BTEX	<1740
MTBE	11
NAPHTHALENE	**120**
EDB	<0.04
LEAD	<10
1,2-DCA	<10

DW-2	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	4.3
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
TOTAL BTEX	<8.3
MTBE	9
NAPHTHALENE	6.9
EDB	<0.04
LEAD	<10
1,2-DCA	<1

LEGEND

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:
1. BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.
2. NA = NOT APPLICABLE
3. NS = NOT SAMPLED

TITLE FIGURE 4C UST PERMIT #11760
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE 1252116.dwg | TYPE CODE | PREP. BY JH | REV. BY | SCALE 1"=80' | DATE 03-23-2010 | PROJECT NO. 14.25384.0012

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

03/25/2010 12:21pm - sthompson - H:\125 - ATC__1252116_pl-03-23-10.dwg

APPENDIX A

SCDHEC Correspondence

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 01 2009

SEP 02 REC'D

BILLY KEENAN
KEENAN OIL COMPANY, INC.
3923 WEST BELTLINE BOULEVARD
COLUMBIA, SC 29204

Re: **AFVR, Well Replacement, & Groundwater Sampling Directive**
Former United Exxon, 401 North Congress Street, Winnsboro, SC 29180
UST Permit # 11760; CA# 36932 (Rel. 2) & 36933 (Rel. 3); MWA# UMW-23084
Releases 2 and 3 reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the file and the next necessary scope of work is to install three (3) new monitoring wells in the vicinity of MW-2 as recommended. After installation of new wells, conduct four (4) Aggressive Fluid/Vapor Recovery (AFVR) events to remove free phase product from monitoring wells. These events should be performed on the newly installed monitoring wells as well as MW2 and MW13. Approximately one (1) month after completion of the AFVR events, a comprehensive groundwater sampling event should be completed to obtain current data.

Samples from all monitoring wells should be collected and analyzed for BTEX, naphthalene, MTBE, and 1,2-DCA by EPA method 8260B, EDB by EPA Method 8011, and lead by EPA method 6010. Purging will not be required for existing monitoring wells where the water table is bracketed by the screen. Please have your contractor request low detection limits/reporting levels for all analyses. The use of "J" values is encouraged. Note that a non-detect analysis where the detection limit/reporting level exceeds the risk-based screening level (RBSL) is inconclusive. In this case, SUPERB payment may be denied since the analysis cannot be used as the basis for a decision.

Cost Agreement # 36932 and 36933 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. The AFVR, well installation, and groundwater sampling activities may proceed immediately upon receipt of this letter. The AFVR/Groundwater Sampling Report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR event started and ended, ambient air temperature, and general weather conditions during the AFVR event.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the events. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).
- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.

- A table documenting the free product thickness in each well before and after the recovery events.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Historical and current groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.
- Boring logs and 1903 forms for the well installation

Magnehelic gauges must be installed on the extraction wells and monitoring wells immediately surrounding the extraction wells. The AFVR should be completed by establishing a vacuum on the subsurface through the existing monitoring wells. The unit must be capable of providing a minimum airflow of 250 cubic feet per minute (CPM) at 25 inches Mercury vacuum. An airtight seal must be established on the top of each extraction well. Drop tubes inserted in the well(s) should have an inside diameter of at least one (1) inch and should initially be installed six inches below the bottom of the product or the top of the well screen whichever is deeper. The drop tubes should be lowered deeper in the well only if the well exhibits slow recovery (repeatedly goes dry) or if it is deemed necessary to establish a steeper hydraulic gradient to enhance free product migration toward the well. The goal is to maximize the recovery of free product and petroleum vapors in the capillary fringe and minimize the recovery of ground water.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

An AFVR/groundwater monitoring report and invoice are due within 90 days from the date of this letter. Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference **UST Permit # 11760**. If you have any questions, please feel free to contact me by phone at (803) 896-6649, by fax at (803) 896-6245, or email at koonjt@dhec.sc.gov.

Sincerely,

Justin Koon, EIT
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Cost Agreement
Monitoring well approval
Site Map (Proposed Locations of New Monitoring Wells)

cc: ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ enc)
Technical File (w/ enc)

APPENDIX B

Monitor Well Construction Logs

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY COMPANY (last) (first)
Address: 3923 WEST BELTLINE BLVD
City: COLUMBIA State: SC Zip: 29204
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 NORTH CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
GRASS/GRAVEL	1.0	1.0
ORANGE/TAN SILTY SAND	3.0	4.0
ORANGE CLAYEY SILTY SAND	31.0	35.0
WHITE/TAN SANDY SILT	15.0	50.0
RED/ORANGE SANDY SILT	10.0	60.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-27 BENTONITE SEAL FROM 37.0 TO 42.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/01/09
60.0 ft. Date Completed: 10/01/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 45.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 45.0 ft. and 60.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 52.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 42.0 ft. to 60.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 37.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE MCCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 10/05/09
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-27
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	10/1/2009

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Grab
LOGGED BY:	Cindy Ng	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			1.1		5.0	Brown, slightly sandy (fine grained), stiff Clay, dry,
					5.5	no odor
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			344		10.0	Red/brown, sandy (fine grained), stiff Clay, dry, odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			301		15.0	Orange/brown, sandy (fine to medium grained), stiff
					15.5	Clay, odor
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-27

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			419		20.0	Tan, silty, medium stiff Clay, dry, odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			598		25.0	Tan, silty, medium stiff Clay, dry, odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1166		30.0	Tan, sandy (fine to medium), stiff Clay, dry, strong odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			622		35.0	Tan, sandy (fine to medium), stiff Clay, dry, odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			130		40.0	Tan, sandy (fine to medium grained) Clay, moist, odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-27

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			159		45.0	Pink/white, silty, very stiff Clay, moist, odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
50			162		50.0	Pink/white, silty, very stiff Clay, moist, odor
					50.5	
					51.0	
					51.5	
					52.0	
					52.5	
					53.0	Water Level at 52.60 feet on February 24, 2010
					53.5	
					54.0	
					54.5	
55			64		55.0	Pink/white, silty, very stiff Clay, moist, odor
					55.5	
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
					60.0	Termination of Boring at 60 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY COMPANY (last) (first)
Address: 3923 WEST BELTLINE BLVD
City: COLUMBIA State: SC Zip: 29204
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 NORTH CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT/GRAVEL	1.0	1.0
ORANGE/TAN SILTY SAND	3.0	4.0
ORANGE CLAYEY SILTY SAND	31.0	35.0
WHITE/TAN SANDY SILT	15.0	50.0
TAN/ORANGE SANDY SILT	10.0	60.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-28 BENTONITE SEAL FROM 37.0 TO 42.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/01/09
60.0 ft. Date Completed: 10/01/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 45.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 45.0 ft. and 60.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 52.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 42.0 ft. to 60.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 37.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE MCCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 10/05/09
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-28
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	10/1/2009
PROJECT LOCATION: 401 N. Congress Street Winnsboro, SC		DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Grab
LOGGED BY:	Cindy Ng	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			1.3		5.0	Red/white, sandy (fine grained), soft Clay, dry, no
					5.5	odor
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			2.2		10.0	Tan, clayey (soft), fine grained Sand, dry, no odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1		15.0	Reddish brown, soft Clay, dry, no odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-28

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			5.3		20.0	Reddish brown, soft Clay, dry, no odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			27.8		25.0	Reddish brown, soft Clay, dry, odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			28.2		30.0	Reddish brown, sandy (fine grained), medium soft Clay,
					30.5	moist, odor
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			48.4		35.0	Reddish brown, sandy (fine grained), medium soft Clay,
					35.5	moist, odor
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			94.7		40.0	Tan, sandy (fine grained) Clay, moist, odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)				PROJECT NO.: 14.25384.0012		BORING I.D.: MW-28
SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			76.9		45.0	Tan, silty, stiff Clay, moist, odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	Water Level at 49.59 feet on February 24, 2010
50			426		50.0	Tan, silty, stiff Clay, moist, odor
					50.5	
					51.0	
					51.5	
					52.0	
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			221		55.0	Tan, silty, stiff Clay, moist, odor
					55.5	
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
					60.0	Termination of Boring at 60 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY COMPANY (last) (first)
Address: 3923 WEST BELTLINE BLVD
City: COLUMBIA State: SC Zip: 29204
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 NORTH CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
ASPHALT/STONE	1.0	1.0
ORANGE/TAN SILTY SAND	3.0	4.0
ORANGE CLAYEY SILTY SAND	31.0	35.0
WHITE/TAN SANDY SILT	15.0	50.0
TAN/ORANGE SANDY SILT	10.0	60.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-29 BENTONITE SEAL FROM 37.0 TO 42.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 10/01/09
60.0 ft. Date Completed: 10/01/09

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 45.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 45.0 ft. and 60.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 52.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 42.0 ft. to 60.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 37.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: _____ ft. _____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE MCCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 10/05/09
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003)

COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-29
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	10/1/2009

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Grab
LOGGED BY:	Cindy Ng	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			2.1		5.0	Red/white, sandy (fine grained), soft Clay, dry, no
					5.5	odor
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			1.6		10.0	Tan, clayey (soft), fine grained Sand, dry, no odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			2.4		15.0	Reddish brown, soft Clay, dry, no odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
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HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-29

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			21.3		20.0	Reddish brown, soft Clay, dry, odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			1007		25.0	Reddish brown, soft Clay, dry, odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1806		30.0	Reddish brown, sandy (fine grained), medium soft Clay,
					30.5	moist, odor
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			3189		35.0	Reddish brown, sandy (fine grained), medium soft Clay,
					35.5	moist, odor
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			3353		40.0	Tan, sandy (fine grained) Clay, moist, odor

DRILLING METHODS
AIR - AIR ROTARY
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RC - ROCK CORING
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* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-29

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			717		45.0	Tan, silty, stiff Clay, moist, odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
50			1443		50.0	Tan, silty, stiff Clay, moist, odor
					50.5	
					51.0	
					51.5	Water Level at 51.22 feet on February 24, 2010
					52.0	
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			610		55.0	Tan, silty, stiff Clay, moist, odor
					55.5	
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
					60.0	Termination of Boring at 60 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

APPENDIX C

AFVR Summary Reports

SHAMROCK
ENVIRONMENTAL CORPORATION

503 Patton Avenue • Greensboro, NC 27406
336-375-1989 800-881-1098 Fax 336-282-2499
www.shamrockenviro.com • info@shamrockenviro.com

March 11, 2010

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Summary for Enhanced Fluid Recovery Event
United Exxon
Job Location: 401 N. Congress Street; Winnsboro,SC
Date of Event: October 6, 2009

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above-referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blow vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents the EFR event recently performed at the above-referenced site. This event was conducted on October 6, 2009.

The following able provides the event duration, the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Event Duraction (Consecutive Hours)	Total Fluids Recovered (gallons)	Total Separated Free Product (gallons)	Total Calculated Free Product Recovered (gallons)
Oct. 6, 2009	8	78	4	10.48

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event. Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Wellhead vacuum in inches of mercury for each well used for EFR recovery.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Event Water Levels
Date of Event: October 6, 2009

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-27	53.48	NFP	54.47	NFP
MW-28	51.61	NFP	51.50	NFP
MW-2	53.89	NFP	52.58	NFP
MW-29	52.39	NFP	53.47	NFP

ND = Not Determined
DTW = Depth to Water in feet below well casing
DTP = Depth to Product in feet below well casing
NFP = No Free Product detected

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,

Shamrock Environmental Corporation

Johnny Shelton

Johnny Shelton
Project Manager

Total Emissions

ATC

United Exxon

Date of Event: 10-6-09

Date	Time (hr)	Time (min)	Flow (DSCFM)	PPM Measured (ppm)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
10-6-09	7:00	0	629.0	2,702.0	2702	14369	0.00090	33.854	16.927
10-6-09	7:30	30	618.5	1,651.0	1651	8780	0.00055	20.342	10.171
10-6-09	8:00	60	550.8	1,257.0	1257	6685	0.00042	13.792	6.896
10-6-09	8:30	90	532.7	1,068.0	1068	5679	0.00035	11.333	5.666
10-6-09	9:00	120	437.4	481.0	481	2558	0.00016	4.191	2.095
10-6-09	9:30	150	416.5	430.0	430	2287	0.00014	3.567	1.784
10-6-09	10:00	180	397.9	414.0	414	2202	0.00014	3.281	1.641
10-6-09	10:30	210	459.6	408.0	408	2170	0.00014	3.735	1.868
10-6-09	11:00	240	456.3	405.0	405	2154	0.00013	3.681	1.840
10-6-09	11:30	270	303.3	678.0	678	3605	0.00023	4.096	2.048
10-6-09	12:00	300	392.1	665.0	665	3536	0.00022	5.193	2.597
10-6-09	12:30	330	396.1	673.0	673	3579	0.00022	5.311	2.655
10-6-09	13:00	360	411.8	657.0	657	3494	0.00022	5.389	2.694
10-6-09	13:30	390	402.9	638.0	638	3393	0.00021	5.121	2.560
10-6-09	14:00	420	430.1	555.0	555	2951	0.00018	4.755	2.377
10-6-09	14:30	450	400.2	408.0	408	2170	0.00014	3.253	1.626
10-6-09	15:00	480	385.3	396.0	396	2106	0.00013	3.039	1.519
		510				**Total emissions in pounds**			**66.966**

Total emission in gallons **10.47976741**

K=number of carbons in calibration gas
ppm=parts per million of VOC's measured in stack
Cg:m=mass concentration of VOC emissions as carbon
Cg=mass concentration of VOC emissions as carbon, dry basis, at STP
PRMg=pollutant mass removal rate of VOC's, as gasoline
PRMg=pollutant mass removal rate of VOC's, as carbon

Field Data Record

ATC

United Exxon

Date of Event: 10-6-09

Date	Time (hr)	Time (min)	Unit-Vac - VT-7 (inches of Hg)	MW-28 (inches of Hg)	MW-27 (inches of Hg)	MW-2 (inches of Hg)	MW-29 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)
10-6-09	7:00	0	24.0	18.0	18.0			4000	6	110	86.5	0.135	629.0
10-6-09	7:30	30	24.0	18.0	20.0			4000	6	125	87.3	0.127	618.5
10-6-09	8:00	60	24.0	18.0	18.0			4000	6	145	80.4	0.196	550.8
10-6-09	8:30	90	24.0	18.0	18.0			4000	6	150	78.4	0.216	532.7
10-6-09	9:00	120	24.0	19.0	17.0			4000	6	155	64.9	0.351	437.4
10-6-09	9:30	150	24.0	19.0	20.0			4000	6	160	62.3	0.377	416.5
10-6-09	10:00	180	24.0	19.0	20.0			4000	6	165	60.0	0.4	397.9
10-6-09	10:30	210	24.0	19.0	19.0			4000	6	165	69.3	0.307	459.6
10-6-09	11:00	240	24.0	19.0	19.0			4000	6	165	68.8	0.312	456.3
10-6-09	11:30	270	24.0			15.0	15.0	3160	6	150	56.5	0.435	303.3
10-6-09	12:00	300	24.0			15.0	15.0	4000	6	150	57.7	0.423	392.1
10-6-09	12:30	330	24.0			14.0	15.0	4000	6	150	58.3	0.417	396.1
10-6-09	13:00	360	24.0			14.0	15.0	4000	6	150	60.6	0.394	411.8
10-6-09	13:30	390	24.0			14.0	15.0	4000	6	150	59.3	0.407	402.9
10-6-09	14:00	420	24.0			14.0	15.0	4000	6	150	63.3	0.367	430.1
10-6-09	14:30	450	24.0			14.0	15.0	4000	6	150	58.9	0.411	400.2
10-6-09	15:00	480	24.0			14.0	15.0	4000	6	150	56.7	0.433	385.3

OL=Off-line
QSTD=Flow at DSCFM

SHAMROCK
ENVIRONMENTAL CORPORATION

503 Patton Avenue • Greensboro, NC 27406
336-375-1989 800-881-1098 Fax 336-282-2499
www.shamrockenviro.com • info@shamrockenviro.com

March 11, 2010

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Summary for Enhanced Fluid Recovery Event
United Exxon
Job Location: 401 N. Congress Street; Winnsboro,SC
Date of Event: October 27, 2009

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above-referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blow vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents the EFR event recently performed at the above-referenced site. This event was conducted on October 27, 2009.

The following able provides the event duration, the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Event Duraction (Consecutive Hours)	Total Fluids Recovered (gallons)	Total Separated Free Product (gallons)	Total Calculated Free Product Recovered (gallons)
Oct. 27, 2009	8	289	0	12.905

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event. Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Wellhead vacuum in inches of mercury for each well used for EFR recovery.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Event Water Levels
Date of Event: October 27, 2009

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-27	53.58	NFP	54.21	NFP
MW-28	51.65	NFP	53.73	NFP
MW-2	52.63	NFP	52.22	NFP
MW-29	52.35	NFP	54.03	NFP

ND = Not Determined
DTW = Depth to Water in feet below well casing
DTP = Depth to Product in feet below well casing
NFP = No Free Product detected

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,

Shamrock Environmental Corporation

Johnny Shelton
Project Manager

Field Data Record

ATC

United Exxon

Date of Event: 10-27-2009

Date	Time (hr)	Time (min)	Unit-Vac - VT-7 (inches of Hg)	MW-27 (inches of Hg)	MW-28 (inches of Hg)	MW-2 (inches of Hg)	MW-29 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)
10-27-2009	7:00	0	24.0	21.0	15.0			2580	6	110	63.3	0.367	296.9
10-27-2009	7:30	30	24.0	21.0	15.0			2930	6	127	55.7	0.443	288.1
10-27-2009	8:00	60	24.0	21.0	15.0			2870	6	132	54.5	0.455	273.8
10-27-2009	8:30	90	24.0	21.0	20.0			4000	6	152	58.4	0.416	395.5
10-27-2009	9:00	120	24.0	21.0	20.0			4000	6	156	63.2	0.368	425.2
10-27-2009	9:30	150	24.0	21.0	20.0			4000	6	158	61.3	0.387	411.1
10-27-2009	10:00	180	24.0	20.0	20.0			4000	6	159	60.9	0.391	407.8
10-27-2009	10:30	210	24.0	20.0	20.0			4000	6	154	60.7	0.393	409.8
10-27-2009	11:00	240	24.0	20.0	20.0			4000	6	152	59.8	0.402	405.0
10-27-2009	11:30	270	24.0			20.0	20.0	2870	6	152	70.4	0.296	342.1
10-27-2009	12:00	300	24.0			17.0	17.0	3250	6	147	62.9	0.371	349.0
10-27-2009	12:30	330	24.0			17.0	17.0	3710	6	140	64.5	0.355	413.3
10-27-2009	13:00	360	24.0			17.0	17.0	3780	6	137	63.6	0.364	417.3
10-27-2009	13:30	390	24.0			17.0	17.0	3630	6	135	62.1	0.379	392.6
10-27-2009	14:00	420	24.0			17.0	17.0	3870	6	142	65.1	0.349	433.6
10-27-2009	14:30	450	24.0			17.0	17.0	4000	6	141	72.5	0.275	500.0
10-27-2009	15:00	480	24.0			17.0	17.0	4000	6	144	66.3	0.337	455.0

OL=Off-line
QSTD=Flow at DSCFM

Total Emissions

ATC

United Exxon

Date of Event: 10-27-2009

Date	Time (hr)	Time (min)	Flow (DSCFM)	PPM Measured (ppm)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
10-27-2009	7:00	0	296.9	1,436.0	1436	7636	0.00048	8.492	4.246
10-27-2009	7:30	30	288.1	1,381.0	1381	7344	0.00046	7.925	3.963
10-27-2009	8:00	60	273.8	1,333.0	1333	7089	0.00044	7.270	3.635
10-27-2009	8:30	90	395.5	1,062.0	1062	5648	0.00035	8.367	4.183
10-27-2009	9:00	120	425.2	1,232.0	1232	6552	0.00041	10.436	5.218
10-27-2009	9:30	150	411.1	1,223.0	1223	6504	0.00041	10.016	5.008
10-27-2009	10:00	180	407.8	1,331.0	1331	7078	0.00044	10.812	5.406
10-27-2009	10:30	210	409.8	1,297.0	1297	6897	0.00043	10.586	5.293
10-27-2009	11:00	240	405.0	1,268.0	1268	6743	0.00042	10.229	5.115
10-27-2009	11:30	270	342.1	1,402.0	1402	7456	0.00047	9.554	4.777
10-27-2009	12:00	300	349.0	1,461.0	1461	7769	0.00049	10.156	5.078
10-27-2009	12:30	330	413.3	1,436.0	1436	7636	0.00048	11.821	5.911
10-27-2009	13:00	360	417.3	1,232.0	1232	6552	0.00041	10.240	5.120
10-27-2009	13:30	390	392.6	1,246.0	1246	6626	0.00041	9.744	4.872
10-27-2009	14:00	420	433.6	1,091.0	1091	5802	0.00036	9.424	4.712
10-27-2009	14:30	450	500.0	1,060.0	1060	5637	0.00035	10.557	5.279
10-27-2009	15:00	480	455.0	1,026.0	1026	5456	0.00034	9.298	4.649
		510				**Total emissions in pounds**			**82.463**

Total emission in gallons **12.90508147**

K=number of carbons in calibration gas
ppm=parts per million of VOC's measured in stack
Cg:m=mass concentration of VOC emissions as carbon
Cg=mass concentration of VOC emissions as carbon, dry basis, at STP
PRMg=pollutant mass removal rate of VOC's, as gasoline
PRMg=pollutant mass removal rate of VOC's, as carbon

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March 11, 2010

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Summary for Enhanced Fluid Recovery Event
United Exxon
Job Location: 401 N. Congress Street; Winnsboro,SC
Date of Event: November 17, 2009

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above-referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blow vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents the EFR event recently performed at the above-referenced site. This event was conducted on November 17, 2009.

The following able provides the event duration, the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Event Duraction (Consecutive Hours)	Total Fluids Recovered (gallons)	Total Separated Free Product (gallons)	Total Calculated Free Product Recovered (gallons)
Nov. 17, 2009	8.5	505	9.3	3.544

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event. Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Wellhead vacuum in inches of mercury for each well used for EFR recovery.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Event Water Levels
Date of Event: November 17, 2009

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-27	53.82	NFP	54.00	NFP
MW-28	51.83	51.72	53.99	53.85
MW-29	53.77	NFP	54.05	53.98
MW-2	53.01	52.73	53.67	NFP

ND = Not Determined
DTW = Depth to Water in feet below well casing
DTP = Depth to Product in feet below well casing
NFP = No Free Product detected

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,

Shamrock Environmental Corporation

Johnny Shelton
Project Manager

Total Emissions Data

ATC Associates

United Exxon

Date of Event: 11-17-09

Date	Time (hr)	Time (min)	Flow (DSCFM)	PPM Measured (ppm)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
11-17-09	7:00	0	724.0	59.4	59.4	316	0.00002	0.857	0.428
11-17-09	7:30	30	836.0	41.5	41.5	221	0.00001	0.691	0.346
11-17-09	8:00	60	784.0	97.3	97.3	517	0.00003	1.520	0.760
11-17-09	8:30	90	863.0	107.0	107	569	0.00004	1.839	0.920
11-17-09	9:00	120	854.0	189.0	189	1005	0.00006	3.215	1.608
11-17-09	9:30	150	852.0	201.0	201	1069	0.00007	3.411	1.706
11-17-09	10:00	180	859.0	176.0	176	936	0.00006	3.012	1.506
11-17-09	10:30	210	863.0	183.0	183	973	0.00006	3.146	1.573
11-17-09	11:00	240	853.0	171.0	171	909	0.00006	2.906	1.453
11-17-09	11:30	270	1246.0	119.0	119	633	0.00004	2.954	1.477
11-17-09	12:00	300	1172.0	121.0	121	643	0.00004	2.825	1.412
11-17-09	12:30	330	1144.0	123.0	123	654	0.00004	2.803	1.401
11-17-09	13:00	360	1115.0	123.0	123	654	0.00004	2.732	1.366
11-17-09	13:30	390	1075.0	125.0	125	665	0.00004	2.677	1.338
11-17-09	14:00	420	1082.0	127.0	127	675	0.00004	2.737	1.369
11-17-09	14:30	450	1045.0	126.0	126	670	0.00004	2.623	1.311
11-17-09	15:00	480	1050.0	127.0	127	675	0.00004	2.656	1.328
11-17-09	15:30	510	1055.0	128.0	128	681	0.00004	2.690	1.345
		540				**Total emissions in pounds**			**22.646**
						Total emission in gallons			**3.543972022**

K=number of carbons in calibration gas

ppm=parts per million of VOC's measured in stack

Cg:m=mass concentration of VOC emissions as carbon

Cg=mass concentration of VOC emissions as carbon, dry basis, at STP

PRMg=pollutant mass removal rate of VOC's, as gasoline

PRMg=pollutant mass removal rate of VOC's, as carbon

Field Data Record

ATC Associates

United Exxon

Date of Event: 11-17-09

Date	Time (hr)	Time (min)	Unit-Vac-VT-7 (inches of Hg)	MW-27 (inches of Hg)	MW-28 (inches of Hg)	MW-29 (inches of Hg)	MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)
11-17-09	7:00	0	24.0	19.0	20.0	OL	OL	4000	6	105	31.6	0.684	231.8
11-17-09	7:30	30	24.0	19.0	20.0	OL	OL	4000	6	129.9	22.5	0.775	158.1
11-17-09	8:00	60	24.0	19.0	20.0	OL	OL	4000	6	136	11.5	0.885	80.0
11-17-09	8:30	90	24.0	19.0	20.0	OL	OL	4000	6	139.1	12.7	0.873	87.9
11-17-09	9:00	120	24.0	19.0	20.0	OL	OL	4000	6	139.8	13.9	0.861	96.1
11-17-09	9:30	150	24.0	19.0	20.0	OL	OL	4000	6	140	13.3	0.867	91.9
11-17-09	10:00	180	24.0	19.0	20.0	OL	OL	4000	6	149	14.8	0.852	100.7
11-17-09	10:30	210	24.0	19.0	20.0	OL	OL	4000	6	158	14.3	0.857	95.9
11-17-09	11:00	240	24.0	19.0	20.0	OL	OL	4000	6	160	15.1	0.849	100.9
11-17-09	11:30	270	24.0	OL	OL	20.0	18.0	4000	6	164	13.7	0.86	91.0
11-17-09	12:00	300	24.0	OL	OL	20.0	18.0	4000	6	164	14.3	0.86	95.0
11-17-09	12:30	330	24.0	OL	OL	20.0	18.0	4000	6	167	13.5	0.87	89.2
11-17-09	13:00	360	24.0	OL	OL	20.0	18.0	4000	6	168	16.1	0.84	106.3
11-17-09	13:30	390	24.0	OL	OL	20.0	18.0	4000	6	167	11.7	0.88	77.3
11-17-09	14:00	420	24.0	OL	OL	20.0	18.0	4000	6	168	12.3	0.88	81.2
11-17-09	14:30	450	24.0	OL	OL	20.0	18.0	4000	6	168	16.4	0.84	108.2
11-17-09	15:00	480	24.0	OL	OL	20.0	18.0	4000	6	169	11.9	0.88	78.4
11-17-09	15:30	510	24.0	OL	OL	20.0	18.0	4000	6	169	11.1	0.889	73.1

OL=Off-line

QSTD=Flow at DSCFM

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March 11, 2010

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Summary for Enhanced Fluid Recovery Event
United Exxon
Job Location: 401 N. Congress Street; Winnsboro,SC
Date of Event: January 19, 2010

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above-referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blow vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents the EFR event recently performed at the above-referenced site. This event was conducted on January 19, 2010.

The following able provides the event duration, the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Event Duraction (Consecutive Hours)	Total Fluids Recovered (gallons)	Total Separated Free Product (gallons)	Total Calculated Free Product Recovered (gallons)
Jan. 19, 2010	8.0	586	10.2	14.782

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event. Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Wellhead vacuum in inches of mercury for each well used for EFR recovery.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Event Water Levels
Date of Event: January 19, 2010

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	47.32	47.25	47.73	NFP
MW-13	42.68	42.34	44.22	44.19

ND = Not Determined
DTW = Depth to Water in feet below well casing
DTP = Depth to Product in feet below well casing
NFP = No Free Product detected

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,

Shamrock Environmental Corporation

Johnny Shelton
Project Manager

Total Emissions Data

ATC Associates

United Exxon

Date of Event: 1-19-10

Date	Time (hr)	Time (min)	Flow (DSCFM)	PPM Measured (ppm)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
1-19-10	8:10	0	724.0	401.0	401	2132	0.00013	5.783	2.892
1-19-10	8:40	30	836.0	393.0	393	2090	0.00013	6.545	3.272
1-19-10	9:10	60	784.0	381.0	381	2026	0.00013	5.950	2.975
1-19-10	9:40	90	863.0	391.0	391	2079	0.00013	6.721	3.361
1-19-10	10:10	120	854.0	404.0	404	2148	0.00013	6.873	3.436
1-19-10	10:40	150	852.0	413.0	413	2196	0.00014	7.009	3.505
1-19-10	11:10	180	859.0	441.0	441	2345	0.00015	7.546	3.773
1-19-10	11:40	210	863.0	523.0	523	2781	0.00017	8.991	4.495
1-19-10	12:10	240	853.0	575.0	575	3058	0.00019	9.770	4.885
1-19-10	12:40	270	1246.0	621.0	621	3302	0.00021	15.413	7.707
1-19-10	13:10	300	1172.0	662.0	662	3520	0.00022	15.455	7.727
1-19-10	13:40	330	1144.0	694.0	694	3691	0.00023	15.815	7.907
1-19-10	14:10	360	1115.0	704.0	704	3744	0.00023	15.636	7.818
1-19-10	14:40	390	1075.0	720.0	720	3829	0.00024	15.418	7.709
1-19-10	15:10	420	1082.0	724.0	724	3850	0.00024	15.604	7.802
1-19-10	15:40	450	1045.0	725.0	725	3855	0.00024	15.092	7.546
1-19-10	16:10	480	1050.0	731.0	731	3887	0.00024	15.289	7.645
		510							
						Total emissions in pounds			**94.454**
						Total emission in gallons			**14.7815996**

K=number of carbons in calibration gas

ppm=parts per million of VOC's measured in stack

Cg:m=mass concentration of VOC emissions as carbon

Cg=mass concentration of VOC emissions as carbon, dry basis, at STP

PRMg=pollutant mass removal rate of VOC's, as gasoline

PRMg=pollutant mass removal rate of VOC's, as carbon

Field Data Record

ATC Associates

United Exxon

Date of Event: 1-19-10

Date	Time (hr)	Time (min)	Unit-Vac - VT-7 (inches of Hg)	MW-10 (inches of Hg)	MW-13 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)
1-19-10	8:10	0	24.0	10.0	14.0	4000	6	105	31.6	0.684	231.8
1-19-10	8:40	30	24.0	10.0	14.0	4000	6	129.9	22.5	0.775	158.1
1-19-10	9:10	60	24.0	10.0	14.0	4000	6	136	11.5	0.885	80.0
1-19-10	9:40	90	24.0	10.0	14.0	4000	6	139.1	12.7	0.873	87.9
1-19-10	10:10	120	24.0	10.0	14.0	4000	6	139.8	13.9	0.861	96.1
1-19-10	10:40	150	24.0	9.0	15.0	4000	6	140	13.3	0.867	91.9
1-19-10	11:10	180	24.0	11.0	15.0	4000	6	149	14.8	0.852	100.7
1-19-10	11:40	210	24.0	12.0	14.0	4000	6	158	14.3	0.857	95.9
1-19-10	12:10	240	24.0	11.0	15.0	4000	6	160	15.1	0.849	100.9
1-19-10	12:40	270	24.0	11.0	15.0	4000	6	164	13.7	0.86	91.0
1-19-10	13:10	300	24.0	11.0	14.0	4000	6	164	14.3	0.86	95.0
1-19-10	13:40	330	24.0	12.0	15.0	4000	6	167	13.5	0.87	89.2
1-19-10	14:10	360	24.0	12.0	15.0	4000	6	168	16.1	0.84	106.3
1-19-10	14:40	390	24.0	12.0	15.0	4000	6	167	11.7	0.88	77.3
1-19-10	15:10	420	24.0	12.0	15.0	4000	6	168	12.3	0.88	81.2
1-19-10	15:40	450	24.0	12.0	15.0	4000	6	168	16.4	0.84	108.2
1-19-10	16:10	480	24.0	12.0	15.0	4000	6	169	11.9	0.88	78.4

OL=Off-line

QSTD=Flow at DSCFM

APPENDIX D

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Giles, John Monechan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 42.53 feet
Total Well Depth (TWD) 48.0 feet
Length of the water column (LWC=TWD-DGW) 5.47 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1315	
pH (s.u.)							6.20	
Specific Conductivity (µmhos/cm)							303	
Water Temperature (°C)							18.3	
Dissolved Oxygen							8.56	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.32	feet
Depth to Free Product (DFP)	57.61	feet
Depth to Ground Water (DGW)	57.93	feet
Total Well Depth (TWD)	54.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product, no sample

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Moreehan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW3
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	44.24	feet
Total Well Depth (TWD)	45.0	feet
Length of the water column (LWC=TWD-DGW)	0.76	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: BAILED DRY SLOW NO RECHARGE. VOA ONLY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW4
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grices, John Monegham
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW4R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	48.56	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)	11.44	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1245	
pH (s.u.)							6.56	
Specific Conductivity (µmhos/cm)							164	
Water Temperature (°C)							18.2	
Dissolved Oxygen							8.92	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Moneghan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW5
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 42.43 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 2.57 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1355	
pH (s.u.)							6.25	
Specific Conductivity (µmhos/cm)							.156	
Water Temperature (°C)							19.1	
Dissolved Oxygen							8.67	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/24/10
Field Personnel: Brandon Grimes, John Monaghan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Know
Site ID#: _____ Monitoring Well # MW 6n
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 57.27 feet
Total Well Depth (TWD) 65.0 feet
Length of the water column (LWC=TWD-DGW) 7.73 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1310	
pH (s.u.)							5.91	
Specific Conductivity (µmhos/cm)							133	
Water Temperature (°C)							15.35	
Dissolved Oxygen							7.74	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Moneghan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW7
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	—	feet
Total Well Depth (TWD)	52.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Moreehan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW8
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 42.34 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 2.64 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1335	
pH (s.u.)							6.22	
Specific Conductivity (µmhos/cm)							167	
Water Temperature (°C)							17.9	
Dissolved Oxygen							8.73	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monaghan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW9R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 53.66 feet
Total Well Depth (TWD) 65.0 feet
Length of the water column (LWC=TWD-DGW) 11.34 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1240	
pH (s.u.)							5.51	
Specific Conductivity (µmhos/cm)							110	
Water Temperature (°C)							14.25	
Dissolved Oxygen							8.97	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, Warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW10
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 46.90 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 3.10 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0945	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DOWN

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Giles, John Monegham
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW11
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	32.67	feet
Total Well Depth (TWD)	38.0	feet
Length of the water column (LWC=TWD-DGW)	5.33	feet

1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1125	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Moreshan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW12
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	40.13	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	9.87	feet

1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								1030
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Moreghan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW13
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.13	feet
Depth to Free Product (DFP)	41.88	feet
Depth to Ground Water (DGW)	42.01	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C) = ____ X ____ = ____ gals
3 casing volume (3 X CV) = ____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free Product Present

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Moneghan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW14
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 34.19 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 5.81 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1120	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW15
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 35.82 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 4.18 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1125	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10

Field Personnel: Brandon Gillies, John Monaghan

General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)

Site ID#: _____ Monitoring Well # MW16

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	43.29	feet
Total Well Depth (TWD)	500	feet
Length of the water column (LWC=TWD-DGW)	6.71	feet
1 casing volume (CV=LWC X C) = ____ X ____ =		gals
3 casing volume (3 X CV) = ____ gals (standard purge volume)		

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							Post	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monaghan
General Weather Conditions: Cloudy, Warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW17
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 37.59 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 12.41 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1040	
pH (s.u.)							6.10	
Specific Conductivity (µmhos/cm)							179	
Water Temperature (°C)							17.42	
Dissolved Oxygen							8.68	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10

Field Personnel: Brandon Gillies, John Monechan

General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)

Site ID#: _____ Monitoring Well # MW18

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	39.68	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	10.32	feet

1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals

3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1055	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Giles, John Moreehan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW19
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 40.04 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 5.94 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1020	
pH (s.u.)							6.26	
Specific Conductivity (µmhos/cm)							155	
Water Temperature (°C)							16.80	
Dissolved Oxygen							9.27	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monaghan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW20
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 39.99 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 6.01 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0955	
pH (s.u.)							5.39	
Specific Conductivity (µmhos/cm)							177	
Water Temperature (°C)							17.17	
Dissolved Oxygen							6.25	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10

Field Personnel: Brandon Gillies, John Monechan

General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)

Site ID#: _____ Monitoring Well # MW21

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 26.39 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 13.61 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0555	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Giles, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW22
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 31.81 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 8.19 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)							1025	
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Giles, John Monechan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW23
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 30.64 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 9.36 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1215	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW24
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 18.46 feet
Total Well Depth (TWD) 25.0 feet
Length of the water column (LWC=TWD-DGW) 6.54 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1240	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10

Field Personnel: Brandon Grimes, John Monechan

General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)

Site ID#: _____ Monitoring Well # MW25

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 13.56 feet
Total Well Depth (TWD) 23.0 feet
Length of the water column (LWC=TWD-DGW) 9.44 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1310	
pH (s.u.)							5.43	
Specific Conductivity (µmhos/cm)							112.	
Water Temperature (°C)							17.82	
Dissolved Oxygen							6.91	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, Warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW2C
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 17.61 feet
Total Well Depth (TWD) 35.0 feet
Length of the water column (LWC=TWD-DGW) 17.39 feet
1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1400	
pH (s.u.)							5.83	
Specific Conductivity (µmhos/cm)							109	
Water Temperature (°C)							18.17	
Dissolved Oxygen							6.44	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monechan
General Weather Conditions: Cloudy, rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW27
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.08	feet
Depth to Free Product (DFP)	52.52	feet
Depth to Ground Water (DGW)	52.60	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals
3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW2E
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	49.59	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)	10.41	feet
1 casing volume (CV=LWC X C)= ____ X ____ =	150	gals
3 casing volume (3 X CV)=	450	gals (standard purge volume)

Total Volume of Water Purged Before Sampling 3.0 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0925	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Baloony

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # MW29
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.02	feet
Depth to Free Product (DFP)	51.20	feet
Depth to Ground Water (DGW)	51.22	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Gillies, John Monechan
General Weather Conditions: Cloudy, Warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # DW1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 50.02 feet
Total Well Depth (TWD) 80.0 feet
Length of the water column (LWC=TWD-DGW) 27.98 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 4.50 gals
3 casing volume (3 X CV)= 13.0 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 10.0 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0845	
pH (s.u.)	6.64	6.47	6.53				6.16	
Specific Conductivity (µmhos/cm)	115	110	113				111	
Water Temperature (°C)	18.18	20.13	21.23				19.62	
Dissolved Oxygen	5.56	9.03	6.14				7.58	
PID readings, if required								

Remarks: Bailed only

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 2/24/10
Field Personnel: Brandon Grimes, John Monaghan
General Weather Conditions: Cloudy, Rain

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United (Exxon)
Site ID#: _____ Monitoring Well # DW2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	32.58	feet
Total Well Depth (TWD)	80.0	feet
Length of the water column (LWC=TWD-DGW)	47.42	feet
1 casing volume (CV=LWC X C)= ____ X ____	= 7.00	gals
3 casing volume (3 X CV)= 21.00 gals (standard purge volume)		

Total Volume of Water Purged Before Sampling 11.0 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1145	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Bailed on Moon

APPENDIX E

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

10021002

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	3/17/2010	
ph: (803) 735-0003	fax:			

NOTE: THIS REPORT HAS BEEN AMENDED FROM THE ORIGINAL. THIS REPORT REPLACES IN ITS ENTIRETY ANY PREVIOUSLY SUBMITTED COPY. On 3/11/10, client requested that 1,2-Dichloroethane be reported for all the samples. 1,2-DCA was not originally requested on the CoC. No revised CoC was received.

Sample CK1 was received and not recorded on the CoC. Client requested sample CK1 analyzed and reported. A revised CoC was not received.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.
Exception:
Dibromomethane- Method 8011: For samples MW-19 and MW-20", (SPL id 10021002-16 and 10021002-17) surrogate recovery exceeded the UCLs and as such indicates potential positive bias for associated samples. Dibromomethane with ND value is reported since positive bias is not indicated for this analyte.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

3/19/2010

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

10021002

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 3/17/2010

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	10021002-01	Water	2/24/2010 1:15:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-3	10021002-02	Water	2/24/2010 1:40:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-4R	10021002-03	Water	2/24/2010 12:45:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-5	10021002-04	Water	2/24/2010 1:55:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-6R	10021002-05	Water	2/24/2010 1:10:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-8	10021002-06	Water	2/24/2010 1:35:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-9R	10021002-07	Water	2/24/2010 12:40:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-10	10021002-08	Water	2/24/2010 9:45:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-11	10021002-09	Water	2/24/2010 11:25:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-12	10021002-10	Water	2/24/2010 10:30:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-14	10021002-11	Water	2/24/2010 11:20:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-15	10021002-12	Water	2/24/2010 11:25:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-16	10021002-13	Water	2/24/2010 10:10:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-17	10021002-14	Water	2/24/2010 10:40:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-18	10021002-15	Water	2/24/2010 10:55:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-19	10021002-16	Water	2/24/2010 10:20:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-20	10021002-17	Water	2/24/2010 9:55:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-21	10021002-18	Water	2/25/2010 9:55:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-22	10021002-19	Water	2/25/2010 10:25:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-23	10021002-20	Water	2/25/2010 12:15:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-24	10021002-21	Water	2/25/2010 12:40:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-25	10021002-22	Water	2/25/2010 1:10:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-26	10021002-23	Water	2/25/2010 2:00:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐
MW-28	10021002-24	Water	2/25/2010 9:25:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐

3/19/2010

Alberto E. Granados
Project Manager

Date

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

10021002

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 3/17/2010

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
DW-1	10021002-25	Water	2/25/2010 8:45:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
DW-2	10021002-26	Water	2/25/2010 11:45:00 AM	2/26/2010 9:25:00 AM	299391,299031	☐
CK-1	10021002-27	Water	2/25/2010 1:30:00 PM	2/26/2010 9:25:00 AM	299391,299031	☐

Alberto E. Granados
Project Manager

3/19/2010
Date

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-1 **Collected:** 02/24/2010 13:15 **SPL Sample ID:** 10021002-01

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.011		0.038	1	03/04/10 13:03	LDD	3478118
Surr: 1-Chloro-2-fluorobenzene	87.8		0	%	33-151	1	03/04/10 13:03	LDD	3478118

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	0.95

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
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SCOTT, LA 70583
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Client Sample ID: MW-1 **Collected:** 02/24/2010 13:15 **SPL Sample ID:** 10021002-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00398	J	0.00256	0.01	1	03/02/10 19:34	SVW	3475340

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-1 **Collected:** 02/24/2010 13:15 **SPL Sample ID:** 10021002-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/02/10 18:24	DN	3494752
Surr: 1,2-Dichloroethane-d4	94.1		0	%	75-120	1	03/02/10 18:24	DN	3494752
Surr: 4-Bromofluorobenzene	105		0	%	89-109	1	03/02/10 18:24	DN	3494752
Surr: Toluene-d8	96.2		0	%	89-110	1	03/02/10 18:24	DN	3494752
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/02/10 18:24	DN	3474791
Ethylbenzene	ND		0.48		1	1	03/02/10 18:24	DN	3474791
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 18:24	DN	3474791
Naphthalene	ND		0.45		5	1	03/02/10 18:24	DN	3474791
Toluene	ND		0.37		1	1	03/02/10 18:24	DN	3474791
m,p-Xylene	ND		0.82		2	1	03/02/10 18:24	DN	3474791
o-Xylene	ND		0.94		2	1	03/02/10 18:24	DN	3474791
Xylenes,Total	ND		0.94		2	1	03/02/10 18:24	DN	3474791
Surr: 1,2-Dichloroethane-d4	94.1		0	%	75-120	1	03/02/10 18:24	DN	3474791
Surr: 4-Bromofluorobenzene	105		0	%	89-109	1	03/02/10 18:24	DN	3474791
Surr: Toluene-d8	96.2		0	%	89-110	1	03/02/10 18:24	DN	3474791

Alberto E. Granados
Project Manager

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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: MW-3 **Collected:** 02/24/2010 13:40 **SPL Sample ID:** 10021002-02

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 13:23	LDD	3478119
Surr: 1-Chloro-2-fluorobenzene	132		0 %	33-151	1	03/04/10 13:23	LDD	3478119

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Client Sample ID: MW-3 **Collected:** 02/24/2010 13:40 **SPL Sample ID:** 10021002-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	12		0.44		1	1	03/02/10 7:26	DN	3494796
Surr: 1,2-Dichloroethane-d4	104		0	%	75-120	1	03/02/10 7:26	DN	3494796
Surr: 4-Bromofluorobenzene	94.9		0	%	89-109	1	03/02/10 7:26	DN	3494796
Surr: Toluene-d8	97.0		0	%	89-110	1	03/02/10 7:26	DN	3494796
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	3.4		0.39		1	1	03/02/10 7:26	DN	3473414
Ethylbenzene	ND		0.48		1	1	03/02/10 7:26	DN	3473414
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 7:26	DN	3473414
Naphthalene	ND		0.45		5	1	03/02/10 7:26	DN	3473414
Toluene	ND		0.37		1	1	03/02/10 7:26	DN	3473414
m,p-Xylene	ND		0.82		2	1	03/02/10 7:26	DN	3473414
o-Xylene	ND		0.94		2	1	03/02/10 7:26	DN	3473414
Xylenes,Total	ND		0.94		2	1	03/02/10 7:26	DN	3473414
Surr: 1,2-Dichloroethane-d4	104		0	%	75-120	1	03/02/10 7:26	DN	3473414
Surr: 4-Bromofluorobenzene	94.9		0	%	89-109	1	03/02/10 7:26	DN	3473414
Surr: Toluene-d8	97.0		0	%	89-110	1	03/02/10 7:26	DN	3473414

Alberto E. Granados
Project Manager

Qualifiers:
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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Client Sample ID: MW-4R **Collected:** 02/24/2010 12:45 **SPL Sample ID:** 10021002-03

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 13:44	LDD	3478120
Surr: 1-Chloro-2-fluorobenzene	122		0 %	33-151	1	03/04/10 13:44	LDD	3478120

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
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Client Sample ID: MW-4R **Collected:** 02/24/2010 12:45 **SPL Sample ID:** 10021002-03

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 20:17	SVW	3475349

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
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Client Sample ID: MW-4R **Collected:** 02/24/2010 12:45 **SPL Sample ID:** 10021002-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	9.7		0.44		1	1	03/02/10 7:55	DN	3494797
Surr: 1,2-Dichloroethane-d4	102		0	%	75-120	1	03/02/10 7:55	DN	3494797
Surr: 4-Bromofluorobenzene	94.8		0	%	89-109	1	03/02/10 7:55	DN	3494797
Surr: Toluene-d8	97.0		0	%	89-110	1	03/02/10 7:55	DN	3494797
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	3.7		0.39		1	1	03/02/10 7:55	DN	3473415
Ethylbenzene	0.56	J	0.48		1	1	03/02/10 7:55	DN	3473415
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 7:55	DN	3473415
Naphthalene	ND		0.45		5	1	03/02/10 7:55	DN	3473415
Toluene	ND		0.37		1	1	03/02/10 7:55	DN	3473415
m,p-Xylene	ND		0.82		2	1	03/02/10 7:55	DN	3473415
o-Xylene	ND		0.94		2	1	03/02/10 7:55	DN	3473415
Xylenes,Total	ND		0.94		2	1	03/02/10 7:55	DN	3473415
Surr: 1,2-Dichloroethane-d4	102		0	%	75-120	1	03/02/10 7:55	DN	3473415
Surr: 4-Bromofluorobenzene	94.8		0	%	89-109	1	03/02/10 7:55	DN	3473415
Surr: Toluene-d8	97.0		0	%	89-110	1	03/02/10 7:55	DN	3473415

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-5 **Collected:** 02/24/2010 13:55 **SPL Sample ID:** 10021002-04

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 14:04	LDD	3478121
Surr: 1-Chloro-2-fluorobenzene	132		0	% 33-151	1	03/04/10 14:04	LDD	3478121

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.07

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
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Client Sample ID: MW-5 **Collected:** 02/24/2010 13:55 **SPL Sample ID:** 10021002-04

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00473	J	0.00256	0.01	1	03/02/10 20:22	SVW	3475350

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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Client Sample ID: MW-5 **Collected:** 02/24/2010 13:55 **SPL Sample ID:** 10021002-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/02/10 18:54	DN	3494753
Surr: 1,2-Dichloroethane-d4	96.3		0	%	75-120	1	03/02/10 18:54	DN	3494753
Surr: 4-Bromofluorobenzene	106		0	%	89-109	1	03/02/10 18:54	DN	3494753
Surr: Toluene-d8	94.1		0	%	89-110	1	03/02/10 18:54	DN	3494753
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/02/10 18:54	DN	3474792
Ethylbenzene	ND		0.48		1	1	03/02/10 18:54	DN	3474792
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 18:54	DN	3474792
Naphthalene	ND		0.45		5	1	03/02/10 18:54	DN	3474792
Toluene	ND		0.37		1	1	03/02/10 18:54	DN	3474792
m,p-Xylene	ND		0.82		2	1	03/02/10 18:54	DN	3474792
o-Xylene	ND		0.94		2	1	03/02/10 18:54	DN	3474792
Xylenes,Total	ND		0.94		2	1	03/02/10 18:54	DN	3474792
Surr: 1,2-Dichloroethane-d4	96.3		0	%	75-120	1	03/02/10 18:54	DN	3474792
Surr: 4-Bromofluorobenzene	106		0	%	89-109	1	03/02/10 18:54	DN	3474792
Surr: Toluene-d8	94.1		0	%	89-110	1	03/02/10 18:54	DN	3474792

Alberto E. Granados
Project Manager

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Client Sample ID: MW-6R **Collected:** 02/24/2010 13:10 **SPL Sample ID:** 10021002-05

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.042	1	03/04/10 14:24	LDD	3478122
Surr: 1-Chloro-2-fluorobenzene	149		0	%	33-151	1	03/04/10 14:24	LDD	3478122

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.06

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-6R **Collected:** 02/24/2010 13:10 **SPL Sample ID:** 10021002-05

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 20:27	SVW	3475351

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-6R **Collected:** 02/24/2010 13:10 **SPL Sample ID:** 10021002-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 20:14	DN	3494837
Surr: 1,2-Dichloroethane-d4	110		0	%	75-120	1	03/01/10 20:14	DN	3494837
Surr: 4-Bromofluorobenzene	102		0	%	89-109	1	03/01/10 20:14	DN	3494837
Surr: Toluene-d8	97.0		0	%	89-110	1	03/01/10 20:14	DN	3494837
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 20:14	DN	3473153
Ethylbenzene	ND		0.48		1	1	03/01/10 20:14	DN	3473153
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 20:14	DN	3473153
Naphthalene	ND		0.45		5	1	03/01/10 20:14	DN	3473153
Toluene	ND		0.37		1	1	03/01/10 20:14	DN	3473153
m,p-Xylene	ND		0.82		2	1	03/01/10 20:14	DN	3473153
o-Xylene	ND		0.94		2	1	03/01/10 20:14	DN	3473153
Xylenes,Total	ND		0.94		2	1	03/01/10 20:14	DN	3473153
Surr: 1,2-Dichloroethane-d4	110		0	%	75-120	1	03/01/10 20:14	DN	3473153
Surr: 4-Bromofluorobenzene	102		0	%	89-109	1	03/01/10 20:14	DN	3473153
Surr: Toluene-d8	97.0		0	%	89-110	1	03/01/10 20:14	DN	3473153

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID: MW-8 **Collected:** 02/24/2010 13:35 **SPL Sample ID:** 10021002-06

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 14:45	LDD	3478123
Surr: 1-Chloro-2-fluorobenzene	122		0	%	33-151	1	03/04/10 14:45	LDD	3478123

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.07

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-8 **Collected:** 02/24/2010 13:35 **SPL Sample ID:** 10021002-06

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	ND		0.00256	0.01	1	03/02/10 20:32	SVW	3475352

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-8 **Collected:** 02/24/2010 13:35 **SPL Sample ID:** 10021002-06

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 20:44	DN	3494838
Surr: 1,2-Dichloroethane-d4	112		0	%	75-120	1	03/01/10 20:44	DN	3494838
Surr: 4-Bromofluorobenzene	103		0	%	89-109	1	03/01/10 20:44	DN	3494838
Surr: Toluene-d8	98.4		0	%	89-110	1	03/01/10 20:44	DN	3494838
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 20:44	DN	3473154
Ethylbenzene	ND		0.48		1	1	03/01/10 20:44	DN	3473154
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 20:44	DN	3473154
Naphthalene	ND		0.45		5	1	03/01/10 20:44	DN	3473154
Toluene	ND		0.37		1	1	03/01/10 20:44	DN	3473154
m,p-Xylene	ND		0.82		2	1	03/01/10 20:44	DN	3473154
o-Xylene	ND		0.94		2	1	03/01/10 20:44	DN	3473154
Xylenes,Total	ND		0.94		2	1	03/01/10 20:44	DN	3473154
Surr: 1,2-Dichloroethane-d4	112		0	%	75-120	1	03/01/10 20:44	DN	3473154
Surr: 4-Bromofluorobenzene	103		0	%	89-109	1	03/01/10 20:44	DN	3473154
Surr: Toluene-d8	98.4		0	%	89-110	1	03/01/10 20:44	DN	3473154

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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(337) 237-4775

Client Sample ID: MW-9R **Collected:** 02/24/2010 12:40 **SPL Sample ID:** 10021002-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 15:05	LDD	3478124
Surr: 1-Chloro-2-fluorobenzene	138		0	%	33-151	1	03/04/10 15:05	LDD	3478124

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.09

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-9R **Collected:** 02/24/2010 12:40 **SPL Sample ID:** 10021002-07

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C**	**Units: mg/L**		
Lead	ND		0.00256	0.01	1	03/02/10 20:37	SVW	3475353

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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(337) 237-4775

Client Sample ID: MW-9R **Collected:** 02/24/2010 12:40 **SPL Sample ID:** 10021002-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 21:13	DN	3494839
Surr: 1,2-Dichloroethane-d4	110		0	%	75-120	1	03/01/10 21:13	DN	3494839
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/01/10 21:13	DN	3494839
Surr: Toluene-d8	97.5		0	%	89-110	1	03/01/10 21:13	DN	3494839
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 21:13	DN	3473155
Ethylbenzene	ND		0.48		1	1	03/01/10 21:13	DN	3473155
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 21:13	DN	3473155
Naphthalene	ND		0.45		5	1	03/01/10 21:13	DN	3473155
Toluene	ND		0.37		1	1	03/01/10 21:13	DN	3473155
m,p-Xylene	ND		0.82		2	1	03/01/10 21:13	DN	3473155
o-Xylene	ND		0.94		2	1	03/01/10 21:13	DN	3473155
Xylenes,Total	ND		0.94		2	1	03/01/10 21:13	DN	3473155
Surr: 1,2-Dichloroethane-d4	110		0	%	75-120	1	03/01/10 21:13	DN	3473155
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/01/10 21:13	DN	3473155
Surr: Toluene-d8	97.5		0	%	89-110	1	03/01/10 21:13	DN	3473155

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-10 **Collected:** 02/24/2010 9:45 **SPL Sample ID:** 10021002-08

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.045	1	03/04/10 15:46	LDD	3478126
Surr: 1-Chloro-2-fluorobenzene	183	MI	0	%	33-151	1	03/04/10 15:46	LDD	3478126

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.12

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-10 **Collected:** 02/24/2010 9:45 **SPL Sample ID:** 10021002-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00285	J	0.00256	0.01	1	03/02/10 20:42	SVW	3475354

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
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(337) 237-4775

Client Sample ID: MW-10 **Collected:** 02/24/2010 9:45 **SPL Sample ID:** 10021002-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		8.8		20	20	03/03/10 12:25	TDD	3494840
Surr: 1,2-Dichloroethane-d4	107		0	%	75-120	20	03/03/10 12:25	TDD	3494840
Surr: 4-Bromofluorobenzene	97.3		0	%	89-109	20	03/03/10 12:25	TDD	3494840
Surr: Toluene-d8	97.8		0	%	89-110	20	03/03/10 12:25	TDD	3494840
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	5200		7.8		20	20	03/03/10 12:25	TDD	3476848
Ethylbenzene	2400		9.7		20	20	03/03/10 12:25	TDD	3476848
Methyl tert-butyl ether	ND		8.1		20	20	03/03/10 12:25	TDD	3476848
Naphthalene	590		9		100	20	03/03/10 12:25	TDD	3476848
Toluene	3900		7.4		20	20	03/03/10 12:25	TDD	3476848
m,p-Xylene	4200		16		40	20	03/03/10 12:25	TDD	3476848
o-Xylene	1300		19		40	20	03/03/10 12:25	TDD	3476848
Xylenes,Total	5500		19		40	20	03/03/10 12:25	TDD	3476848
Surr: 1,2-Dichloroethane-d4	107		0	%	75-120	20	03/03/10 12:25	TDD	3476848
Surr: 4-Bromofluorobenzene	97.3		0	%	89-109	20	03/03/10 12:25	TDD	3476848
Surr: Toluene-d8	97.8		0	%	89-110	20	03/03/10 12:25	TDD	3476848

Alberto E. Granados
Project Manager

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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID: MW-11 **Collected:** 02/24/2010 23:25 **SPL Sample ID:** 10021002-09

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.044	1	03/04/10 16:06	LDD	3478127
Surr: 1-Chloro-2-fluorobenzene	168	MI	0	%	33-151	1	03/04/10 16:06	LDD	3478127

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.10

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-11 **Collected:** 02/24/2010 23:25 **SPL Sample ID:** 10021002-09

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	0.00586	J	0.00256	0.01	1	03/02/10 20:47	SVW	3475355

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
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E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
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(337) 237-4775

Client Sample ID: MW-11 **Collected:** 02/24/2010 23:25 **SPL Sample ID:** 10021002-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		44		100	100	03/03/10 12:56	TDD	3494841
Surr: 1,2-Dichloroethane-d4	106		0	%	75-120	100	03/03/10 12:56	TDD	3494841
Surr: 4-Bromofluorobenzene	94.4		0	%	89-109	100	03/03/10 12:56	TDD	3494841
Surr: Toluene-d8	99.3		0	%	89-110	100	03/03/10 12:56	TDD	3494841
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	6500		39		100	100	03/03/10 12:56	TDD	3476849
Ethylbenzene	2100		48		100	100	03/03/10 12:56	TDD	3476849
Methyl tert-butyl ether	ND		40		100	100	03/03/10 12:56	TDD	3476849
Naphthalene	720		45		500	100	03/03/10 12:56	TDD	3476849
Toluene	13000		37		100	100	03/03/10 12:56	TDD	3476849
m,p-Xylene	6100		82		200	100	03/03/10 12:56	TDD	3476849
o-Xylene	2800		94		200	100	03/03/10 12:56	TDD	3476849
Xylenes,Total	8900		94		200	100	03/03/10 12:56	TDD	3476849
Surr: 1,2-Dichloroethane-d4	106		0	%	75-120	100	03/03/10 12:56	TDD	3476849
Surr: 4-Bromofluorobenzene	94.4		0	%	89-109	100	03/03/10 12:56	TDD	3476849
Surr: Toluene-d8	99.3		0	%	89-110	100	03/03/10 12:56	TDD	3476849

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 02/24/2010 10:30 **SPL Sample ID:** 10021002-10

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013	0.044	1	03/04/10 16:27	LDD	3478128
Surr: 1-Chloro-2-fluorobenzene	115		0 %	33-151	1	03/04/10 16:27	LDD	3478128

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.11

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 02/24/2010 10:30 **SPL Sample ID:** 10021002-10

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	ND		0.00256	0.01	1	03/02/10 20:52	SVW	3475356

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 02/24/2010 10:30 **SPL Sample ID:** 10021002-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		4.4		10	10	03/03/10 13:28	TDD	3494842
Surr: 1,2-Dichloroethane-d4	109		0	%	75-120	10	03/03/10 13:28	TDD	3494842
Surr: 4-Bromofluorobenzene	95.3		0	%	89-109	10	03/03/10 13:28	TDD	3494842
Surr: Toluene-d8	97.8		0	%	89-110	10	03/03/10 13:28	TDD	3494842
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	1600		3.9		10	10	03/03/10 13:28	TDD	3476850
Ethylbenzene	6.7	J	4.8		10	10	03/03/10 13:28	TDD	3476850
Methyl tert-butyl ether	86		4		10	10	03/03/10 13:28	TDD	3476850
Naphthalene	160		4.5		50	10	03/03/10 13:28	TDD	3476850
Toluene	5.5	J	3.7		10	10	03/03/10 13:28	TDD	3476850
m,p-Xylene	20		8.2		20	10	03/03/10 13:28	TDD	3476850
o-Xylene	ND		9.4		20	10	03/03/10 13:28	TDD	3476850
Xylenes,Total	20		9.4		20	10	03/03/10 13:28	TDD	3476850
Surr: 1,2-Dichloroethane-d4	109		0	%	75-120	10	03/03/10 13:28	TDD	3476850
Surr: 4-Bromofluorobenzene	95.3		0	%	89-109	10	03/03/10 13:28	TDD	3476850
Surr: Toluene-d8	97.8		0	%	89-110	10	03/03/10 13:28	TDD	3476850

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-14 **Collected:** 02/24/2010 11:20 **SPL Sample ID:** 10021002-11

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 16:47	LDD	3478129
Surr: 1-Chloro-2-fluorobenzene	101		0 %	33-151	1	03/04/10 16:47	LDD	3478129

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.09

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-14 **Collected:** 02/24/2010 11:20 **SPL Sample ID:** 10021002-11

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	0.0065	J	0.00256	0.01	1	03/02/10 21:12	SVW	3475360

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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Client Sample ID: MW-14 **Collected:** 02/24/2010 11:20 **SPL Sample ID:** 10021002-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		8.8		20	20	03/03/10 14:00	TDD	3494843
Surr: 1,2-Dichloroethane-d4	102		0	%	75-120	20	03/03/10 14:00	TDD	3494843
Surr: 4-Bromofluorobenzene	97.5		0	%	89-109	20	03/03/10 14:00	TDD	3494843
Surr: Toluene-d8	98.0		0	%	89-110	20	03/03/10 14:00	TDD	3494843
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	4400		7.8		20	20	03/03/10 14:00	TDD	3476851
Ethylbenzene	ND		9.7		20	20	03/03/10 14:00	TDD	3476851
Methyl tert-butyl ether	14	J	8.1		20	20	03/03/10 14:00	TDD	3476851
Naphthalene	240		9		100	20	03/03/10 14:00	TDD	3476851
Toluene	45		7.4		20	20	03/03/10 14:00	TDD	3476851
m,p-Xylene	ND		16		40	20	03/03/10 14:00	TDD	3476851
o-Xylene	ND		19		40	20	03/03/10 14:00	TDD	3476851
Xylenes,Total	ND		19		40	20	03/03/10 14:00	TDD	3476851
Surr: 1,2-Dichloroethane-d4	102		0	%	75-120	20	03/03/10 14:00	TDD	3476851
Surr: 4-Bromofluorobenzene	97.5		0	%	89-109	20	03/03/10 14:00	TDD	3476851
Surr: Toluene-d8	98.0		0	%	89-110	20	03/03/10 14:00	TDD	3476851

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-15 **Collected:** 02/24/2010 11:25 **SPL Sample ID:** 10021002-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 17:07	LDD	3478130
Surr: 1-Chloro-2-fluorobenzene	106		0 %	33-151	1	03/04/10 17:07	LDD	3478130

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.09

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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(337) 237-4775

Client Sample ID: MW-15 **Collected:** 02/24/2010 11:25 **SPL Sample ID:** 10021002-12

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00313	J	0.00256	0.01	1	03/02/10 21:17	SVW	3475361

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
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LAFAYETTE LABORATORY
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Client Sample ID: MW-15 **Collected:** 02/24/2010 11:25 **SPL Sample ID:** 10021002-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		4.4		10	10	03/03/10 14:31	TDD	3494844
Surr: 1,2-Dichloroethane-d4	111		0	%	75-120	10	03/03/10 14:31	TDD	3494844
Surr: 4-Bromofluorobenzene	95.2		0	%	89-109	10	03/03/10 14:31	TDD	3494844
Surr: Toluene-d8	96.6		0	%	89-110	10	03/03/10 14:31	TDD	3494844
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	2600		3.9		10	10	03/03/10 14:31	TDD	3476852
Ethylbenzene	15		4.8		10	10	03/03/10 14:31	TDD	3476852
Methyl tert-butyl ether	11		4		10	10	03/03/10 14:31	TDD	3476852
Naphthalene	140		4.5		50	10	03/03/10 14:31	TDD	3476852
Toluene	42		3.7		10	10	03/03/10 14:31	TDD	3476852
m,p-Xylene	ND		8.2		20	10	03/03/10 14:31	TDD	3476852
o-Xylene	ND		9.4		20	10	03/03/10 14:31	TDD	3476852
Xylenes,Total	ND		9.4		20	10	03/03/10 14:31	TDD	3476852
Surr: 1,2-Dichloroethane-d4	111		0	%	75-120	10	03/03/10 14:31	TDD	3476852
Surr: 4-Bromofluorobenzene	95.2		0	%	89-109	10	03/03/10 14:31	TDD	3476852
Surr: Toluene-d8	96.6		0	%	89-110	10	03/03/10 14:31	TDD	3476852

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-16 **Collected:** 02/24/2010 10:10 **SPL Sample ID:** 10021002-13

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 17:28	LDD	3478131
Surr: 1-Chloro-2-fluorobenzene	198	MI	0	%	33-151	1	03/04/10 17:28	LDD	3478131

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-16 **Collected:** 02/24/2010 10:10 **SPL Sample ID:** 10021002-13

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 21:22	SVW	3475362

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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500 AMBASSADOR CAFFERY PARKWAY
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(337) 237-4775

Client Sample ID: MW-16 **Collected:** 02/24/2010 10:10 **SPL Sample ID:** 10021002-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		8.8		20	20	03/03/10 15:03	TDD	3494845
Surr: 1,2-Dichloroethane-d4	111		0	%	75-120	20	03/03/10 15:03	TDD	3494845
Surr: 4-Bromofluorobenzene	97.1		0	%	89-109	20	03/03/10 15:03	TDD	3494845
Surr: Toluene-d8	97.0		0	%	89-110	20	03/03/10 15:03	TDD	3494845
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	5600		7.8		20	20	03/03/10 15:03	TDD	3476853
Ethylbenzene	1400		9.7		20	20	03/03/10 15:03	TDD	3476853
Methyl tert-butyl ether	27		8.1		20	20	03/03/10 15:03	TDD	3476853
Naphthalene	790		9		100	20	03/03/10 15:03	TDD	3476853
Toluene	5100		7.4		20	20	03/03/10 15:03	TDD	3476853
m,p-Xylene	7200		16		40	20	03/03/10 15:03	TDD	3476853
o-Xylene	3000		19		40	20	03/03/10 15:03	TDD	3476853
Xylenes,Total	10200		18.9		40	20	03/03/10 15:03	TDD	3476853
Surr: 1,2-Dichloroethane-d4	111		0	%	75-120	20	03/03/10 15:03	TDD	3476853
Surr: 4-Bromofluorobenzene	97.1		0	%	89-109	20	03/03/10 15:03	TDD	3476853
Surr: Toluene-d8	97.0		0	%	89-110	20	03/03/10 15:03	TDD	3476853

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-17 **Collected:** 02/24/2010 10:40 **SPL Sample ID:** 10021002-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP						**MCL**	**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 17:48	LDD	3478132
Surr: 1-Chloro-2-fluorobenzene	115		0	%	33-151	1	03/04/10 17:48	LDD	3478132

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.06

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-17 **Collected:** 02/24/2010 10:40 **SPL Sample ID:** 10021002-14

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00363	J	0.00256	0.01	1	03/02/10 21:27	SVW	3475363

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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(337) 237-4775

Client Sample ID: MW-17 **Collected:** 02/24/2010 10:40 **SPL Sample ID:** 10021002-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/02/10 20:35	DN	3494866
Surr: 1,2-Dichloroethane-d4	96.1		0	%	75-120	1	03/02/10 20:35	DN	3494866
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/02/10 20:35	DN	3494866
Surr: Toluene-d8	97.1		0	%	89-110	1	03/02/10 20:35	DN	3494866
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/02/10 20:35	DN	3475004
Ethylbenzene	ND		0.48		1	1	03/02/10 20:35	DN	3475004
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 20:35	DN	3475004
Naphthalene	1.5	J	0.45		5	1	03/02/10 20:35	DN	3475004
Toluene	ND		0.37		1	1	03/02/10 20:35	DN	3475004
m,p-Xylene	ND		0.82		2	1	03/02/10 20:35	DN	3475004
o-Xylene	ND		0.94		2	1	03/02/10 20:35	DN	3475004
Xylenes,Total	ND		0.94		2	1	03/02/10 20:35	DN	3475004
Surr: 1,2-Dichloroethane-d4	96.1		0	%	75-120	1	03/02/10 20:35	DN	3475004
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/02/10 20:35	DN	3475004
Surr: Toluene-d8	97.1		0	%	89-110	1	03/02/10 20:35	DN	3475004

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-18 **Collected:** 02/24/2010 10:55 **SPL Sample ID:** 10021002-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 18:09	LDD	3478133
Surr: 1-Chloro-2-fluorobenzene	172	MI	0	%	33-151	1	03/04/10 18:09	LDD	3478133

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-18 **Collected:** 02/24/2010 10:55 **SPL Sample ID:** 10021002-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00783	J	0.00256	0.01	1	03/02/10 21:32	SVW	3475364

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-18 **Collected:** 02/24/2010 10:55 **SPL Sample ID:** 10021002-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	17		4.4		10	10	03/03/10 15:35	TDD	3494846
Surr: 1,2-Dichloroethane-d4	108		0	%	75-120	10	03/03/10 15:35	TDD	3494846
Surr: 4-Bromofluorobenzene	96.5		0	%	89-109	10	03/03/10 15:35	TDD	3494846
Surr: Toluene-d8	98.7		0	%	89-110	10	03/03/10 15:35	TDD	3494846
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	630		3.9		10	10	03/03/10 15:35	TDD	3476854
Ethylbenzene	190		4.8		10	10	03/03/10 15:35	TDD	3476854
Methyl tert-butyl ether	2600		4		10	10	03/03/10 15:35	TDD	3476854
Naphthalene	77		4.5		50	10	03/03/10 15:35	TDD	3476854
Toluene	1100		3.7		10	10	03/03/10 15:35	TDD	3476854
m,p-Xylene	1300		8.2		20	10	03/03/10 15:35	TDD	3476854
o-Xylene	790		9.4		20	10	03/03/10 15:35	TDD	3476854
Xylenes,Total	2090		9.45		20	10	03/03/10 15:35	TDD	3476854
Surr: 1,2-Dichloroethane-d4	108		0	%	75-120	10	03/03/10 15:35	TDD	3476854
Surr: 4-Bromofluorobenzene	96.5		0	%	89-109	10	03/03/10 15:35	TDD	3476854
Surr: Toluene-d8	98.7		0	%	89-110	10	03/03/10 15:35	TDD	3476854

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-19 **Collected:** 02/24/2010 10:20 **SPL Sample ID:** 10021002-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 18:29	LDD	3478134
Surr: 1-Chloro-2-fluorobenzene	172	*	0	%	33-151	1	03/04/10 18:29	LDD	3478134

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-19 **Collected:** 02/24/2010 10:20 **SPL Sample ID:** 10021002-16

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00394	J	0.00256	0.01	1	03/02/10 21:37	SVW	3475365

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
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(337) 237-4775

Client Sample ID: MW-19 **Collected:** 02/24/2010 10:20 **SPL Sample ID:** 10021002-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/02/10 21:34	DN	3494867
Surr: 1,2-Dichloroethane-d4	98.2		0	%	75-120	1	03/02/10 21:34	DN	3494867
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/02/10 21:34	DN	3494867
Surr: Toluene-d8	95.6		0	%	89-110	1	03/02/10 21:34	DN	3494867
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/02/10 21:34	DN	3475006
Ethylbenzene	ND		0.48		1	1	03/02/10 21:34	DN	3475006
Methyl tert-butyl ether	ND		0.4		1	1	03/02/10 21:34	DN	3475006
Naphthalene	ND		0.45		5	1	03/02/10 21:34	DN	3475006
Toluene	ND		0.37		1	1	03/02/10 21:34	DN	3475006
m,p-Xylene	ND		0.82		2	1	03/02/10 21:34	DN	3475006
o-Xylene	ND		0.94		2	1	03/02/10 21:34	DN	3475006
Xylenes,Total	ND		0.94		2	1	03/02/10 21:34	DN	3475006
Surr: 1,2-Dichloroethane-d4	98.2		0	%	75-120	1	03/02/10 21:34	DN	3475006
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/02/10 21:34	DN	3475006
Surr: Toluene-d8	95.6		0	%	89-110	1	03/02/10 21:34	DN	3475006

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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(337) 237-4775

Client Sample ID: MW-20 **Collected:** 02/24/2010 9:55 **SPL Sample ID:** 10021002-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 18:49	LDD	3478135
Surr: 1-Chloro-2-fluorobenzene	173	*	0 %	33-151	1	03/04/10 18:49	LDD	3478135

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.09

Alberto E. Granados
Project Manager

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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: MW-20 **Collected:** 02/24/2010 9:55 **SPL Sample ID:** 10021002-17

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00268	J	0.00256	0.01	1	03/02/10 21:42	SVW	3475366

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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Client Sample ID: MW-20 **Collected:** 02/24/2010 9:55 **SPL Sample ID:** 10021002-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 19:27	TDD	3494855
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 19:27	TDD	3494855
Surr: 4-Bromofluorobenzene	99.6		0	%	89-109	1	03/01/10 19:27	TDD	3494855
Surr: Toluene-d8	97.0		0	%	89-110	1	03/01/10 19:27	TDD	3494855
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 19:27	TDD	3473899
Ethylbenzene	ND		0.48		1	1	03/01/10 19:27	TDD	3473899
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 19:27	TDD	3473899
Naphthalene	ND		0.45		5	1	03/01/10 19:27	TDD	3473899
Toluene	ND		0.37		1	1	03/01/10 19:27	TDD	3473899
m,p-Xylene	ND		0.82		2	1	03/01/10 19:27	TDD	3473899
o-Xylene	ND		0.94		2	1	03/01/10 19:27	TDD	3473899
Xylenes,Total	ND		0.94		2	1	03/01/10 19:27	TDD	3473899
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 19:27	TDD	3473899
Surr: 4-Bromofluorobenzene	99.6		0	%	89-109	1	03/01/10 19:27	TDD	3473899
Surr: Toluene-d8	97.0		0	%	89-110	1	03/01/10 19:27	TDD	3473899

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 02/25/2010 9:55 **SPL Sample ID:** 10021002-18

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 19:29	LDD	3478137
Surr: 1-Chloro-2-fluorobenzene	119		0	%	33-151	1	03/04/10 19:29	LDD	3478137

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.08

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 02/25/2010 9:55 **SPL Sample ID:** 10021002-18

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00457	J	0.00256	0.01	1	03/02/10 21:47	SVW	3475367

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 02/25/2010 9:55 **SPL Sample ID:** 10021002-18

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B						**MCL**	**SW8260B Units: ug/L**		
1,2-Dichloroethane	ND		0.44		1	1	03/02/10 19:24	DN	3494754
Surr: 1,2-Dichloroethane-d4	92.3		0	%	75-120	1	03/02/10 19:24	DN	3494754
Surr: 4-Bromofluorobenzene	104		0	%	89-109	1	03/02/10 19:24	DN	3494754
Surr: Toluene-d8	98.6		0	%	89-110	1	03/02/10 19:24	DN	3494754
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN						**MCL**	**SW8260B Units: ug/L**		
Benzene	7.3		0.39		1	1	03/02/10 19:24	DN	3474793
Ethylbenzene	36		0.48		1	1	03/02/10 19:24	DN	3474793
Methyl tert-butyl ether	100		0.4		1	1	03/02/10 19:24	DN	3474793
Naphthalene	140		0.45		5	1	03/02/10 19:24	DN	3474793
Toluene	9.6		0.37		1	1	03/02/10 19:24	DN	3474793
m,p-Xylene	150		0.82		2	1	03/02/10 19:24	DN	3474793
o-Xylene	49		0.94		2	1	03/02/10 19:24	DN	3474793
Xylenes,Total	199		0.945		2	1	03/02/10 19:24	DN	3474793
Surr: 1,2-Dichloroethane-d4	92.3		0	%	75-120	1	03/02/10 19:24	DN	3474793
Surr: 4-Bromofluorobenzene	104		0	%	89-109	1	03/02/10 19:24	DN	3474793
Surr: Toluene-d8	98.6		0	%	89-110	1	03/02/10 19:24	DN	3474793

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 02/25/2010 10:25 **SPL Sample ID:** 10021002-19

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.042	1	03/04/10 19:50	LDD	3478138
Surr: 1-Chloro-2-fluorobenzene	97.2		0	%	33-151	1	03/04/10 19:50	LDD	3478138

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.06

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 02/25/2010 10:25 **SPL Sample ID:** 10021002-19

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 21:52	SVW	3475368

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 02/25/2010 10:25 **SPL Sample ID:** 10021002-19

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		4.4		10	10	03/01/10 18:24	TDD	3494854
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	10	03/01/10 18:24	TDD	3494854
Surr: 4-Bromofluorobenzene	106		0	%	89-109	10	03/01/10 18:24	TDD	3494854
Surr: Toluene-d8	101		0	%	89-110	10	03/01/10 18:24	TDD	3494854
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	1700		3.9		10	10	03/01/10 18:24	TDD	3473897
Ethylbenzene	ND		4.8		10	10	03/01/10 18:24	TDD	3473897
Methyl tert-butyl ether	11		4		10	10	03/01/10 18:24	TDD	3473897
Naphthalene	120		4.5		50	10	03/01/10 18:24	TDD	3473897
Toluene	ND		3.7		10	10	03/01/10 18:24	TDD	3473897
m,p-Xylene	ND		8.2		20	10	03/01/10 18:24	TDD	3473897
o-Xylene	ND		9.4		20	10	03/01/10 18:24	TDD	3473897
Xylenes,Total	ND		9.4		20	10	03/01/10 18:24	TDD	3473897
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	10	03/01/10 18:24	TDD	3473897
Surr: 4-Bromofluorobenzene	106		0	%	89-109	10	03/01/10 18:24	TDD	3473897
Surr: Toluene-d8	101		0	%	89-110	10	03/01/10 18:24	TDD	3473897

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 02/25/2010 12:15 **SPL Sample ID:** 10021002-20

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.012		0.042	1	03/04/10 20:10	LDD	3478139
Surr: 1-Chloro-2-fluorobenzene	118		0	%	33-151	1	03/04/10 20:10	LDD	3478139

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:59	JT	1.05

Alberto E. Granados
Project Manager

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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 02/25/2010 12:15 **SPL Sample ID:** 10021002-20

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00313	J	0.00256	0.01	1	03/02/10 21:57	SVW	3475369

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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TNTC - Too numerous to count

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 02/25/2010 12:15 **SPL Sample ID:** 10021002-20

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 17:52	TDD	3494853
Surr: 1,2-Dichloroethane-d4	108		0	%	75-120	1	03/01/10 17:52	TDD	3494853
Surr: 4-Bromofluorobenzene	105		0	%	89-109	1	03/01/10 17:52	TDD	3494853
Surr: Toluene-d8	101		0	%	89-110	1	03/01/10 17:52	TDD	3494853
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	1500		7.8		20	20	03/02/10 20:24	DN	3474795
Ethylbenzene	ND		0.48		1	1	03/01/10 17:52	TDD	3473896
Methyl tert-butyl ether	13		0.4		1	1	03/01/10 17:52	TDD	3473896
Naphthalene	50		0.45		5	1	03/01/10 17:52	TDD	3473896
Toluene	ND		0.37		1	1	03/01/10 17:52	TDD	3473896
m,p-Xylene	ND		0.82		2	1	03/01/10 17:52	TDD	3473896
o-Xylene	ND		0.94		2	1	03/01/10 17:52	TDD	3473896
Xylenes,Total	ND		0.94		2	1	03/01/10 17:52	TDD	3473896
Surr: 1,2-Dichloroethane-d4	94.8		0	%	75-120	20	03/02/10 20:24	DN	3474795
Surr: 1,2-Dichloroethane-d4	108		0	%	75-120	1	03/01/10 17:52	TDD	3473896
Surr: 4-Bromofluorobenzene	104		0	%	89-109	20	03/02/10 20:24	DN	3474795
Surr: 4-Bromofluorobenzene	105		0	%	89-109	1	03/01/10 17:52	TDD	3473896
Surr: Toluene-d8	96.9		0	%	89-110	20	03/02/10 20:24	DN	3474795
Surr: Toluene-d8	101		0	%	89-110	1	03/01/10 17:52	TDD	3473896

Alberto E. Granados
Project Manager

Qualifiers:
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 02/25/2010 12:40 **SPL Sample ID:** 10021002-21

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.044	1	03/05/10 3:43	LDD	3478198
Surr: 1-Chloro-2-fluorobenzene	117		0	%	33-151	1	03/05/10 3:43	LDD	3478198

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:32	JT	1.09

Alberto E. Granados
Project Manager

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 02/25/2010 12:40 **SPL Sample ID:** 10021002-21

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 22:17	SVW	3475373

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 02/25/2010 12:40 **SPL Sample ID:** 10021002-21

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 17:21	TDD	3494852
Surr: 1,2-Dichloroethane-d4	106		0	%	75-120	1	03/01/10 17:21	TDD	3494852
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/01/10 17:21	TDD	3494852
Surr: Toluene-d8	95.1		0	%	89-110	1	03/01/10 17:21	TDD	3494852
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 17:21	TDD	3473895
Ethylbenzene	ND		0.48		1	1	03/01/10 17:21	TDD	3473895
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 17:21	TDD	3473895
Naphthalene	ND		0.45		5	1	03/01/10 17:21	TDD	3473895
Toluene	ND		0.37		1	1	03/01/10 17:21	TDD	3473895
m,p-Xylene	ND		0.82		2	1	03/01/10 17:21	TDD	3473895
o-Xylene	ND		0.94		2	1	03/01/10 17:21	TDD	3473895
Xylenes,Total	ND		0.94		2	1	03/01/10 17:21	TDD	3473895
Surr: 1,2-Dichloroethane-d4	106		0	%	75-120	1	03/01/10 17:21	TDD	3473895
Surr: 4-Bromofluorobenzene	101		0	%	89-109	1	03/01/10 17:21	TDD	3473895
Surr: Toluene-d8	95.1		0	%	89-110	1	03/01/10 17:21	TDD	3473895

Alberto E. Granados
Project Manager

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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 02/25/2010 13:10 **SPL Sample ID:** 10021002-22

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013	0.045	1	03/05/10 4:04	LDD	3478199
Surr: 1-Chloro-2-fluorobenzene	108		0 %	33-151	1	03/05/10 4:04	LDD	3478199

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:32	JT	1.12

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 02/25/2010 13:10 **SPL Sample ID:** 10021002-22

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00541	J	0.00256	0.01	1	03/02/10 23:05	SVW	3475381

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 02/25/2010 13:10 **SPL Sample ID:** 10021002-22

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 16:49	TDD	3494851
Surr: 1,2-Dichloroethane-d4	105		0	%	75-120	1	03/01/10 16:49	TDD	3494851
Surr: 4-Bromofluorobenzene	97.1		0	%	89-109	1	03/01/10 16:49	TDD	3494851
Surr: Toluene-d8	95.9		0	%	89-110	1	03/01/10 16:49	TDD	3494851
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	34		0.39		1	1	03/01/10 16:49	TDD	3473894
Ethylbenzene	ND		0.48		1	1	03/01/10 16:49	TDD	3473894
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 16:49	TDD	3473894
Naphthalene	6.6		0.45		5	1	03/01/10 16:49	TDD	3473894
Toluene	ND		0.37		1	1	03/01/10 16:49	TDD	3473894
m,p-Xylene	ND		0.82		2	1	03/01/10 16:49	TDD	3473894
o-Xylene	ND		0.94		2	1	03/01/10 16:49	TDD	3473894
Xylenes,Total	ND		0.94		2	1	03/01/10 16:49	TDD	3473894
Surr: 1,2-Dichloroethane-d4	105		0	%	75-120	1	03/01/10 16:49	TDD	3473894
Surr: 4-Bromofluorobenzene	97.1		0	%	89-109	1	03/01/10 16:49	TDD	3473894
Surr: Toluene-d8	95.9		0	%	89-110	1	03/01/10 16:49	TDD	3473894

Alberto E. Granados
Project Manager

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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-26 **Collected:** 02/25/2010 14:00 **SPL Sample ID:** 10021002-23

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	ND		0.013		0.043	1	03/05/10 4:25	LDD	3478200
Surr: 1-Chloro-2-fluorobenzene	137		0	%	33-151	1	03/05/10 4:25	LDD	3478200

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/01/2010 9:32	JT	1.09

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-26 **Collected:** 02/25/2010 14:00 **SPL Sample ID:** 10021002-23

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/02/10 23:48	SVW	3475390

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Client Sample ID: MW-26 **Collected:** 02/25/2010 14:00 **SPL Sample ID:** 10021002-23

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 16:18	TDD	3494850
Surr: 1,2-Dichloroethane-d4	101		0	%	75-120	1	03/01/10 16:18	TDD	3494850
Surr: 4-Bromofluorobenzene	98.3		0	%	89-109	1	03/01/10 16:18	TDD	3494850
Surr: Toluene-d8	95.7		0	%	89-110	1	03/01/10 16:18	TDD	3494850
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 16:18	TDD	3473893
Ethylbenzene	ND		0.48		1	1	03/01/10 16:18	TDD	3473893
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 16:18	TDD	3473893
Naphthalene	ND		0.45		5	1	03/01/10 16:18	TDD	3473893
Toluene	ND		0.37		1	1	03/01/10 16:18	TDD	3473893
m,p-Xylene	ND		0.82		2	1	03/01/10 16:18	TDD	3473893
o-Xylene	ND		0.94		2	1	03/01/10 16:18	TDD	3473893
Xylenes,Total	ND		0.94		2	1	03/01/10 16:18	TDD	3473893
Surr: 1,2-Dichloroethane-d4	101		0	%	75-120	1	03/01/10 16:18	TDD	3473893
Surr: 4-Bromofluorobenzene	98.3		0	%	89-109	1	03/01/10 16:18	TDD	3473893
Surr: Toluene-d8	95.7		0	%	89-110	1	03/01/10 16:18	TDD	3473893

Alberto E. Granados
Project Manager

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TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-28 **Collected:** 02/25/2010 9:25 **SPL Sample ID:** 10021002-24

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011 Units: ug/L**			
1,2-Dibromoethane	5.2		0.063	0.21	5	03/04/10 2:02	LDD	3477123
Surr: 1-Chloro-2-fluorobenzene	D	*	0 %	33-151	5	03/04/10 2:02	LDD	3477123

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/03/2010 9:00	JDF	1.07

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-28 **Collected:** 02/25/2010 9:25 **SPL Sample ID:** 10021002-24

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	0.00323	J	0.00256	0.01	1	03/02/10 23:53	SVW	3475391

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

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J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
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Client Sample ID: MW-28 **Collected:** 02/25/2010 9:25 **SPL Sample ID:** 10021002-24

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		88		200	200	03/02/10 20:53	DN	3494756
Surr: 1,2-Dichloroethane-d4	93.5		0	%	75-120	200	03/02/10 20:53	DN	3494756
Surr: 4-Bromofluorobenzene	102		0	%	89-109	200	03/02/10 20:53	DN	3494756
Surr: Toluene-d8	98.5		0	%	89-110	200	03/02/10 20:53	DN	3494756
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	13000		78		200	200	03/02/10 20:53	DN	3474796
Ethylbenzene	9100		97		200	200	03/02/10 20:53	DN	3474796
Methyl tert-butyl ether	38000		81		200	200	03/02/10 20:53	DN	3474796
Naphthalene	4400		90		1000	200	03/02/10 20:53	DN	3474796
Toluene	64000		74		200	200	03/02/10 20:53	DN	3474796
m,p-Xylene	35000		160		400	200	03/02/10 20:53	DN	3474796
o-Xylene	16000		190		400	200	03/02/10 20:53	DN	3474796
Xylenes,Total	51000		190		400	200	03/02/10 20:53	DN	3474796
Surr: 1,2-Dichloroethane-d4	93.5		0	%	75-120	200	03/02/10 20:53	DN	3474796
Surr: 4-Bromofluorobenzene	102		0	%	89-109	200	03/02/10 20:53	DN	3474796
Surr: Toluene-d8	98.5		0	%	89-110	200	03/02/10 20:53	DN	3474796

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-1 **Collected:** 02/25/2010 8:45 **SPL Sample ID:** 10021002-25

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 2:24	LDD	3477124
Surr: 1-Chloro-2-fluorobenzene	94.4		0 %	33-151	1	03/04/10 2:24	LDD	3477124

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/03/2010 9:00	JDF	1.07

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-1 **Collected:** 02/25/2010 8:45 **SPL Sample ID:** 10021002-25

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	ND		0.00256	0.01	1	03/02/10 23:58	SVW	3475392

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-1 **Collected:** 02/25/2010 8:45 **SPL Sample ID:** 10021002-25

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 15:14	TDD	3494849
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 15:14	TDD	3494849
Surr: 4-Bromofluorobenzene	104		0	%	89-109	1	03/01/10 15:14	TDD	3494849
Surr: Toluene-d8	96.9		0	%	89-110	1	03/01/10 15:14	TDD	3494849
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	0.62	J	0.39		1	1	03/01/10 15:14	TDD	3473891
Ethylbenzene	2.8		0.48		1	1	03/01/10 15:14	TDD	3473891
Methyl tert-butyl ether	ND		0.4		1	1	03/01/10 15:14	TDD	3473891
Naphthalene	ND		0.45		5	1	03/01/10 15:14	TDD	3473891
Toluene	14		0.37		1	1	03/01/10 15:14	TDD	3473891
m,p-Xylene	39		0.82		2	1	03/01/10 15:14	TDD	3473891
o-Xylene	16		0.94		2	1	03/01/10 15:14	TDD	3473891
Xylenes,Total	55		0.94		2	1	03/01/10 15:14	TDD	3473891
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 15:14	TDD	3473891
Surr: 4-Bromofluorobenzene	104		0	%	89-109	1	03/01/10 15:14	TDD	3473891
Surr: Toluene-d8	96.9		0	%	89-110	1	03/01/10 15:14	TDD	3473891

Alberto E. Granados
Project Manager

Qualifiers:
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B/V - Analyte detected in the associated Method Blank above Rep.Limit
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MI - Matrix Interference
TNTC - Too numerous to count

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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 02/25/2010 11:45 **SPL Sample ID:** 10021002-26

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**	**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013	0.043	1	03/04/10 10:55	LDD	3477145
Surr: 1-Chloro-2-fluorobenzene	94.9		0	% 33-151	1	03/04/10 10:55	LDD	3477145

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/03/2010 9:00	JDF	1.06

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 02/25/2010 11:45 **SPL Sample ID:** 10021002-26

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)				**MCL**	**SW6010C Units: mg/L**			
Lead	ND		0.00256	0.01	1	03/03/10 0:03	SVW	3475393

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 02/25/2010 11:45 **SPL Sample ID:** 10021002-26

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 14:43	TDD	3494848
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 14:43	TDD	3494848
Surr: 4-Bromofluorobenzene	107		0	%	89-109	1	03/01/10 14:43	TDD	3494848
Surr: Toluene-d8	96.4		0	%	89-110	1	03/01/10 14:43	TDD	3494848
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	4.3		0.39		1	1	03/01/10 14:43	TDD	3473890
Ethylbenzene	ND		0.48		1	1	03/01/10 14:43	TDD	3473890
Methyl tert-butyl ether	9		0.4		1	1	03/01/10 14:43	TDD	3473890
Naphthalene	6.9		0.45		5	1	03/01/10 14:43	TDD	3473890
Toluene	ND		0.37		1	1	03/01/10 14:43	TDD	3473890
m,p-Xylene	ND		0.82		2	1	03/01/10 14:43	TDD	3473890
o-Xylene	ND		0.94		2	1	03/01/10 14:43	TDD	3473890
Xylenes,Total	ND		0.94		2	1	03/01/10 14:43	TDD	3473890
Surr: 1,2-Dichloroethane-d4	103		0	%	75-120	1	03/01/10 14:43	TDD	3473890
Surr: 4-Bromofluorobenzene	107		0	%	89-109	1	03/01/10 14:43	TDD	3473890
Surr: Toluene-d8	96.4		0	%	89-110	1	03/01/10 14:43	TDD	3473890

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
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MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 02/25/2010 13:30 **SPL Sample ID:** 10021002-27

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011 Units: ug/L**		
1,2-Dibromoethane	ND		0.013		0.043	1	03/04/10 3:06	LDD	3477125
Surr: 1-Chloro-2-fluorobenzene	127		0	%	33-151	1	03/04/10 3:06	LDD	3477125

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	03/03/2010 9:00	JDF	1.06

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 02/25/2010 13:30 **SPL Sample ID:** 10021002-27

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	MDL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
TOTAL METALS BY METHOD 6010C (WATER)					**MCL**	**SW6010C Units: mg/L**		
Lead	ND		0.00256	0.01	1	03/03/10 0:08	SVW	3475394

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	02/26/2010 17:00	SA	1.00

Alberto E. Granados
Project Manager

Qualifiers:
ND/U - Not Detected at the Method Detection Limit
J - Estimated Value between MDL and PQL
* - Surrogate Recovery Outside Advisable QC Limits
E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 02/25/2010 13:30 **SPL Sample ID:** 10021002-27

Site: UNITED EXXON

Analyses/Method	Result	QUAL	MDL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B Units: ug/L**			
1,2-Dichloroethane	ND		0.44		1	1	03/01/10 14:11	TDD	3494847
Surr: 1,2-Dichloroethane-d4	105		0	%	75-120	1	03/01/10 14:11	TDD	3494847
Surr: 4-Bromofluorobenzene	99.3		0	%	89-109	1	03/01/10 14:11	TDD	3494847
Surr: Toluene-d8	98.1		0	%	89-110	1	03/01/10 14:11	TDD	3494847
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B Units: ug/L**			
Benzene	ND		0.39		1	1	03/01/10 14:11	TDD	3473889
Ethylbenzene	ND		0.48		1	1	03/01/10 14:11	TDD	3473889
Methyl tert-butyl ether	16		0.4		1	1	03/01/10 14:11	TDD	3473889
Naphthalene	ND		0.45		5	1	03/01/10 14:11	TDD	3473889
Toluene	ND		0.37		1	1	03/01/10 14:11	TDD	3473889
m,p-Xylene	ND		0.82		2	1	03/01/10 14:11	TDD	3473889
o-Xylene	ND		0.94		2	1	03/01/10 14:11	TDD	3473889
Xylenes,Total	ND		0.94		2	1	03/01/10 14:11	TDD	3473889
Surr: 1,2-Dichloroethane-d4	105		0	%	75-120	1	03/01/10 14:11	TDD	3473889
Surr: 4-Bromofluorobenzene	99.3		0	%	89-109	1	03/01/10 14:11	TDD	3473889
Surr: Toluene-d8	98.1		0	%	89-110	1	03/01/10 14:11	TDD	3473889

Alberto E. Granados
Project Manager

Qualifiers:
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E - Concentrations exceeding Calibration range of Instrument
B/V - Analyte detected in the associated Method Blank above Rep.Limit
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference
TNTC - Too numerous to count

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: EDB & DBCP
Method: SW8011

WorkOrder: 10021002
Lab Batch ID: 87465

Method Blank

RunID: PCBB_100303D-3478117 Units: ug/L
Analysis Date: 03/04/2010 12:02 Analyst: LDD
Preparation Date: 03/01/2010 13:59 Prep By: JT Method: E504

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dibromoethane	ND		0.040	0.012
Surr: 1-Chloro-2-fluorobenzene	120.7		33-151	0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-01B	MW-1
10021002-02B	MW-3
10021002-03B	MW-4R
10021002-04B	MW-5
10021002-05B	MW-6R
10021002-06B	MW-8
10021002-07B	MW-9R
10021002-08B	MW-10
10021002-09B	MW-11
10021002-10B	MW-12
10021002-11B	MW-14
10021002-12B	MW-15
10021002-13B	MW-16
10021002-14B	MW-17
10021002-15B	MW-18
10021002-16B	MW-19
10021002-17B	MW-20
10021002-18B	MW-21
10021002-19B	MW-22
10021002-20B	MW-23

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_100303D-3478187 Units: ug/L
Analysis Date: 03/04/2010 12:22 Analyst: LDD
Preparation Date: 03/01/2010 9:59 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.530	93.1	0.570	0.451	79.1	16.2	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	152	106	143	119	83.1	24.3	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: EDB & DBCP
Method: SW8011

WorkOrder: 10021002
Lab Batch ID: 87470

Method Blank

RunID: PCBB_100303E-3478195 Units: ug/L
Analysis Date: 03/05/2010 2:39 Analyst: LDD
Preparation Date: 03/01/2010 9:32 Prep By: JT Method: E504

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-21B	MW-24
10021002-22B	MW-25
10021002-23B	MW-26

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dibromoethane	ND		0.040	0.012
Surr: 1-Chloro-2-fluorobenzene	132.0		33-151	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_100303E-3478196 Units: ug/L
Analysis Date: 03/05/2010 3:00 Analyst: LDD
Preparation Date: 03/01/2010 9:32 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.417	73.2	0.570	0.481	84.3	14.1	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	120	84.2	143	145	101	18.5	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
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(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: EDB & DBCP
Method: SW8011

WorkOrder: 10021002
Lab Batch ID: 87554

Method Blank

RunID: PCBB_100303B-3477144 Units: ug/L
Analysis Date: 03/04/2010 10:35 Analyst: LDD
Preparation Date: 03/03/2010 9:00 Prep By: JDF Method: E504

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dibromoethane	ND		0.040	0.012
Surr: 1-Chloro-2-fluorobenzene	78.4		33-151	0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-24B	MW-28
10021002-25B	DW-1
10021002-26B	DW-2
10021002-27B	CK-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_100303B-3477121 Units: ug/L
Analysis Date: 03/04/2010 1:20 Analyst: LDD
Preparation Date: 03/03/2010 9:00 Prep By: JDF Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.349	61.2	0.570	0.399	70.1	13.5	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	90.0	63.0	143	112	78.5	21.9	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010C (water)
Method: SW6010C

WorkOrder: 10021002
Lab Batch ID: 87430

Method Blank

RunID: ICPDV_100302F-3475338 Units: mg/L
Analysis Date: 03/02/2010 19:25 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Analyte	Result	Qual	Rep Limit	MDL
Lead	ND		0.01	0.00256

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-01C	MW-1
10021002-03C	MW-4R
10021002-04C	MW-5
10021002-05C	MW-6R
10021002-06C	MW-8
10021002-07C	MW-9R
10021002-08C	MW-10
10021002-09C	MW-11
10021002-10C	MW-12
10021002-11C	MW-14
10021002-12C	MW-15
10021002-13C	MW-16
10021002-14C	MW-17
10021002-15C	MW-18
10021002-16C	MW-19
10021002-17C	MW-20
10021002-18C	MW-21
10021002-19C	MW-22
10021002-20C	MW-23
10021002-21C	MW-24

Laboratory Control Sample (LCS)

RunID: ICPDV_100302F-3475339 Units: mg/L
Analysis Date: 03/02/2010 19:30 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Qual	Lower Limit	Upper Limit
Lead	1.000	1.019	101.9		80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10021002-01
RunID: ICPDV_100302F-3475342 Units: mg/L
Analysis Date: 03/02/2010 19:44 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: **Total Metals by Method 6010C (water)** **WorkOrder:** **10021002**
Method: **SW6010C** **Lab Batch ID:** **87430**

Analyte	Sample Result	Smp Qual	MS Spike Added	MS Result	MS % Rcvry	MS Qual	MSD Spike Added	MSD Result	MSD % Rcvry	MSD Qual	RPD	RPD Qual	RPD Limit	Low Limit	High Limit
Lead	0.003984	J	1	0.8907	88.67		1	0.8937	88.98		0.3444		20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010C (water)
Method: SW6010C

WorkOrder: 10021002
Lab Batch ID: 87431

Method Blank

RunID: ICPDV_100302F-3475379 Units: mg/L
Analysis Date: 03/02/2010 22:56 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Analyte	Result	Qual	Rep Limit	MDL
Lead	ND		0.01	0.00256

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-22C	MW-25
10021002-23C	MW-26
10021002-24C	MW-28
10021002-25C	DW-1
10021002-26C	DW-2
10021002-27C	CK-1

Laboratory Control Sample (LCS)

RunID: ICPDV_100302F-3475380 Units: mg/L
Analysis Date: 03/02/2010 23:00 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Qual	Lower Limit	Upper Limit
Lead	1.000	1.011	101.1		80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 10021002-22
RunID: ICPDV_100302F-3475383 Units: mg/L
Analysis Date: 03/02/2010 23:15 Analyst: SVW
Preparation Date: 02/26/2010 17:00 Prep By: SA Method: SW3010A

Analyte	Sample Result	Smp Qual	MS Spike Added	MS Result	MS % Rcvry	MS Qual	MSD Spike Added	MSD Result	MSD % Rcvry	MSD Qual	RPD	RPD Qual	RPD Limit	Low Limit	High Limit
Lead	0.005411	J	1	0.9812	97.58		1	0.9875	98.20		0.6313		20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 10021002
Lab Batch ID: R228460

Method Blank

RunID: GB_100301A-3473137 Units: ug/L
Analysis Date: 03/01/2010 12:21 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-05A	MW-6R
10021002-06A	MW-8
10021002-07A	MW-9R

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	ND		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	98.5		75-120	0
Surr: 4-Bromofluorobenzene	98.9		89-109	0
Surr: Toluene-d8	96.1		89-110	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GB_100301A-3473135 Units: ug/L
Analysis Date: 03/01/2010 10:49 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	55.9	112	50.0	58.2	116	4.1	21	80	124
Benzene	50.0	53.4	107	50.0	55.5	111	3.9	23	88	117
Ethylbenzene	50.0	50.6	101	50.0	52.5	105	3.7	16	90	114
Methyl tert-butyl ether	50.0	57.0	114	50.0	57.2	114	0.3	23	80	124
Naphthalene	50.0	53.0	106	50.0	51.4	103	3.1	27	68	131
Toluene	50.0	50.7	101	50.0	53.3	107	5.0	21	84	118
m,p-Xylene	100	103	103	100	108	108	4.3	20	86	114
o-Xylene	50.0	52.9	106	50.0	54.1	108	2.3	17	87	117
Xylenes,Total	150.0	155.9	104.1	150.0	162.1	108.0	3.7	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	52.4	105	50.0	51.7	103	1.2	30	75	120
Surr: 4-Bromofluorobenzene	50.0	50.3	101	50.0	51.3	103	1.9	30	89	109
Surr: Toluene-d8	50.0	51.1	102	50.0	50.3	101	1.6	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228460**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 10021002
Lab Batch ID: R228475

Method Blank

RunID: QA_100301C-3473401 Units: ug/L
Analysis Date: 03/02/2010 0:57 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-02A	MW-3
10021002-03A	MW-4R

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	0.61		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	98.3		75-120	0
Surr: 4-Bromofluorobenzene	93.9		89-109	0
Surr: Toluene-d8	97.1		89-110	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: QA_100301C-3473399 Units: ug/L
Analysis Date: 03/01/2010 23:27 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	52.1	104	50.0	51.9	104	0.4	21	80	124
Benzene	50.0	52.2	104	50.0	51.6	103	1.1	23	88	117
Ethylbenzene	50.0	55.7	111	50.0	55.8	112	0.3	16	90	114
Methyl tert-butyl ether	50.0	54.3	109	50.0	51.6	103	5.2	23	80	124
Naphthalene	50.0	56.7	113	50.0	51.9	104	9.0	27	68	131
Toluene	50.0	52.7	105	50.0	55.1	110	4.4	21	84	118
m,p-Xylene	100	110	110	100	111	111	0.9	20	86	114
o-Xylene	50.0	54.1	108	50.0	54.5	109	0.9	17	87	117
Xylenes,Total	150.0	164.1	109.2	150.0	165.5	110.2	0.9	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	49.2	98.4	50.0	50.2	100	2.0	30	75	120
Surr: 4-Bromofluorobenzene	50.0	48.7	97.3	50.0	51.3	103	5.3	30	89	109
Surr: Toluene-d8	50.0	49.4	98.8	50.0	50.5	101	2.2	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228475**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 10021002
Lab Batch ID: R228493

Method Blank

RunID: XB_100301A-3473888 Units: ug/L
Analysis Date: 03/01/2010 13:40 Analyst: TDD

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	ND		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	98.3		75-120	0
Surr: 4-Bromofluorobenzene	98.9		89-109	0
Surr: Toluene-d8	99.0		89-110	0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-17A	MW-20
10021002-19A	MW-22
10021002-20A	MW-23
10021002-21A	MW-24
10021002-22A	MW-25
10021002-23A	MW-26
10021002-25A	DW-1
10021002-26A	DW-2
10021002-27A	CK-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_100301A-3473886 Units: ug/L
Analysis Date: 03/01/2010 12:05 Analyst: TDD

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	53.8	108	50.0	55.8	112	3.6	21	80	124
Benzene	50.0	51.4	103	50.0	53.3	107	3.7	23	88	117
Ethylbenzene	50.0	51.1	102	50.0	51.9	104	1.4	16	90	114
Methyl tert-butyl ether	50.0	54.9	110	50.0	54.6	109	0.6	23	80	124
Naphthalene	50.0	46.3	92.5	50.0	48.9	97.8	5.5	27	68	131
Toluene	50.0	51.2	102	50.0	52.2	104	2.0	21	84	118
m,p-Xylene	100	105	105	100	102	102	2.3	20	86	114
o-Xylene	50.0	55.3	111	50.0	53.7	107	2.8	17	87	117
Xylenes,Total	150.0	160.3	106.7	150.0	155.7	104.1	2.5	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	52.0	104	50.0	51.8	104	0.5	30	75	120
Surr: 4-Bromofluorobenzene	50.0	51.1	102	50.0	50.8	102	0.7	30	89	109
Surr: Toluene-d8	50.0	50.1	100	50.0	49.8	99.6	0.7	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228493**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 10021002
Lab Batch ID: R228552

Method Blank

RunID: QB_100302A-3474782 Units: ug/L
Analysis Date: 03/02/2010 12:26 Analyst: DN

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	ND		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	97.5		75-120	0
Surr: 4-Bromofluorobenzene	103.9		89-109	0
Surr: Toluene-d8	96.2		89-110	0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-01A	MW-1
10021002-04A	MW-5
10021002-18A	MW-21
10021002-20A	MW-23
10021002-24A	MW-28

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: QB_100302A-3474780 Units: ug/L
Analysis Date: 03/02/2010 10:57 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	52.4	105	50.0	51.0	102	2.7	21	80	124
Benzene	50.0	49.9	99.7	50.0	49.0	98.1	1.7	23	88	117
Ethylbenzene	50.0	56.0	112	50.0	55.1	110	1.7	16	90	114
Methyl tert-butyl ether	50.0	52.3	105	50.0	50.8	102	2.9	23	80	124
Naphthalene	50.0	52.9	106	50.0	53.7	107	1.5	27	68	131
Toluene	50.0	56.2	112	50.0	54.8	110	2.5	21	84	118
m,p-Xylene	100	110	110	100	107	107	3.0	20	86	114
o-Xylene	50.0	54.9	110	50.0	53.6	107	2.4	17	87	117
Xylenes,Total	150.0	164.9	110.0	150.0	160.6	107.0	2.8	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	49.4	98.8	50.0	48.0	96.0	2.9	30	75	120
Surr: 4-Bromofluorobenzene	50.0	50.8	102	50.0	51.5	103	1.3	30	89	109
Surr: Toluene-d8	50.0	49.1	98.2	50.0	49.8	99.7	1.5	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228552**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 10021002
Lab Batch ID: R228564

Method Blank

RunID: GB_100302A-3474999 Units: ug/L
Analysis Date: 03/02/2010 18:06 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-14A	MW-17
10021002-16A	MW-19

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	ND		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	100.3		75-120	0
Surr: 4-Bromofluorobenzene	97.4		89-109	0
Surr: Toluene-d8	95.4		89-110	0

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GB_100302A-3474997 Units: ug/L
Analysis Date: 03/02/2010 16:34 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	51.5	103	50.0	52.0	104	0.9	21	80	124
Benzene	50.0	53.6	107	50.0	52.6	105	1.8	23	88	117
Ethylbenzene	50.0	53.2	106	50.0	52.8	106	0.7	16	90	114
Methyl tert-butyl ether	50.0	53.8	108	50.0	52.6	105	2.3	23	80	124
Naphthalene	50.0	61.7	123	50.0	50.2	100	20.6	27	68	131
Toluene	50.0	52.6	105	50.0	52.7	105	0.0	21	84	118
m,p-Xylene	100	107	107	100	108	108	1.4	20	86	114
o-Xylene	50.0	54.3	109	50.0	54.8	110	1.1	17	87	117
Xylenes,Total	150.0	161.3	107.3	150.0	162.8	108.7	1.3	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	49.6	99.2	50.0	50.5	101	1.7	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.2	98.3	50.0	49.6	99.3	1.0	30	89	109
Surr: Toluene-d8	50.0	50.4	101	50.0	50.4	101	0.2	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228564**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 10021002
Lab Batch ID: R228667

Method Blank

RunID: XB_100303A-3476847 Units: ug/L
Analysis Date: 03/03/2010 11:53 Analyst: TDD

Analyte	Result	Qual	Rep Limit	MDL
1,2-Dichloroethane	ND		1.0	0.44
Benzene	ND		1.0	0.39
Ethylbenzene	ND		1.0	0.48
Methyl tert-butyl ether	ND		1.0	0.4
Naphthalene	ND		5.0	0.45
Toluene	ND		1.0	0.37
m,p-Xylene	ND		2.0	0.82
o-Xylene	ND		2.0	0.94
Xylenes,Total	ND		2.0	0.94
Surr: 1,2-Dichloroethane-d4	102.9		75-120	0
Surr: 4-Bromofluorobenzene	97.2		89-109	0
Surr: Toluene-d8	98.2		89-110	0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
10021002-08A	MW-10
10021002-09A	MW-11
10021002-10A	MW-12
10021002-11A	MW-14
10021002-12A	MW-15
10021002-13A	MW-16
10021002-15A	MW-18

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_100303A-3476845 Units: ug/L
Analysis Date: 03/03/2010 10:18 Analyst: TDD

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	53.6	107	50.0	52.9	106	1.3	21	80	124
Benzene	50.0	50.3	101	50.0	51.8	104	3.1	23	88	117
Ethylbenzene	50.0	55.9	112	50.0	54.0	108	3.4	16	90	114
Methyl tert-butyl ether	50.0	48.5	96.9	50.0	47.7	95.3	1.6	23	80	124
Naphthalene	50.0	50.6	101	50.0	51.3	103	1.4	27	68	131
Toluene	50.0	52.2	104	50.0	52.4	105	0.3	21	84	118
m,p-Xylene	100	114	114	100	111	111	2.1	20	86	114
o-Xylene	50.0	57.8	116	50.0	56.7	113	2.0	17	87	117
Xylenes,Total	150.0	171.8	114.3	150.0	167.7	112.0	2.0	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	55.5	111	50.0	53.4	107	3.8	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.9	99.8	50.0	48.8	97.6	2.3	30	89	109
Surr: Toluene-d8	50.0	48.4	96.8	50.0	48.6	97.2	0.4	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**10021002**
Method:	**SW8260B**	**Lab Batch ID:**	**R228667**

Qualifiers:
ND/U - Not Detected at the Reporting Limit
E - Estimated Value exceeds calibration curve
J - Estimated value between MDL and PQL
B - Analyte Detected In The Associated Method Blank
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**10021002**	Received By:	**HJC**
Date and Time Received:	**2/26/2010 9:25:00 AM**	Carrier name:	**FedEx-Std 1 Day PM**
Temperature:	**4°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☑	No ☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

SPL Representative:
Contact Date & Time:
Client Name Contacted:

Non Conformance Issues: REC'D CK1 SAMPLES NOT LISTED ON COC

Client Instructions:

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 299391
1002100 2 page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q
City COLUMBIA State SC Zip [redacted]
Phone/Fax: (803) 735-0003
Client Contact: BOB BARTON Email:
Project Name/No.: 14253.84.002
Site Name: UNITED EXXON
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil A=air SL=sludge E=encore X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis: BTEX, Naph, MTBE; EDB; Lead

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph, MTBE	EDB	Lead							
MW1	2/24/10	1315			W	P/V	16/40	1/2/X	07										7
MW3		1340			W	V	40	1/X	04										4
MW4R		1245			W	P/V	16/40	1/2/X	07										7
MW5		1355																	7
MW6R		1310																	7
MW8		1335																	7
MW9R		1240																	7
MW10		0945																	7
MW11		1125																	7
MW12		1030																	7

Client/Consultant Remarks:

Laboratory remarks: CS ON COOLER, BW-6 (FX) BW-15 (8) (3W)

Intact? ☐ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 4.0

Requested TAT
☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☐ Standard
☐ 3 Business Days
☐ Other ____
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 2/25/10	time	2. Received by: FedEx
3. Relinquished by: FedEx	date 02/26/10	time 0850	4. Received by: [signature]
5. Relinquished by: [signature]	date 02/26/10	time 09:25	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 299031

page ____ of ____

Client Name: ARC ASSOCIATES
Address: 600 NORTHEAST DR UNIT Q
City COLUMBIA State SC Zip [redacted]
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: UNITED EXCON
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil A=air SL=sludge E=encore X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NAPH, MTBE	EDB	LEAD						
MW14	2/24/10	1120			W	PV	16/40	1/2X	07									7
MW15		1125																7
MW16		1010																7
MW17		1040																7
MW18		1055																7
MW19		1020																7
MW20		0955																7
MW21	2/25/10	0955																7
MW22		1025																7
MW23		1215																7

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 4.0

Requested TAT
☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☐ Standard
☐ 3 Business Days
☐ Other ____
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: Bob Mongel	date 2/25/10	time	2. Received by: Fedex
3. Relinquished by: Fedex	date 02/26/10	time 0850	4. Received by: [illegible]
5. Relinquished by: [illegible]	date 02/26/10	time 09:25	6. Received by Laboratory: [illegible]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 299030

page ____ of ____

Client Name: ~~[illegible]~~ ATC ASSOCIATES
Address: 400 DENTHEAFE DR UNIT Q
City COLUMBIA State SC Zip [redacted]
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14253840.0012
Site Name: UNITED BOOM
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil A=air SL=sludge E=encore X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NO2PH, MTBE	EDB	1,2DO							
MW24	2/25/10	1240		✓	W	P	V	1	2	✓	✓	✓							7
MW25	↓	1310		↓	↓	↓	↓	↓	↓	↓	↓	↓							7
MW26		1400																	7
MW28		0925																	7
DW1		0845																	7
DW2		1145																	7

Client/Consultant Remarks:

Laboratory remarks:

Intact? ✓ Y ☐ N
Ice? ✓ Y ☐ N
Temp: 4.0

Requested TAT
☐ 1 Business Day ☐ Contract
☐ 2 Business Days ☐ Standard
☐ 3 Business Days
☐ Other ____
Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: John Mogel	date 2/25/10	time	2. Received by: Fedex
3. Relinquished by: Fedex	date 02/26/10	time 08:50	4. Received by:
5. Relinquished by:	date 02/26/10	time 09:25	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx Express **US Airbill**

FedEx Tracking Number 8693 8873 1054

From This portion can be removed for Recipient's records.

Date 7/25/10 FedEx Tracking Number 869388731054

Sender's Name BOB BOLTON/LINDA WILLIA Phone 803 735-0003

Company ATC ASSOCIATES INC #14

Address 400 NORTHEAST DR STE G Dept./Floor/Suite/Room

City COLUMBIA State SC ZIP 29203-5182

2 Your Internal Billing Reference 14.25384.0012

3 To

Recipient's Name SHIPPING/RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0402380829

8693 8873 1054

RECIPIENT: PEEL HERE

1800.GoFedEx 1800.463.3339 fedex.com

Recipient's Copy

4a Express Package Service *Packages up to 150 lbs.*

- ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: ** To most locations.

5 Packaging

- ☐ FedEx Envelope*
- ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- ☐ FedEx Box
- ☐ FedEx Tube
- ☒ Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- ☐ SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- ☐ HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- ☐ HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- ☒ No
- ☐ Yes — As per attached Shipper's Declaration.
- ☐ Yes — Shipper's Declaration not required.
- ☐ Dry Ice — Dry Ice/9, UN 1845 ____ x ____ kg
- ☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- ☐ Sender — Acct. No. in Section 1 will be billed.
- ☒ Recipient
- ☐ Third Party
- ☐ Credit Card
- ☐ Obtain Recip. Acct. No.
- ☐ Cash/Check

[redacted] 070[redacted]

Total Packages Total Weight [redacted]

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- ☐ No Signature Required — Package may be left without obtaining a signature for delivery.
- ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

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fedex.com 1.800.GoFedEx 1.800.463.3339

RECIPIENT: PEEL HERE

FedEx Express **US Airbill**

FedEx Tracking Number 8693 8873 1043

This portion can be removed for Recipient's records.

Date 2/25/10 FedEx Tracking Number 869388731043

Sender's Name BOB BOLTON/LINDA WILLIA Phone 803 735-0003

Company ATC ASSOCIATES INC #14

Address 400 NORTHEAST DR STE G

Dept./Floor/Suite/Room

City COLUMBIA State SC ZIP 29203-5182

2 Your Internal Billing Reference 1421384.0012

3 To

Recipient's Name SHIPPING/RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0402380829

8693 8873 1043

Recipient's Copy

4a Express Package Service *Packages up to 150 lbs.*

- [ ] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: ____

** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [x] Other

* Declared value limit $500.

6 Special Handling

Include FedEx address in Section 3.

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods?

One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No. [ ]

[redacted] 070 [redacted]

Total Packages ____ Total Weight ____ [redacted]

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

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Express

FedEx Tracking Number 8693 8873 1032

RECIPIENT: PEEL HERE

fedex.com 1.800.GoFedEx 1.800.463.3339

1 From This portion can be removed for Recipient's records.

Date 2/25/00 FedEx Tracking Number 869388731032

Sender's Name BOB BOLTON/LINDA WILLI Phone 803 735-0003

Company ATC ASSOCIATES INC #14

Address 400 NORTHEAST DR, STE 9

Dept./Floor/Suite/Room

City COLUMBIA State SC ZIP 29203-5182

2 Your Internal Billing Reference 14.25384.00/2

3 To

Recipient's Name SHIPPING/RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

Dept./Floor/Suite/Room

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0402380829

8693 8873 1032

Recipient's Copy

4a Express Package Service

Packages up to 150 lbs.

- ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service

Packages over 150 lbs.

- ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

- ☐ FedEx Envelope*
- ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- ☐ FedEx Box
- ☐ FedEx Tube
- ☒ Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- ☐ SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- ☐ HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- ☐ HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- ☒ No
- ☐ Yes — As per attached Shipper's Declaration.
- ☐ Yes — Shipper's Declaration not required.
- ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- ☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- ☐ Sender — Acct. No. in Section 1 will be billed.
- ☒ Recipient
- ☐ Third Party
- ☐ Credit Card
- ☐ Obtain Recip. Acct. No.
- ☐ Cash/Check

Total Packages [redacted] Total Weight [redacted]

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- ☐ No Signature Required — Package may be left without obtaining a
- ☐ Direct Signature — Someone at recipient's address may sign for delivery.
- ☐ Indirect Signature — If no one is available at recipient's address

fedex.com 1.800.GoFedEx 1.800.463.3339

APPENDIX F

Disposal Manifests

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-10012398

Page of

Job No. D-10012398

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: United Auto Sales (Lot Shop #4)

US EPA ID No.

Street Address: 401 N. Congress St, Winnsboro SC 29180

Mailing Address: 4100 Nz Dr. Suite Q, Columbia SC

Phone No.: 803-767-1552

Contact: Bob

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Hazardous liquid NOS				2	DM		
b.		Non Hazardous solid NOS				15	DM		3.91
c.									

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Contact water		NT-0109003	Approved For Disposal
b.	Soil		CO-6803	
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Elizabeth Hartman

Signature: Elizabeth Hartman

Mo./Day/Yr.: 10-2-09

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [illegible] Shipment Date: 10/2/09

Transporter or EPA ID No.: SCR000004358

Unit No.:

Phone: 864-583-2717

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [illegible] Delivery Date: 10/2/09

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: Leslie Vaughn Receipt Date: 10/2/09

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

	Discrepancies	Routing Codes	Handling Methods.
a.			
b.			
c.			

Original - Facility Retain **COPY 2 - Return to Generator** **COPY 3 - Transporter Retain** **COPY 4 - Generator Retain**

CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

Shipper's No. 00001

Carrier Shamrock Environmental Corp. SCAC _____ Carrier's No. NC0000942144

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at _____, date October 6, 09 from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:	FROM:
Consignee Shamrock Environmental Corp.	Shipper United Exxon (c/o ATC Associates)
Street 6106 Corporate Park Drive	Street 1 N. Congress St.
Destination Browns Summit, NC Zip 27214	Origin Winnsboro, SC Zip
Route	

Delivering Carrier | Vehicle Number | U.S. DOT Hazmat Reg. No. 051409 550 039 B

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
001, TT	X		UN1203, Gasoline Mixture, 3,			78	G	
			PG III			Product 4 Gals		
			Shamrock Approval 2005-0063-BG					
			Shamrock Job No. 02-AFV-09-09516					
			10/7/09					
			pH-6.0 Co-RT			4 gal gas		

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $. Per

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ BY SHIPPER ☑ BY CARRIER

DRIVER'S SIGNATURE: Jimmie Sluss

SHIPPER: _____ PER: _____ DATE: 9/10/09

CARRIER: Shamrock Environmental PER: Jimmie Sluss DATE: 10-6-09

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (172.604).

CONTAINS HAZARDOUS MATERIALS

CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

Shipper's No. 00001

Carrier Shamrock Environmental Corporation SCAC _____ Carrier's No. NC0000942144

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at _____, date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:	FROM:
Consignee Shamrock Environmental Corporation	Shipper United Exxon (c/o ATC Associates)
Street 6106 Corporate Park Drive	Street 1 N Congress Street
Destination Browns Summit, NC Zip 27214	Origin Winnsboro, SC Zip
Route	

Delivering Carrier	Vehicle Number	U.S. DOT Hazmat Reg. No.
		051409 550 039R

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
001, TT	X		UN1203, Gasoline Mixture, 3, PG III			289	G	
			Shamrock Approval 2005-0063-BG					
			Shamrock Job No. 02-AFV-09-0956					
			02 AFV 09 0956					
			Hmel No gas Rick Geeslin					

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ BY SHIPPER ☑ BY CARRIER

DRIVER'S SIGNATURE: Jim DSluss

SHIPPER: ATC
PER: ATC DATE: 10/27/09

CARRIER: Shamrock Environmental
PER: Jimmie Sluss DATE: 10-27-09

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (172.604).

205-BLC-0-1 12/06

CONTAINS HAZARDOUS MATERIALS 1

CONTAINS HAZARDOUS MATERIALS

CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

Shipper's No. 00001

Carrier Shamrock Environmental Corporation SCAC _____ Carrier's No. NC0000942144

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at _____, date _____ from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:	FROM:
Consignee Shamrock Environmental Corporation	Shipper United Exxon (c/o ATC Associates)
Street 6106 Corporate Park Drive	Street 1 N Congress Street
Destination Browns Summit, NC Zip 27214	Origin Winnsboro, SC Zip
Route	

Delivering Carrier	Vehicle Number	U.S. DOT Hazmat Reg. No.
		051409 550 039R

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
001, TT	X		UN1203, Gasoline Mixture, 3, PG III			505	G	
			Shamrock Approval 2005-0063-BG					
			Shamrock Job No. 02 AFV-09-0956					
			9.3 Gals of total Product					
			11/17/09					
	pHio R-RT		1Mo1 1Mo3					

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ BY SHIPPER ☑ BY CARRIER

DRIVER'S SIGNATURE: Jimmy Daniel Sluss

SHIPPER: [signature]
PER: _____ DATE: 11/17/09

CARRIER: Shamrock ENV
PER: Simmie D Sluss DATE: 11-17-09

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (172.604).

205-BLC-O 4 12460

CONTAINS HAZARDOUS MATERIALS 1

CONTAINS HAZARDOUS MATERIALS

CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING – ORIGINAL – NOT NEGOTIABLE

Shipper's No. 00001

Carrier Shamrock Environmental Corporation SCAC _____ Carrier's No. NC0000942144

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request; and all applicable state and federal regulations;

at _____, date January 19, 2010 from _____

the Property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to delivery at said destination, if on its route, or otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said Property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said Property that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained, including the conditions on the back hereof, which are hereby agreed to by the shipper and accepted for himself and his assigns.

TO:	FROM:
Consignee Shamrock Environmental Corporation	Shipper United Exxon (c/o ATC Associates)
Street 6106 Corporate Park Drive	Street 1 N Congress Street
Destination Browns Summit, NC Zip 27214	Origin Winnsboro, SC Zip
Route	

Delivering Carrier	Vehicle Number	U.S. DOT Hazmat Reg. No.
		051409 550 039R

Number and Type of Packages	HM	I.D. Number	Description of Articles	Hazard Class	Pkg. Grp.	Total Quantity (mass, volume, or activity)	Weight (subject to correction)	Class or Rate
	X		UN1203, Gasoline Mixture, 3, PG III			586	G	
			Shamrock Approval 2005-0063-BG					
			Shamrock Job No. 02-AFV-10-0016					
			10,2 Gals Product					
			1/20/10					

Remit COD to:
Address:
City: State: Zip:

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding $ Per

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

(Signature of Consignor)

COD AMT: $

TOTAL CHARGES: $

COD FEE: Prepaid ☐ Collect ☐ $

FREIGHT CHARGES: ☐ Prepaid ☐ Collect

NOTE: Liability Limitation for loss or damage in this shipment may be applicable. See 49 U.S.C. 14706(c)(1)(A) and (B).

This is to certify that the above-named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Per

PLACARDS REQUIRED

PLACARDS SUPPLIED ☐ BY SHIPPER ☑ BY CARRIER

DRIVER'S SIGNATURE: Jim Daniel

SHIPPER: _____ PER: _____ DATE: 1/18/10

CARRIER: Shamrock ENV PER: Jimmie Sluss DATE: 1-19-10

EMERGENCY RESPONSE TELEPHONE NUMBER: ( )

Monitored at all times the Hazardous Material is in transportation including storage incidental to transportation (172.604).

205-BLC-O 4 12460

CONTAINS HAZARDOUS MATERIALS

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-03050324

Page of

Job No. D-03050324

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: United Exxon

US EPA ID No.

Street Address: United Exxon Winnsboro

Mailing Address: For Payee ATC 400 Northeast B. Wilg Cola, SC. 29203

Phone No. For Payee 803.735.0003

Contact For Payee Johnny Horn

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Haz liq				1	drum		
b.									
c.									.23 TON

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Water		AT-1209169	Approved for Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Brenda Giles

Signature: B.G. Agent for SMK

Mo./Day/Yr. 3-5-10

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Transporter or EPA ID No.: SCR000004358

Unit No.

Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: B.G. Shipment Date: 3-5-10

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: B.G. Delivery Date: 3-5-10

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: [illegible] Receipt Date: 3-5-10

Discrepancies	Routing Codes	Handling Methods.
a.	WM3519.	
b.		
c.		

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 14 2010

13tech UST DOCKET

BILLY KEENAN
KEENAN OIL COMPANY, INC.
3923 WEST BELTLINE BOULEVARD
COLUMBIA, SC 29204

Re: **AFVR Directive**
Former United Exxon: 401 North Congress Street, Winnsboro, SC 29180
UST Permit # **11760**; **CA# 39458** (Rel. 2)
Releases 2 and 3 reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank Management Division (UST Division) of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the above referenced report and determined the next necessary scope of work is to conduct three (3) Aggressive Fluid/Vapor Recovery (AFVR) events to remove free phase product and chemicals of concern. One (1) AFVR event should be performed at each of the following groupings: MW2/MW27 and MW10/MW13. Wait 15 days and then perform an AFVR event on the grouping of MW2/MW29. Approximately 30 days after the final AFVR event, the following wells should be gauged: MW2, MW10, MW13, MW27, MW28, and MW29.

Cost Agreement # **39458** has been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. The AFVR and gauging activities may proceed immediately upon receipt of this letter. The AFVR Report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR events noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR events started and ended, ambient air temperature, and general weather conditions during the AFVR events.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the events. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).
- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.
- A table documenting the free product thickness in each well before and after the recovery events.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Chart depicting the depth to product, depth to groundwater, and product thickness during gauging activities.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

Magnehelic gauges must be installed on the extraction wells and monitoring wells immediately surrounding the extraction wells. The AFVR should be completed by establishing a vacuum on the subsurface through the existing monitoring wells. The unit must be capable of providing a minimum airflow of 250 cubic feet per minute (CPM) at 25 inches Mercury vacuum. An airtight seal must be established on the top of each extraction well. Drop tubes inserted in the well(s) should have an inside diameter of at least one (1) inch and should initially be installed six inches below the bottom of the product or the top of the well screen whichever is deeper. The drop tubes should be lowered deeper in the well only if the well exhibits slow recovery (repeatedly goes dry) or if it is deemed necessary to establish a steeper hydraulic gradient to enhance free product migration toward the well. The goal is to maximize the recovery of free product and petroleum vapors in the capillary fringe and minimize the recovery of ground water.

ATC Associates - Columbia can submit an invoice for direct billing from the SUPERB Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

An AFVR report and invoice are due within 90 days from the date of this letter. Interim invoices may be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the UST Division is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the UST Division for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference **UST Permit #11760 and CA#39458**. If you have any questions, please feel free to contact me by phone at (803) 896-6649, by fax at (803) 896-6245, or email at koonjt@dhec.sc.gov.

Sincerely,

Justin Koon, Engineer Associate
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Cost Agreement

cc: ATC Associates, Inc.: 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ enc)
Technical File (w/ enc)

Approved Cost Agreement 39458

Facility: 11760 UNITED EXXON
KOONJT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	4.0000	290.00	1,160.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY	6.0000	20.00	120.00
17 DISPOSAL						
		A2	WASTEWATER - PUMPING TEST	2,500.0000	0.60	1,500.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	14,345.00	2,151.75
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C	OFF GAS TREATMENT	24.0000	35.00	840.00
				Total Amount		16,496.75

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

December 17, 2010

Mr. Justin Koon, Engineer Associate
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

UST
DEC 2 1 2010
PROGRAM

UST
DOCKET
14 TECH

Re: Aggressive Fluid Vapor Recovery Activities
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina 29180
UST Permit #11760

Dear Mr. Koon:

As per your directive letter dated September 14, 2010, ATC Associates Inc. (ATC) scheduled three aggressive fluid vapor recovery (AFVR) events at the Former United Exxon. On October 11, 2010, ATC personnel oversaw AFVR activities at Monitor Wells MW-2 and MW-27 by Versatile Environmental Resource Company (VERCO) personnel at the site. Additional readings were conducted at Monitor Wells MW-28 and MW-29. This event was conducted for eight hours at these two wells simultaneously with off-gas treatment.

On October 12, 2010, ATC personnel oversaw an AFVR event at Monitor Wells MW-10 and MW-13 by VERCO personnel at the site. Additional readings were conducted at Monitor Wells MW-11 and MW-12. The event was conducted for eight hours at these two wells simultaneously with off-gas treatment. Additionally, approximately 671 gallons of liquid were removed during the October 11 & October 12, 2010 events.

On October 27, 2010, ATC personnel oversaw an AFVR event at Monitor Wells MW-2 and MW-29 by VERCO personnel at the site. Additional readings were conducted at Monitor Wells MW-27 and MW-28. The event was conducted for eight hours at these two wells simultaneously with off-gas treatment, and approximately 429 gallons of liquid were removed during this event. A site location map is presented as Figure 1 and a site map is presented as Figure 2. Summaries of the three AFVR events are presented in the appendix.

Due to the continued effectiveness of the current AFVR events; ATC recommends that three additional AFVR events be conducted at Monitor Wells MW-2, MW-10, MW-13, MW-27, and MW-29, followed by a gauging event. Should you have any questions or require additional information, please contact me at 735-0003.

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Sincerely,
ATC Associates Inc.
UST Site Rehabilitation Contractor #313

Johnny Horn
Staff Geologist

Fred Lyke, P.G. #1055
Branch Manager

Attachments

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

APPENDIX
TABLE/FIGURES

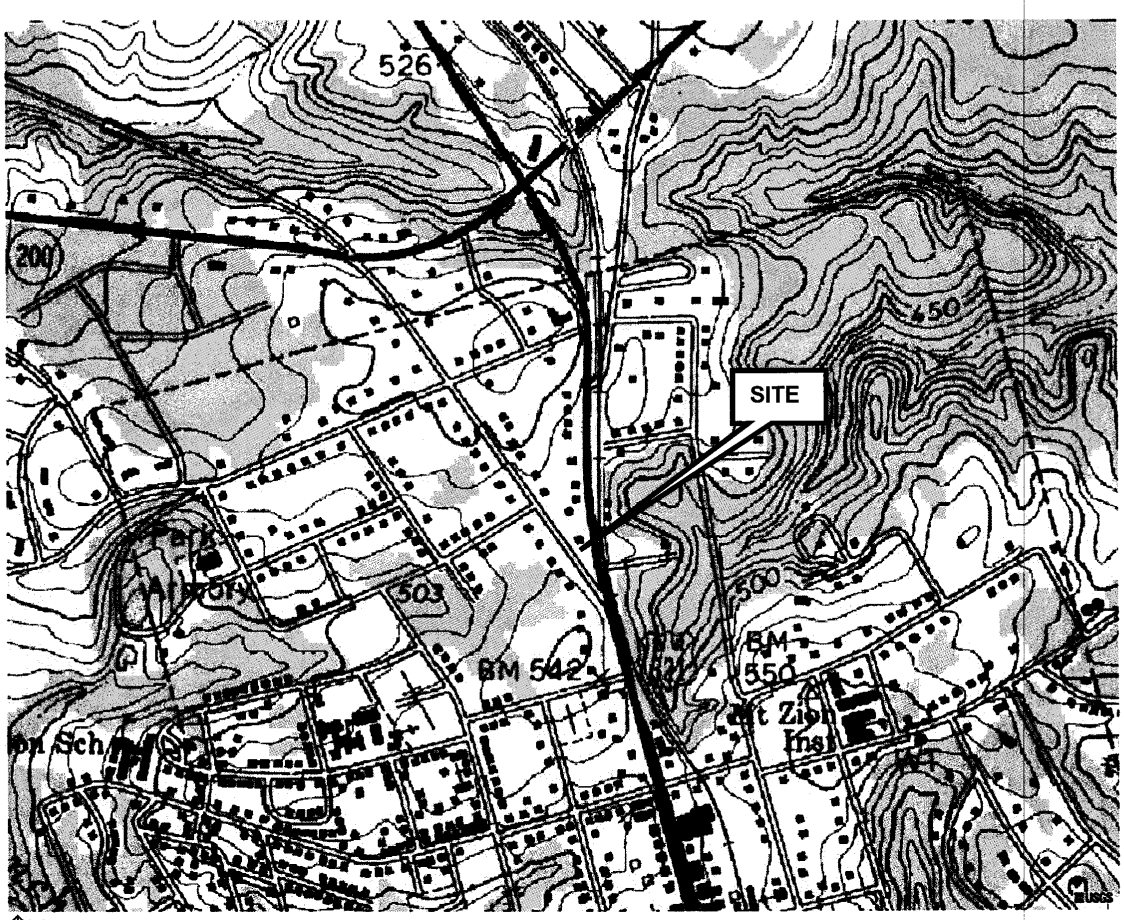
TABLE I
Historical Groundwater Elevation Data
United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-2	11/29/2010	98.17	51.37*	0.02	15	54	46.80
	2/24/2010		51.69*	0.32			46.48
	7/16/2009		52.31*	1.57			45.86
	9/22/2008		52.66*	0.18			45.51
	1/14/2008		51.81*	0.27			46.36
	4/19/2007		49.93*	0.03			48.24
	8/21/2006		51.76*	0.30			46.41
	6/27/2005		50.12*	0.02			48.05
	3/8/2005		50.87*	0.20			47.30
	8/20/2003		49.75*	0.33			48.42
MW-10	11/29/2010	88.26	46.86	0	15	50	41.40
	2/24/2010		46.90	0			41.36
	7/16/2009		47.10*	0.25			41.16
	9/22/2008		47.66*	0.33			40.60
	1/14/2008		47.23	0			41.03
	4/19/2007		45.71	0			42.55
	8/21/2006		46.98	0			41.28
	6/27/2005		45.46	0			42.80
	3/8/2005		46.33*	0.42			41.93
	8/20/2003		45.82	0			42.44
MW-13	11/29/2010	81.02	41.82*	0.12	15	50	39.20
	2/24/2010		41.91*	0.13			39.11
	7/16/2009		42.25*	0.29			38.77
	9/22/2008		42.75*	0.11			38.27
	1/14/2008		42.15*	0.23			38.87
	4/19/2007		40.74	0			40.28
	8/21/2006		41.96	0			39.06
	6/27/2005		40.64	0			40.38
	3/8/2005		41.26	0			39.76
MW-27	11/29/2010	98.43	52.38*	0.03	60	15	46.05
	2/24/2010		52.54*	0.08			45.89

*Corrected depth to water = depth to water – (LPH thickness x 0.78)
LPH = Liquid Phase Hydrocarbons

TABLE I (continued) Historical Groundwater Elevation Data United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-28	11/29/2010	97.11	50.32	0	60	15	46.79
	2/24/2010		49.59	0			47.52
MW-29	11/29/2010	97.88	50.98*	0.02	60	15	46.90
	2/24/2010		51.20*	0.02			46.68

*Corrected depth to water = depth to water – (LPH thickness x 0.78)
LPH = Liquid Phase Hydrocarbons



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

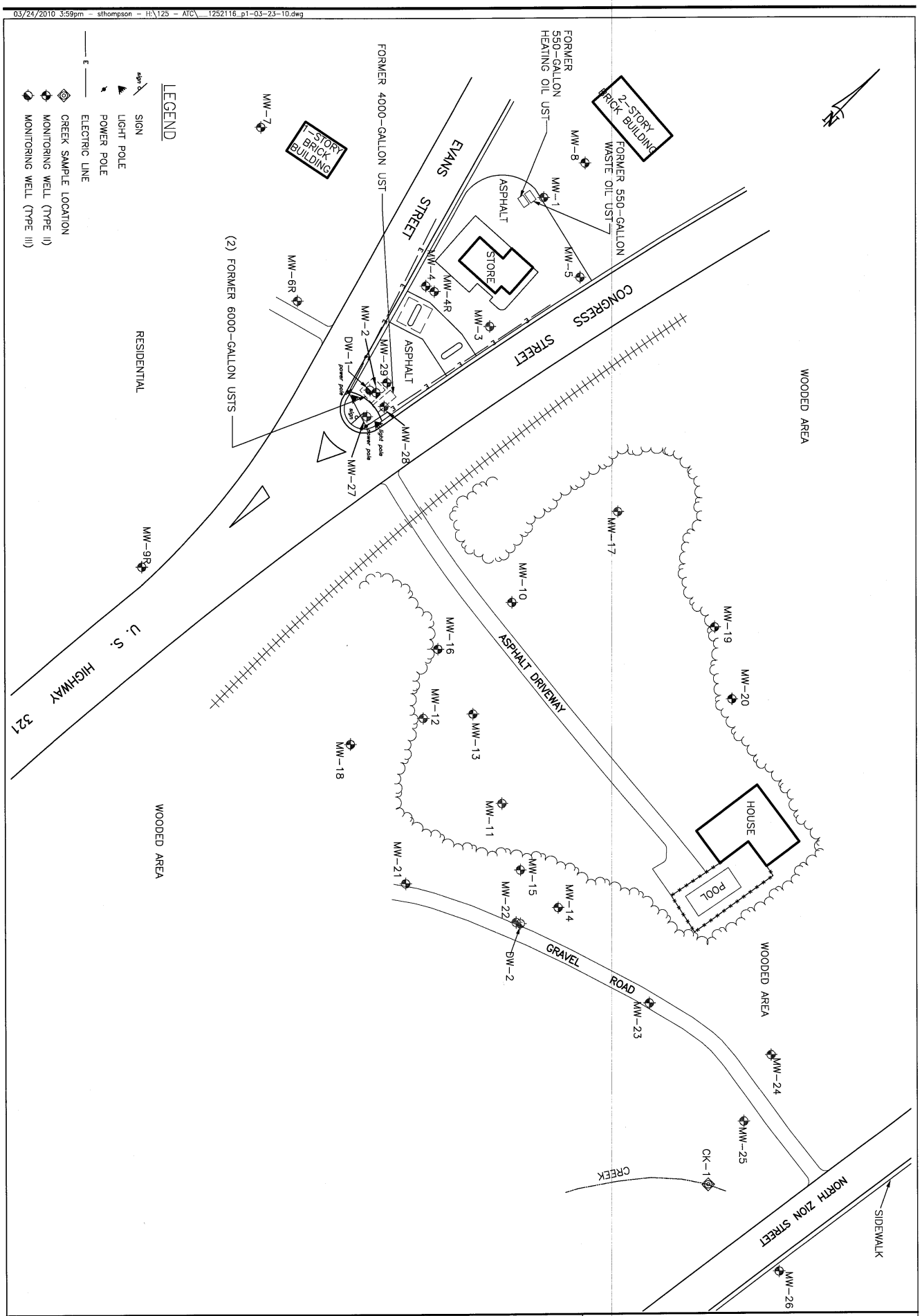
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



NOTES:

TITLE **FIGURE 2** **UST PERMIT #11760**

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		JH		1"=80'	03-23-2010	14.25384.0012

AFVR Summary Reports

TABLE 1
AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760

Start Weather: Sunny, 68 degrees F
Finish Weather: Sunny, 82 degrees F

Extraction Well	Date	Time (hh:mm)	Differential Time (hr)	Extraction Well Head Vacuum (in. Hg) MW02	MW27	Truck	Vacuum Truck Exhaust Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW02	10/11/2010	8:00	0.00	14	15	20	16.3	170.0	787	2400	0.04	94.59
MW27		8:30	0.50	14	15	20	12.2	200.0	800	2200	0.06	81.04
		9:00	0.50	14	15	20	11.3	205.0	782	2200	0.07	79.57
		9:30	0.50	14	15	20	7.5	205.0	816	3500	0.04	130.68
		10:00	0.50	14	15	20	7.1	215.0	725	4100	0.05	149.24
		10:30	0.50	14	15	20	6.5	215.0	599	3400	0.05	123.76
		11:00	0.50	14	15	20	6.0	215.0	650	3000	0.05	109.20
		11:30	0.50	14	15	21	6.0	215.0	673	2700	0.05	98.28
		12:00	0.50	14	15	21	6.0	215.0	700	2400	0.05	87.36
		12:30	0.50	14	15	21	6.1	215.0	722	2800	0.05	101.92
		13:00	0.50	14	15	21	6.1	215.0	675	3000	0.05	109.20
		13:30	0.50	14	15	21	6.1	215.0	620	3100	0.05	112.84
		14:00	0.50	14	15	21	6.1	215.0	600	3100	0.05	112.84
		14:30	0.50	14	15	21	5.8	215.0	575	3200	0.04	117.71
		15:00	0.50	14	15	21	5.6	215.0	525	3200	0.04	117.71
		15:30	0.50	14	15	21	5.6	215.0	580	3400	0.04	125.06
		16:00	0.50	14	15	21	5.7	215.0	575	3400	0.04	125.06

Well Gauging Data:

Well No.	Diameter (in)	Total Depth (ft)	Depth to Product (ft)	Before AFVR Event: Depth to Water (ft)	Before AFVR Event: Product Thickness (ft)	After AFVR Event: Depth to Product (ft)	After AFVR Event: Depth to Water (ft)	After AFVR Event: Product Thickness (ft)
MW02	2	54.00	51.00	51.35	0.35	none	51.78	0.00
MW27	2	60.00	52.06	52.11	0.05	none	53.41	0.00

AFVR Information		Well ID	Stinger Depth
Client	ATC	MW02	52.0 feet
Equipment Operator:	Robert Freeman	MW27	52.0 feet
Blower Discharge I.D.	3 inches		

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The % relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

TABLE 2
DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
UNITED EXXON
WINNSBORO, SOUTH CAROLINA
SCDHEC SITE ID NUMBER 11760

Date: 10/11/10

Weather: Sunny, 82 degrees F

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
		MW-28	MW-29	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
8:00	0.0	0	0	
8:30	0.5			
9:00	1.0	0	0	
9:30	1.5			
10:00	2.0	0	0	
10:30	2.5			
11:00	3.0	0	0	
11:30	3.5			
12:00	4.0	0	0	
12:30	4.5			
13:00	5.0	0	0	
13:30	5.5			
14:00	6.0	0	0	
14:30	6.5			
15:00	7.0	0	0	
15:30	7.5			
16:00	8.0	0	0	
Maximum Change:		0	0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
		MW-28	MW-29	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR		50.04	50.73	
13:00	4 hours	50.45	51.02	
17:00	8 hours	50.84	51.39	
Maximum Change:		-0.80	-0.66	

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 10/11/10
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	81.04	800	4	3200	17024	0.001062808	5.167799	2.5839
60	79.57	782	4	3128	16640.96	0.001038895	4.959893	2.479947
90	130.68	816	4	3264	17364.48	0.001084064	8.499933	4.249966
120	149.24	725	4	2900	15428	0.00096317	8.62461	4.312305
150	123.76	599	4	2396	12746.72	0.000795778	5.909127	2.954564
180	109.2	650	4	2600	13832	0.000863532	5.65786	2.82893
210	98.28	673	4	2692	14321.44	0.000894087	5.272255	2.636128
240	87.36	700	4	2800	14896	0.000929957	4.874464	2.437232
270	101.92	722	4	2888	15364.16	0.000959185	5.865605	2.932803
300	109.2	675	4	2700	14364	0.000896745	5.87547	2.937735
330	112.84	620	4	2480	13193.6	0.000823676	5.576619	2.78831
360	112.84	600	4	2400	12768	0.000797106	5.396728	2.698364
390	117.71	575	4	2300	12236	0.000763893	5.395074	2.697537
420	117.71	525	4	2100	11172	0.000697468	4.925937	2.462969
450	125.06	580	4	2320	12342.4	0.000770536	5.781794	2.890897
480	125.06	575	4	2300	12236	0.000763893	5.731951	2.865976
					Total Emissions in pounds			46.75756
					Equivalent Gallons (vapor)			7.590513

Equations: PPMg = PPM (measured) x K Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

TABLE 1
AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760

Start Weather: Sunny, 71 degrees F
Finish Weather: Sunny, 80 degrees F

Extraction Well	Date	Time (hh:mm)	Differential Time (hr)	Extraction Well Head Vacuum (in. Hg) MW13	MW10	Truck	Vacuum Truck Exhaust Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW13, MW10	10/12/2010	8:00	0.00	13	17	20	32.0	180.0	485	1300	0.09	47.81
		8:30	0.50	13	16	20	16.0	205.0	420	1500	0.09	53.09
		9:00	0.50	13	16	20	9.8	205.0	312	1500	0.07	54.55
		9:30	0.50	12	15	20	6.5	205.0	293	1800	0.04	67.21
		10:00	0.50	12	15	20	6.6	220.0	256	2000	0.05	72.27
		10:30	0.50	12	15	21	6.1	220.0	260	2400	0.05	86.72
		11:00	0.50	12	15	21	5.3	220.0	270	2600	0.04	94.93
		11:30	0.50	12	15	21	5.3	220.0	285	2700	0.04	98.59
		12:00	0.50	12	15	21	5.3	220.0	290	2200	0.04	80.33
		12:30	0.50	12	15	21	5.5	220.0	275	1500	0.04	54.77
		13:00	0.50	12	15	21	5.7	220.0	267	1700	0.04	62.07
		13:30	0.50	12	15	22	5.5	220.0	265	1800	0.04	65.72
		14:00	0.50	12	15	22	5.3	220.0	260	2000	0.04	73.03
		14:30	0.50	12	15	21	5.1	220.0	245	2100	0.04	76.68
		15:00	0.50	13	15	21	5.0	220.0	229	1900	0.04	69.38
		15:30	0.50	13	15	21	4.9	220.0	220	1800	0.04	65.72
		16:00	0.50	13	15	21	4.7	220.0	220	1600	0.04	58.42

Well Gauging Data:

Well No.	Diameter (in)	Total Depth (ft)	Before AFVR Event: Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	After AFVR Event: Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW13	2	50.0	41.56	41.93	0.34	none	42.8	0.00
MW10	2	50.0	none	46.63	0.00	none	46.8	0.00

AFVR Information		Well ID	Stinger Depth
Client	ATC	MW13	43.0 feet
Equipment Operator:	Robert Freeman	MW10	47.5 feet
Blower Discharge I.D.	3 inches		

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

TABLE 2
DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
UNITED EXXON
WINNSBORO, SOUTH CAROLINA
SCDHEC SITE ID NUMBER 11760

Date: 10/12/10

Weather: Sunny, 80 degrees F

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
		MW-12	MW-11	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
8:00	0.0	0	0	
8:30	0.5			
9:00	1.0	0	0	
9:30	1.5			
10:00	2.0	0	0	
10:30	2.5			
11:00	3.0	0	0	
11:30	3.5			
12:00	4.0	0	0	
12:30	4.5			
13:00	5.0	0	0	
13:30	5.5			
14:00	6.0	0	0	
14:30	6.5			
15:00	7.0	0	0	
15:30	7.5			
16:00	8.0	0	0	
Maximum Change:		0	0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
		MW-12	MW-11	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR		39.81	32.50	
13:00	4 hours	39.81	32.52	
17:00	8 hours	39.81	32.55	
Maximum Change:		0.00	-0.05	

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 10/12/10
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	53.09	420	4	1680	8937.6	0.000557974	1.777372	0.888686
60	54.55	312	4	1248	6639.36	0.000414495	1.356643	0.678321
90	67.21	293	4	1172	6235.04	0.000389254	1.569704	0.784852
120	72.27	256	4	1024	5447.68	0.000340099	1.474736	0.737368
150	86.72	260	4	1040	5532.8	0.000345413	1.797251	0.898626
180	94.93	270	4	1080	5745.6	0.000358698	2.043071	1.021535
210	98.59	285	4	1140	6064.8	0.000378625	2.239721	1.119861
240	80.33	290	4	1160	6171.2	0.000385268	1.856915	0.928457
270	54.77	275	4	1100	5852	0.00036534	1.200581	0.600291
300	62.07	267	4	1068	5681.76	0.000354712	1.321019	0.66051
330	65.72	265	4	1060	5639.2	0.000352055	1.388224	0.694112
360	73.03	260	4	1040	5532.8	0.000345413	1.513529	0.756765
390	76.68	245	4	980	5213.6	0.000325485	1.497492	0.748746
420	69.38	229	4	916	4873.12	0.000304229	1.266444	0.633222
450	65.72	220	4	880	4681.6	0.000292272	1.152488	0.576244
480	58.42	220	4	880	4681.6	0.000292272	1.024473	0.512236
					Total Emissions in pounds			12.23983
					Equivalent Gallons (vapor)			1.986986

Equations: PPMg = PPM (measured) x K Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} lb-m^3/mg-ft^3) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg ((T2-T1)/60) (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 dsm^3/1 x 10^6 mg-mole (mass to volume conversion factor)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: 11760
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number: Verco 004

5. Generator's Name and Mailing Address: United Exxon
Generator's Site Address (if different than mailing address): 401-N Congress Street Winnsboro SC
Generator's Phone:

6. Transporter 1 Company Name: Verco
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address: A&D 1741 Calks Ferry Rd Lexington, SC 29073
U.S. EPA ID Number
Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz water	1	Truck	671	gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Brandon Guiles
Signature
Month 10 Day 12 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: John L Freeman
Signature
Month 10 Day 12 Year 10
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: John R Ray
Signature
Month 10 Day 12 Year 10

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

2-DESIGNATED FACILITY TO GENERATOR

TABLE 1
AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760

Start Weather: Sunny, 73 degrees F
Finish Weather: Sunny, 85 degrees F

Extraction Well	Date	Time (hh:mm)	Differential Time (hr)	Extraction Well Head Vacuum (in. Hg) MW13	MW10	Truck	Vacuum Truck Exhaust: Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW2	10/27/2010	8:00	0.00	13.5	14	20	12.0	172.5	912	2800	0.03	111.06
MW29		8:30	0.50	14	15	20	8.4	194.1	900	2700	0.04	103.02
		9:00	0.50	14	15	20	6.3	214.6	855	2800	0.04	103.06
		9:30	0.50	14	15	20	5.8	215.6	893	2800	0.04	102.90
		10:00	0.50	14	15	20	5.9	219.6	847	2800	0.05	101.76
		10:30	0.50	14.5	15	20	5.9	222.5	894	2800	0.05	100.80
		11:00	0.50	14	15	20	6.2	224.6	880	2800	0.05	100.49
		11:30	0.50	14.5	15.5	20.5	6.5	227.1	922	2900	0.06	103.16
		12:00	0.50	14.5	15.5	20.5	6.2	228.5	939	2900	0.06	102.40
		12:30	0.50	14	15	20.5	5.9	228.7	984	2800	0.05	100.19
		13:00	0.50	14.5	15.5	20.5	5.8	229.6	1026	3000	0.06	105.76
		13:30	0.50	14	15.5	20	5.4	228.8	1006	3000	0.05	107.01
		14:00	0.50	14	15.5	20	5.4	227.6	956	2900	0.05	103.63
		14:30	0.50	14	15	20	5.3	231.0	982	3000	0.05	107.23
		15:00	0.50	14.5	15	21	5.4	233.0	963	3000	0.04	107.48
		15:30	0.50	14	15.5	21	5.5	229.1	989	2800	0.04	100.89
		16:00	0.50	14	15	21	5.4	232.0	1023	2800	0.04	100.46

Well Gauging Data:

Well No.	Diameter (in)	Total Depth (ft)	Before AFVR Event: Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	After AFVR Event: Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW02	2	54.00	51.14	51.15	0.01	none	52.09	0.00
MW29	2	60.00	none	50.78	0.00	none	52.49	0.00

AFVR Information		Well ID	Stinger Depth
Client	ATC	MW02	52.0 feet
Equipment Operator:	Robert Freeman	MW29	51.5 feet
Blower Discharge I.D.	3 inches		

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The % relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

TABLE 2
DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION - Winnsborro, SC
SCDHEC SITE ID #11760

Date: **10/27/2010**

Weather: Sunny, 85

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
		MW27	MW28	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
8:00	0.0			
8:30	0.5	-0.5	-1.0	
9:00	1.0	-1.0	-1.0	
9:30	1.5	-1.0	-1.0	
10:00	2.0	-1.0	-1.0	
10:30	2.5	-1.0	-1.0	
11:00	3.0	-1.0	-1.0	
11:30	3.5	-1.0	-1.0	
12:00	4.0	-1.0	-1.0	
12:30	4.5	-1.0	-1.0	
1:00	5.0	-1.0	-1.0	
1:30	5.5	-1.0	-1.0	
2:00	6.0	-1.0	-1.0	
2:30	6.5	-1.0	-1.0	
3:00	7.0	-1.0	-1.0	
3:30	7.5	-1.0	-1.0	
4:00	8.0	-1.0	-1.0	
Maximum Change:		-0.5	-1	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
		MW27	MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR		52.20	50.19	
	4 hours	52.79	51.87	
	8 hours	52.90	52.04	
Maximum Change:		-0.70	-1.85	

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 10/27/10
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	103.02	900	4	3600	19152	0.001195659	7.39061	3.695305
60	103.06	855	4	3420	18194.4	0.001135876	7.023805	3.511903
90	102.90	893	4	3572	19003.04	0.00118636	7.324585	3.662293
120	101.76	847	4	3388	18024.16	0.001125248	6.870316	3.435158
150	100.80	894	4	3576	19024.32	0.001187688	7.183139	3.591569
180	100.49	880	4	3520	18726.4	0.001169089	7.048906	3.524453
210	103.16	922	4	3688	19620.16	0.001224887	7.581558	3.790779
240	102.40	939	4	3756	19981.92	0.001247471	7.664463	3.832232
270	100.19	984	4	3936	20939.52	0.001307254	7.858428	3.929214
300	105.76	1026	4	4104	21833.28	0.001363052	8.649381	4.32469
330	107.01	1006	4	4024	21407.68	0.001336481	8.581013	4.290506
360	103.63	956	4	3824	20343.68	0.001270056	7.896954	3.948477
390	107.23	982	4	3928	20896.96	0.001304597	8.393518	4.196759
420	107.48	963	4	3852	20492.64	0.001279356	8.250308	4.125154
450	100.89	989	4	3956	21045.92	0.001313897	7.953543	3.976771
480	100.46	1023	4	4092	21769.44	0.001359066	8.191907	4.095954
					Total Emissions in pounds			61.93122
					Equivalent Gallons (vapor)			10.05377

Equations: PPMg = PPM (measured) x K Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number: 009

5. Generator's Name and Mailing Address

Generator's Site Address (if different than mailing address): 401 Congress ST, Williamsburg, SC

Generator's Phone:

6. Transporter 1 Company Name: Versatile Environmental Resource Company

U.S. EPA ID Number:

7. Transporter 2 Company Name

U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental, 1741 Calks Ferry Rd, Lexington SC

U.S. EPA ID Number:

Facility's Phone: 803 957 9171

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	TT	429	gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Branden Guiles — Signature: — Month 10 Day 27 Year 10

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature: — Month 10 Day 27 Year 10

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: John P. Rao — Signature: — Month 10 Day 22 Year 10

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

6-NHM-C-SO-1158

A DESIGNATED FACILITY TO GENERATOR

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

15tch UST DOCKET

MAR 10 2011

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: **AFVR Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760, CA #41038
Releases Reported August 1, 1997
Aggressive Fluid Vapor Recovery Report Received December 21, 2010
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates. The next work scope includes three 8-hour AFVR events to remove free product from monitoring wells MW-2, MW-27, and MW-29. Each of the events should be spaced approximately 30 days apart. **During each event, the stinger should be set no deeper than 12 inches beneath the free product.**

The AFVR Report should be submitted within 120 days from the date of this correspondence and should include the following:

- A narrative portion documenting the AFVR events noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR events started and ended, ambient air temperature, and general weather conditions during the AFVR events.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the events. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).
- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.
- A table documenting the free product thickness in each well before and after the recovery event.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.

ATC can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Cost Agreement #41038 has been approved in the amount shown on the enclosed cost agreement. If the invoice and completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the UST Management Division is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Division for the cost to be paid. The Division reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Division reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Management Division grants preapproval for transportation of virgin petroleum-contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on-site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference UST Permit #11760 and CA #41038. If you have any questions, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Technical File (with enclosure)
ATC Associates, Inc., 400 Northeast Dr., Ste. Q, Columbia, SC 29203 (with enclosure)

Approved Cost Agreement 41038

Facility: 11760 UNITED EXXON
MINERRS
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	3.0000	290.00	870.00
17 DISPOSAL						
		A2	WASTEWATER - PUMPING TEST	1,500.0000	0.60	900.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	13,335.00	2,000.25
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C	OFF GAS TREATMENT	24.0000	35.00	840.00
				Total Amount		15,335.25

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760
3/21/2011

Start Weather: 55 degrees F,
Finish Weather: 70 degrees F

Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
MW2	MW27	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
16.0	15.0	16.0	18.0	6.3	205.0	1486	3400	0.04	126.95
16.0	14.0	16.0	18.0	5.1	217.0	1561	3500	0.04	128.36
16.0	15.0	15.0	18.0	5.0	220.0	1637	3700	0.04	135.10
16.0	15.0	16.0	18.0	5.0	225.0	1597	3700	0.05	132.72
16.0	15.0	16.0	18.0	4.7	228.0	1561	3900	0.05	139.28
16.0	15.0	16.5	18.0	4.7	226.0	1532	3900	0.05	139.69
16.0	14.0	16.0	18.0	4.6	229.0	1567	3900	0.05	139.08
16.0	15.0	16.0	18.0	4.9	231.0	1513	3900	0.05	138.68
16.0	15.0	16.0	18.0	4.8	233.0	1498	3800	0.05	134.73
16.0	15.0	16.0	18.0	4.6	229.0	1478	3900	0.05	139.08
16.0	15.0	16.5	18.0	4.6	234.0	1452	3900	0.05	138.08
16.0	14.0	16.0	18.0	4.7	237.0	1431	3900	0.05	137.48
16.0	14.0	16.0	18.0	4.6	240.0	1505	3800	0.05	133.38
16.0	15.0	16.0	18.0	4.8	241.0	1476	3900	0.05	136.70
16.0	15.0	16.0	18.0	4.9	243.0	1525	3900	0.05	136.31
16.0	15.0	16.0	18.0	4.6	240.0	1493	3900	0.05	136.89

Data:		Before AFVR Event			After AFVR Event		
Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
54.00	52.00	51.68	51.78	0.10	none	51.64	0.00
60.00	53.00	52.73	52.76	0.03	53.44	53.45	0.01
60.00	51.50	51.30	51.38	0.08	none	50.85	0.00

Total Gallons Extracted
214

otes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
locity - The rate at which air flows is measured at the blower discharge piping
mperature - The temperature of the air stream exiting the blower discharge piping
lative humidity - The & relative humidity of the air stream exiting the blower discharge piping
ater Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
w rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED
JUN 10 2011
SC DHEC - BUREAU OF
LAND & WASTE MANAGEMENT

June 9, 2011

UST
JUN 13 2011
PROGRAM

Read S. Miner, P.G., Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: Aggressive Fluid Vapor Recovery Activities
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina 29180
UST Permit #11760

Dear Mr. Miner:

As per your directive letter dated March 10, 2011, ATC Associates Inc. (ATC) scheduled three aggressive fluid vapor recovery (AFVR) events at the Former United Exxon. On March 21, 2011, ATC personnel oversaw AFVR activities at Monitor Wells MW-2, MW-27, and MW-29 by Versatile Environmental Resource Company (VERCO) personnel at the site. Additional readings were conducted at Monitor Well MW-28. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 214 gallons of liquid were removed during the event.

On April 22, 2011, ATC personnel oversaw an AFVR event at Monitor Wells MW-2, MW-27, and MW-29 by VERCO personnel at the site. Additional readings were conducted at Monitor Well MW-28. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 348 gallons of liquid were removed during the event. Additionally, liquid phase hydrocarbons (LPH) were detected at Monitor Well MW-28 during the referenced event.

On June 1, 2011, ATC personnel oversaw an AFVR event at Monitor Wells MW-2, MW-27, and MW-29 by VERCO personnel at the site. Additional readings were conducted at Monitor Well MW-28. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 382 gallons of liquid were removed during the event. Additionally, LPH were detected at Monitor Well MW-28 during the referenced event. A site location map is presented as Figure 1, a site map is presented as Figure 2, and Historical Groundwater Elevation Data as Table I. Summaries of the three AFVR events are presented in the appendix.

UST
DOCKET
16 Tech

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

LPH continues to exist at Monitor Wells MW-2, MW-27, and MW-29 and now is present at Monitor Well MW-28. Due to these findings, ATC recommends that three additional AFVR events be conducted at Monitor Wells MW-2, MW-27, MW-28, and MW-29 to continue to remove LPH. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.
UST Site Rehabilitation Contractor #313

Johnny Horn
Staff Geologist

Fred Lyke, P.G. #1055
Branch Manager

FREDERICK P. LYKE
REGISTERED
No.
1055
NORTH CAROLINA
PROFESSIONAL GEOLOGIST

Attachments

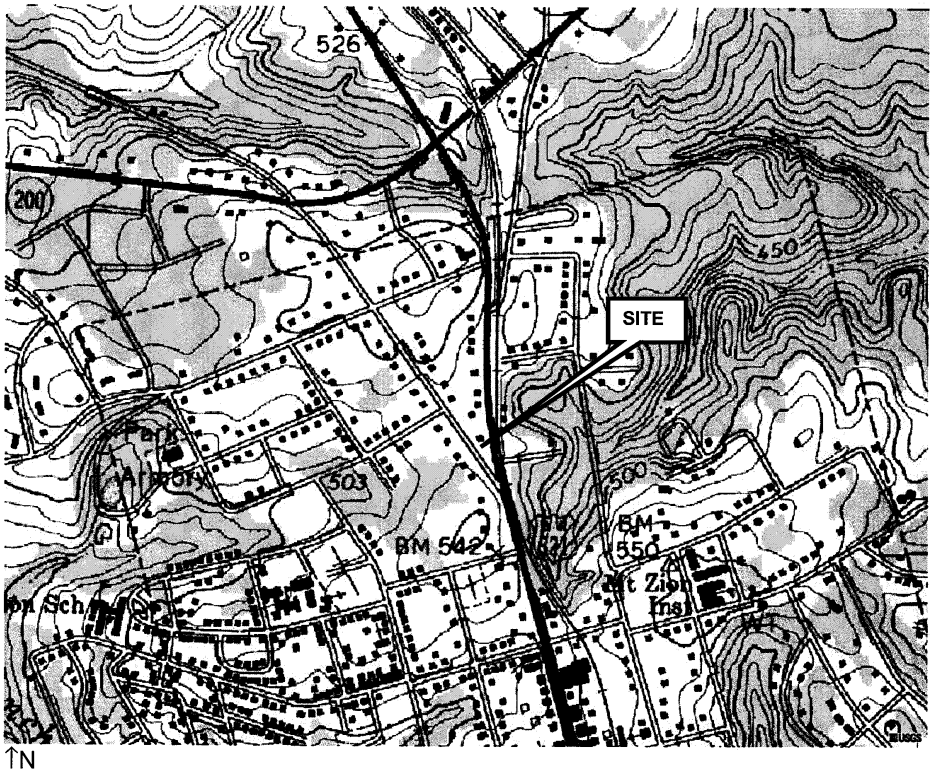
cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

APPENDIX
TABLE/FIGURES

TABLE I
Historical Groundwater Elevation Data
United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-2	6/1/2011	98.17	53.74	0.00	15	54	44.43
	11/29/2010		51.37*	0.02			46.80
	2/24/2010		51.69*	0.32			46.48
	7/16/2009		52.31*	1.57			45.86
	9/22/2008		52.66*	0.18			45.51
	1/14/2008		51.81*	0.27			46.36
	4/19/2007		49.93*	0.03			48.24
	8/21/2006		51.76*	0.30			46.41
	6/27/2005		50.12*	0.02			48.05
	3/8/2005		50.87*	0.20			47.30
	8/20/2003		49.75*	0.33			48.42
MW-27	6/1/2011	98.43	53.21	0.00	15	60	45.22
	11/29/2010		52.38*	0.03			46.05
	2/24/2010		52.54*	0.08			45.89
MW-28	6/1/2011	97.11	52.67*	0.15	15	60	44.44
	11/29/2010		50.32	0			46.79
	2/24/2010		49.59	0			47.52
MW-29	6/1/2011	97.88	53.02	0.00	15	60	44.86
	11/29/2010		50.98*	0.02			46.90
	2/24/2010		51.20*	0.02			46.68

*Corrected depth to water = depth to water – (LPH thickness x 0.78)
LPH = Liquid Phase Hydrocarbons



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

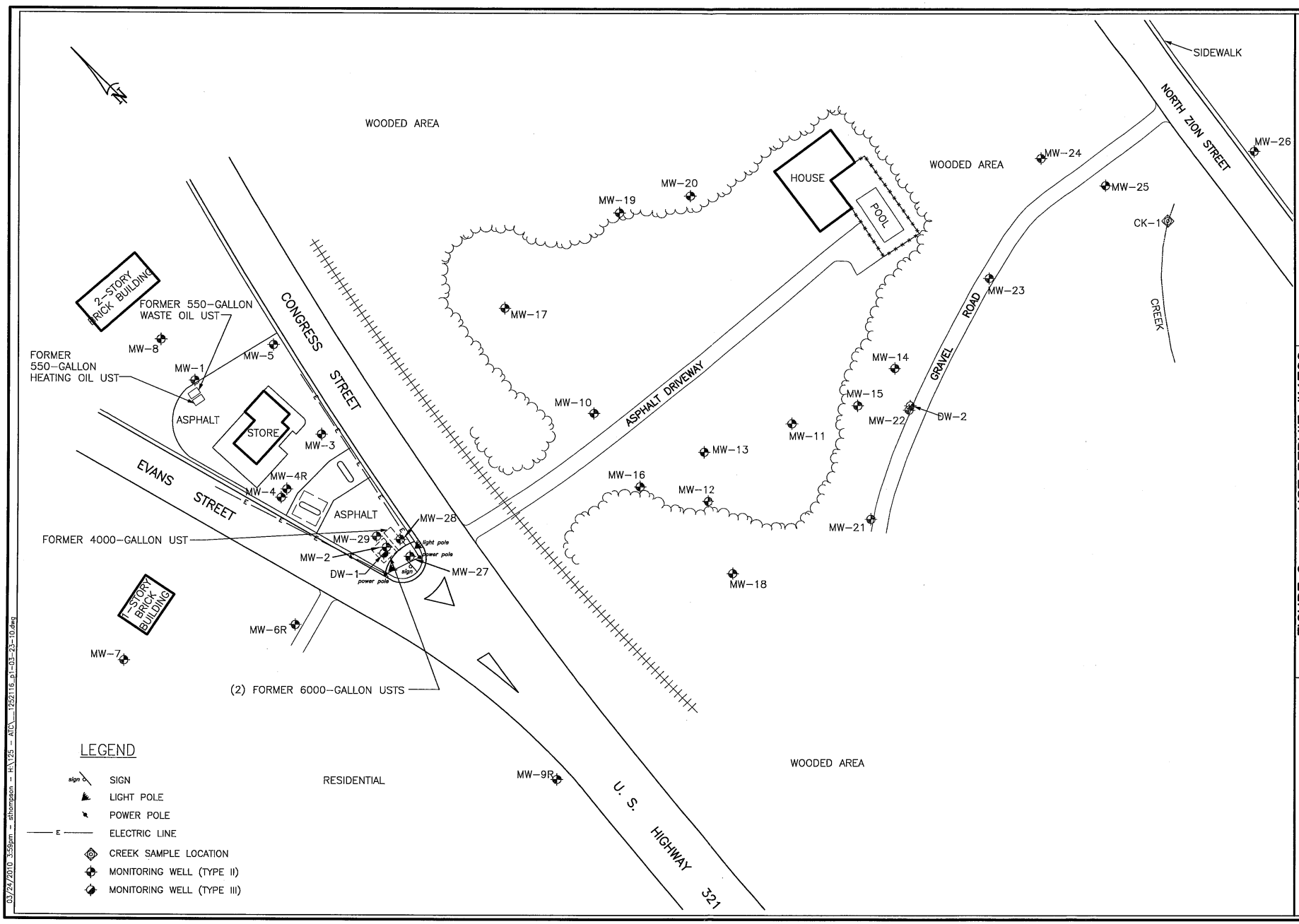
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		JH		1"=80'	03-23-2010	14.25384.0012

NOTES:

03/24/2010 3:59pm - sthompson - H:\725 - ATC\ 1252116_p1-03-23-10.dwg

AFVR Summary Reports

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760
3/21/2011

Start Weather: 55 degrees F,
Finish Weather: 70 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW2	MW27	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW2	7:30										
MW27	8:00	16.0	15.0	16.0	18.0	6.3	205.0	1486	3400	0.04	126.95
MW29	8:30	16.0	14.0	16.0	18.0	5.1	217.0	1561	3500	0.04	128.36
	9:00	16.0	15.0	15.0	18.0	5.0	220.0	1637	3700	0.04	135.10
	9:30	16.0	15.0	16.0	18.0	5.0	225.0	1597	3700	0.05	132.72
	10:00	16.0	15.0	16.0	18.0	4.7	228.0	1581	3900	0.05	139.28
	10:30	16.0	15.0	16.5	18.0	4.7	226.0	1532	3900	0.05	139.69
	11:00	16.0	14.0	16.0	18.0	4.8	229.0	1567	3900	0.05	139.08
	11:30	16.0	15.0	16.0	18.0	4.9	231.0	1513	3900	0.05	138.68
	12:00	16.0	15.0	16.0	18.0	4.8	233.0	1498	3800	0.05	134.73
	12:30	16.0	15.0	16.0	18.0	4.6	229.0	1478	3900	0.05	139.08
	1:00	16.0	15.0	16.5	18.0	4.6	234.0	1452	3900	0.05	138.08
	1:30	16.0	14.0	16.0	18.0	4.7	237.0	1431	3900	0.05	137.48
	2:00	16.0	14.0	16.0	18.0	4.6	240.0	1505	3800	0.05	133.38
	2:30	16.0	15.0	16.0	18.0	4.8	241.0	1476	3900	0.05	136.70
	3:00	16.0	15.0	16.0	18.0	4.9	243.0	1525	3900	0.05	136.31
	3:30	16.0	15.0	16.0	18.0	4.6	240.0	1493	3900	0.05	136.89

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW2	2.00	54.00	52.00	51.68	51.78	0.10	none	51.64	0.00
MW27	2.00	60.00	53.00	52.73	52.76	0.03	53.44	53.45	0.01
MW29	2.00	60.00	51.50	51.30	51.38	0.08	none	50.85	0.00

AFVR Information	
Client	ATC
Equipment Operator:	R Freeman
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
214

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date:3/21/11

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	126.95	1486	4	5944	31622.08	0.001974166	15.037226	7.518613
60	128.36	1561	4	6244	33218.08	0.002073805	15.971615	7.985807
90	135.10	1637	4	6548	34835.36	0.002174772	17.628698	8.814349
120	132.72	1597	4	6388	33984.16	0.002121631	16.8949728	8.447486
150	139.28	1581	4	6324	33643.68	0.002100375	17.552413	8.776207
180	139.68	1532	4	6128	32600.96	0.002035278	17.05726	8.528629
210	139.08	1567	4	6268	33345.76	0.002081776	17.372003	8.686001
240	138.68	1513	4	6052	32196.64	0.002010036	16.72511	8.362555
270	134.73	1498	4	5992	31877.44	0.001990109	16.08764	8.04382
300	139.08	1478	4	5912	31451.84	0.001963538	16.385335	8.192667
330	138.08	1452	4	5808	30898.56	0.001928997	15.981355	7.990678
360	137.48	1431	4	5724	30451.68	0.001901098	15.68178	7.840890
390	133.38	1505	4	6020	32026.4	0.001999408	16.000864	8.000432
420	136.70	1476	4	5904	31409.28	0.001960881	16.083149	8.041574
450	136.31	1525	4	6100	32452	0.002025978	16.569667	8.284833
480	136.89	1493	4	5972	31771.04	0.001983466	16.291	8.1455
					Total Emissions in pounds			131.66
					Equivalent Gallons (vapor)			21.37338

Equations: PPMg = PPM (measured) x K Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} lb-m^3/mg-ft^3) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 dsm^3/1 x 10^6 mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION - Winsborro, SC
SCDHEC SITE ID #11760
3/21/2011

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
7:30	0.0			
8:00	0.5		0.0	
8:30	1.0		0.25	
9:00	1.5		0.35	
9:30	2.0		0.35	
10:00	2.5		0.50	
10:30	3.0		0.50	
11:00	3.5		0.50	
11:30	4.0		0.50	
12:00	4.5		0.50	
12:30	5.0		0.50	
1:00	5.5		0.50	
1:30	6.0		0.50	
2:00	6.5		0.50	
2:30	7.0		0.50	
3:00	7.5		0.50	
3:30	8.0		0.50	
Maximum Change:			0.50	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		51.74	
	4 hours		52.92	
	8 hours		53.25	
Maximum Change:			1.51	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of 1
3. Emergency Response Phone
4. Waste Tracking Number 0039

5. Generator's Name and Mailing Address: C/O ATC, 400 Northeast Dr, Columbia SC

Generator's Site Address (if different than mailing address): United Exhon, 401 N Congress St., Winnsboro, SC

Generator's Phone:

6. Transporter 1 Company Name: VerCO — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: ACD, 174 Calks Ferry Rd, Lexington SC — U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	St	214	GAL	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Johnny Horn — Signature — Month 3 Day 21 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature — Month 3 Day 21 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: John P. Rao — Signature — Month 3 Day 22 Year 11

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760
4/22/2011

Start Weather: 65 degrees F,
Finish Weather: 80 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW2	MW27	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW2	6:30										
MW27	7:00	16.5	16.0	15.0	18.0	6.9	196.0	1739	3900	0.03	149.15
MW29	7:30	16.0	16.0	16.0	18.0	6.3	224.0	1916	3800	0.05	136.50
	8:00	16.0	16.0	15.0	18.0	5.4	232.0	1906	3900	0.05	138.47
	8:30	16.0	16.0	16.0	18.0	5.5	234.0	1784	3800	0.05	134.54
	9:00	16.5	16.0	15.0	18.0	5.3	238.0	1854	3800	0.05	133.76
	9:30	16.5	16.0	15.0	18.0	5.1	237.0	1725	3800	0.05	133.96
	10:00	16.5	16.0	15.0	18.0	5.3	236.0	1811	4000	0.05	141.21
	10:30	16.5	15.0	15.0	18.0	5.0	229.0	1836	4000	0.05	142.64
	11:00	16.5	16.0	15.0	18.0	5.2	235.0	1775	4000	0.05	141.41
	11:30	16.5	16.0	15.0	18.0	5.1	238.0	1802	4100	0.05	144.32
	12:00	16.5	16.0	16.0	18.0	5.4	237.0	1876	4100	0.05	144.53
	12:30	16.5	16.0	15.0	18.0	5.0	241.0	1725	4100	0.05	143.71
	1:00	16.5	16.0	15.0	18.0	5.1	234.0	1932	4100	0.05	145.16
	1:30	16.5	15.0	15.0	18.0	5.3	238.0	1824	4100	0.05	144.32
	2:00	16.5	16.0	15.0	18.0	4.9	239.0	1724	4100	0.05	144.12
	2:30	16.5	15.0	15.0	18.0	5.1	235.0	1913	4100	0.05	144.95

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW2	2.00	54.00	52.50	51.80	51.85	0.05	none	52.34	0.00
MW27	2.00	60.00	53.50	52.79	52.81	0.02	none	54.01	0.00
MW29	2.00	60.00	52.00	51.40	51.43	0.03	none	52.73	0.00

AFVR Information	
Client	ATC
Equipment Operator:	R Freeman
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(526°R/Temp + 460)

Total Gallons Extracted
348

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date:4/22/11

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	149.15	1739	4	6956	37005.92	0.00231028	20.674692	10.33735
60	136.50	1916	4	7664	40772.48	0.002545426	20.847038	10.423519
90	138.47	1906	4	7624	40559.68	0.002532141	21.037532	10.51877
120	134.54	1784	4	7136	37963.52	0.002370063	19.1320930	9.566046
150	133.76	1854	4	7416	39453.12	0.002463058	19.767521	9.88376
180	133.96	1725	4	6900	36708	0.00229168	18.41961	9.209805
210	141.21	1811	4	7244	38538.08	0.002405932	20.384502	10.192251
240	142.64	1836	4	7344	39070.08	0.002439145	20.875179	10.43759
270	141.41	1775	4	7100	37772	0.002358106	20.007586	10.00379
300	144.32	1802	4	7208	38346.56	0.002393976	20.729915	10.36496
330	144.53	1876	4	7504	39921.28	0.002492286	21.612601	10.8063
360	143.71	1725	4	6900	36708	0.00229168	19.760244	9.880122
390	145.16	1932	4	7728	41112.96	0.002566682	22.354774	11.17739
420	144.32	1824	4	7296	38814.72	0.002423203	20.982999	10.4915
450	144.12	1724	4	6896	36686.72	0.002290352	19.805131	9.902566
480	144.95	1913	4	7652	40708.64	0.00254144	22.102907	11.05145
					Total Emissions in pounds			164.2472
					Equivalent Gallons (vapor)			26.6635

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION - Winsborro, SC
SCDHEC SITE ID #11760
4/22/2011

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
6:30	0.0			
7:00	0.5		0.0	
7:30	1.0		0.25	
8:00	1.5		0.35	
8:30	2.0		0.50	
9:00	2.5		0.60	
9:30	3.0		0.65	
10:00	3.5		0.75	
10:30	4.0		0.75	
11:00	4.5		0.75	
11:30	5.0		0.75	
12:00	5.5		0.75	
12:30	6.0		0.75	
1:00	6.5		0.75	
1:30	7.0		0.75	
2:00	7.5		0.75	
2:30	8.0		0.75	
Maximum Change:			**0.75**	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		51.80	
	4 hours		52.72-52.98	*Free Product
	8 hours		52.79-53.10	*Free Product
Maximum Change:			**1.30**	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address: United Exxon, 401 N Congress Street, Winnsboro SC

Generator's Site Address (if different than mailing address): c/o ATC, 1400 Northeast Dr, Columbia SC

Generator's Phone:

6. Transporter 1 Company Name: Vero — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: TK Trans, 425 Boulevard Rd, Sumter SC — U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	SD	348	gl	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator/Offeror's Printed/Typed Name: Johnny Horn — Signature: [signature] — Month 4 Day 22 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit: Date leaving U.S.:

Transporter signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature: [signature] — Month 4 Day 22 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Tommy Keels — Signature: Tommy Keels — Month 4 Day 22 Year 11

GENERATOR / TRANSPORTER / DESIGNATED FACILITY

INT'L

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
SCDHEC Site ID # 11760
6/1/2011

Start Weather: 80 degrees F,
Finish Weather: 85 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (In. Hg)				Vacuum Truck Exhaust					
		MW2	MW27	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW2	6:30										
MW27	7:00	13.0	11.0	14.0	18.0	7.2	210.0	998	3700	0.05	135.69
MW29	7:30	13.0	13.0	14.0	18.0	5.1	235.0	941	3800	0.06	132.93
	8:00	15.0	13.0	15.0	18.0	3.3	245.0	810	3900	0.04	137.35
	8:30	15.0	15.0	16.0	19.0	3.3	245.0	1131	3800	0.04	133.83
	9:00	15.0	15.0	15.0	20.0	3.3	247.0	1090	3800	0.04	133.45
	9:30	15.0	15.0	15.0	20.0	3.3	250.0	1138	3800	0.04	132.89
	10:00	15.0	15.0	15.0	20.0	3.4	248.0	1193	3700	0.04	129.76
	10:30	15.0	15.0	16.0	20.0	3.4	247.0	1470	3800	0.04	133.45
	11:00	15.0	15.0	16.0	20.0	3.3	249.0	1548	3800	0.04	133.08
	11:30	15.0	15.0	16.0	20.0	3.5	251.0	1519	3800	0.04	132.70
	12:00	15.0	15.0	16.0	20.0	3.2	248.0	1602	3800	0.04	133.26
	12:30	15.0	15.0	16.0	20.0	3.1	245.0	1531	3800	0.04	133.83
	1:00	15.0	15.0	16.0	20.0	3.1	246.0	1574	3800	0.04	133.64
	1:30	15.0	15.0	16.0	20.0	3.4	249.0	1689	3900	0.04	136.58
	2:00	15.0	15.0	16.0	20.0	3.2	250.0	1725	3900	0.04	136.38
	2:30	15.0	15.0	16.0	20.0	3.2	248.0	1699	3800	0.04	133.26

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW2	2.00	54.00	52.50	51.88	51.92	0.04	none	53.74	0.00
MW27	2.00	60.00	53.50	52.87	52.93	0.06	none	53.21	0.00
MW29	2.00	60.00	52.00	51.49	51.53	0.04	none	53.02	0.00

AFVR Information	
Client	ATC
Equipment Operator:	R Freeman
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
382

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date:6/1/11

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	135.69	998	4	3992	21237.44	0.001325853	10.794303	5.397151
60	132.93	941	4	3764	20024.48	0.001250128	9.9707732	4.985387
90	137.35	810	4	3240	17236.8	0.001076093	8.8680859	4.434043
120	133.83	1131	4	4524	24067.68	0.001502545	12.0651379	6.032569
150	133.45	1090	4	4360	23195.2	0.001448076	11.594747	5.797374
180	132.89	1138	4	4552	24216.64	0.001511845	12.05454	6.027272
210	129.76	1193	4	4772	25387.04	0.001584913	12.339498	6.169749
240	133.45	1470	4	5880	31281.6	0.00195291	15.636953	7.818476
270	133.08	1548	4	6192	32941.44	0.002056534	16.421013	8.210507
300	132.70	1519	4	6076	32324.32	0.002018007	16.067374	8.033687
330	133.26	1602	4	6408	34090.56	0.002128274	17.016825	8.508412
360	133.83	1531	4	6124	32579.68	0.002033949	16.332207	8.166104
390	133.64	1574	4	6296	33494.72	0.002091075	16.767079	8.383539
420	136.58	1689	4	6756	35941.92	0.002243854	18.387935	9.193968
450	136.38	1725	4	6900	36708	0.00229168	18.752363	9.376181
480	133.26	1699	4	6796	36154.72	0.002257139	18.047182	9.023591
					Total Emissions in pounds			115.558
					Equivalent Gallons (vapor)			18.75942

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION - Winsborro, SC
SCDHEC SITE ID #11760
6/1/2011

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
6:30	0.0			
7:00	0.5		0.0	
7:30	1.0		0.25	
8:00	1.5		0.80	
8:30	2.0		1.00	
9:00	2.5		1.00	
9:30	3.0		1.00	
10:00	3.5		1.00	
10:30	4.0		1.00	
11:00	4.5		1.00	
11:30	5.0		1.00	
12:00	5.5		1.00	
12:30	6.0		1.00	
1:00	6.5		1.00	
1:30	7.0		1.00	
2:00	7.5		1.00	
2:30	8.0		1.00	
Maximum Change:			**1.00**	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		51.06-51.10	*Free Product
	4 hours		52.05-52.16	*Free Product
	8 hours		52.63-52.78	*Free Product
Maximum Change:			**1.68**	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address: United Exhon, 401 N Congress Street, W. Monsboro SC

Generator's Site Address (if different than mailing address): C/o ATC Associates, 400 NE Dr, Columbia SC

Generator's Phone: 803 735-0003

6. Transporter 1 Company Name: VERCO — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address: TK Tank Services, 425 Boulevard Rd, Sumter SC — U.S. EPA ID Number

Facility's Phone

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group, if any)	10. Containers No.	Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	St	382	Gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's Offeror's Printed/Typed Name: Jason C Thompson on behalf of ATC — Signature — Month 6 Day 1 Year 11

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. — Port of entry/exit

Transporter signature (for exports only): — Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature — Month 6 Day 1 Year 11

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17a

Printed/Typed Name: Richard Smoot — Signature — Month 6 Day 3 Year 11

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

D H E C

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C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

UST 17 tech DOCKETING

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

NOV 30 2011

Re: **AFVR Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760, CA #42710
Releases Reported August 1, 1997
Aggressive Fluid Vapor Recovery Report Received June 13, 2011
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates, Inc.

In accordance with Section 280.64 of the South Carolina Underground Storage Tank Control Regulations, implementation of three 8-hour Aggressive Fluid and Vapor Recovery (AFVR) events on monitoring wells MW-2, MW-27, and MW-29 as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. The three events should be spaced approximately one month apart. A copy of SCDHEC QAPP for the Underground Storage Tank Division is available at http://www.dhec.sc.gov/environment/lwm/html/ust.htm.

The AFVR Report should be submitted within 120 days from the date of this correspondence. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Cost Agreement #42710 has been approved in the amount shown on the enclosed cost agreement. ATC Associates can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. If the invoice and completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval is obtained from the UST Management Division. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Division for the cost to be paid. The Division reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Division reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Management Division grants preapproval for transportation of virgin petroleum-contaminated groundwater from the referenced site to a permitted treatment facility.

On all correspondence concerning this site, please reference UST Permit #11760 and CA #42710. If you have any questions, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Technical File (with enclosure)
ATC Associates, Inc., 400 Northeast Dr., Ste. Q, Columbia, SC 29203 (w/enc.)

Approved Cost Agreement 42710

Facility: 11760 UNITED EXXON

MINERRS

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	3.0000	290.00	870.00
17 DISPOSAL						
		A	WASTEWATER	1,500.0000	0.80	1,200.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	13,635.00	2,045.25
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
		C	OFF GAS TREATMENT	24.0000	35.00	840.00
				Total Amount		15,680.25

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C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

FEB 27 2012

UST 18 Tech DOCKETING

RANDY AMICK
303 N ZION ST
WINNSBORO SC 29180-1141

Re: **Letter of Concern for Adjacent Property**
United Exxon 401 N Congress St., Winnsboro, SC
UST Permit #11760
Adjacent property located at North Zion Avenue
Request received February 14, 2012

Dear Mr. Amick:

In response to your request for information about environmental conditions and liability associated with the referenced facility and adjacent property, the following is provided.

Our records indicate that seven Underground Storage Tanks (USTs) were registered with the Department by Keenan Oil Company. The registered USTs were removed in June 1997. An assessment report received in August 1997 documented a release of petroleum products in the vicinity of the UST. Our records indicate that Keenan Oil Company complied with the regulatory requirements and stopped the leak from the tanks. Additionally, they delineated the extent and severity of petroleum chemicals of concern under our direction. Aggressive Fluid Vapor Recovery (AFVR) is currently being used to remove free phase product, and corrective action is still needed.

This release of petroleum products from the USTs is qualified to receive funding under the conditions of the State Underground Petroleum Environmental Response Bank (SUPERB) Act. The $25,000 deductible has already been satisfied. This means that reasonable costs up to $1,000,000 can be paid by the SUPERB account for site rehabilitation actions associated with this release. Should cleanup costs exceed $1,000,000, Keenan Oil Company, under state and federal law, retains responsibility for any additional actions and associated costs.

Monitoring wells MW-21, MW-22, MW-23, MW-24, MW-25, and DW-2 were installed on Mr. Amick's property as part of the assessment investigation. The samples collected in February 2010 were analyzed for dissolved petroleum constituents such as BTEX (Benzene, Toluene, Ethylbenzene, Xylene). The laboratory analysis detected the following constituents as listed below in parts per billion:

Chemical of Concern	MW-21 Results	MW-22 Results	MW-23 Results	MW-24 Results	MW-25 Results	DW-2 Results	RBSL
Benzene	7	1700	1500	<1	34	4	5
Toluene	10	<10	<1	<1	<1	<1	1000
Ethylbenzene	36	<10	<1	<1	<1	<1	700
Xylenes	199	<20	<2	<2	<2	<2	10,000
Naphthalene	140	120	50	<5	7	7	25
MTBE	100	11	13	<1	<1	9	40

The levels of benzene, naphthalene, and MTBE exceed the drinking water standard established by the Environmental Protection Agency (EPA) in selected monitoring wells. MW-21, MW-22, MW-23, MW-24, MW-25, and DW-2 were installed as monitoring wells and are not a source of drinking water.

Corrective action will be needed. The UST owner/operator and the Department will require access to your property during reasonable hours to perform necessary rehabilitation activities. You will be contacted by letter before corrective action is initiated. Rehabilitation activities remain the responsibility of Keenan Oil Company.

The Department is not aware of any laws or regulations that prohibit the use or development of adjacent properties and properties where a petroleum release has occurred. However, the Department advises against installing a water supply well for drinking, cooking, or bathing purposes until active corrective action is completed. If you should choose to install a water supply well for these purposes at this time, it is at your discretion. As stated above, active corrective action measures will be implemented to rehabilitate affected ground water to acceptable levels.

If you have any questions, please do not hesitate to call me at (803) 896-6584.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Correective Action Section
Underground Storage Tank Division
Bureau of Land and Waste Management

cc: Keenan Oil Co., 3923 W Beltline Blvd., Columbia, SC 29204
ATC Associates, Inc., 400 Northeast Dr., Ste. Q, Columbia, SC 29203
Technical File

D H E C

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C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

FEB 29 2012

UST 19tch DOCKETING

VERN AMICK
303 N ZION ST
WINNSBORO SC 29180-1141

Re: **Letter of Concern for Adjacent Property**
United Exxon 401 N Congress St., Winnsboro, SC
UST Permit #11760
Adjacent property located at North Zion Avenue
Request received February 14, 2012

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Chemical of Concern	MW-21 Results	MW-22 Results	MW-23 Results	MW-24 Results	MW-25 Results	DW-2 Results	RBSL
Benzene	7	1700	1500	<1	34	4	5
Toluene	10	<10	<1	<1	<1	<1	1000
Ethylbenzene	36	<10	<1	<1	<1	<1	700
Xylenes	199	<20	<2	<2	<2	<2	10,000
Naphthalene	140	120	50	<5	7	7	25
MTBE	100	11	13	<1	<1	9	40

The levels of benzene, naphthalene, and MTBE exceed the drinking water standard established by the Environmental Protection Agency (EPA) in selected monitoring wells. MW-21, MW-22, MW-23, MW-24, MW-25, and DW-2 were installed as monitoring wells and are not a source of drinking water.

Corrective action will be needed. The UST owner/operator and the Department will require access to your property during reasonable hours to perform necessary rehabilitation activities. You will be contacted by letter before corrective action is initiated. Rehabilitation activities remain the responsibility of Keenan Oil Company.

The Department is not aware of any laws or regulations that prohibit the use or development of adjacent properties and properties where a petroleum release has occurred. However, the Department advises against installing a water supply well for drinking, cooking, or bathing purposes until active corrective action is completed. If you should choose to install a water supply well for these purposes at this time, it is at your discretion. As stated above, active corrective action measures will be implemented to rehabilitate affected ground water to acceptable levels.

If you have any questions, please do not hesitate to call me at (803) 896-6584.

Sincerely,

Read S Miner

Read S. Miner, P.G., Hydrogeologist
Correective Action Section
Underground Storage Tank Division
Bureau of Land and Waste Management

cc: Keenan Oil Co., 3923 W Beltline Blvd., Columbia, SC 29204
ATC Associates, Inc., 400 Northeast Dr., Ste. Q, Columbia, SC 29203
Technical File

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

RECEIVED
DEC 04 2007
UNDERGROUND STORAGE TANK PROGRAM

December 3, 2007

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: Free Product Removal Activities
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Dear Mr. Shrader:

Mr. Billy Keenan of Keenan Energy Company, Inc. contracted ATC Associates Inc. (ATC) to conduct six Aggressive Fluid/Vapor Recovery events at the former United Exxon facility as directed in your letter dated May 23, 2007. On July 31, 2007, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10 and MW-11 by Shamrock Environmental Corporation personnel. The free product removal event was conducted for eight hours, and approximately 335 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for 4.0 hours at each well. On August 1, 2007, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock personnel. This free product removal event was conducted for eight hours, and approximately 270 gallons of liquid were removed from this well.

On September 18, 2007, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10, MW-11, and MW-16 by Shamrock personnel. This event was conducted for eight hours, and approximately 321 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for four hours at Monitor Wells MW-10 and MW-16, simultaneously and four hours at Monitor Well MW-11. On September 19, 2007, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock personnel. This free product removal event was conducted for eight hours, and approximately 153 gallons of liquid were removed from this well.

On November 6, 2007, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10, MW-11, and MW-16 by Shamrock personnel. This event was conducted for eight hours, and approximately 289 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for four hours at Monitor

UST PROGRAM
DOCKETING # 2

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

Wells MW-10 and MW-16, simultaneously and four hours at Monitor Well MW-11. On November 7, 2007, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock personnel. This free product removal event was conducted for eight hours, and approximately 200 gallons of liquid were removed from this well. A summary of the free product removal events is presented in the appendix.

Should you have any questions or require additional information, please contact me at 866-735-0003.

Sincerely,
ATC Associates Inc.

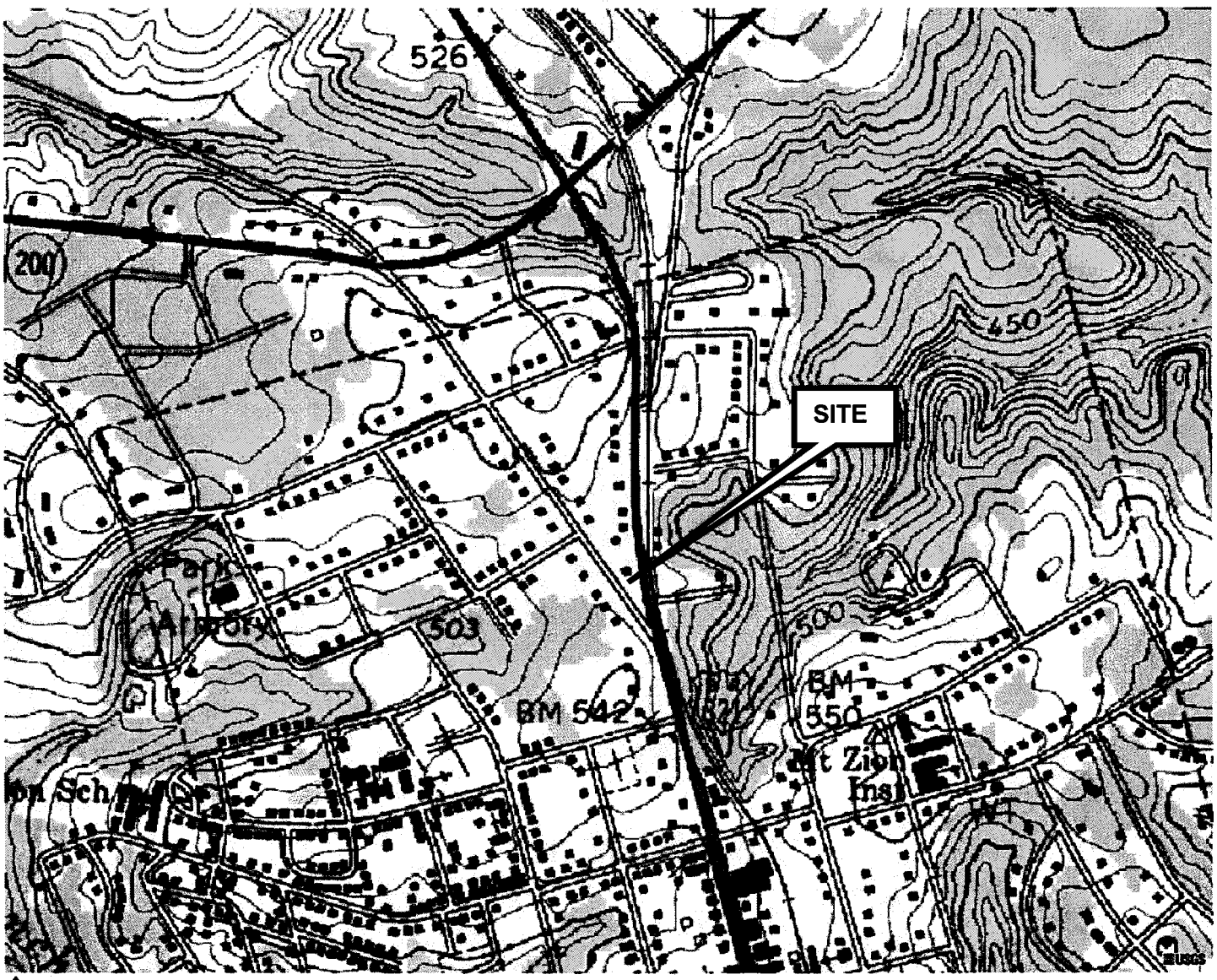
Robert G. Bolton, Jr.
Environmental Division Manager

Fred Lyke, P.G. #1055
Branch Manager

Attachments

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

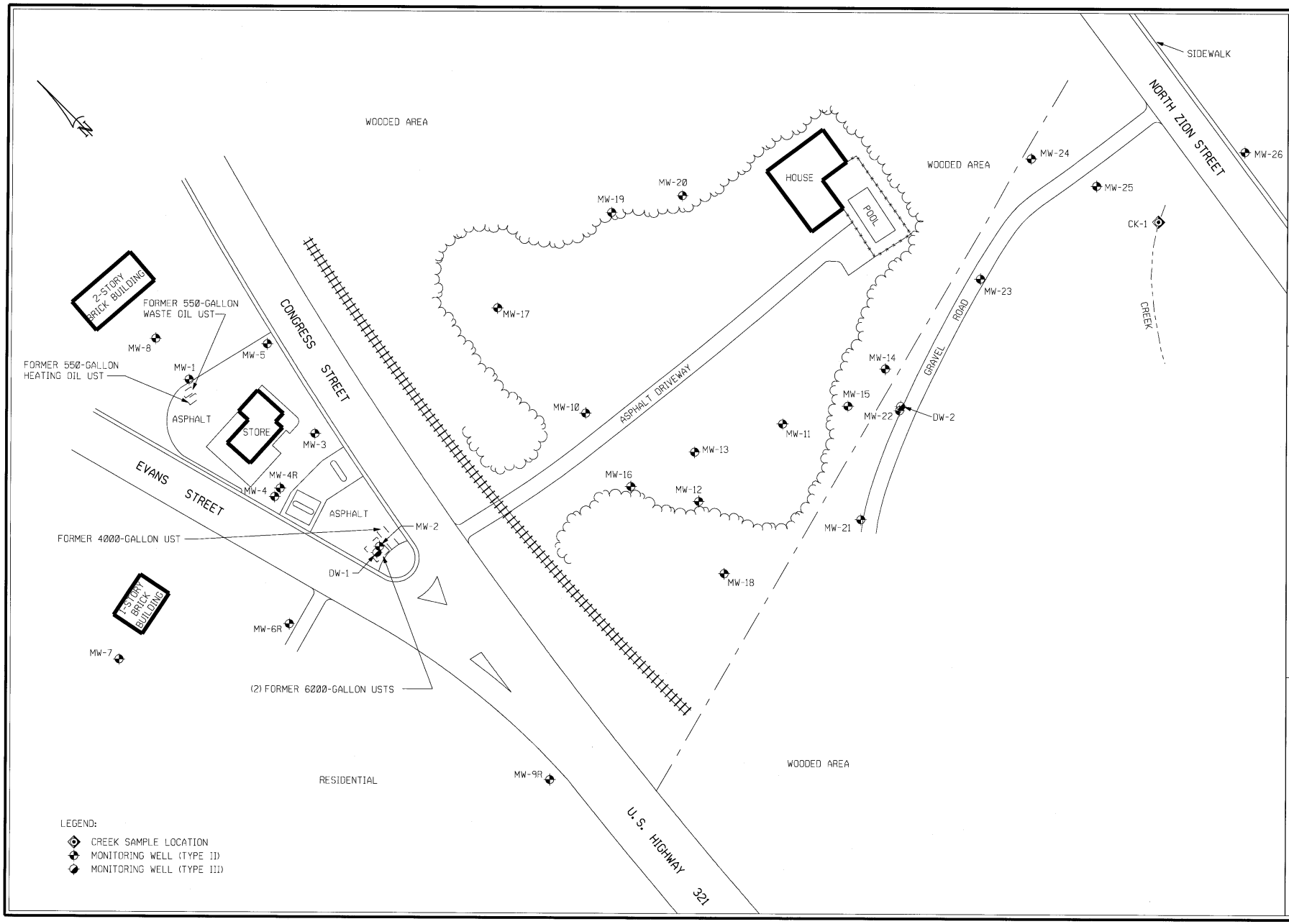
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.	
1" = 80'	05-14-2007	14.25384.0012	

TITLE FIGURE 2
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY
125216.DGN		BB	

NOTES:

APPENDIX

Free Product Recovery Summary Report

SHAMROCK
ENVIRONMENTAL CORPORATION

November 29, 2007

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Events
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Events: July 31-August 1, 2007, September 18-19, 2007 and November 6-7, 2007

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents six EFR events performed at the above referenced site. The dates of the events are listed above.

The following table provides the duration of each event, the total volume of fluids recovered during the events, the amount of separated free product recovered during each event and the amount of calculated gallons of free product recovered as a result of vapor recovery for each event.

Date of EFR Event	Event Duration (Consecutive Hours)	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
July 31, 2007	8	335	2	1.01
August 1, 2007	8	270	1	1.71
September 18, 2007	8	391	2	0.477
September 19, 2007	8	153	2	2.00
November 6, 2007	8	289	2	0.493
November 7, 2007	8	200	2	1.90

Attachment A contains copies of the manifests used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the events.

Attachment C contains the Field Data Record used to document the pertinent information collected during the events. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

During each event, pre-recovery and post recovery depth to water and depth to product levels were determined in various monitoring wells. The product/water levels were determined using an interface probe. **Table 1** contains the levels documented during these determinations.

During the events, with the exception of the November 6-7, 2007 events, vacuum influence in terms of water level draw-down in specific on-site monitoring wells was determined. The water levels were determined using an interface probe. **Table 2** contains the levels documented during these determinations.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TABLE 1
PRE/POST RECOVERY PRODUCT/WATER LEVELS
UNITED EXXON – WINNSBORO, SC

Date	7/31/07 Pre-Event		7/31/07 Post-Event		8/1/07 Pre-Event		8/1/07 Post-Event	
	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW
Well ID								
MW-1	NR	NR	NR	NR	NFP	41.41	NFP	41.40
MW-2	NR	NR	NR	NR	49.98	50.06	NFP	52.24
MW-3	NR	NR	NR	NR	NFP	43.09	NFP	43.09
MW-4	NR	NR	NR	NR	NFP	47.31	NFP	47.31
MW-5	NR	NR	NR	NR	NFP	41.40	NFP	41.39
DW-1	NR	NR	NR	NR	NFP	50.48	NFP	50.97
MW-10	NFP	45.81	NFP	46.94	NR	NR	NR	NR
MW-11	NFP	31.97	NFP	33.04	NR	NR	NR	NR
MW-12	NFP	38.87	NFP	38.88	NR	NR	NR	NR
MW-13	NFP	41.03	NFP	41.08	NR	NR	NR	NR
MW-14	NFP	33.82	NFP	33.84	NR	NR	NR	NR
MW-15	NFP	35.39	NFP	35.44	NR	NR	NR	NR
MW-16	NFP	42.36	NFP	42.34	NR	NR	NR	NR
MW-17	NFP	37.25	NFP	37.24	NR	NR	NR	NR
MW-18	NFP	38.94	NFP	38.91	NR	NR	NR	NR
MW-19	NFP	40.54	NFP	40.49	NR	NR	NR	NR
MW-20	NFP	40.55	NFP	40.52	NR	NR	NR	NR
MW-21	NFP	26.02	NFP	26.00	NR	NR	NR	NR
MW-22	NFP	31.82	NFP	31.81	NR	NR	NR	NR
MW-23	NFP	30.82	NFP	30.81	NR	NR	NR	NR
MW-24	NFP	18.74	NFP	18.72	NR	NR	NR	NR
MW-25	NFP	14.39	NFP	14.34	NR	NR	NR	NR
DW-2	NFP	32.61	NFP	32.68	NR	NR	NR	NR

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

TABLE 1
PRE/POST RECOVERY PRODUCT/WATER LEVELS
UNITED EXXON – WINNSBORO, SC

Date	9/18/07 Pre-Event		9/18/07 Post-Event		9/19/07 Pre-Event		9/19/07 Post-Event	
	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW
Well ID								
MW-1	NR	NR	NR	NR	NFP	42.22	NFP	42.19
MW-2	NR	NR	NR	NR	50.55	50.69	NFP	51.38
MW-3	NR	NR	NR	NR	NFP	43.88	NFP	43.81
MW-4	NR	NR	NR	NR	NFP	47.98	NFP	47.94
MW-5	NR	NR	NR	NR	NFP	42.25	NFP	42.21
DW-1	NR	NR	NR	NR	NFP	51.12	NFP	52.52
MW-10	NFP	46.50	NFP	46.60	NR	NR	NR	NR
MW-11	NFP	32.52	NFP	34.28	NR	NR	NR	NR
MW-12	NFP	39.44	NFP	39.42	NR	NR	NR	NR
MW-13	NFP	41.59	NFP	41.60	NR	NR	NR	NR
MW-14	NFP	34.35	NFP	34.36	NR	NR	NR	NR
MW-15	NFP	35.89	NFP	34.96	NR	NR	NR	NR
MW-16	42.93	42.94	NFP	44.85	NR	NR	NR	NR
MW-17	NFP	38.22	NFP	38.22	NR	NR	NR	NR
MW-18	NFP	39.48	NFP	39.48	NR	NR	NR	NR
MW-19	NFP	41.44	NFP	41.44	NR	NR	NR	NR
MW-20	NFP	41.45	NFP	41.45	NR	NR	NR	NR
MW-21	NFP	26.59	NFP	26.59	NR	NR	NR	NR
MW-22	NFP	32.28	NFP	32.28	NR	NR	NR	NR
MW-23	NFP	31.21	NFP	31.21	NR	NR	NR	NR
MW-24	NFP	19.14	NFP	19.14	NR	NR	NR	NR
MW-25	NFP	14.54	NFP	14.54	NR	NR	NR	NR
DW-2	NFP	33.02	NFP	33.02	NR	NR	NR	NR

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

TABLE 1
PRE/POST RECOVERY PRODUCT/WATER LEVELS
UNITED EXXON – WINNSBORO, SC

Date	11/6/07 Pre-Event		11/6/07 Post -Event		11/7/07 Pre-Event		11/7/07 Post -Event	
	DTP	DTW	DTP	DTW	DTP	DTW	DTP	DTW
Well ID								
MW-1	NR	NR	NR	NR	NR	NR	NR	NR
MW-2	NR	NR	NR	NR	51.10	51.30	NFP	52.15
MW-3	NR	NR	NR	NR	NFP	44.50	NFP	44.42
MW-4	NR	NR	NR	NR	NFP	48.60	NFP	48.55
MW-5	NR	NR	NR	NR	NFP	42.87	NFP	42.80
DW-1	NR	NR	NR	NR	NFP	51.58	NFP	51.82
MW-10	NFP	46.91	NFP	47.90	NR	NR	NR	NR
MW-11	NFP	32.90	NFP	33.80	NR	NR	NR	NR
MW-12	NFP	39.75	NFP	39.80	NR	NR	NR	NR
MW-13	NFP	42.00	NFP	42.02	NR	NR	NR	NR
MW-14	NFP	34.51	NFP	34.53	NR	NR	NR	NR
MW-15	NFP	36.14	NFP	36.21	NR	NR	NR	NR
MW-16	43.26	43.28	NFP	45.10	NR	NR	NR	NR
MW-17	NR	NR	NR	NR	NR	NR	NR	NR
MW-18	NR	NR	NR	NR	NR	NR	NR	NR
MW-19	NR	NR	NR	NR	NR	NR	NR	NR
MW-20	NR	NR	NR	NR	NR	NR	NR	NR
MW-21	NR	NR	NR	NR	NR	NR	NR	NR
MW-22	NR	NR	NR	NR	NR	NR	NR	NR
MW-23	NR	NR	NR	NR	NR	NR	NR	NR
MW-24	NR	NR	NR	NR	NR	NR	NR	NR
MW-25	NR	NR	NR	NR	NR	NR	NR	NR
DW-2	NR	NR	NR	NR	NR	NR	NR	NR

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 8008811098	4. Waste Tracking Number 07317

5. Generator's Name and Mailing Address
United Exxon
1 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORPORATION
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	335	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
VT9 Sheen
Job No. 02-AFV-07-1043

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: JESSE KEEFE As Agent for AFC
Signature: Jesse Keefe as Agent for AFC
Month 07 Day 31 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Paul Jacobs
Signature
Month 07 Day 31 Year 07
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

1/1001 1/1003 pH-6.0 H-RT 3 gal gas

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Signature
Month 08 Day 01 Year 07

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 31, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	146.5	996	4	996	5297	0.00033	2.907	1.453
30	132.0	1,085	4	1085	5770	0.00036	2.854	1.427
60	125.1	621	4	621	3302	0.00021	1.548	0.774
90	124.3	318	4	318	1691	0.00011	0.787	0.394
120	118.4	107	4	107	569	0.00004	0.252	0.126
150	107.4	183	4	183	973	0.00006	0.391	0.196
180	109.3	175	4	175	931	0.00006	0.381	0.191
210	113.7	165	4	165	877	0.00005	0.374	0.187
240	95.6	165	4	165	877	0.00005	0.314	0.157
270	99.0	182	4	182	968	0.00006	0.359	0.179
300	88.2	157	4	157	835	0.00005	0.276	0.138
330	80.2	173	4	173	920	0.00006	0.277	0.138
360	80.7	109	4	109	580	0.00004	0.175	0.088
390	79.5	102	4	102	542	0.00003	0.162	0.081
420	78.5	104	4	104	553	0.00003	0.163	0.081
450	78.2	98	4	98	521	0.00003	0.153	0.076
480	83.9	105	4	105	558	0.00003	0.176	0.088
510					**Total emissions in pounds**			**5.686**
			Total Emissions Converted into Gallons:					**1.0117614**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 31, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
7/31/2007	8:30	26.0	OL	25.0	3610	6	140	23.5	0.765	146.5	MW-11
7/31/2007	9:00	25.0	OL	23.0	3420	6	160	23.1	0.769	132.0	MW-11
7/31/2007	9:30	25.0	OL	23.0	3420	6	180	22.6	0.774	125.1	MW-11
7/31/2007	10:00	25.0	OL	23.0	3570	6	180	21.5	0.785	124.3	MW-11
7/31/2007	10:30	25.0	OL	23.0	3310	6	180	22.1	0.779	118.4	MW-11
7/31/2007	11:00	25.0	OL	23.0	3220	6	180	20.6	0.794	107.4	MW-11
7/31/2007	11:30	25.0	OL	23.0	3360	6	180	20.1	0.799	109.3	MW-11
7/31/2007	12:00	25.0	OL	23.0	3410	6	180	20.6	0.794	113.7	MW-11
7/31/2007	12:30	24.0	22.0	OL	3060	6	180	19.3	0.807	95.6	MW-10
7/31/2007	13:00	24.0	22.0	OL	3120	6	180	19.6	0.804	99.0	MW-10
7/31/2007	13:30	24.0	22.0	OL	3010	6	180	18.1	0.819	88.2	MW-10
7/31/2007	14:00	24.0	22.0	OL	2860	6	190	17.6	0.824	80.2	MW-10
7/31/2007	14:30	24.0	22.0	OL	2910	6	190	17.4	0.826	80.7	MW-10
7/31/2007	15:00	24.0	22.0	OL	2970	6	190	16.8	0.832	79.5	MW-10
7/31/2007	15:30	24.0	22.0	OL	3040	6	190	16.2	0.838	78.5	MW-10
7/31/2007	16:00	24.0	22.0	OL	2960	6	195	16.7	0.833	78.2	MW-10
7/31/2007	16:30	24.0	22.0	OL	3140	6	195	16.9	0.831	83.9	MW-10
OL=Off-Line											

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 800 881 1098	4. Waste Tracking Number 08017

5. Generator's Name and Mailing Address
United Exxon
1 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORPORATION
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	0 0 1	T T	270	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
VT9
SHEEN
Job No. 02-AFV-07-1043

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: JESSE KEEFE As Agent for JATC
Signature: Jesse J Keefe Jr c/o ATC
Month 08 Day 01 Year 07

INT'L
15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER
16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: PAUL JACOBS
Signature
Month 08 Day 01 Year 07
Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY
17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

1Mo1 1Mo3 PH-6.0 FP- RT 3yl gro

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Signature
Month 08 Day 01 Year 07

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: August 1, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	116.3	1,017	4	1017	5408	0.00034	2.356	1.178
30	113.0	1,183	4	1183	6291	0.00039	2.663	1.332
60	107.3	986	4	986	5243	0.00033	2.106	1.053
90	109.7	831	4	831	4419	0.00028	1.815	0.908
120	104.4	807	4	807	4291	0.00027	1.678	0.839
150	99.7	765	4	765	4068	0.00025	1.519	0.760
180	95.0	633	4	633	3366	0.00021	1.198	0.599
210	86.4	581	4	581	3090	0.00019	1.000	0.500
240	77.3	543	4	543	2888	0.00018	0.836	0.418
270	73.6	541	4	541	2877	0.00018	0.793	0.396
300	71.7	489	4	489	2600	0.00016	0.699	0.349
330	74.5	387	4	387	2058	0.00013	0.574	0.287
360	68.9	394	4	394	2095	0.00013	0.541	0.270
390	69.3	381	4	381	2026	0.00013	0.526	0.263
420	60.4	362	4	362	1925	0.00012	0.436	0.218
450	63.3	358	4	358	1904	0.00012	0.451	0.226
480	64.0	371	4	371	1973	0.00012	0.473	0.237
510					**Total emissions in pounds**			**9.595**
			Total Emissions Converted into Gallons:					**1.7073406**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: August 1, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
8/1/2007	7:00	24.0	22.0	2980	6	140	22.6	0.774	116.3	MW-2
8/1/2007	7:30	24.0	22.0	3060	6	160	22.1	0.779	113.0	MW-2
8/1/2007	8:00	24.0	22.0	3110	6	180	21.3	0.787	107.3	MW-2
8/1/2007	8:30	24.0	22.0	3370	6	180	20.1	0.799	109.7	MW-2
8/1/2007	9:00	24.0	22.0	3340	6	180	19.3	0.807	104.4	MW-2
8/1/2007	9:30	24.0	22.0	3410	6	185	18.2	0.818	99.7	MW-2
8/1/2007	10:00	24.0	22.0	3360	6	185	17.6	0.824	95.0	MW-2
8/1/2007	10:30	24.0	22.0	3150	6	190	17.2	0.828	86.4	MW-2
8/1/2007	11:00	24.0	22.0	3010	6	190	16.1	0.839	77.3	MW-2
8/1/2007	11:30	24.0	22.0	3060	6	195	15.2	0.848	73.6	MW-2
8/1/2007	12:00	24.0	22.0	3170	6	195	14.3	0.857	71.7	MW-2
8/1/2007	12:30	24.0	22.0	3250	6	200	14.6	0.854	74.5	MW-2
8/1/2007	13:00	24.0	22.0	3180	6	200	13.8	0.862	68.9	MW-2
8/1/2007	13:30	24.0	22.0	3220	6	200	13.7	0.863	69.3	MW-2
8/1/2007	14:00	24.0	22.0	3180	6	200	12.1	0.879	60.4	MW-2
8/1/2007	14:30	24.0	22.0	3250	6	200	12.4	0.876	63.3	MW-2
8/1/2007	15:00	24.0	22.0	3210	6	205	12.8	0.872	64.0	MW-2
OL=Off-Line										

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 800 88 1098	4. Waste Tracking Number 09187

GENERATOR

5. Generator's Name and Mailing Address

United Exxon
401 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORPORATION — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:

U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	391	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

VTD

shsgw
170 USE

Job No. 02-AFV-07-1244

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Johnny Horn — Signature: [signature] — Month 09 Day 18 Year 07

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ray Jacobs — Signature: [signature] — Month 09 Day 18 Year 07

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

1mm01 1mm3 2gl 8m pH-6.0 FL-AT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: [illegible] — Signature: [signature] — Month 09 Day 20 Year 07

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: September 18, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	141.9	149	4	149	792	0.00005	0.421	0.211
30	113.1	183	4	183	973	0.00006	0.412	0.206
60	110.8	167	4	167	888	0.00006	0.369	0.184
90	104.9	178	4	178	947	0.00006	0.372	0.186
120	96.0	179	4	179	952	0.00006	0.342	0.171
150	85.4	193	4	193	1026	0.00006	0.328	0.164
180	84.2	194	4	194	1032	0.00006	0.325	0.163
210	86.9	198	4	198	1053	0.00007	0.343	0.171
240	93.6	194	4	194	1032	0.00006	0.362	0.181
270	91.6	169	4	169	899	0.00006	0.308	0.154
300	79.8	178	4	178	947	0.00006	0.283	0.141
330	78.8	181	4	181	963	0.00006	0.284	0.142
360	71.9	197	4	197	1048	0.00007	0.282	0.141
390	76.4	206	4	206	1095	0.00007	0.313	0.157
420	79.1	210	4	210	1117	0.00007	0.331	0.165
450	69.8	203	4	203	1080	0.00007	0.282	0.141
480	75.6	208	4	208	1106	0.00007	0.313	0.157
510					**Total emissions in pounds**			**2.679**
			Total Emissions Converted into Gallons:					**0.4766877**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: September 18, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Well-Head -Vacuum-MW-16 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
9/18/2007	9:30	24.0	OL	22.0	OL	3590	6	130	22.5	0.775	141.9	MW-11
9/18/2007	10:00	25.0	OL	22.0	OL	3420	6	170	20.1	0.799	113.1	MW-11
9/18/2007	10:30	26.0	OL	22.0	OL	3290	6	180	20.8	0.792	110.8	MW-11
9/18/2007	11:00	26.0	OL	22.0	OL	3410	6	190	19.3	0.807	104.9	MW-11
9/18/2007	11:30	26.0	OL	22.0	OL	3220	6	190	18.7	0.813	96.0	MW-11
9/18/2007	12:00	26.0	OL	22.0	OL	3170	6	190	16.9	0.831	85.4	MW-11
9/18/2007	12:30	26.0	OL	22.0	OL	3260	6	190	16.2	0.838	84.2	MW-11
9/18/2007	13:00	26.0	OL	22.0	OL	3150	6	190	17.3	0.827	86.9	MW-11
9/18/2007	13:30	26.0	18.0	OL	20.0	3280	6	190	17.9	0.821	93.6	MW-10; MW-16
9/18/2007	14:00	25.0	18.0	OL	20.0	3420	6	190	16.8	0.832	91.6	MW-10; MW-16
9/18/2007	14:30	24.0	18.0	OL	20.0	3270	6	190	15.3	0.847	79.8	MW-10; MW-16
9/18/2007	15:00	24.0	18.0	OL	20.0	3130	6	190	15.8	0.842	78.8	MW-10; MW-16
9/18/2007	15:30	24.0	18.0	OL	20.0	3070	6	190	14.7	0.853	71.9	MW-10; MW-16
9/18/2007	16:00	24.0	18.0	OL	20.0	3350	6	190	14.3	0.857	76.4	MW-10; MW-16
9/18/2007	16:30	24.0	18.0	OL	20.0	3180	6	190	15.6	0.844	79.1	MW-10; MW-16
9/18/2007	17:00	24.0	18.0	OL	20.0	3060	6	190	14.3	0.857	69.8	MW-10; MW-16
9/18/2007	17:30	24.0	18.0	OL	20.0	3140	6	190	15.1	0.849	75.6	MW-10; MW-16

OL=Off-Line

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 8008811098	4. Waste Tracking Number 09197

GENERATOR

5. Generator's Name and Mailing Address

United Exxon
401 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORPORATION — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:

U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	153	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

VT7 Station

~~Job No. 02-AFV-07-1244~~

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Johnny Horn — Signature: [signature] — Month 9 Day 19 Year 07

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Paul Jacobs — Signature: [signature] — Month 09 Day 19 Year 07

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

1mo1 Hm3 2gal pH-6.0 FP-RT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Ty Cm — Signature: [signature] — Month 09 Day 20 Year 07

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: September 19, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	139.0	1,299	4	1299	6908	0.00043	3.598	1.799
30	121.6	1,159	4	1159	6163	0.00038	2.807	1.404
60	108.5	1,192	4	1192	6339	0.00040	2.577	1.289
90	96.4	935	4	935	4972	0.00031	1.796	0.898
120	95.8	867	4	867	4611	0.00029	1.654	0.827
150	84.7	798	4	798	4244	0.00026	1.347	0.673
180	84.7	727	4	727	3866	0.00024	1.226	0.613
210	72.2	708	4	708	3765	0.00024	1.019	0.509
240	63.8	693	4	693	3685	0.00023	0.881	0.441
270	64.8	662	4	662	3520	0.00022	0.854	0.427
300	64.7	674	4	674	3584	0.00022	0.868	0.434
330	64.8	683	4	683	3632	0.00023	0.882	0.441
360	61.7	659	4	659	3504	0.00022	0.810	0.405
390	57.2	634	4	634	3371	0.00021	0.722	0.361
420	62.3	629	4	629	3345	0.00021	0.781	0.390
450	56.1	623	4	623	3313	0.00021	0.696	0.348
480	65.2	618	4	618	3286	0.00021	0.802	0.401
510					**Total emissions in pounds**			**11.260**
			Total Emissions Converted into Gallons:					**2.0034896**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: September 19, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
9/19/2007	7:00	27.0	24.0	3710	6	140	21.7	0.783	139.0	MW-2
9/19/2007	7:30	26.0	24.0	3620	6	160	20.1	0.799	121.6	MW-2
9/19/2007	8:00	26.0	24.0	3510	6	180	19.1	0.809	108.5	MW-2
9/19/2007	8:30	26.0	23.0	3290	6	180	18.1	0.819	96.4	MW-2
9/19/2007	9:00	26.0	23.0	3440	6	180	17.2	0.828	95.8	MW-2
9/19/2007	9:30	26.0	23.0	3250	6	180	16.1	0.839	84.7	MW-2
9/19/2007	10:00	26.0	23.0	3310	6	180	15.8	0.842	84.7	MW-2
9/19/2007	10:30	26.0	23.0	3120	6	180	14.3	0.857	72.2	MW-2
9/19/2007	11:00	26.0	23.0	3010	6	180	13.1	0.869	63.8	MW-2
9/19/2007	11:30	26.0	23.0	3280	6	180	12.2	0.878	64.8	MW-2
9/19/2007	12:00	25.0	22.0	3170	6	190	12.8	0.872	64.7	MW-2
9/19/2007	12:30	25.0	22.0	3360	6	190	12.1	0.879	64.8	MW-2
9/19/2007	13:00	25.0	22.0	3280	6	190	11.8	0.882	61.7	MW-2
9/19/2007	13:30	25.0	22.0	3120	6	190	11.5	0.885	57.2	MW-2
9/19/2007	14:00	25.0	22.0	3460	6	190	11.3	0.887	62.3	MW-2
9/19/2007	14:30	25.0	22.0	3170	6	190	11.1	0.889	56.1	MW-2
9/19/2007	15:00	25.0	22.0	3350	6	190	12.2	0.878	65.2	MW-2
OL=Off-Line										

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone: 800 881 1098

4. Waste Tracking Number: 11607

5. Generator's Name and Mailing Address
United Exxon
401 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORPORATION
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	0 0 1	T T	289	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
VT7 289 GAL
Job No. 02-AFV-07-1520

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: Johnny Hern
Signature:
Month 11 Day 6 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: T Allen
Signature:
Month 11 Day 6 Year 07
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

Hm01

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: Rick Gruchowski
Signature:
Month 11 Day 6 Year 07

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: November 6, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	141.0	167	4	167	888	0.00006	0.469	0.234
30	147.1	157	4	157	835	0.00005	0.460	0.230
60	135.4	173	4	173	920	0.00006	0.467	0.233
90	151.8	185	4	185	984	0.00006	0.559	0.280
120	108.9	199	4	199	1058	0.00007	0.432	0.216
150	100.1	196	4	196	1042	0.00007	0.391	0.195
180	83.1	104	4	104	553	0.00003	0.172	0.086
210	77.8	95	4	95	505	0.00003	0.147	0.074
240	82.8	209	4	209	1111	0.00007	0.345	0.172
270	88.0	195	4	195	1037	0.00006	0.342	0.171
300	80.9	208	4	208	1106	0.00007	0.335	0.168
330	98.4	165	4	165	877	0.00005	0.323	0.162
360	96.9	132	4	132	702	0.00004	0.255	0.127
390	87.2	122	4	122	649	0.00004	0.212	0.106
420	96.9	172	4	172	915	0.00006	0.332	0.166
450	86.9	176	4	176	936	0.00006	0.305	0.152
480	89.4	148	4	148	787	0.00005	0.263	0.132
510					**Total emissions in pounds**			**2.773**
			Total Emissions Converted into Gallons:					**0.4933868**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: November 6, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Well-Head -Vacuum-MW-16 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
11/6/2007	8:30	26.0	OL	22.0	OL	3940	6	180	22.1	0.779	141.0	MW-11
11/6/2007	9:00	26.0	OL	22.0	OL	3960	6	190	23.3	0.767	147.1	MW-11
11/6/2007	9:30	26.0	OL	22.0	OL	3970	6	190	21.4	0.786	135.4	MW-11
11/6/2007	10:00	26.0	OL	22.0	OL	4000	6	190	23.8	0.762	151.8	MW-11
11/6/2007	10:30	26.0	OL	22.0	OL	3920	6	200	17.7	0.823	108.9	MW-11
11/6/2007	11:00	26.0	OL	22.0	OL	3960	6	200	16.1	0.839	100.1	MW-11
11/6/2007	11:30	26.0	OL	22.0	OL	3920	6	200	13.5	0.865	83.1	MW-11
11/6/2007	12:00	26.0	OL	22.0	OL	3900	6	200	12.7	0.873	77.8	MW-11
11/6/2007	12:30	26.0	25.0	OL	21.0	3790	6	180	13.5	0.865	82.8	MW-10; MW-16
11/6/2007	13:00	26.0	25.0	OL	21.0	3940	6	180	13.8	0.862	88.0	MW-10; MW-16
11/6/2007	13:30	26.0	23.0	OL	21.0	3760	6	190	13.5	0.865	80.9	MW-10; MW-16
11/6/2007	14:00	26.0	20.0	OL	20.0	3810	6	190	16.2	0.838	98.4	MW-10; MW-16
11/6/2007	14:30	26.0	20.0	OL	20.0	3640	6	190	16.7	0.833	96.9	MW-10; MW-16
11/6/2007	15:00	26.0	20.0	OL	20.0	3720	6	190	14.7	0.853	87.2	MW-10; MW-16
11/6/2007	15:30	26.0	22.0	OL	20.0	3640	6	190	16.7	0.833	96.9	MW-10; MW-16
11/6/2007	16:00	26.0	22.0	OL	20.0	3540	6	190	15.4	0.846	86.9	MW-10; MW-16
11/6/2007	16:30	26.0	22.0	OL	20.0	3460	6	190	16.2	0.838	89.4	MW-10; MW-16
OL=Off-Line												

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone: 800 881 1098

4. Waste Tracking Number: 11707

5. Generator's Name and Mailing Address

United Exxon
401 N. Congress Street
Winnsboro, SC

Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORPORATION**

U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989

Facility's Phone:

U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	Approval No.
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	200	G	2005-0063-BG
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

VTT 200 GAL

Job No. 02-AFV-07-1520

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: DANA DEWEZ AGENT FOR ATC — Signature: [signature] — Month 11 Day 7 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month Day Year

Transporter 2 Printed/Typed Name: TOMMY ALLEN — Signature: [signature] — Month 11 Day 07 Year 07

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

Hmol

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Rick Gruchowski — Signature: [signature] — Month 11 Day 7 Year 07

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: November 7, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	130.3	604	4	604	3212	0.00020	1.568	0.784
30	119.2	614	4	614	3265	0.00020	1.458	0.729
60	127.1	670	4	670	3563	0.00022	1.696	0.848
90	114.7	643	4	643	3419	0.00021	1.469	0.735
120	125.1	656	4	656	3488	0.00022	1.635	0.817
150	121.3	530	4	530	2818	0.00018	1.280	0.640
180	97.4	625	4	625	3324	0.00021	1.212	0.606
210	118.6	631	4	631	3356	0.00021	1.491	0.745
240	118.0	626	4	626	3329	0.00021	1.472	0.736
270	97.2	611	4	611	3249	0.00020	1.184	0.592
300	92.9	624	4	624	3318	0.00021	1.155	0.577
330	104.4	581	4	581	3090	0.00019	1.208	0.604
360	82.5	604	4	604	3212	0.00020	0.993	0.496
390	96.4	583	4	583	3100	0.00019	1.120	0.560
420	99.3	590	4	590	3138	0.00020	1.167	0.583
450	95.6	651	4	651	3462	0.00022	1.240	0.620
480	84.2	600	4	600	3191	0.00020	1.006	0.503
510					**Total emissions in pounds**			**10.673**
			Total Emissions Converted into Gallons:					**1.8991056**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: November 7, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
11/7/2007	8:00	20.0	24.0	3990	6	130	18.6	0.814	130.3	MW-2
11/7/2007	8:30	25.0	25.0	3940	6	160	18.1	0.819	119.2	MW-2
11/7/2007	9:00	25.0	25.0	3960	6	160	19.2	0.808	127.1	MW-2
11/7/2007	9:30	25.0	25.0	3730	6	160	18.4	0.816	114.7	MW-2
11/7/2007	10:00	25.0	25.0	3960	6	160	18.9	0.811	125.1	MW-2
11/7/2007	10:30	25.0	25.0	3770	6	165	19.4	0.806	121.3	MW-2
11/7/2007	11:00	25.0	25.0	3920	6	170	15.1	0.849	97.4	MW-2
11/7/2007	11:30	25.0	25.0	3660	6	170	19.7	0.803	118.6	MW-2
11/7/2007	12:00	25.0	25.0	3680	6	170	19.5	0.805	118.0	MW-2
11/7/2007	12:30	25.0	25.0	3820	6	175	15.6	0.844	97.2	MW-2
11/7/2007	13:00	25.0	25.0	3770	6	175	15.1	0.849	92.9	MW-2
11/7/2007	13:30	25.0	25.0	3720	6	175	17.2	0.828	104.4	MW-2
11/7/2007	14:00	25.0	25.0	3490	6	180	14.6	0.854	82.5	MW-2
11/7/2007	14:30	25.0	25.0	3700	6	180	16.1	0.839	96.4	MW-2
11/7/2007	15:00	25.0	25.0	3650	6	180	16.8	0.832	99.3	MW-2
11/7/2007	15:30	25.0	25.0	3440	6	170	16.9	0.831	95.6	MW-2
11/7/2007	16:00	25.0	25.0	3280	6	170	15.6	0.844	84.2	MW-2
OL=Off-Line										

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

March 23, 2012

Read S. Miner, P.G., Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

RECEIVED
MAR 26 2012
SC DHEC
BUREAU OF LAND & WASTE MGT.

Re: Aggressive Fluid Vapor Recovery Activities
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina 29180
UST Permit #11760
Cost Agreement #42710

Dear Mr. Miner:

As per your directive letter dated November 30, 2012, ATC Associates Inc. (ATC) scheduled three aggressive fluid vapor recovery (AFVR) events at the Former United Exxon. This scope of work was completed under cost agreement number 42710.

On January 16, 2012, ATC personnel oversaw AFVR activities at Monitor Wells MW-2, MW-27, and MW-29 by Versatile Environmental Resource Company (VERCO) personnel at the site. Differential pressure and groundwater drawdown readings were conducted at Monitor Wells MW-3 and MW-28. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 560 gallons of liquid were removed during the event.

On February 8, 2012, ATC personnel oversaw an AFVR event at Monitor Wells MW-2, MW-28, and MW-29 by VERCO personnel at the site. Differential pressure and groundwater drawdown readings were conducted at Monitor Wells MW-3 and MW-27. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 510 gallons of liquid were removed during the event. Additionally, liquid phase hydrocarbons (LPH) were detected at Monitor Well MW-28 prior to the referenced event.

On March 5, 2012, ATC personnel oversaw an AFVR event at Monitor Wells MW-2, MW-27, and MW-29 by VERCO personnel at the site. Differential pressure and groundwater drawdown readings were conducted at Monitor Well MW-28. The event was conducted for eight hours at the referenced three wells simultaneously with off-gas treatment and approximately 475 gallons of liquid were removed during the event.

A site location map and a site map are presented as Figures 1 and 2, respectively. Historical Groundwater Elevation Data is presented as Table I and historical emissions

UST DOCKETING
20 tech

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

are summarized in Table II. Summaries and calculations of the three AFVR events are presented in the appendix.

LPH continues to be reduced at the subject site via AFVR events. ATC recommends that three additional AFVR events be conducted at Monitor Wells MW-2, MW-27, MW-28, and MW-29 to continue to remove LPH. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.
UST Site Rehabilitation Contractor #313

Jesse Keeffe, P.G.
Project Manager

Fred Lyke, P.G. #1055
Branch Manager

Attachments

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

JESSE W. KEEFFE JR. REGISTERED No. 2308 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

TABLE I
Historical Groundwater Elevation Data
United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-2	3/5/2012*	98.17	52.82	0.02	15	54	45.35
	2/8/2012*		52.85	0.13			45.32
	1/16/2012		52.86	---			45.31
	6/1/2011		53.74	---			44.43
	11/29/2010*		51.37	0.02			46.8
	2/24/2010C*		51.69	0.32			46.48
	7/16/2009*		52.31	1.57			-52.31
	9/22/2008*		52.66	0.18			45.51
	1/14/2008*		51.81	0.27			46.36
	4/19/2007*		49.93	0.03			48.24
	8/21/2006*		51.76	0.3			46.41
	6/27/2005*		50.12	0.02			48.05
	3/8/2005*		50.87	0.2			47.3
	8/20/2003*		49.75	0.33			48.42
MW-27	3/5/2012*	98.43	53.74	0.02	15	60	44.69
	2/8/2012		53.75	---			44.68
	1/16/2012		53.71	---			44.72
	6/1/2011		53.21	---			45.22
	11/29/2010*		52.38	0.03			46.05
	2/24/2010*		52.54	0.08			45.89
MW-28	3/5/2012	97.11	53.68	---	15	60	43.43
	2/8/2012*		51.79	0.37			45.32
	1/16/2012		51.61	---			45.50
	6/1/2011*		52.67	0.15			44.44
	11/29/2010		50.32	---			46.79
	2/24/2010		49.59	---			47.52
MW-29	3/5/2012	97.88	52.47	0.03	15	60	45.41
	2/8/2012*		52.39	0.08			45.49
	1/16/2012		52.47	---			45.41
	6/1/2011		53.02	---			44.86
	11/29/2010*		50.98	0.02			46.9
	2/24/2010*		51.2	0.02			46.68

*Corrected depth to water = depth to water – (LPH thickness x 0.78)
LPH = Liquid Phase Hydrocarbons

TABLE II Historical Hydrocarbon Emissions Data United Exxon / Winnsboro, South Carolina				
AFVR Event #	**Date**	**Calculated gallons of hydrocarbons Extracted**	**Calculated Pounds of Hydrocarbons Extracted**	**Total Gallons Fluid Extracted**
1	6/7/2010	2	14	347
2	6/8/2010	17	134	384
3	10/11/2010	7.59	46.76	---
4	10/12/2010*	1.99	12.24	671
5	10/27/2010	10.05	61.93	429
6	3/21/2011	21.37	131.66	214
7	4/22/2011	26.66	164.25	348
8	6/1/2011	18.76	115.56	382
9	11/22/2011	9.19	56.63	146
10	12/7/2011	9.84	60.6	120
11	1/16/2012	39.57	243.72	560
12	2/8/2012	30.34	186.86	510
13	3/5/2012	32.11	197.77	475
Approximate Total		226.47	1425.98	4586

* = Total gallons of fluid extracted were combined for October 11 and 12, 2010 AFVR events

AFVR Summary Reports

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro, SC
Date:1/16/12
SCDHEC Site ID# 11760

Start Weather : 37 degrees F
Finish Weather: 53 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW27	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW27,MW2,MW29											
	8:30	15.0	15.0	18.0	16.0	4.4	200.0	2341	3600	0.03	
	9:00	15.0	15.0	18.0	16.5	3.2	214.0	2199	3500	0.02	131.62
	9:30	16.0	16.0	18.5	17.0	2.7	217.0	1965	4100	0.02	153.50
	10:00	16.0	16.0	18.5	18.0	3.2	221.0	1859	4100	0.02	152.60
	10:30	16.0	16.0	18.5	18.0	2.8	221.0	2134	4100	0.02	152.60
	11:00	16.0	16.0	18.5	18.0	2.3	221.0	2038	4100	0.02	152.60
	11:30	16.0	16.0	18.5	18.0	2.3	227.0	3791	4000	0.02	147.58
	12:00	16.0	16.0	18.5	18.0	2.4	230.0	3612	3900	0.02	143.26
	12:30	16.0	16.0	18.5	18.5	2.3	232.0	3069	3800	0.02	139.18
	1:00	16.0	16.0	18.5	19.0	2.3	234.0	1857	3800	0.02	138.78
	1:30	16.0	16.0	18.5	19.0	2.3	236.0	2367	3800	0.02	138.38
	2:00	16.0	16.0	18.5	19.0	2.3	237.0	2726	3800	0.02	138.19
	2:30	16.0	16.0	18.5	19.0	2.3	236.0	3452	3700	0.02	134.74
	3:00	16.0	16.0	18.5	19.0	2.4	235.0	3179	3800	0.02	138.30
	3:30	16.0	16.0	18.5	19.0	2.2	234.0	3242	3700	0.02	134.86
	4:00	16.0	16.0	18.5	19.0	2.1	234.0	2906	3700	0.02	134.86
	4:30	16.0	16.0	18.5	19.0	2.1	233.0	2984	3700	0.02	135.33

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW27	2.00	54.00	54.00	NONE	53.71	0.00	NONE	54.38	0.00
MW2	2.00	60.00	53.00	NONE	52.86	0.00	NONE	53.15	0.00
MW29	2.00	60.00	53.00	NONE	52.47	0.00	NONE	53.57	0.00

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
560

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 1/16/12
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	131.62	2199	4	8796	46794.72	0.002921394	23.070836	11.535418
60	153.50	1965	4	7860	41815.2	0.002610523	24.042916	12.0214581
90	152.60	1859	4	7436	39559.52	0.002469701	22.612581	11.30629
120	152.60	2134	4	8536	45411.52	0.002835041	25.9576372	12.978819
150	152.60	2038	4	8152	43368.64	0.002707504	24.789908	12.394954
180	147.58	3791	4	15164	80672.48	0.005036383	44.59616	22.298082
210	143.26	3612	4	14448	76863.36	0.00479858	41.246671	20.623335
240	139.18	3069	4	12276	65308.32	0.004077198	34.047869	17.023934
270	138.78	1857	4	7428	39516.96	0.002467044	20.54258	10.27129
300	138.38	2367	4	9468	50369.76	0.003144584	26.108853	13.054427
330	138.19	2726	4	10904	58009.28	0.003621519	30.027466	15.013733
360	134.74	3452	4	13808	73458.56	0.004586018	37.075203	18.537602
390	138.30	3179	4	12716	67649.12	0.004223335	35.04523	17.522615
420	134.86	3242	4	12968	68989.76	0.004307031	34.85077	17.425385
450	134.86	2906	4	11624	61839.68	0.003860651	31.238845	15.619423
480	135.33	2984	4	11936	63499.52	0.003964275	32.18912	16.09456
					Total Emissions in pounds			243.72132
					Equivalent Gallons (vapor)			39.56515

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 1/16/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
		MW3	MW28	
Time	Elapsed Time	Differential Pressure Readings (inches of water)		
8:30	0.0	0.0	0.0	
9:00	0.5	0.0	0.3	
9:30	1.0	0.0	0.3	
10:00	1.5	0.0	0.3	
10:30	2.0	0.0	0.4	
11:00	2.5	0.0	0.5	
11:30	3.0	0.0	0.5	
12:00	3.5	0.0	0.5	
12:30	4.0	0.0	0.5	
1:00	4.5	0.0	0.5	
1:30	5.0	0.0	0.5	
2:00	5.5	0.0	0.8	
2:30	6.0	0.0	0.8	
3:00	6.5	0.0	1.0	
3:30	7.0	0.0	1.0	
4:00	7.5	0.0	1.0	
4:30	8.0	0.0	1.0	
Maximum Change:		**0.0**	**1.0**	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours	44.55	51.61	
	4 hours	44.55	52.37	
	8 hours	44.56	53.57	
Maximum Change:		**0.01**	**1.96**	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address: 401 N Congress Street, Winnsboro SC

Generator's Site Address (if different than mailing address): United Exxon, 401 N Congress St, Winnsboro SC

Generator's Phone:

6. Transporter 1 Company Name: VERCO — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: TK Tank, 425 Boulevard Rd, Sumter SC — U.S. EPA ID Number:

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Wstr	1	St	500	gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Fred Lyle of ATC as Agent for Keenan Oil — Signature: Fred Lyle — Month 1 Day 16 Year 12

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Green — Signature: [signature] — Month 1 Day 16 Year 12

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Steve A. Gamble — Signature: [signature] — Month 1 Day 17 Year 12

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro SC
Date:2/8/12
SCDHEC Site ID# 11760

Start Weather : 33 degrees F
Finish Weather: 60 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW28	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW28, MW29, MW2											
	8:30										
	9:00	15.0	15.0	16.0	16.0	3.5	177.0	1075	3000	0.01	120.59
	9:30	15.0	15.0	16.0	16.0	2.9	204.0	1865	3100	0.02	118.94
	10:00	15.0	15.0	16.0	16.0	2.5	207.0	2133	3100	0.02	118.40
	10:30	15.0	15.0	17.0	16.0	2.2	210.0	2234	3100	0.02	117.87
	11:00	15.0	15.0	17.0	16.0	2.2	211.0	2456	3100	0.02	117.70
	11:30	15.0	15.0	17.0	16.0	2.2	212.0	2478	3100	0.02	117.52
	12:00	15.0	15.0	17.0	16.0	2.2	215.0	2589	3100	0.02	117.00
	12:30	15.0	15.0	17.0	16.0	2.1	218.0	2521	3100	0.02	116.48
	1:00	15.0	15.0	17.0	17.0	2.1	219.0	2782	3100	0.02	116.31
	1:30	15.0	15.0	17.0	17.0	2.0	220.0	2893	3100	0.02	116.14
	2:00	15.0	15.0	17.0	17.0	2.2	222.0	2869	3100	0.02	115.80
	2:30	15.0	15.0	17.0	17.0	2.2	222.0	2723	3100	0.02	115.80
	3:00	15.0	15.0	17.0	18.0	2.2	223.0	2689	3100	0.02	115.63
	3:30	15.0	15.0	17.0	18.0	2.2	224.0	2867	3100	0.02	115.11
	4:00	15.0	15.0	17.0	19.0	2.0	226.0	2953	3100	0.02	114.77
	4:30	15.0	15.0	17.0	19.0	2.1	228.0	3123	3100	0.02	114.44

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW28	2.00	60.00	52.50	51.71	52.08	0.37	NONE	54.05	0.00
MW2	2.00	60.00	53.50	52.82	52.95	0.13	NONE	52.99	0.00
MW29	2.00	60.00	53.00	52.45	52.53	0.08	NONE	53.71	0.00

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
510

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 2/8/12

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	120.59	1075	4	4300	22876	0.001428149	10.333227	5.1666135
60	118.94	1865	4	7460	39687.2	0.002477672	17.681658	8.8408289
90	118.40	2133	4	8532	45390.24	0.002833713	20.130695	10.065347
120	117.87	2234	4	8936	47539.52	0.002967892	20.9895275	10.494764
150	117.70	2456	4	9824	52263.68	0.003262822	23.042046	11.521023
180	117.52	2478	4	9912	52731.84	0.003292049	23.21289	11.606447
210	117.00	2589	4	10356	55093.92	0.003439513	24.145384	12.072692
240	116.48	2521	4	10084	53646.88	0.003349175	23.406712	11.703356
270	116.31	2782	4	11128	59200.96	0.003695916	25.792319	12.896159
300	116.14	2893	4	11572	61563.04	0.003843381	26.782213	13.391107
330	115.80	2869	4	11476	61052.32	0.003811496	26.482277	13.241138
360	115.80	2723	4	10892	57945.44	0.003617534	25.134625	12.567312
390	115.63	2689	4	10756	57221.92	0.003572364	24.78435	12.392175
420	115.11	2867	4	11468	61009.76	0.003808839	26.30613	13.153065
450	114.77	2953	4	11812	62839.84	0.003923091	27.015191	13.507595
480	114.44	3123	4	12492	66457.44	0.004148938	28.488268	14.244134
					Total Emissions in pounds			186.86376
					Equivalent Gallons (vapor)			30.335026

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 2/8/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
		MW3	MW27	
Time	**Elapsed Time**	**Differential Pressure Readings (inches of water)**		
8:30	0.0	0.0	0.5	
9:00	0.5	0.0	0.5	
9:30	1.0	0.0	0.8	
10:00	1.5	0.0	0.8	
10:30	2.0	0.0	1.0	
11:00	2.5	0.0	1.0	
11:30	3.0	0.0	1.0	
12:00	3.5	0.0	1.0	
12:30	4.0	0.0	1.0	
1:00	4.5	0.1	1.0	
1:30	5.0	0.1	1.0	
2:00	5.5	0.0	1.0	
2:30	6.0	0.1	1.0	
3:00	6.5	0.1	1.0	
3:30	7.0	0.1	1.0	
4:00	7.5	0.0	1.0	
4:30	8.0	0.1	1.0	
Maximum Change:		0.1	1.0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
		MW3	MW27	
Time	**Elapsed Time**	**Depth to Liquid (feet below of casing):**		
Prior to AFVR	0 hours	44.40	53.75	
	4 hours	44.43	54.28	
	8 hours	44.48	54.97	
Maximum Change:		**0.08**	**1.22**	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address
United Exxon
401 N Congress Street
Winnsboro SC
Generator's Phone:

Generator's Site Address (if different than mailing address)
401 N Congress St
Winnsboro, SC

6. Transporter 1 Company Name: VERCO — U.S. EPA ID Number:

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: TK Tank, 425 Boulevard Rd, Sumter SC — U.S. EPA ID Number:
Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Waste	1	St	510	Gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Johnny Ron — Signature: [signature] — Month 12 Day 8 Year 12

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Fran — Signature: [signature] — Month 12 Day 8 Year 12

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Steve A. Smith — Signature: [signature] — Month 12 Day 10 Year 12

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro SC
Date:3/5/12
SCDHEC Site ID# 11760

Start Weather : 33 degrees F
Finish Weather: 60 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW27	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW27, MW29, MW2											
	8:30	14.5	17.0	17.0	20.0						
	9:00	14.5	17.0	17.0	20.0	3.2	199.0	1737	3300	0.02	127.57
	9:30	15.0	17.0	17.0	20.0	2.9	203.0	4403	3200	0.02	122.33
	10:00	14.5	17.0	17.0	20.0	2.5	208.0	4225	3300	0.02	125.85
	10:30	15.0	17.0	17.0	20.0	2.4	212.0	4455	3300	0.02	125.10
	11:00	14.5	17.0	17.0	20.0	2.2	211.0	2478	3300	0.02	125.29
	11:30	14.5	17.0	17.5	20.0	2.4	210.0	2108	3300	0.02	125.48
	12:00	15.0	17.0	18.0	20.0	2.3	214.0	1879	3300	0.02	124.73
	12:30	14.5	17.0	18.0	20.0	2.4	215.0	2343	3200	0.02	120.77
	1:00	14.5	17.0	17.0	20.0	2.3	218.0	2269	3100	0.02	116.48
	1:30	14.5	17.0	18.0	20.0	2.3	219.0	1985	3100	0.02	116.31
	2:00	15.0	17.0	18.0	20.0	2.0	218.0	1763	3100	0.02	116.48
	2:30	14.5	17.0	18.0	20.0	2.1	225.0	1634	3100	0.02	115.29
	3:00	14.5	17.0	18.0	20.0	2.2	221.0	1812	3100	0.02	115.97
	3:30	14.5	17.0	19.0	20.0	2.1	222.0	2389	3100	0.02	115.45
	4:00	14.5	17.0	19.0	20.0	2.3	218.0	2418	3100	0.02	116.13
	4:30	14.5	17.0	19.0	20.0	2.1	216.0	1691	3100	0.02	116.47

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW27	2.00	60.00	54.50	53.72	53.74	0.02	NONE	54.49	0.00
MW2	2.00	55.00	54.00	52.80	52.82	0.02	NONE	dry	0.00
MW29	2.00	60.00	53.50	52.44	52.47	0.03	NONE	54.41	0.00

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
475

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 3/5/12
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	127.57	1737	4	6948	36963.36	0.002307623	17.663005	8.8315023
60	122.33	4403	4	17612	93695.84	0.005849431	42.933656	21.4668279
90	125.85	4225	4	16900	89908	0.005612956	42.383434	21.191717
120	125.10	4455	4	17820	94802.4	0.005918514	44.4243648	22.212182
150	125.29	2478	4	9912	52731.84	0.003292049	24.747647	12.373824
180	125.48	2108	4	8432	44858.24	0.0028005	21.08440	10.542202
210	124.73	1879	4	7516	39985.12	0.002496271	18.681593	9.340797
240	120.77	2343	4	9372	49859.04	0.0031127	22.555246	11.277623
270	116.48	2269	4	9076	48284.32	0.00301439	21.06697	10.533485
300	116.31	1985	4	7940	42240.8	0.002637093	18.403218	9.2016091
330	116.48	1763	4	7052	37516.64	0.002342164	16.368915	8.1844573
360	115.29	1634	4	6536	34771.52	0.002170786	15.016195	7.508098
390	155.97	1812	4	7248	38559.36	0.002407261	22.527628	11.263814
420	155.45	2389	4	9556	50837.92	0.003173811	29.602138	14.801069
450	116.13	2418	4	9672	51455.04	0.003212338	22.38293	11.191465
480	116.47	1691	4	6764	35984.48	0.002246511	15.699069	7.8495344
					Total Emissions in pounds			197.77021
					Equivalent Gallons (vapor)			32.105553

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 3/5/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time			
8:30	0.0		0.3	
9:00	0.5		0.3	
9:30	1.0		0.5	
10:00	1.5		0.5	
10:30	2.0		0.7	
11:00	2.5		0.8	
11:30	3.0		1.0	
12:00	3.5		1.0	
12:30	4.0		1.0	
1:00	4.5		1.0	
1:30	5.0		1.0	
2:00	5.5		1.0	
2:30	6.0		1.0	
3:00	6.5		1.0	
3:30	7.0		1.0	
4:00	7.5		1.0	
4:30	8.0		1.0	
Maximum Change:			1.0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		53.68	
	4 hours		53.39	
	8 hours		53.03	
Maximum Change:			0.65	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address
Formerly United Exxon
401 N Congress Street
Winnsboro SC
Generator's Phone:

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: VERCO — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
TK Tank
425 Boulevard Rd
Sumter SC
Facility's Phone:
U.S. EPA ID Number

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	St	475	Gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: JESSE KEEFE for ATC — Signature: [signature] — Month 03 Day 05 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature: [signature] — Month 3 Day 5 Year 12

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

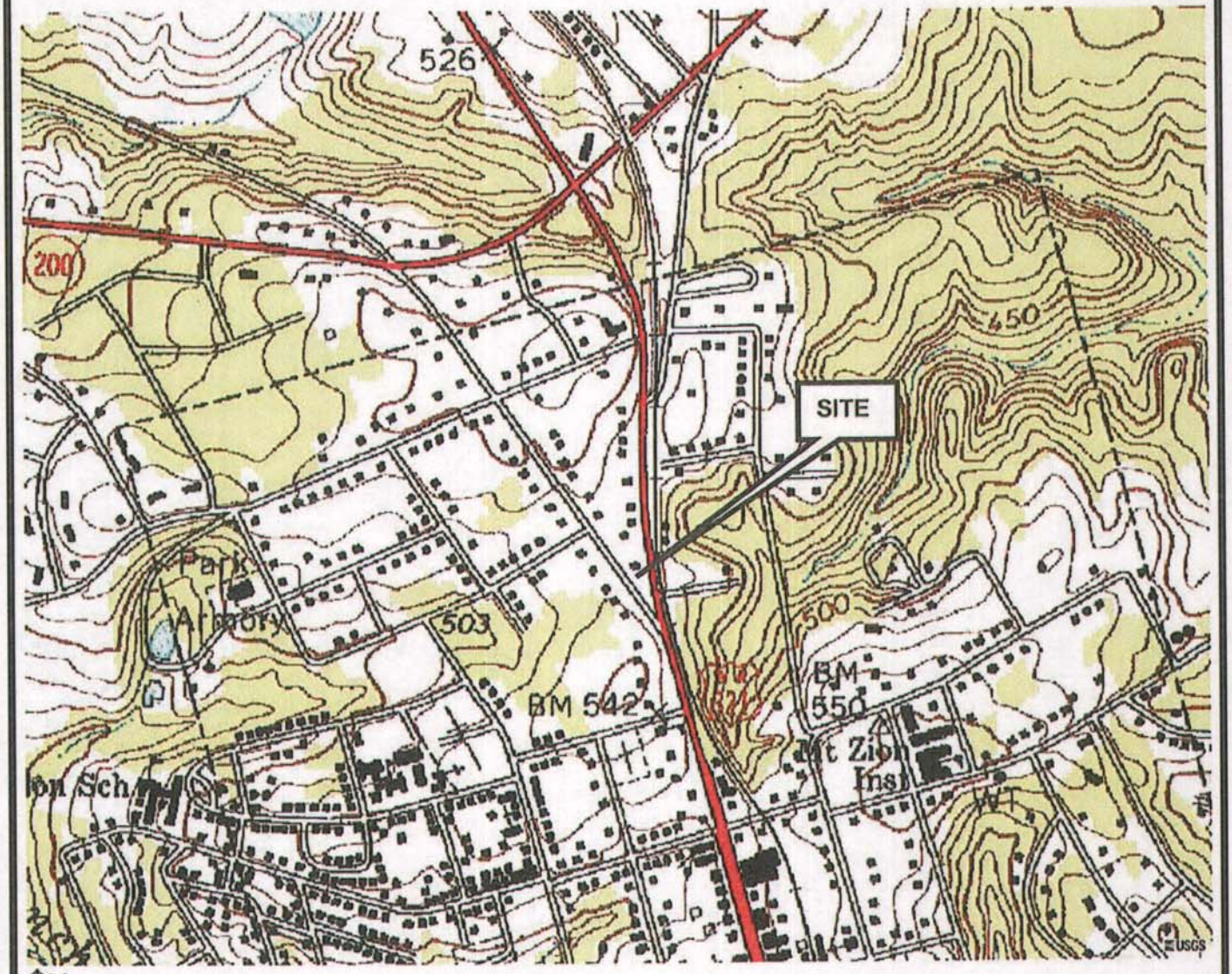
Printed/Typed Name: Steve A. Gamble — Signature: [signature] — Month 3 Day 15 Year 12

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

2-DESIGNATED FACILITY TO GENERATOR

APPENDIX
TABLE/FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

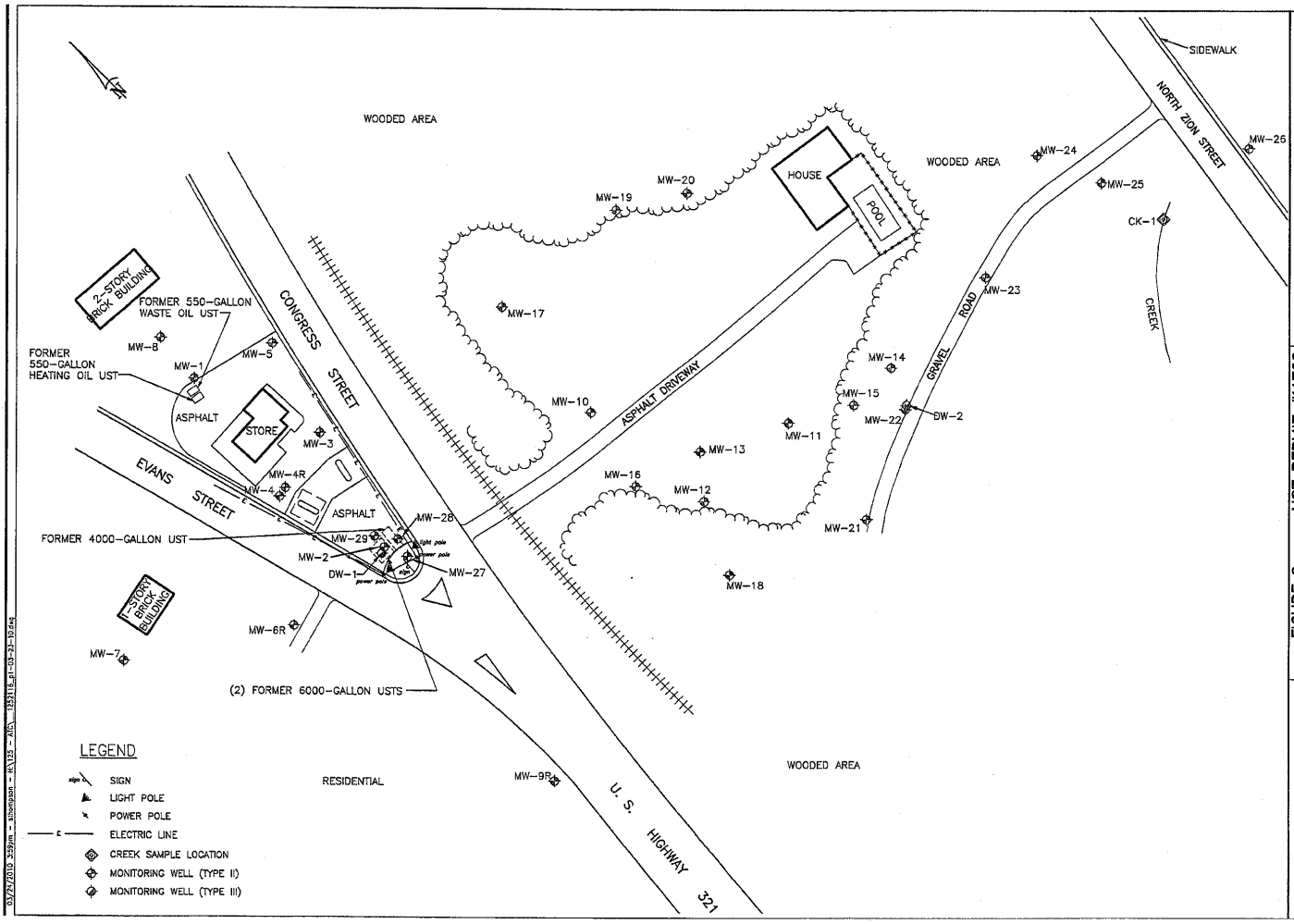
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

SCALE	DATE	PROJECT NO.
1"=80'	03-23-2010	14.25384.0012

REV. BY	PREP. BY	TYPE CODE	CAD FILE
	JH		1252116.dwg

TITLE: FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

NOTES:

03/24/2010 3:59pm - shoemaspa - HV125 - ATC\ 1252116_p1-03-23-10.dwg

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

APR 10 2012

UST 21 tech DOCKETING

Re: **AFVR Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760, CA #43566
Releases Reported August 1, 1997
Aggressive Fluid Vapor Recovery Report received March 26, 2012
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates, Inc.

In accordance with Section 280.64 of the South Carolina Underground Storage Tank Control Regulations, implementation of three 8-hour Aggressive Fluid and Vapor Recovery (AFVR) events on monitoring wells MW-2, MW-27, and MW-29 as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. The three events should be spaced approximately one month apart. A copy of SCDHEC QAPP for the Underground Storage Tank Division is available at http://www.dhec.sc.gov/environment/lwm/html/ust.htm.

The AFVR Report should be submitted within 120 days from the date of this correspondence. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Cost Agreement #43566 has been approved in the amount shown on the enclosed cost agreement. ATC Associates can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. If the invoice and completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval is obtained from the UST Management Division. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Division for the cost to be paid. The Division reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Division reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Management Division grants preapproval for transportation of virgin petroleum-contaminated groundwater from the referenced site to a permitted treatment facility.

On all correspondence concerning this site, please reference UST Permit #11760 and CA #43566. If you have any questions, please contact me at (803) 896-6584 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: ✓Technical File (with enclosure)
ATC Associates, Inc., 400 Northeast Dr., Ste. Q, Columbia, SC 29203 (w/enc.)

Approved Cost Agreement 43566

Facility: 11760 UNITED EXXON

MINERRS

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	3.0000	575.00	1,725.00
		B	PERSONNEL	3.0000	290.00	870.00
17 DISPOSAL						
		A	WASTEWATER	2,000.0000	0.80	1,600.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	13,195.00	1,979.25
23 EFR						
		A	8 HOUR EVENT	3.0000	3,000.00	9,000.00
				Total Amount		15,174.25

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

UST
AUG 30 2012
PROGRAM

RECEIVED
AUG 30 2012
SC DHEC
BUREAU OF LAND & WASTE MGT.

August 28, 2012

Read S. Miner, P.G., Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: Aggressive Fluid Vapor Recovery Activities
Former United Oil
401 North Congress Street
Winnsboro, South Carolina 29180
Fairfield County
UST Permit #11760
Cost Agreement #43566

UST
DOCKETING

Dear Mr. Miner:

As per your directive letter dated April 10, 2012, ATC Associates Inc. (ATC) scheduled three aggressive fluid vapor recovery (AFVR) events at the Former United Oil site located at 401 North Congress Street, Fairfield County, Winnsboro, South Carolina. This scope of work was conducted under the South Carolina Department of Health and Environmental Control (SCDHEC) Underground Storage Tank (UST) cost agreement #43566.

On May 2, 2012, ATC personnel oversaw AFVR activities, which were conducted by Versatile Environmental Resource Company (VERCO) personnel, utilizing Monitor Wells MW-2, MW-27, and MW-29 as extraction points. Prior to the beginning of the AFVR event, approximately 0.04 and 0.06 feet of liquid phase hydrocarbons (LPH) were observed in Monitor Wells MW-2 and MW-29, respectively. Monitor Well MW-27 did not contain LPH prior to the start of the AFVR event. The event was conducted for eight hours simultaneously with off-gas treatment, and emission and groundwater drawdown data was collected approximately every thirty minutes. Monitor Well MW-28 was monitored for groundwater drawdown data. Approximately 496 gallons of liquid were removed during the May 2, 2012 event. Based on the emissions calculations, approximately 980.59 pounds (or approximately 159.19 equivalent gallons) of hydrocarbons were removed from Monitor Wells MW-2, MW-27, and MW-29. At the conclusion of the AFVR event, LPH were observed in Monitor Wells MW-27 and MW-29 with an approximate thickness of 0.04 and 0.17 feet, respectively. It should be noted that LPH was detected in Monitor Well MW-28 with an approximate thickness of 0.56 feet after four hours and an approximate thickness of 0.70 feet at the conclusion of the AFVR event.

On June 1, 2012, ATC personnel oversaw AFVR activities, conducted by VERCO personnel, utilizing Monitor Wells MW-2, MW-27, and MW-29 as extraction points. Prior to the start of the AFVR event, approximately 0.11 and 0.04 feet of LPH were observed in Monitor Wells MW-2 and MW-29, respectively and Monitor Well MW-27 did not contain LPH during the AFVR event. The event was conducted for eight hours simultaneously with off-gas treatment, groundwater drawdown data readings (conducted at Monitor Well MW-28), and emissions data readings were collected approximately every thirty minutes. Approximately 214 gallons of liquid were removed during the second AFVR event, and approximately 213.34 pounds of hydrocarbons (or approximately 34.63 equivalent gallons) were removed from Monitor Wells MW-2, MW-27, and MW-29. LPH were not observed in Monitor Wells MW-2, MW-27, and MW-29 at the conclusion of the AFVR event. It should be noted that LPH were detected in Monitor Well MW-28 with an approximate thickness of 0.05 feet after four hours and an approximate thickness of 0.09 feet at the conclusion of the AFVR event.

On July 2, 2012, ATC personnel oversaw AFVR activities, conducted by VERCO personnel, utilizing Monitor Wells MW-2, MW-27, and MW-29 as extraction points. Prior to the start of the AFVR event, approximately 0.01 and 0.02 feet of LPH were observed in Monitor Wells MW-2 and MW-27, respectively and Monitor Well MW-29 did not contain LPH. The event was conducted for eight hours simultaneously with off-gas treatment, groundwater drawdown data readings (conducted at Monitor Well MW-28), and emissions data reading were collected approximately every thirty minutes. Approximately 385 gallons of liquid were removed during the third AFVR event, and approximately 292.61 pounds of hydrocarbons (or approximately 47.50 equivalent gallons) were removed from Monitor Wells MW-2, MW-27, and MW-29. LPH were not observed in Monitor Wells MW-2, MW-27, and MW-29 at the conclusion of the AFVR event. However, LPH were detected in Monitor Well MW-28 with an approximate thickness of 0.01 at the conclusion of the AFVR event.

A site location map and a site map are presented as Figures 1 and 2, respectively. Historical Groundwater Elevation Data and LPH levels are presented as Table I and historical emissions are summarized in Table II. Summaries of the three AFVR events are presented in the appendix.

LPH continues to be reduced at the subject site via AFVR events. ATC recommends that three additional AFVR events be conducted at Monitor Wells MW-2, MW-27, MW-28, and MW-29 to continue the reduction of LPH and lower dissolved groundwater concentrations at the site. Should you have any questions or require additional information, please contact me at 803-735-0003.

Sincerely,
ATC Associates Inc.
UST Site Rehabilitation Contractor #313

Jesse L. Keeffe, Jr., P.G. #2308
Project Manager

Fred Lyke, P.G. #1055
Branch Manager

JESSE L. KEEFFE JR. REGISTERED No. 2308 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

Attachments

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

APPENDIX
TABLE/FIGURES

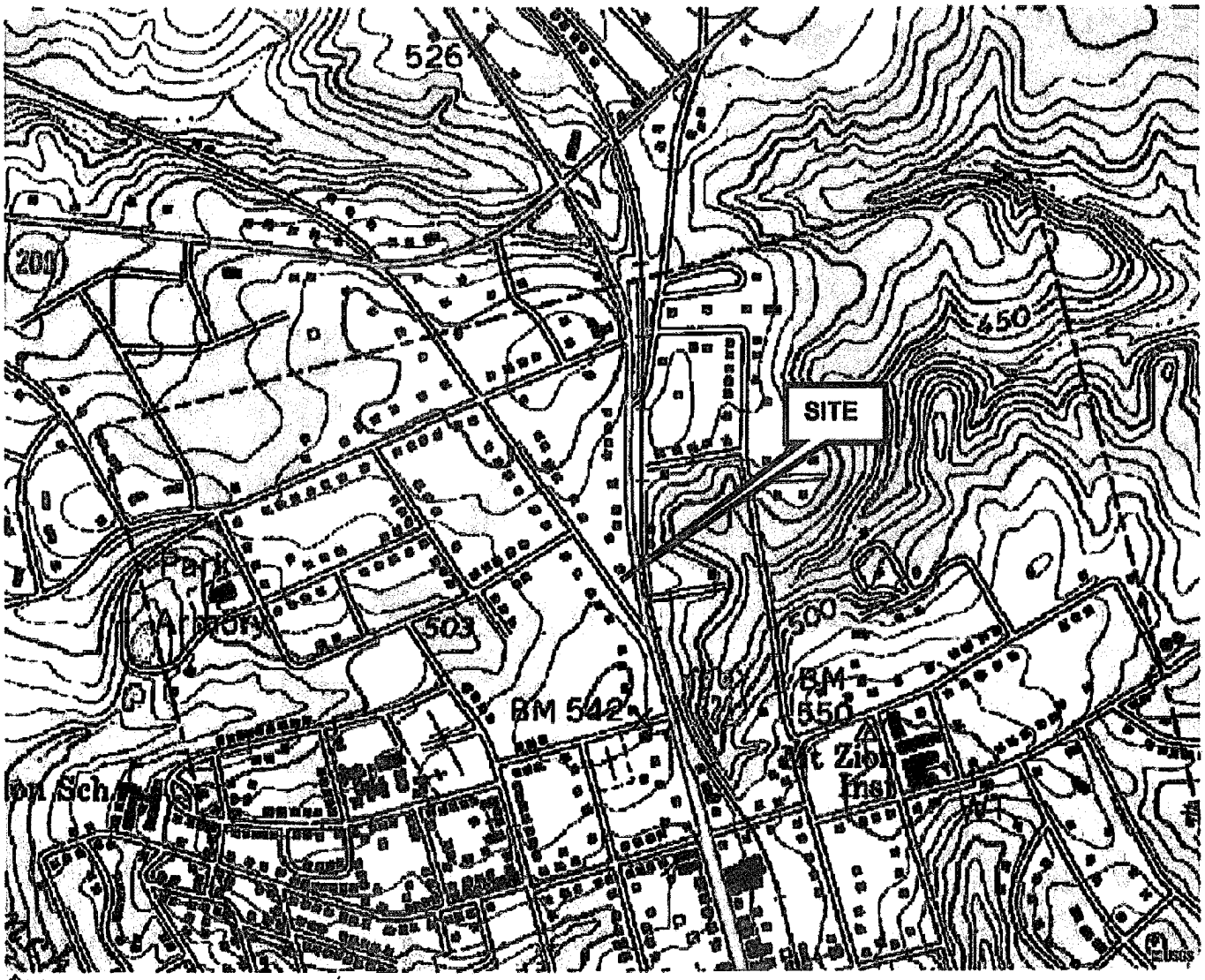


Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

SCALE	DATE	PROJECT NO.
1"=80'	08-18-2009	14.253864.0012

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.dwg		BB	

NOTES:

08/18/2009 7:25pm – kbryan – 14X36 – ATC\ – 1252116.p1-08-18-09.dwg

TABLE I Historical Groundwater Elevation Data Former United Oil / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-2	7/2/2012*	98.17	52.83	0.01			45.34
	6/1/2012*		52.73	0.11			45.44
	5/2/2012*		52.70	0.04			45.47
	3/5/2012*		52.82	0.02			45.35
	2/8/2012*		52.85	0.13			45.32
	1/16/2012		52.86	---			45.31
	6/1/2011		53.74	---			44.43
	11/29/2010*		51.37	0.02			46.8
	2/24/2010*		51.69	0.32			46.48
	7/16/2009*		52.31	1.57			45.86
	9/22/2008*		52.66	0.18			45.51
	1/14/2008*		51.81	0.27			46.36
	4/19/2007*		49.93	0.03			48.24
	8/21/2006*		51.76	0.3			46.41
	6/27/2005*		50.12	0.02			48.05
	3/8/2005*		50.87	0.2			47.3
	8/20/2003*		49.75	0.33			48.42
MW-27	7/2/2012*	98.43	53.73	0.02	15	60	44.70
	6/1/2012		53.63	---			44.80
	5/2/2012		53.65	---			44.78
	3/5/2012*		53.74	0.02			44.69
	2/8/2012		53.75	---			44.68
	1/16/2012		53.71	---			44.72
	6/1/2011		53.21	---			45.22
	11/29/2010*		52.38	0.03			46.05
	2/24/2010*		52.54	0.08			45.89
MW-28	7/2/2012	97.11	51.74	---	15	60	45.37
	6/1/2012		51.85	---			45.26
	5/2/2012		51.66	---			45.45
	3/5/2012		53.68	---			43.43
	2/8/2012*		51.79	0.37			45.32
	1/16/2012		51.61	---			45.50
	6/1/2011*		52.67	0.15			44.44
	11/29/2010		50.32	---			46.79
	2/24/2010		49.59	---			47.52
MW-29	7/2/2012	97.88	52.42	---	15	60	45.46
	6/1/2012*		52.27	0.04			45.61
	5/2/2012*		52.34	0.06			45.54
	3/5/2012*		52.47	0.03			45.41
	2/8/2012*		52.39	0.08			45.49
	1/16/2012		52.47	---			45.41
	6/1/2011		53.02	---			44.86
	11/29/2010*		50.98	0.02			46.9
	2/24/2010*		51.2	0.02			46.68

*Corrected depth to water = depth to water – (LPH thickness x 0.78)
LPH = Liquid Phase Hydrocarbons
Depth of water readings were obtained prior to the beginning of the AFVR event.

TABLE II Historical Hydrocarbon Emissions Data Former United Oil / Winnsboro, South Carolina				
AFVR Event #	Date	Calculated gallons of hydrocarbons Extracted	Calculated Pounds of Hydrocarbons Extracted	Total Gallons Fluid Extracted
1	6/7/2010	2.0	14.0	347
2	6/8/2010	17	134.0	384
3	10/11/2010	7.59	46.76	---
4	10/12/2010*	1.99	12.24	671
5	10/27/2010	10.05	61.93	429
6	3/21/2011	21.37	131.66	214
7	4/22/2011	26.66	164.25	348
8	6/1/2011	18.76	115.56	382
9	11/22/2011	9.19	56.63	146
10	12/7/2011	9.84	60.6	120
11	1/16/2012	39.57	243.72	560
12	2/8/2012	30.34	186.86	510
13	3/5/2012	32.11	197.77	475
14	5/2/2012	159.19	980.59	496
15	6/1/2012	34.63	213.34	214
16	7/2/2012	47.50	292.61	385
Approximate Total		467.79	2912.52	5681

* = Total gallons of fluid extracted were combined for October 11 and 12, 2010 AFVR events

AFVR Summary Reports

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro SC
Date:5/2/12
SCDHEC Site ID# 11760

Start Weather : 68 degrees F
Finish Weather: 80 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW27	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW27, MW29, MW2											
	8:30	14.5	17.0	17.0	20.0						
	9:00	14.5	17.0	17.0	21.0	3.7	216.0	9999	4300	0.02	162.05
	9:30	15.0	18.0	17.0	21.0	2.6	236.0	9999	4300	0.02	156.59
	10:00	15.0	17.0	17.0	20.0	2.4	244.0	9999	4300	0.02	155.60
	10:30	15.0	17.0	17.0	22.0	2.3	246.0	9999	4300	0.02	155.16
	11:00	15.0	17.0	17.0	21.0	2.2	251.0	9999	4300	0.02	154.07
	11:30	15.0	18.0	17.0	21.0	2.2	252.0	9999	4300	0.02	153.86
	12:00	14.0	17.0	17.0	22.0	2.1	252.0	9999	4300	0.02	153.86
	12:30	15.0	17.0	17.0	20.0	2.2	254.0	9999	4300	0.02	153.42
	1:00	14.5	17.0	17.0	20.0	2.0	256.0	9999	4300	0.02	153.00
	1:30	15.0	17.0	17.0	20.0	2.1	259.0	9999	4300	0.02	152.36
	2:00	15.0	17.0	17.0	20.0	1.9	260.0	9999	4300	0.02	152.15
	2:30	15.0	18.0	17.0	20.0	2.0	262.0	9999	4300	0.02	151.72
	3:00	15.0	17.0	17.0	21.0	1.8	258.0	9999	4300	0.02	152.57
	3:30	14.5	17.0	17.0	21.0	1.9	264.0	9999	4300	0.02	150.84
	4:00	15.0	17.0	17.0	20.0	2.1	261.0	9999	4300	0.02	151.47
	4:30	15.0	17.0	17.0	20.0	2.0	259.0	9999	4300	0.02	151.89

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW27	2.00	60.00	54.50	NONE	53.65	0.00	54.35	54.39	0.04
MW2	2.00	55.00	53.50	52.69	52.73	0.04	NONE	53.78	0.00
MW29	2.00	60.00	53.00	52.33	52.39	0.06	53.82	53.99	0.17

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
496

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 5/2/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	**Elapsed Time**			
8:30	0.0		0.0	
9:00	0.5		1.0	
9:30	1.0		1.0	
10:00	1.5		1.0	
10:30	2.0		1.0	
11:00	2.5		1.0	
11:30	3.0		1.0	
12:00	3.5		1.0	
12:30	4.0		1.0	
1:00	4.5		1.0	
1:30	5.0		1.0	
2:00	5.5		1.0	
2:30	6.0		1.0	
3:00	6.5		1.0	
3:30	7.0		1.0	
4:00	7.5		1.0	
4:30	8.0		1.0	
Maximum Change:			1.0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	**Elapsed Time**	**Depth to Liquid (feet below of casing):**		
Prior to AFVR	0 hours		51.66	
	4 hours		53.57-54.13	*PRODUCT
	8 hours		53.73-54.43	*PRODUCT
Maximum Change:			**2.07**	

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 5/2/12

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	162.05	9999	4	39996	212778.72	0.013283775	129.1581491	64.579075
60	156.59	9999	4	39996	212778.72	0.013283775	124.8063842	62.4031921
90	155.60	9999	4	39996	212778.72	0.013283775	124.017328	62.008664
120	155.16	9999	4	39996	212778.72	0.013283775	123.6666363	61.833318
150	154.07	9999	4	39996	212778.72	0.013283775	122.7978774	61.398939
180	153.86	9999	4	39996	212778.72	0.013283775	122.63050	61.315251
210	153.86	9999	4	39996	212778.72	0.013283775	122.6305018	61.315251
240	153.42	9999	4	39996	212778.72	0.013283775	122.2798101	61.139905
270	153.00	9999	4	39996	212778.72	0.013283775	121.945059	60.972529
300	152.36	9999	4	39996	212778.72	0.013283775	121.434962	60.717481
330	152.15	9999	4	39996	212778.72	0.013283775	121.2675864	60.633793
360	151.72	9999	4	39996	212778.72	0.013283775	120.924865	60.462433
390	152.57	9999	4	39996	212778.72	0.013283775	121.6023376	60.801169
420	150.84	9999	4	39996	212778.72	0.013283775	120.2234817	60.111741
450	151.47	9999	4	39996	212778.72	0.013283775	120.7256084	60.362804
480	151.89	9999	4	39996	212778.72	0.013283775	121.0603595	60.53018
					Total Emissions in pounds			980.58572
					Equivalent Gallons (vapor)			159.18599

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address
United oil
401 N Congress Street
Winnsboro SC
Generator's Phone:

Generator's Site Address (if different than mailing address)
C/O ATC
400 Northeast Dr
Columbia, SC

6. Transporter 1 Company Name: VERCO
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
TK Tank Services
423 Boulevard Rd
Sumter SC
Facility's Phone:
U.S. EPA ID Number

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	st	496	gal	
	2					
	3					
	4.					

13. Special Handling Instructions and Additional Information
UST 11760

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste

Generator's/Offeror's Printed/Typed Name: Jesse Keefe for Norfolk Southern Corp
Signature
Month 5 Day 2 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S.
Port of entry/exit
Transporter signature (for exports only):
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Irvin
Signature
Month 5 Day 2 Year 12

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Steve A. Gamble
Signature
Month 5 Day 8 Year 12

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

1-DESIGNATED FACILITY TO DESTINATION

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro SC
Date:6/1/12
SCDHEC Site ID# 11760

Start Weather: 72 degrees F
Finish Weather: 93 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW27	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW27, MW29, MW2											
	8:30	14.0	17.0	16.0	21.0						
	9:00	14.5	17.0	16.0	21.0	2.5	234.0	1682	4500	0.02	165.19
	9:30	14.0	17.0	16.0	21.0	2.2	250.0	2168	4500	0.02	160.65
	10:00	14.0	17.0	16.0	21.0	1.9	254.2	2435	4500	0.02	160.52
	10:30	14.0	17.0	16.0	21.0	1.9	252.0	2143	4500	0.02	161.01
	11:00	15.0	17.0	15.0	21.0	2.0	250.0	2500	4400	0.02	157.88
	11:30	15.0	17.0	16.0	20.0	1.9	256.0	1984	4500	0.02	160.11
	12:00	14.0	17.0	16.0	21.0	1.9	251.0	1812	4400	0.02	157.65
	12:30	14.0	17.0	15.0	20.0	1.9	255.0	1966	4500	0.02	160.34
	1:00	14.0	17.0	16.0	20.0	1.8	258.0	2069	4300	0.02	152.57
	1:30	15.0	17.0	16.0	21.0	1.9	256.9	1896	4400	0.02	156.36
	2:00	14.5	17.0	16.0	21.0	2.0	254.0	1763	4500	0.02	160.56
	2:30	14.0	17.0	16.0	20.0	1.9	259.9	1966	4500	0.02	159.24
	3:00	14.0	17.0	16.0	21.0	1.9	257.0	2110	4400	0.02	156.34
	3:30	14.0	17.0	15.0	21.0	1.9	254.9	2227	4500	0.02	159.87
	4:00	14.0	17.0	16.0	21.0	1.8	255.0	2436	4400	0.02	156.30
	4:30	14.0	17.0	16.0	21.0	1.8	256.0	2579	4400	0.02	156.08

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW27	2.00	60.00	54.50	NONE	53.63	0.00	NONE	54.55	0.00
MW2	2.00	55.00	53.50	52.71	52.82	0.11	NONE	DRY	0.00
MW29	2.00	60.00	53.00	52.30	52.34	0.04	NONE	53.02	0.00

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
214

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 6/1/12

EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	165.19	1682	4	6728	35792.96	0.002234554	22.1475634	11.073782
60	160.65	2168	4	8672	46135.04	0.002880211	27.76234946	13.8811747
90	160.52	2435	4	9740	51816.8	0.003234923	31.1561887	15.578094
120	161.01	2143	4	8572	45603.04	0.002846998	27.5037068	13.751853
150	157.88	2500	4	10000	53200	0.003321276	31.46178329	15.730892
180	160.11	1984	4	7936	42219.52	0.002635765	25.32074	12.660368
210	157.65	1812	4	7248	38559.36	0.002407261	22.77028033	11.385140
240	160.34	1966	4	7864	41836.48	0.002611851	25.12705565	12.563528
270	152.57	2069	4	8276	44028.32	0.002748688	25.16203985	12.58102
300	156.36	1896	4	7584	40346.88	0.002518856	23.63089681	11.815448
330	160.56	1763	4	7052	37516.64	0.002342164	22.56346952	11.281735
360	159.24	1966	4	7864	41836.48	0.002611851	24.95467346	12.477337
390	156.34	2110	4	8440	44900.8	0.002803157	26.2947334	13.147367
420	159.87	2227	4	8908	47390.56	0.002958593	28.37941252	14.189706
450	156.30	2436	4	9744	51838.08	0.003236251	30.34956501	15.174783
480	156.08	2579	4	10316	54881.12	0.003426228	32.08594299	16.042971
					Total Emissions in pounds			213.3352
					Equivalent Gallons (vapor)			34.632337

Equations:

PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 6/1/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time			
8:30	0.0		0.0	
9:00	0.5		1.0	
9:30	1.0		1.0	
10:00	1.5		1.0	
10:30	2.0		1.0	
11:00	2.5		1.0	
11:30	3.0		1.0	
12:00	3.5		1.0	
12:30	4.0		1.0	
1:00	4.5		1.0	
1:30	5.0		1.0	
2:00	5.5		1.0	
2:30	6.0		1.0	
3:00	6.5		1.0	
3:30	7.0		1.0	
4:00	7.5		1.0	
4:30	8.0		1.0	
Maximum Change:			1.0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		51.85	
	4 hours		52.80-52.85	*PRODUCT
	8 hours		52.89-52.98	*PRODUCT
Maximum Change:			1.13	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address
United Exxon
4191 N Congress Street
Winnsboro SC

Generator's Site Address (if different than mailing address)
c/o ATC Associates
400 Northeast Dr
Columbia SC

Generator's Phone:

6. Transporter 1 Company Name: VERCO — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address
TK Tank Services
4125 Boulevard
Sumter SC

U.S. EPA ID Number

Facility's Phone:

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Water	1	SL	214	gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
VST 11760

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: John Monegan — Signature: [signature] — Month 06 Day 01 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Robert Freeman — Signature: [signature] — Month 6 Day 1 Year 12

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Steve A. Gamble — Signature: [signature] — Month 6 Day 12 Year 12

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

2-DESIGNATED FACILITY TO GENERATOR

AFVR MONITORING DATA
Site Name: United Exxon
Site Location: Winnsboro SC
Date:7/2/12
SCDHEC Site ID# 11760

Start Weather : 82 degrees F
Finish Weather: 101 degrees F

Extraction Well	Time (hh:mm)	Extraction Well Head Vacuum (in. Hg)				Vacuum Truck Exhaust					
		MW27	MW2	MW29	Truck	Relative Humidity	Temp (°F)	Concentration (PPM)	Offgas Velocity Ft/Min	Water Vapor (%)	Flow Rate (DSCFM)
MW27, MW29, MW2											
	8:30	17.0	12.0	16.5	21.0						
	9:00	17.0	12.0	16.0	22.0	2.9	238.0	2440	4000	0.03	143.77
	9:30	17.0	12.0	16.5	22.0	2.6	245.0	2800	4000	0.03	142.34
	10:00	17.0	12.0	16.5	22.0	2.1	246.0	3241	4000	0.02	144.34
	10:30	17.0	12.0	16.0	21.0	2.1	248.0	3287	4000	0.03	141.74
	11:00	17.0	12.0	17.0	21.0	2.1	250.0	3469	4000	0.03	141.34
	11:30	17.0	12.0	16.0	22.0	2.2	252.0	3376	4000	0.03	140.94
	12:00	17.0	13.0	16.0	22.0	2.0	255.0	3612	4000	0.03	140.35
	12:30	17.0	12.0	17.0	22.0	2.0	254.0	3428	4000	0.03	140.55
	1:00	17.0	12.0	16.0	23.0	2.0	257.0	3395	4000	0.03	139.96
	1:30	17.0	12.0	16.0	22.0	1.9	258.0	3536	4000	0.03	139.76
	2:00	17.0	12.0	16.0	23.0	2.0	256.0	3275	4000	0.03	140.15
	2:30	17.0	13.0	16.0	23.0	2.0	250.0	3125	4000	0.03	141.34
	3:00	17.0	12.0	16.5	23.0	2.1	253.0	3367	4000	0.03	140.74
	3:30	17.0	13.0	17.0	23.0	1.9	256.0	3308	4000	0.03	140.15
	4:00	17.0	13.0	16.0	23.0	2.0	258.0	3397	4000	0.03	139.76
	4:30	17.0	13.0	16.0	23.0	1.8	260.0	3024	4000	0.03	139.38

Well Gauging Data:				Before AFVR Event			After AFVR Event		
Well No.	Diameter (in)	Total Depth (ft)	Stinger Depth (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)	Depth to Product (ft)	Depth to Water (ft)	Product Thickness (ft)
MW27	2.00	60.00	54.50	53.83	53.75	0.02	NONE	53.98	0.00
MW2	2.00	55.00	53.50	52.83	52.84	0.01	NONE	53.50	0.00
MW29	2.00	60.00	53.50	NONE	52.42	0.00	NONE	54.20	0.00

AFVR Information	
Client	ATC
Equipment Operator:	RF
Blower Discharge I.D.	3 Inches

Notes: Pipe ID - The inside diameter of the blower discharge piping (from vacuum truck)
Velocity - The rate at which air flows is measured at the blower discharge piping
Temperature - The temperature of the air stream exiting the blower discharge piping
Relative humidity - The & relative humidity of the air stream exiting the blower discharge piping
Water Vapor in % - Pounds of water per pound of dry air (derived from a Psychrometric chart of temp. vs relative humidity)
Flow rate = (1 - water vapor)(velocity)(Pipe Diameter/24)^2(3.14)(528°R/Temp + 460)

Total Gallons Extracted
385

Site Name: United Exxon
Location: Winnsboro, SC
UST ID # 11760
Date: 7/2/12
EMISSION CALCULATION

Elapsed Time (min)	Flow Rate (DSCFM)	Concentration (ppm)	K (#C - gas)	PPMg (ppm)	Cg:m (mg/dsm^3)	Cg (lbs/dscf)	PMRg (lb/hr)	PMR (lb)
0								
30	143.77	2440	4	9760	51923.2	0.003241565	27.96239125	13.981196
60	142.34	2800	4	11200	59584	0.003719829	31.76882862	15.8844143
90	144.34	3241	4	12964	68968.48	0.004305702	37.28910339	18.644552
120	141.74	3287	4	13148	69947.36	0.004366814	37.1371303	18.568565
150	141.34	3469	4	13876	73820.32	0.004608603	39.0827933	19.541397
180	140.94	3376	4	13504	71841.28	0.004485051	37.92739	18.963693
210	140.35	3612	4	14448	76863.36	0.00479858	40.40883852	20.204419
240	140.55	3428	4	13712	72947.84	0.004554134	38.40500908	19.202505
270	139.96	3395	4	13580	72245.6	0.004510293	37.87563488	18.937817
300	139.76	3536	4	14144	75246.08	0.004697613	39.39230168	19.696151
330	140.15	3275	4	13100	69692	0.004350872	36.58647895	18.293239
360	141.34	3125	4	12500	66500	0.004151595	35.20718624	17.603593
390	140.74	3367	4	13468	71649.76	0.004473095	37.77259934	18.8863
420	140.15	3308	4	13232	70394.24	0.004394712	36.9551366	18.477568
450	139.76	3397	4	13588	72288.16	0.00451295	37.84379208	18.921896
480	139.38	3024	4	12096	64350.72	0.004017415	33.59684192	16.798421
					Total Emissions in pounds			292.60573
					Equivalent Gallons (vapor)			47.50093

Equations: PPMg = PPM (measured) x K

Mg = 128 mg/mg-mole (molecular weight of gasoline)

Cg:m = PPMg x (Mg/K_3) mass conc. of gasoline emission

Cg = (Cg:m)(62.43×10^{-9} $lb\text{-}m^3/mg\text{-}ft^3$) mass concentration of gasoline emission

PMRg = (Cg)(Q_{std})(60 min/hr) mass removal rate of gasoline emission

PMR = PMRg {(T2-T1)/60} (mass removal rate of gasoline over time)

K = Number of carbons in calibration gas

K_3 = 24.07 $dsm^3/1 \times 10^6$ mg-mole (mass to volume conversion factor)

DIFFERENTIAL PRESSURE AND GROUNDWATER DRAWDOWN DATA
SITE - United Exxon
LOCATION -Winnsboro, SC
SCDHEC SITE ID - 11760
Date: 7/2/12

DIFFERENTIAL PRESSURE DATA

		Well Designation:		
			MW28	
Time	Elapsed Time			
8:30	0.0		0.0	
9:00	0.5		1.0	
9:30	1.0		1.0	
10:00	1.5		1.0	
10:30	2.0		1.0	
11:00	2.5		1.0	
11:30	3.0		1.0	
12:00	3.5		1.0	
12:30	4.0		1.0	
1:00	4.5		1.0	
1:30	5.0		1.0	
2:00	5.5		1.0	
2:30	6.0		1.0	
3:00	6.5		1.0	
3:30	7.0		1.0	
4:00	7.5		1.0	
4:30	8.0		1.0	
Maximum Change:			1.0	

GROUNDWATER DRAWDOWN DATA

		Well Designation:		
			MW28	
Time	Elapsed Time	Depth to Liquid (feet below of casing):		
Prior to AFVR	0 hours		51.74	
	4 hours		53.38	
	8 hours		53.79-53.80	*PRODUCT
Maximum Change:			2.06	

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number

5. Generator's Name and Mailing Address
United Exton
401 Wanglass Street
Winnsboro SC
Generator's Phone:

Generator's Site Address (if different than mailing address)
C/O ATC
400 Northeast Dr
Columbia SC

6. Transporter 1 Company Name: VE RCG
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
TK Tank
425 Boulevard Rd
Sumter SC
Facility's Phone:
U.S. EPA ID Number

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. Non Haz Wate	1	ST	385	gal	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
VST 11760

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: William Fogle
Signature: William Fogle
Month 7 Day 2 Year 12

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Robert Freeman
Signature
Month 7 Day 2 Year 12
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Signature
Month Day Year

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

6-NHM-C-SO-1158

3-DESIGNATED FACILITY TO GENERATOR

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

AGGRESSIVE FLUID VAPOR RECOVERY ACTIVITIES

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760
Cost Agreement #43566

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JAN 03 2013

UST DOCKETING 23tech

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: Corrective Action Options
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760
Releases Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced file. The report indicates that active corrective action is necessary at the site to mitigate petroleum impact to the creek and ensure that there is no detrimental exposure to human health or the environment.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action. The selected technology must reduce free product and petroleum chemicals of concern (CoC) concentrations to site-specific target levels (SSTLs) determined by the Agency.

The SUPERB Site Rehabilitation and Fund Access Regulations R.61-98 require the UST owner/operator to develop and implement a reasonable, cost-effective corrective action to be performed by an Agency-certified site rehabilitation contractor. As the owner/operator for the releases reported on August 1, 1997, you may choose one of two options as to how to proceed with this requirement: state lead or owner/operator lead.

State Lead Option:

- If you choose the state lead option, the Agency will procure a certified site rehabilitation contractor to perform corrective action on your behalf. The Agency will enter into an enforceable contract with the awarded contractor. As long as you do not interfere with or prohibit the work at your site, you will not be responsible in the event the state selected contractor does not perform appropriately or does not make satisfactory progress towards achieving the established corrective action goals. To utilize the state lead option, please sign and return the applicable Permission and Right-of-Entry forms within 15 days of the date of this letter.

Owner/Operator Lead Option:

- If you select the owner/operator lead option, you will be required to select a contractor to perform the corrective action. In order to assist you in determining the clean-up technology, time frame, clean-up levels, and associated costs, the Agency will prepare a technical specification package and provide you copies to send to contractors of your choice. In addition, the Agency will announce the request for solicitations in the South Carolina Business Opportunities, a bi-weekly state government publication, to ensure that an adequate solicitation response is obtained so that a fair and competitive price can be established. This announcement will clearly indicate that you will select the contractor to implement the corrective action.
- Compensation to the contractor will be from the SUPERB Account, but you may have the obligation to pay your selected contractor for any costs not approved by the Agency.
- The Agency strongly suggests that a written contract between you and the selected contractor be developed following the completion of the solicitation process. The parties to this contract would be you and the contractor you choose; the Agency would not be a party to this contract. The Agency's function would be to monitor and ensure progress of corrective action activities.
- If the contractor you select does not or cannot complete the required activities, you will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount. No additional funding from the SUPERB Account may be allowed. Under R.61-92, Part 280: Underground Storage Tank Control Regulations, you as the owner/operator are ultimately responsible to the Agency for the actions of your contractor. The Agency will pursue enforcement actions against you if the contractor you select does not make satisfactory progress towards achieving established corrective actions goals. To utilize the owner/operator lead option, please sign and return the enclosed Active Corrective Action Options Form within 15 days of the date of this letter.

On all correspondence or inquiries regarding this project, please reference UST Permit #11760. If you have any questions, please contact me at (803) 896-6584 or by email at miners@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Permission/Right-of-Entry forms
Active Corrective Action Options form

cc: Technical file (w/o enc)

D H E C

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Catherine B. Templeton, Director

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UST DOCKETING 34 Keep

MAR 27 2013

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: **Corrective Action Options – 2nd request**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760
Releases Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced file. The report indicates that active corrective action is necessary at the site to mitigate petroleum impact to the creek and ensure that there is no detrimental exposure to human health or the environment.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action. The selected technology must reduce free product and petroleum chemicals of concern (CoC) concentrations to site-specific target levels (SSTLs) determined by the Agency.

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On all correspondence or inquiries regarding this project, please reference UST Permit #11760. If you have any questions, please contact me at (803) 896-6584 or by email at miners@dhec.sc.gov.

Sincerely,

Read S Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Permission/Right-of-Entry forms
Active Corrective Action Options form

cc: Technical file (w/o enc)

D H E C

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Catherine B. Templeton, Director

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MAY 15 2013

UST DOCKETING

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: Corrective Action Options-3rd Request
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760
Releases Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced file. The report indicates that active corrective action is necessary at the site to mitigate petroleum impact to the creek and ensure that there is no detrimental exposure to human health or the environment.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action. The selected technology must reduce free product and petroleum chemicals of concern (CoC) concentrations to site-specific target levels (SSTLs) determined by the Agency.

The SUPERB Site Rehabilitation and Fund Access Regulations R.61-98 require the UST owner/operator to develop and implement a reasonable, cost-effective corrective action to be performed by an Agency-certified site rehabilitation contractor. As the owner/operator for the releases reported on August 1, 1997, you may choose one of two options as to how to proceed with this requirement: state lead or owner/operator lead.

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- If the contractor you select does not or cannot complete the required activities, you will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount. No additional funding from the SUPERB Account may be allowed. Under R.61-92, Part 280: Underground Storage Tank Control Regulations, you as the owner/operator are ultimately responsible to the Agency for the actions of your contractor. The Agency will pursue enforcement actions against you if the contractor you select does not make satisfactory progress towards achieving established corrective actions goals. To utilize the owner/operator lead option, please sign and return the enclosed Active Corrective Action Options Form within 15 days of the date of this letter.

On all correspondence or inquiries regarding this project, please reference UST Permit #11760. If you have any questions, please contact me at (803) 896-6584 or by email at miners@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
UST Management Division
Bureau of Land and Waste Management

enc: Permission/Right-of-Entry forms
Active Corrective Action Options form

cc: Technical file (w/o enc)

State Lead Option

UST
JUN 13 2013
PROGRAM

PERMISSION FORM

UNDERGROUND STORAGE TANK AND PROPERTY OWNER

UST Permit #11760

If you are both the owner of the former or existing underground storage tanks for the releases reported on February 11, 2000 and the current property owner, please complete this form.

I, Keenan Oil Company, certify that I am the identified legal owner of the underground storage tanks for the releases reported on August 1, 1997 and property located at the facility identified below or serve as the authorized representative for the owner. I grant permission to the South Carolina Department of Health and Environmental Control (Agency) to secure on my behalf contractor services to conduct assessment and corrective action activities as required, and authorize the Agency, or a contractor selected by the Agency, to enter this property at reasonable times only to accomplish these site rehabilitation tasks. The contractor(s) will be designated as my contractor for only the required site rehabilitation activities. Compensation to the contractor(s) will be from the SUPERB Account and I will have no obligation to pay the contractor(s). I understand that the Agency or its contractor will be responsible for notifying me of all activities that are necessary prior to their initiation and will promptly provide to me a copy of each environmental report. I understand that I may choose to select my own contractor at the completion of any phase of work by notifying the Division of Underground Storage Tank Management in writing.

Name of Facility United Oil Phone # _____

Street Address of Facility 401 N Congress St

Town, City, District, Suburb Winnsboro SC

Is the property currently leased or rented to someone? (yes or no) NO. If yes, please provide their name _____ and phone number _____ and let them know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before the Agency's contractor arrives at the site.

NAME of UST/property owner (Please Print): Keenan Oil Company

Phone Number (home) 803-920-2759 (work) 803-256-0667

UST
26 tech
DOCKET

Signature of UST/property Owner: [signature]

Witness: [signature]

Date: 5/8/13 Month May Day 08 2013 Year

Please return to: Read Miner, SCDHEC UST Division, 2600 Bull St., Columbia, SC 29201

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Catherine B. Templeton, Director
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JUN 1 4 2013

UST 27tech DOCKETING

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: **QAPP Contractor Addendum Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760
Releases Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report.

To evaluate the current site conditions, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a groundwater sampling event is necessary. Sampling should include all of the monitoring wells, the stream, trip blanks, field blanks, and field duplicates for BTEX, naphthalene, 1,2-DCA, MTBE, oxygenates, and EDB. The groundwater sampling event should be conducted in accordance with the UST Quality Assurance Program Plan and must be conducted in compliance with all applicable regulations. A copy of Agency QAPP for the Underground Storage Tank Division is available at http://www.dhec.sc.gov/environment/lwm/usthome/Qapp.htm.

Please have your contractor complete and submit the QAPP Contractor Addendum and Cost Agreement within thirty days of the date of this letter. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial pre-approval from the Agency must be issued before work begins**.

On all correspondence concerning this site, please reference UST Permit #11760. If you have any questions, please contact me at (803) 898-0608 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Technical File
Cardno ATC, 400 Northeast Dr., Ste Q, Columbia, SC 29203-5182

UST
Read
JUN 2 7 2013
PROGRAM

UST
2 Rtech
DOCKETING

Appendix B: Contractor Addendum

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For

Former United Oil
UST Permit No. 11760

401 N. Congress St.
Winnsboro, South Carolina

Prepared by: Fred Lyke

CARDNO-ATC
400 Northeast Drive, Unit Q
Columbia, SC 29203

Date: 26/June/2013
Day/Month/Year

CARDNO-ATC
SC Certified Contractor No. 0313

Approvals

Read Miner SC DHEC Project Manager	Signature	Date
Brad Hubbard Contractor QA Manager	Signature	Date 6/25/13
Fred Lyke Site Rehabilitation Contractor	Signature	Date 6/25/13
Ron Benjamin Laboratory Director	Signature	Date 6/25/13

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A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Read Miner	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-898-0673	803-886-6245	minerrs@dhec.sc.gov
Fred Lyke	Site Rehabilitation Contractor	CARDNO-ATC 400 Northeast Dr., Unit Q Columbia, SC 29203	803-735-0003	803-735-0443	Fred.Lyke@Cardno.com
Brad Hubbard	CARDNO-ATC QA Manager	CARDNO-ATC 400 Northeast Drive, Unit Q, Columbia, SC 29203	803-735-0003	803-735-0443	Brad.Hubbard@Cardno.com
Jesse Keeffe	Field Manager and Project Verifier	CARDNO-ATC 400 Northeast Dr., Unit Q Columbia, SC 29203	803-735-0003	803-735-0443	Jesse.Keeffe@Cardno.com
Ron Benjamin	Laboratory Director	Accutest/SPL Environmental - Louisiana 500 Ambassador Caffery Pkwy Scott, Louisiana 70583	800-304-5227	337-237-7838	ronb@accutest.com

Table 1A Addendum Distribution List

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Project Manager	Read Miner	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-898-0673	803-886-6245	minerrs@dhec.sc.gov
Site Rehabilitation Contractor	Fred Lyke	CARDNO-ATC 400 Northeast Drive, Unit Q, Columbia, SC 29203	803-735-0003	803-735-0443	Fred.Lyke@Cardno.com
CARDNO-ATC QA Manager	Brad Hubbard	CARDNO-ATC 400 Northeast Drive, Unit Q, Columbia, SC 29203	803-735-0003	803-735-0443	Brad.Hubbard@Cardno.com
Analytical Laboratory Director	Ron Benjamin	Accutest/SPL Environmental - Louisiana 500 Ambassador Caffery Pkwy Scott, Louisiana 70583	800-304-5227	337-237-7838	ronb@accutest.com
Analytical Laboratory Quality Assurance Manager	Tristan L. Davis	Accutest/SPL Environmental - Louisiana 500 Ambassador Caffery Pkwy Scott, Louisiana 70583	800-304-5227	337-237-7838	tristand@accutest.com
Project Verifier and Field Manager	Jesse Keeffe	CARDNO-ATC 400 Northeast Drive, Unit Q, Columbia, SC 29203	803-735-0003	803-735-0443	Jesse.Keeffe@Cardno.com

Table 2A Addendum Role Identification and Contact Information

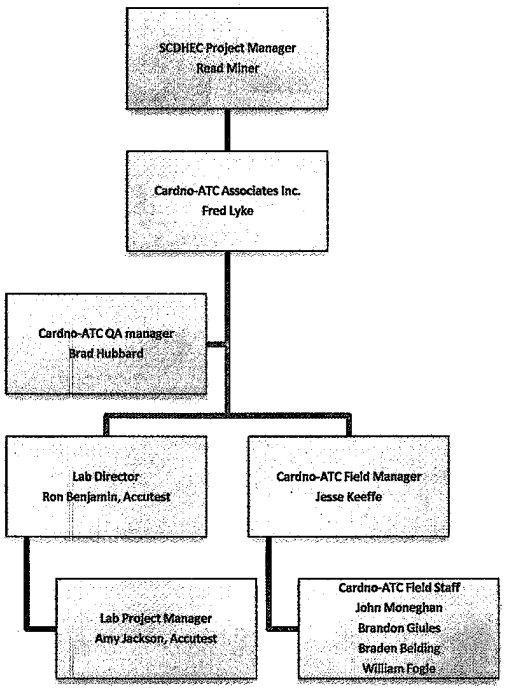


Figure 1A Organizational Chart

DEFINITION OF PROJECT ROLES

Project QA Officer

The project QA officer provides review of field work, documentation of calibration for field instruments, laboratory data, and technical review of reports produced utilizing this data. The QA officer will independently review data generated from this project and determine if the data meets QA/QC criteria as set forth in the SCDHJEC UST Programmatic QAPP. The QA Manager will be responsible for maintaining the official, approved QA Project Plan.

Project Manager

The project manager will be responsible for work conducted during this scope of work and primary point of contact. His duties will include development of the site specific QAPP, supervising field work, documenting any QA failures, determining corrective actions to QA failures, and preparing reports for submission to SCDHEC. The Project Manager is responsible for overseeing adherence to the site specific QAPP during all phases of work.

Contractor Field Manager

The Field Manager is responsible for overseeing site field activities and adherence to the site specific QAPP during the completion of field tasks.

Contractor Field Staff

Contractor field staff will perform sampling and field activities per the QAPP document under the direction of the Project Manager or Field Manager. Field staff will be responsible for collection sampling related data and calibration of field instrument. The Project Manager and or Field Manager in certain situations may also be a member of the field staff.

Project Verifier

Contractor project verifier will confirm by examination and provision of objective evidence that specified requirements have fulfilled.

A5 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The release was reported on August 1, 1997. Following confirmation of the release, soil and groundwater assessments and AFVR were conducted. Most recently an AFVR was submitted to SCDHEC on August 28, 2012. A comprehensive groundwater sampling event has been directed by SCDHEC for this site.

Please answer the following: Does this project fall under UST or Brownfields area?

The work is being conducted under the direction of Read Miner of the South Carolina Department of Health and Environmental Control (SCDHEC) UST Program, Assessment and Corrective Action Division.

A6 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   CARDNO-ATC will collect groundwater samples from the 32 existing monitoring wells associated with this release to determine the extent of the subsurface impact. The location of each existing well is illustrated on Figure 2 attached. All existing wells will be sampled using the purge method prior to sampling. Water quality parameters, including temperature, conductivity, DO, turbidity and pH will be recorded after each volume of a three to five volume purge prior to sample collection. Purge water will be containerized and properly disposed of on site after passing it through a carbon filter. A trip blank will be provided by the laboratory. A field blank will be prepared using lab-supplied water. Also, one duplicate sample will be collected and analyzed.

   The collected groundwater samples will be placed in laboratory-supplied containers, placed on ice, and shipped in accordance with chain-of-custody protocol to Accutest Laboratories in Scott, Louisiana (SCDHEC Certification. No. 73004001). The groundwater samples will be analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, 1-2 DCA, ethanol, and 8 oxygenates using EPA Method 8260B. Each groundwater sample will also be analyzed for EDB using EPA Method 8011.

2. ***The work will begin within _____ after cost approval and sampling should be complete by_____.***

   The work will begin within 30 days after cost approval and sampling should be completed within 90 days of cost agreement approval.

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.***

   There are no known time or resource constraints other than obtaining off-site access for the well installation.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

The site subsurface consists of saprolite weathered from Piedmont Physiographic Province intrusive granite and gabbros, extrusive lava and tuff, and faulted and folded metamorphic rock. Depth to groundwater is 17 feet below land surface. **Figure 1** shows the site location on part of a USGS topographic map. A Site Map showing site features and monitoring well locations is provided as **Figure 2**.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Geologist	Fred Lyke	PG License OSHA *Hazwoper 40 Hr Certificate (annual refresher)	Renewed License June 30, 2012 10/25/12	SC Professional Geologist Certificate	1055 N/A
Field Manager	Jesse Keeffe	PG License OSHA Hazwhopper 40 Hr Certificate (annual refresher)	Renewed License June 30, 2012 10/17/12	Certificate	2308
Field Staff	John Moneghan	OSHA Hazwoper 40 Hr Certificate (annual refresher)	2/23/2013	Certificate	N/A
Field Staff	Braden Belding	OSHA Hazwhopper 40 Hr Certificate (annual refresher)	4/29/13	Certificate	N/A
Field Staff	William Fogle	OSHA Hazwhopper 40 Hr Certificate (annual refresher)	4/25/12	Certificate	N/A
Field Staff	Brandon Guiles	OSHA Hazwhopper 40 Hr Certificate (annual refresher	12/16/2012	Certificate	N/A
QA Officer	Brad Hubbard	OSHA Hazwhopper 40 Hr Certificate (annual refresher)	11/27/12	Certificate	N/A
Lab Director	Ron Benjamin	NA	NA	Lab Certificate	73004001

Table 3A Required Training and Licenses

Fred Lyke of CARDNO-ATC is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: CARDNO-ATC, 400 Northeast Drive, Columbia, SC 29203.

The Laboratory Director of Accutest (Ron Benjamin) is considered qualified and properly trained as long as the commercial laboratory continues to meet the qualification standards as a SC DHEC Certified Laboratory.

It is understood that training records will be produced if requested by SC DHEC.

The Following Laboratory(ies) will be used for this Project:

Commercial Lab(s)

Full Name of the Laboratory: Accutest Laboratories, SPL Environmental
Name of Lab Director: Ron Benjamin
SC DHEC Certification Number: 73004001
Parameters this Lab will analyze for this project:

VOCs by EPA Method 8260B (Benzene, Toluene, Ethylbenzene, Total Xylenes, Naphthalene, MtBE, 1-2 DCA, ethanol, 8 oxyenates), EDB by Method 8011.

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A9 Documents and Records

Personnel will receive the most current version of the QAPP Addendum via: (Check all that apply)

_____ US Mail _____Courier _____Hand delivered

Other (please specify): Fed-ex express Priority Overnight Service

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Laboratory Reports	Accutest	Electronic	Accutest - 7 years after project closure Pantry- Indefinitely CARDNO-ATC Files and network – 20 years	Accutest Network Pantry Network CARDNO-ATC Network
Project Reports	CARDNO-ATC	Electronic	CARDNO-ATC Network – 20 years after project closure Pantry- Indefinitely	CARDNO-ATC Network Pantry Network
SC DHEC Correspondence	SC DHEC	Electronic	CARDNO-ATC Network - 10 years after project closure Pantry Indefinitely	CARDNO-ATC Network Pantry Network

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Item	Start Date	End Date	Comments
QAPP Addendum Preparation / Approval	6/14/13	6/26/13	QAPP Addendum preparation began upon receipt of SCDHEC directive.
Groundwater Sampling	Within 30-days of QAPP Approval	Within 60-days of QAPP Approval	All sample points are existing.
Report Preparation / Submittal	Upon receipt of Laboratory Analytical Results (2 weeks after sample collection)	Within 60-days of QAPP Approval	Report will be submitted to SCDHEC within timeframe indicated in the Directive.

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP. SOPs **CARDNO-ATC-FP-001** describes the protocol for measuring static water levels and **CARDNO-ATC-FP-002** describes the collection of water quality meter readings and groundwater samples.

Prior to sample collection, the depth to groundwater will be measured using an oil/water interface probe. The locations of each sample location are included on **Figure 2**. Previously sampled monitoring wells with screens that intersect the water table will be sampled using the SCDHEC "no purge" protocol. The dissolved oxygen level will be recorded, and then a sample will be collected without purging. Monitoring wells that have a submerged screen or that have not been sampled within the previous 12 months will be purged prior to sampling with water quality parameters, including temperature, conductivity, and pH will be recorded after each volume of a three to five volume purge. Purge and decontamination water will be containerized and properly disposed of on site after passing it through a carbon filter.

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	0
Ground Water from monitoring wells	31
From Drinking/Irrigation water wells	0
From surface water features	1
Total number of Water samples	38 (includes 2 Trip & 2 Field Blank and 2 Duplicate)

The samples will be (check as many as apply): ____Homogenized ____Split

If any of the above are circled please indicate how will it be done and the equipment needed.

Not Applicable

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

Groundwater samples will be collected using new, disposable bailers and new, colorless nylon bailer cord. Nitrile gloves will be worn by field staff and changed between tasks and locations. Sampling equipment and gloves will be disposed as solid waste at a municipal facility.

An interface probe and water quality meter will be used during sample collection. Decontamination procedures for the equipment are described below.

If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.

Groundwater elevation measurements will be collected using an oil/water interface probe and water quality readings will be collected using a multi-parameter water quality meter (as discussed

in Section B-6). The interface probe and water quality meter will be cleaned between wells with a solution of liquinox and rinsed with deionized water. Decontamination water will be containerized with purge water in properly disposed of on site after passing it through a carbon filter.

Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.

Fed-ex will be used to ship the samples to the lab.

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Interface probe not working	Replace batteries Rent alternate Interface probe	Note in Field Book	Field Staff
Well Can Not Be Located	Use metal detector to attempt to locate road box. Consult Site Map Call Project Manager	Note in Field Book	Field Staff

Table 6A Field Corrective Action

B3 Sample Handling and Custody

1. ***How will the samples get from the Site to the Lab to ensure holding requirements are met?***
   Samples will be transported from the site to the CARDNO-ATC office in a cooler, on ice, by the field staff. At the office, samples will be secured in bubble wrapping, packaged on ice, and sealed with custody seals, into a lab-supplied cooler. The entire cooler will be sealed with packing tape and sent to the lab using priority overnight Fed-Ex.

2. ***How will the contactors cool the samples and keep the samples cool?***
   Samples will be placed into a cooler with ice immediately after collection. Fresh ice will be placed into the cooler prior to it being sealed for shipment. If samples are to be stored overnight prior to shipment, they will be placed in a dedicated sample refrigerator.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***
   Measure and record on the COC the temperature of the sample cooler with a thermometer calibrated to the nearest 0.5°C using step 9.2.2.3.3*. The acceptance range for sample receipt is from just above freezing up to 6° C. Be sure to account for any correction factors associated with the thermometer used for the temperature measurement (factor located on the thermometer ID tag).

   9.2.2.3.3*

   1) Using a calibrated thermometer, measure and record the temperature of the temperature blank if present.
   2) If no temperature blank is present, centrally locate the thermometer in the cooler trying not to contact ice and close the cooler.
   3) After at least two minutes (but enough time for the thermometer reading to stabilize) read the temperature of the thermometer. Record the temperature on the associated COC.
   4) If the measured temperature is above the range of the thermometer (>15oC), use the calibrated IR gun to measure the cooler temperature. Record the temperature on the associated COC.

4. ***Where will the samples be stored in the Lab once they are received?***
   For temporary storage of containers requiring volatile analyses, the containers will be segregates and stored in one of the volatile storage coolers containing storage blanks (typically Cooler 5 or Cooler 6 depending on the matrix of the sample).

   Following sample transfer to the sample custodian, samples are assigned to various secured, refrigerated storage areas depending upon the test to be performed and the matrix of the samples. The location (refrigerator and shelf) of each sample is entered into the LIMS. Samples remain in storage until the laboratory technician retrieves the samples for analysis.

   Samples for volatile organics analysis are placed in storage in designated refrigerators by the sample custodian and immediately transferred to the organics group control. Sample custody is

transferred to the department designee. These samples are segregated according to matrix to limit opportunities for cross contamination to occur.

Organics staff is authorized to retrieve samples from these storage areas for analysis. When analysis is complete, the samples are placed back into storage.

5. ***Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.***

Each sample will be appropriately labeled and logged into the chain of custody as it is collected. The chain of custody will be included in the cooler when it is shipped to the lab.

Residual samples will be stored until they have been properly analyzed in approved coolers, ice boxes, walk in coolers and or shelves that shall contain the approved weight for the contents and shall not bear a compatibility issue with samples held in that specific designated area. All samples will be disposed of as outlined in Federal and State regulations. It is SPL policy that all samples be disposed of in a environmentally safe manner. There are three acceptable methods of disposal for samples handled at the SPL laboratory. They are as follow; direct incineration, neutralization, land burial and volume reduction. In every case the method of disposal is dependent on the material, the hazards present as well as Federal and State regulations. (See Laboratory SOP GEN-P12.06)

An example of the **chain of custody** is attached.

B4 Analytical Methods

1. 1. Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:

Parameter	SOP ID*	Method Referenced	Equipment	Comments
VOCs (Benzene, Toluene, Ethylbenzene, Total Xylenes, Naphthalene, MtBE, & Oxygenates)	VO-M04.13	8260B	GCMS	
EDB	GS-M28 09_504-8011	EDB and DBCP Microextraction and Gas Chromatography by EPA 504.1 and 8011	GC	
Water Table Elevation	CARDNO-ATC-FP-001	Field Protocol	Interface Probe	
Field Parameters (pH, Conductivity, DO, turbidity, Temperature)	Cardno-ATC-FP-002 Cardno-ATC-WQM-001 Cardno-ATC-WQM-002	Field Protocol	Water Quality Meter (YSI or Horiba) LaMotte Turbidity Kit	

Table 7A Analytical SOPs and Referenced Methods

*** This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

Abbreviation	Lab Identification of this SOP	Full Name of the SOP
QSM	QSM & SOP GEN-P12.06	Quality Systems Manual
SM-P01.15	SPL/LE/SM-P01.15	Sample Receipt and Logging
GS-M28 09	GS-M28 09_504-8011	EDB and DBCP Microextraction and Gas Chromatography by EPA 504.1 and 8011
VO-M04.13	SPL/LE/VO-M04.13	Volatile Organics – SW846 Method 8260B
GEN-P12.06	SPL/LE/GEN-P12.06	Laboratory Protocol for the Disposal of Wastes
Cardno-ATC-WQM-001	Cardno-ATC-WQM-001	YSI 556MPS Calibration Procedure (with LaMotte Turbidity Kit)
CARDNO-ATC-WQM-002	CARDNO-ATC-WQM-002	Horiba U-50 Series Calibration Procedure
CARDNO-ATC-FP-001	CARDNO-ATC-FP-001	Static Water Level Reading
CARDNO-ATC-FP-002	CARDNO-ATC-FP-002	Water Quality Meter Reading

Table 8A SOP Abbreviation Key

2. Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:

Failure	Response	Documented Where?	Individual Responsible
Laboratory Control Limits Not Met	Corrective Action form initiated and re-analysis of affected samples. See Lab QSM.	Laboratory form and database	Lab Analysts/Technicians Lab Quality Assurance Manager
DO Meter does not match the equilibration charts	Re Calibrate, check again. If still out, replace membrane and recalibrate.	Documented in the Field Logbook	Field Scientist
Water Quality Meter does not meet calibration acceptance criteria	Re Calibrate, check again. If still off, clean in accordance with manufacturer specifications. Re Calibrate, check again. If still off, use alternate water quality meter,	Documented in the Field Logbook and Equipment Calibration Logbook	Field Scientist

	or rent water quality meter and have unit serviced.		

Table 9A Corrective Action Procedures

3. ***Identify sample disposal procedures.***
   For specific laboratory procedures, refer to QSM & SOP GEN-P12.06.

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
VOCs	Water	30-days after report completion	Dilution and disposal to municipal sewer, or labeled as hazardous, segregated, and disposed under manifest	Depends on concentration of constituents
EDB	Water	30-days after report completion	Dilution and disposal to municipal sewer, or labeled as hazardous, segregated, and disposed under manifest	Depends on concentration of constituents
Water Quality Parameters	Water	Within 90 days	Disposed with purge water by non-hazardous waste manifest	

Table 10A Sample Disposal

4. ***Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable).***
   Not Applicable

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. ***Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.***

For specific laboratory procedures, refer to QSM2011, VO-M04-13, and MT-M19.14

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Interface Probe	Multiple	Battery Change	6 months	9V battery / front desk	Field Scientist
YSI 556 MPS	04M1126 A1 09M1010 18 11E1001 77	Battery Change Clean DO Sensor Silver Anode Cleaning Gold Cathode Cleaning pH / ORP Sensor Cleaning	As Needed After Use Monthly As needed As needed As needed	AA batteries / front desk DI Water Replace KCl Solution & Membrane / Equipment Room Probe Conditioning Kit / Equipment Room Probe Conditioning Kit / Equipment Room Cotton Swab / Equipment Room	Field Scientist
LaMotte Turbidity Kit	Turbidity Column, 0-200 JTU, Code 7519-01	Rinse column after each use	After each use	DI water	Field Scientist
Horiba 5000	U-52 UKXS0NYX U-50 KBBLFGGB	Battery Change Clean DO Sensor pH Electrode	As Needed After Use Every 2 months Every 2 months	AA batteries / front desk DI Water / Equipment Room Replace KCl Solution & Membrane / Equipment Room Replace KCl Solution / Equipment Room	Field Scientist
Laboratory: Hewlett-Packard or other equivalent GC/MS system	Model # 5890 with EPC/5971 GC/MS system	Tuning and Calibration	A minimum of every 12 hours	At least 5 other instruments are available	Lab Analysts/Technicians Lab Quality Assurance Manager

Table 11A Instrument and Equipment Maintenance

2. ***Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this***

For specific laboratory procedures, refer to QSM2011, VO-M04-13, GS-M28 09, and MT-M19.14

Instrument/Equipment &	Type of Inspection	Requirement	Individual	Resolution of Deficiencies

Serial Number			**Responsible**	
Interface Probe / Multiple	General	Turn on and press test	Field Scientist	Change battery
YSI 556 MPS / 04M1126 A1 YSI 556 MPS / 09M1010 18 YSI 556 MPS /11E1001 77	General / Calibration	Visually examine for build-up of scale, calibrate	Field Scientist	Clean, recalibrate. If unable to calibrate, contact Project Manager to send for service
LaMotte Turbidity Kit, Turbidity Column 0-200 JTU, Code 7519-01	General	Visually examine for build-up of scale, calibrate	Field Scientist	Clean column using brush, use new reagent bottle
Horiba 5000 U-50 / UKXS0NYX or U-52 / KBBLFGGB	General / Calibration	Visually examine for build-up of scale, calibrate	Field Scientist	Clean, recalibrate. If unable to calibrate, contact Project Manager to send for service
Laboratory: Hewlett-Packard or other equivalent GC/MS system	Tuning and Calibration	A minimum of every 12 hours	Lab Analysts/Technicians Lab Quality Assurance Manager	At least 5 other instruments are available while equipment is repaired

Table 12A Instrument and Equipment Inspection

B7 Instrument Calibration and Frequency

1. ***Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.***
2. ***Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.***
3. ***Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.***

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Oil/Water Interface Probe	Measure against steel tape	Monthly	+/-0.01 ft. per 10 ft.	Replace tape	Field Staff	N/A
YSI-556MPS	See SOP	Daily, prior to use	+/- 10%	Follow Manufacturers Recommendations	Field Staff	WQM-001
LaMotte Turbidity Kit, Turbidity Column 0-200 JTU, Code 7519-01	See SOP	Daily prior to use	+/- 10%	Follow Manufacturers Recommendations	Field Staff	WQM-001
Horiba 5000	See SOP	Daily, prior to use	+/- 10%	Follow Manufacturers Recommendations	Field Staff	WQM-002
GC/MS	Analyze Calibration Standards at a minimum of 5 concentrations	Calibration verification conducted a minimum of every 12 hours	Results to be compared to Table I in the SOP	Recalibrate or repair	Lab Staff	VO-M04.13 And GS-M28 09_504-8011

Table 13A Instrument Calibration Criteria and Corrective Action

*** This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. ***Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.***
2. ***Identify the individual(s) responsible for this.***

For specific laboratory procedures, refer to QSM2011, VO-M04-13, and MT-M19.14

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Nitrile Gloves	All	Sealed Box	Store at room temp, keep clean	John Taylor (Charlotte) Bob Bolton (Columbia)
Disposable Bailers	All	Sealed Plastic Wrapper	Store at room temp, keep clean	John Taylor (Charlotte) Bob Bolton (Columbia)
Nylon Bailer Cord	All	Sealed bucket	Store at room temp, keep clean	John Taylor (Charlotte) Bob Bolton (Columbia)
DI Water	All	Laboratory sealed container	Store with sample containers	John Taylor (Charlotte) Bob Bolton (Columbia)
Isopropyl Alchohol	All	Sealed container from storeroom	Office area, store at room temp	John Taylor (Charlotte) Bob Bolton (Columbia)
Liquinox		Sealed container from storeroom	Office area, store at room temp	John Taylor (Charlotte) Bob Bolton (Columbia)
Calibration Standards	All	Must be within expiration date and acceptable for allowable method	Store at room temp, close bottles tightly	John Taylor (Charlotte) Bob Bolton (Columbia)
Sample Containers	Accutest	Certified, Pre-Cleaned, Preserved	Store at room temp until filled, then cool to 4° C, keep clean	Lab Staff John Taylor (Charlotte) Bob Bolton (Columbia)
Insulated Containers	Accutest	Used only for sample transportation, in good condition	Office area, store at room temp	Lab Staff John Taylor (Charlotte) Bob Bolton (Columbia)

Table 14A List of Consumables and Acceptance Criteria

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. ***Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.***
2. ***Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.***
3. ***Indicate the acceptance criteria for these data sources and/or models.***

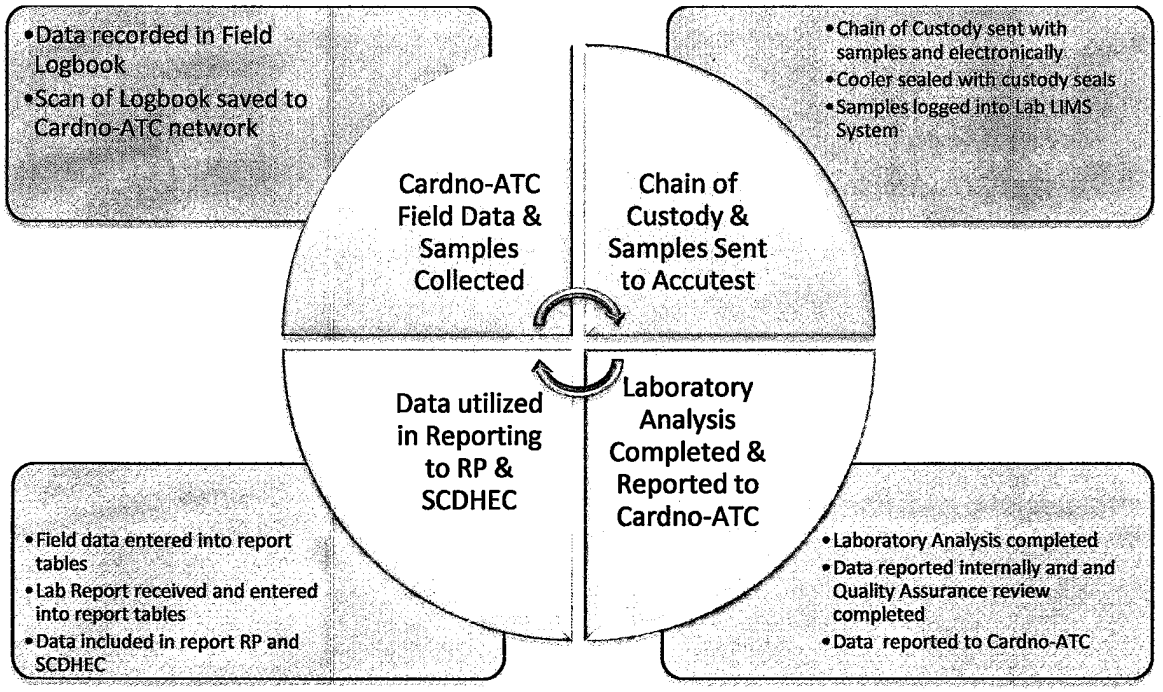
Data Source	Used for	Justification for use in this project	Comments
Historical Data such as Water levels, screened intervals, chemical concentrations levels from previous reports.	Used to base field decisions (eg purging) upon.	Site specific data directly related to determine the process used to gather new data.	Historical data available from Responsible Party (RP) or Freedom Of Information.
Wunderground.com	Weather data	Accurate weather information	More accurate than estimates provided by field staff

Table 15A Non-Direct Measurements

4. ***Identify key resources/support facilities needed.***
   Not Applicable

B10 Data Management

Describe the data management scheme from field to final use and storage.



1. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Field Data Controls
Field notes are recorded in bound, water resistant log books using indelible ink. Pages are dated at the start of the field day, and the name or initials of the field staff, weather, and required activities for the day are recorded. Chain-of-custody documentation information is recorded on field sheets which accompany samples to the lab, and also entered into a limited access and password protected database which is transmitted electronically to the lab. Data collected in the field is also entered into a limited access and password protected database.

Project related computer files are stored on a restricted access network server. Information is backed-up daily. Logbooks are scanned into the network server.

Laboratory Controls - Refer to the Laboratory QSM
Logbook Control. All laboratory logbooks are controlled documents that are comprised of approved forms used to document specific processes. New logs are numbered and issued to a specific individual who is assigned responsibility for the log. Old logs are returned to QA for entry into the document archive system where they are retained for ten (10) years. Laboratory staff may hold a maximum of two consecutively dated logbooks of the same type in the laboratory including the most recently issued book to simplify review of recently completed analysis.

Controlled Documents. Key laboratory documents that are distributed internally and externally are numbered for tracking purposes. Individuals receiving documents, who must be informed when changes occur, receive controlled copies of those documents. Controlled status simplifies document updates and retrieval of outdated documents. Control is maintained through a document numbering procedure and document control logbook which identifies the individual receiving the controlled document and the date of receipt. Key documents are also distributed as uncontrolled documents if the recipient does not require updated copies when changes occur. Key documents in uncontrolled status are numbered and tracked using the same procedures as controlled documents.

Technical Records. All records related to the analysis of samples and the production of an analytical result are archived in secure document storage or on electronic media and contain sufficient detail to produce an audit trail which re-creates the analytical result. These records include

information related to the original client request, bottle order, sample login and custody, storage, sample preparation, analysis, data review and data reporting. Each department involved in this process maintains controlled documents which enable them to maintain records of critical information relevant to their department's process.

Quality Control Support Data & Records. All information and data related to the quality system is stored in restricted access directories on the network server. Information on these directories is backed-up daily. Users of the quality assurance information and data have "read only" access to the files contained in the directory. The QA staff and the laboratory director have write capability in this directory. This directory contains all current and archived quality system manuals, SOPs, control limits, MDL studies, precision and accuracy data, official forms, internal audit reports, proficiency test scores and metrics calibration information.

2. How does the lab ensure that there are no errors in samples records including times when sample information is compiled, data calculated and/or transmitted.

Sample Login. Following sample custody transfer to the laboratory, the documentation that describes the clients analytical requirements are delivered to the sample login group for coding and entry to the Laboratory Information Management System (LIMS). This process translates all information related to collection time, turnaround time, sample analysis, and deliverables into a code which enables client requirements to be electronically distributed to the various departments within the laboratory for scheduling and execution. The technical staff is alerted to client or project specific requirements through the use of a unique project code that is electronically attached to the job during login. The unique project code directs the technical staff to controlled specifications documents detailing the unique requirements.

Sample Retrieval for Analysis. Analysts from individual laboratory departments retrieve samples for analysis. Internal custody transfers using the bar code scanning system occur whenever the samples change hands or locations. After sample analysis has been completed, the department returns the samples to the storage area and completes the custody transfer from the department of the transfer back to sample management or sample storage.

QA Monitoring. The QA staff conducts a spot review of completed data packages prior to client release for specified projects. This review includes an examination of QC data for compliance and trends indicative of systematic difficulties. If non-conformances are detected, the QA staff places an immediate stop on the release of the data and initiates corrective action to rectify the situation. The data package is released when the package becomes compliant with all quality requirements. If compliance is not possible, the data is qualified and an appropriate case narrative is generated for inclusion in the data package. If the review reveals trends indicative of systematic problems, QA initiates an investigation to determine the cause. If process defects are detected, a corrective action is implemented and monitored for effectiveness.

Performance Limits. The Quality Assurance Director or his designee is responsible for compilation and maintenance of all precision and accuracy data used for performance limits. Quality control data for all test methods are accumulated and stored in the laboratory information management system (LIMS). Parameter specific QC data is extracted annually and statically processed to develop laboratory specific control limits. The new limits are reviewed and approved by the supervisory staff prior to their use for data assessment. The new limits are used to evaluate QC data for compliance with method requirements for a period of one year. Laboratory generated limits appear on all data reports.

Data Package Review. Accutest employs multiple levels of data review to assure that reported data has satisfied all quality control criteria and that client specifications and requirements have been met. Each production department has developed specific data review procedures, which must be completed before data is released to the client.

Analytical Review. The analyst conducts the primary review of all data. This review begins with a check of all instrument and method quality control and progresses through sample quality control, concluding with a check to assure that the client's requirements have been executed. Analyst checks focus on a review of qualitative determinations and checks of precision and accuracy data to verify that existing laboratory criteria have been achieved. Checks at this level may include comparisons with project specific criteria if applicable. The analyst has the authority and responsibility to perform corrective action for any out-of-control
parameter or nonconformance at this stage of review. Analysts who have met the qualification criteria for the method in use perform secondary, peer level data reviews. Analyst qualification requirements include a valid demonstration of capability and demonstrated understanding of the method SOP. Section supervisors may perform secondary review in-lieu of a peer review. Supervisors review 100% of the data produced by their department. It includes a check of all manual calculations; an accuracy check of manually transcribed data from bench sheets to the LIMS, a check of calibration and continuing calibration, all QC criteria and a comparison of the data package to client specified requirements. Also included are checks to assure the appropriate methodology was applied and that all anomalous information was properly flagged for communication in the case narrative. Supervisors have the authority to reject data and initiate re-analysis, corrective action, or reprocessing. All laboratory data requiring manual entry into LIMS system is double-checked by the analysts performing initial data entry and the section supervisor. Verification of supervisory review is indicated on the raw data summary by the supervisor's initials and date. Electronic data that is manually edited at the bench by the primary analyst is automatically flagged by the instrument data system indicating an override by the analyst. All manual overrides must be verified and approved by a supervisor who initials and dates all manual changes. Hard copies of manually integrated chromatographic peaks are printed that clearly depict the manually drawn baseline. The hard copy is reviewed and

approved by the section supervisor (initialed and dated) and included in the data package of all full tier reports or the archived bCardno-CARDNO-ATCh records of commercial report packages. Edits to electronic data that have already been committed to the LIMS database are controlled through the use of the QA function in LIMS which does not allow edits unless the data is released back to the laboratory by a senior staff member with administrative rights. Permission to access this program is limited to those approved by the upper levels of laboratory management and is controlled by the Information Technology staff. A GALP electronic audit record trail is maintained for all changes that are made and is automatically appended to the record.

The group manager performs a tertiary review on a spot check basis. This review includes an evaluation of QC data against acceptance criteria and a check of the data package contents to assure that all analytical requirements and specifications were executed.

Report Generation Review. The report generation group reviews all data and supporting information delivered by the laboratory for completeness and compliance with client specifications. Missing deliverables are identified and obtained from the laboratory. The group also reviews the completed package to verify that the delivered product complies with all client specifications. Non-analytical defects are corrected before the package is sent to the client.

Project Management/Quality Control Review. Spot-check data package reviews are performed by the project management staff. Project management reviews focus on project specifications. If the project manager identifies defects in the product prior to release, he initiates immediate corrective action to rectify the situation. The QA staff performs a post-delivery check of completed data packages to verify completeness and compliance with established quality control procedures. Approximately 10% of Full-Deliverables data packages are reviewed. Detected deficiencies are documented and corrective actions initiated as necessary. Data review checklists are electronic documents that may be used to assist with the review process. These checklists are archived in the QA Directory of the network server. The QA review focuses on all elements of the deliverable including the client's specifications and requirements, analytical quality control, sample custody documentation and sample identification. QA reviews at this step in the production process are geared towards systematic process defects, which require procedural changes to effect a corrective action. However, if defects are identified that have an adverse affect on data, the client is immediately informed following standard notification procedures. QA data review is not used in lieu of a peer level review or a supervisory review.

Data Reporting. Analytical data is available for release to clients following a secondary review by the group supervisor. Data release at this stage of the process is limited to electronic information, which is released to clients through a secure, encrypted, password protected, Internet connection. Hard copy support data is compiled by the report generation group and assembled into the final report. The report is sent to the client following reviews by the report generation staff and the project manager

All data reports include specified information, which is required to identify the report and its contents. This information includes a title, name and address of the laboratory, a unique report number, total number of pages in the report, clients name and address, analytical method identification, arriving sample condition, sample and analysis dates, test results with units of measurement, authorized signature of data release, statement of applicability, report reproduction restrictions and NELAC certification requirements. Data reports for the Department of Defense ELAP also include the time of preparation and analysis.

Electronic Data Reduction. Raw data from sample analysis is entered into the laboratory information management system (LIMS) using automated processes or manual entry. Final data processing is performed by the LIMS using procedures developed by the Company. All LIMS programs are tested and validated prior to use to assure that they consistently produce correct results. The Information Technology Staff performs software validation testing. The testing procedures are documented in an SOP. Software programs are not approved for use until they have demonstrated that they are capable of performing the required calculations.

Documentation & Communication. Routine corrective actions are documented as part of the analytical record. Notations are made in the comments section of the analytical chronicle or data sheet detailing the nonconformance and corrective action. Continuation of the analysis indicates that return to control was successful. Corrective actions for process changes are documented, tracked and monitored for effectiveness. Supervisors or senior staff members may initiate corrective actions by generating a corrective action using the corrective action database application. The corrective action database is an Access application. The initiator generates the corrective action investigation form, which is documented, tracked, distributed to responsible parties and archived through the application. The application assigns a tracking number, initiation data and due date to each action and copies the corrective action form to the database. E-mail message containing the form is automatically distributed to the responsible parties for resolution. The responsible party identifies the root cause of the defect, initiates the immediate fix and develops and implements the procedural change. Existing documentation such as SOPs are edited to reflect the change. The affected staff is informed of the procedural change through a formal training session. The training is documented and copies are placed into individual training files. The corrective action form is completed by the responsible party and signed whereby email acknowledgement is sent to the department manager and the QA staff using the database application. Signed and completed corrective action forms are maintained in the corrective action database. This entire database is backed up and archived daily.

Monitoring. The QA Staff monitors the implemented corrective action until it is evident that the action has been effective and the defect has been eliminated. The corrective action database is updated by QA to reflect closure of the corrective action. Additional monitoring of the

corrective action is conducted during routine laboratory audits. Additional monitoring of the corrective action is conducted by adding the corrective action to a verification list by the QA staff at closure. Verification is performed by the QA Staff to assure that the corrective action has remained in effect is scheduled for six (6) months from the initial closure date. If QA determines that the corrective action response has not effectively remedied the deficiency, the process continues with a re-initiation of the corrective action. Corrective action continues until the defect is eliminated. If another procedural change is required, it is treated as a new corrective action, which is documented and monitored using established procedures.

Client Notification. Defective processes, systematic errors, and quality defects, detected during routine audits may have negative impacts on data quality. In some cases, data that has been released to clients may be affected. If defective data has been released for use, Accutest will notify the affected clients of the defect and provide specific details regarding the magnitude of the impact to their data.

3. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Field Data Archiving
Logbooks are scanned into the network server. Project related data is maintained in computer files, which are stored on a restricted access network server. Information is backed-up daily. Hard copies of files are stored on-site for a minimum of ten years after site closure.

Laboratory Data Archiving - Refer to the Laboratory QSM
Report and Data Archiving. Accutest Laboratories produces digital files of all raw and processed data which is maintained for a minimum period of seven (7) years. The archived files consist of all raw data files and source documents associated with the analysis of field samples and proficiency test samples. Data files and source documents associated with method calibration and project and method quality control are also archived. After seven years, the files may be discarded unless contractual arrangements exist which dictate different requirements. Client or regulatory agency specific data retention practices are employed for several government organizations such as the Louisiana Department of Environmental Quality, Department of Defense and the Massachusetts Department of Environmental Protection that require a retention period of ten (10) years. Data archiving may also be extended up to ten (10) years for specific commercial clients in response to contractual requirements.

Either complete date and time stamped PDF reports or dated hardcopy reports are generated automatically from the laboratory information management system (LIMS) using the source documents archived on the document server. These source documents are maintained on a document server and archived to primary and clone tapes. The primary tapes remain on premises while the clone tapes are taken to a secure offsite location for permanent storage. Both the primary and clone tapes remain in storage for the remainder of the archive period.

Section C Assessment and Oversight

C1 Assessment and Response Actions

1. ***The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours.. Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?***

   On-site audits will be conducted daily by phone and email between field staff and/or CARDNO-ATC Field Manager, CARDNO-ATC Project Manager, or CARDNO-ATC QA Manager. If a second field staff or Field Manager is on-site, they will review field instrument calibration results. Experienced staff will be utilized to conduct groundwater sampling in accordance with SCDHEC protocols. The UST Section Project Manager may request or require more frequent field audits. All CARDNO-ATC employees have the authority to stop work if any procedural and/or safety problems are seen.

2. ***The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?***

   Accutest operates a quality program which meets the requirements for laboratory operations established by the international community. Accutest has implemented a Quality System that follows ISO Guide 17025, General Requirements for the Competence of Calibration and Testing Laboratories. The structure of ISO Guide 17025 has been adopted by the National Environmental Laboratory Accreditation Program (NELAP), the voluntary national accreditation program originally established by the USEPA. NELAP has established a uniform national standard for environmental laboratories that places a strong emphasis on quality systems.

   The Quality System at Accutest has been designed to meet NELAP standards. Accutest was among the first laboratories to submit applications to the approved state accrediting authorities for recognition as a NELAP accredited laboratory. All laboratories in the Accutest network are NELAP accredited.

   In addition, each laboratory report Case Narrative and Quality Control Report will be reviewed to determine data usability. Exceptions and quality control results that are outside of acceptable quality control limits will be analyzed and discussed with the laboratory project manager. If continuous quality control issues are reported, a different lab may be selected for confirmation analysis.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

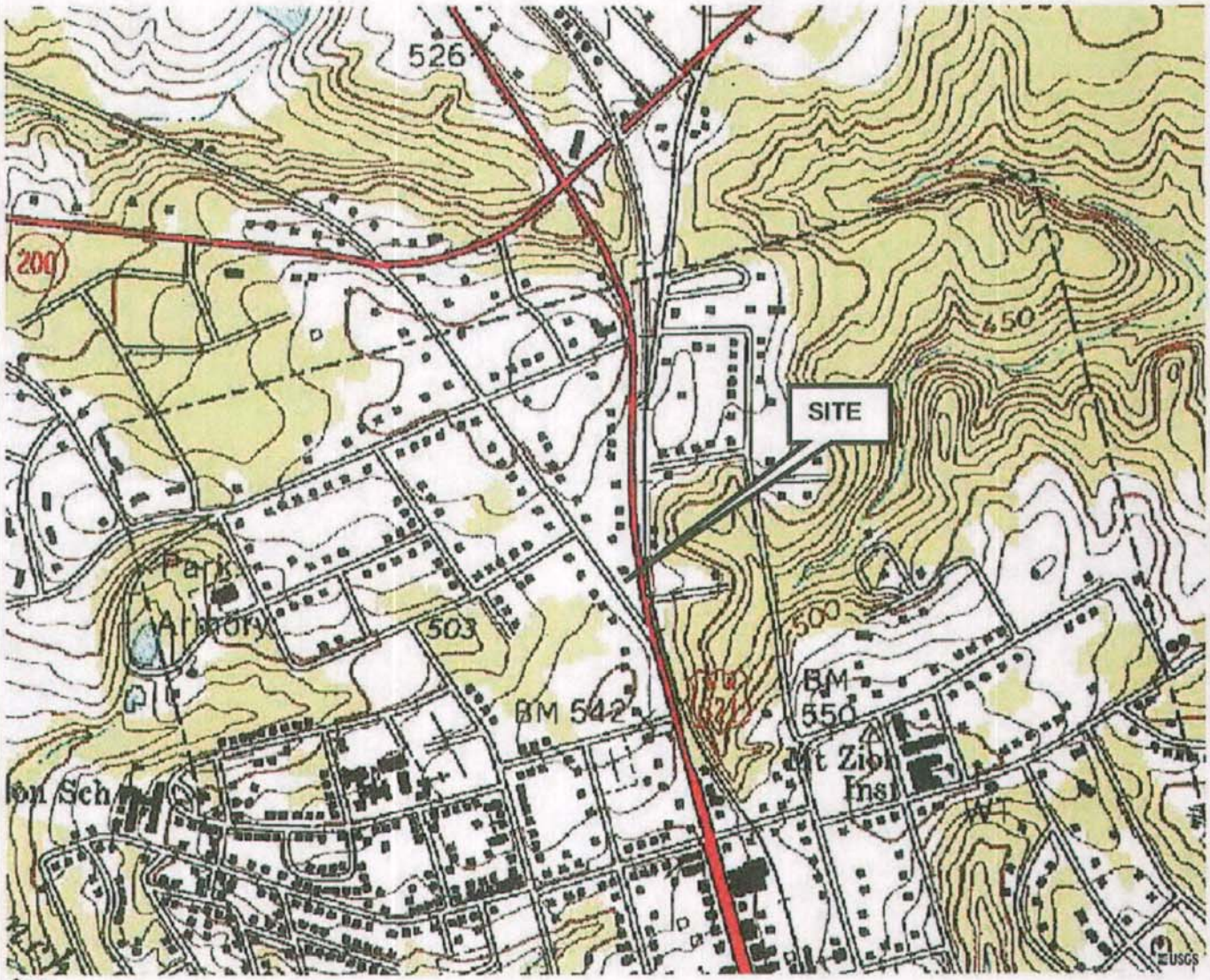
See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Attachments

Figures
Figure 1 – Site Location Map
Figure 2 – Site Map

CARDNO-ATC SOPs
CARDNO-ATC-FP-001 – Static Water Level Measurement
CARDNO-ATC-FP-002 – Water Quality Meter Readings
CARDNO-ATC-WQM-001 – Calibration of Horiba 50 Series
CARDNO-ATC-WQM-002 – Calibration of YSI-556

Accutest Documents
Chain of Custody – Blank
Accutest SOPs available if required. Not attached to save paper.



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina

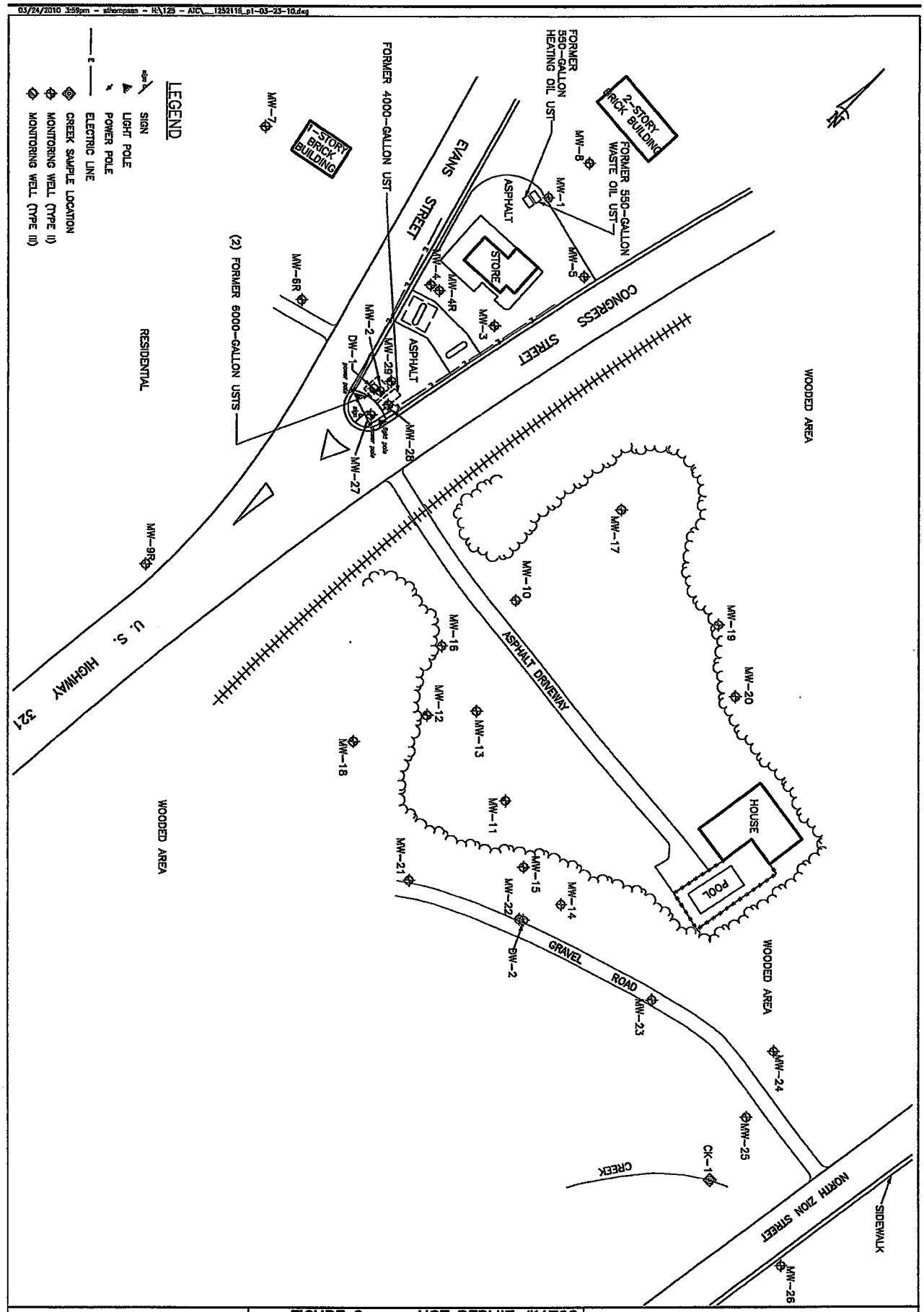
P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

03/24/2010 3:59pm - sthompson - H:\129 - ATC__1252116_p1-03-23-10.dwg



NOTES:

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		JH		1"=80'	03-23-2010	14.25384.0012

Soil Sample Collection Protocol

Soil Sample Collection (Soil Boring)

1. Protect the ground surface using plastic sheeting.
2. If using direct push technology; decontaminate direct push tools using steam pressure washer prior to each borehole. Use factory decontaminated tubes for soil collection if used with direct push tools. If using hollow stem augers; decontaminate augurs using steam pressure washer prior to each borehole and use steam pressure washer to decontaminate split spoons prior to each soil sample collected. If using a stainless steel hand auger; auger will be decontaminated prior to each boring by using soapy water and brush to clean auger, then rinsed with tap water, and rinsed again using DI water.
3. Using direct push, hollow stem auger, or hand auger; sample device will be advanced with soil collected at 5 foot intervals. Each soil sample collected will be placed into a plastic baggie and allowed to volatize for at least 5 minutes. The headspace in each sample baggie will be analyzed using a organic vapor analyzer to determine a Total Petroleum Hydrocarbon (TPH) concentration. The sample exhibiting the highest OVA reading will be selected for laboratory analysis. Soil samples collected for TOC, Sieve Analysis and TPH (as required in Tier I assessments) will be collected in a similar fashion using location selection criteria outlined in the Programmatic QAPP.
4. Fill the appropriate, laboratory provided sample containers with the soil selected for analysis.
5. Label the sample using the format: UST Permit No. – Boring ID (00000-SB-01). Enter the sample into Chain-of-Custody control.
6. Boring will then either be completed as a monitoring well, grouted to land surface if groundwater encountered, or soil placed back into the borehole if groundwater not encountered. Any borehole soils not placed back into the boring will be drummed, labeled, and stored on site for proper disposal.

Packaging and Shipment of Soil Samples

1. Package each sample by wrapping the containers in bubble wrap and enclosing them in sealed Ziploc bags.
2. Include a signed chain-of-custody in the cooler.
3. Seal the cooler closed with custody seals and packing tape, taking care to cover all openings with tape.

Free Product Fingerprint Sample Collection Protocol

Free Product Sample Collection (Monitoring Well)

1. Protect the ground surface using plastic sheeting and/or an oil absorbent.
2. Determine the thickness of the free product using an oil/water interface probe.
3. Using a new, sealed disposable bailer and new, colorless nylon string, gently lower the bailer into the well until the bottom of the bailer is below the bottom of the free product.
4. Carefully drain the excess water from the bottom of the bailer into a properly labeled, DOT approved free product recovery drum.
5. Fill the appropriate, laboratory provided sample containers with the remaining free product.
6. Label the sample using the format: UST Permit No. – Well ID (00000-MW-01). Enter the sample into Chain-of-Custody control.
7. Empty any remaining free product into the free product recovery drum.

Comparison Virgin Product Sample Collection (Dispenser)

1. Protect the ground surface using plastic sheeting and/or an oil absorbent.
2. Using new wide mouth, 16 oz or larger, glass jars, carefully dispense 4 to 5 oz of each available octane from the gasoline dispensers into a separate jar.
3. Carefully transfer the product samples into the appropriate, laboratory provided sample containers.
4. Label the sample using the format: UST Permit No. – Octane (00000-87). Enter the sample into Chain-of-Custody control.
5. Empty any remaining product into the free product recovery drum.

Packaging and Shipment of Product Samples

1. Package each sample by wrapping the containers in bubble wrap and enclosing them in sealed Ziploc bags.
2. Place the sealed bags into a cooler and surround them with oil absorbent materials.
3. Include a signed chain-of-custody in the cooler.
4. Seal the cooler closed with custody seals and packing tape, taking care to cover all openings with tape.

Static Water Level Survey

1. During a sampling event, a static water level survey will be conducted prior to well purging and sampling. The top of each well has been surveyed to a standard elevation. Static water levels will be measured from the top of casing using an electronic oil/water interface probe or a water level indicator or other suitable device in designated wells.
2. Data will be recorded in on-site in dedicated site field logbooks. If certain monitoring wells are found to be dry or contain insufficient water for sampling, those wells were not be sampled during the scheduled event.
3. To minimize the potential for cross-contamination, wells that have historically shown no detectable or minimal concentrations of constituents of concern will be measured before wells with elevated constituent concentrations
4. The downhole measuring device will be thoroughly washed with a solution of phosphate-free soap (such as liquinox) and deionized water, then rinsed with deionized water between well locations.

Water Quality Meter Reading Procedures

1. Calibrate the water quality meter in accordance with the appropriate SOP (WQM-001 or WQM-002).

Dissolved Oxygen (SCDHEC No Purge Protocol)

1. Cover the ground next to the well with new plastic sheeting to provide a clean working area.
2. Using a new, sealed disposable bailer and new, colorless nylon string, gently lower the bailer into the well until the top of the bailer is immersed in the top of the water column. Carefully remove the bailer and fill the appropriate, laboratory provided sample containers.
3. Empty any remaining water into a plastic cup, submerge the probe of a multi-parameter water quality meter in the water, and record the dissolved oxygen reading.

Water Quality Parameters (SCDHEC Purge Protocol)

1. Cover the ground next to the well with new plastic sheeting to provide a clean working area.
2. Calculate the required purge volume using the equation:

$$V = 0.041 d^2 h$$

Where: V = the volume of water in the well (gallons),

d = the diameter of the well (inches), and

h = the height of the water column (feet).

3. Multiply V by 1 to get a single purge volume for the well. Parameters will be measured after each volume purged. Purging is complete when pH, specific conductance, and temperature have stabilized and the turbidity has either stabilized or is below 10 NTUs. Volumes purged should be at least 3 but should not exceed 5 volumes unless authorized by the project leader (per Section B2.3.E.3 of the SCDHEC Programmatic QAPP).
4. Using a new, sealed disposable bailer and new, colorless nylon string, purge a single volume of water from the well into a five gallon bucket.
5. Pour the last bailer of the purge volume water into a plastic cup, submerge the probe of a multi-parameter water quality meter in the water, and record the pH, temperature, conductivity, turbidity and dissolved oxygen readings.
6. Repeat the purging and recording of readings for two more volumes of water,
7. Gently lower the bailer into the well until the top of the bailer is immersed in the top of the water column. Carefully remove the bailer and fill the appropriate, laboratory provided sample containers.

YSI 556MPS Calibration Procedures

Accessing the Calibrate Screen

1. Press the On/off key to display the run screen.
2. Press the Escape key to display the main menu screen.
3. Use the arrow keys to highlight the Calibrate selection.
4. Press the Enter key. The Calibrate screen will be displayed.

Conductivity Calibration

This procedure calibrates specific conductance (recommended), conductivity and salinity. Calibrating any one option automatically calibrates the other two.

1. Go to the calibrate screen as described in Section 6.2.1 Accessing the Calibrate Screen..
2. Use the arrow keys to highlight the Conductivity selection.
3. Press Enter. The Conductivity Calibration Screen is displayed.
4. Use the arrow keys to highlight the Specific Conductance selection.
5. Press Enter. The Conductivity Calibration Entry Screen is displayed.
6. Place the correct amount of conductivity standard into a clean, dry or pre-rinsed transport/calibration cup.

WARNING: Calibration reagents may be hazardous to your health. See *Appendix D Health and Safety* for more information.

NOTE: For maximum accuracy, the conductivity standard you choose should be within the same conductivity range as the samples you are preparing to measure. However, we do not recommend using standards less than 1 mS/cm. For example:

- For fresh water use a 1 mS/cm conductivity standard.
- For brackish water use a 10 mS/cm conductivity standard.
- For seawater use a 50 mS/cm conductivity standard.

NOTE: Before proceeding, ensure that the sensor is as dry as possible. Ideally, rinse the conductivity sensor with a small amount of standard that can be discarded. Be certain that you avoid cross-contamination of solutions. Make certain that there are no salt deposits around the oxygen and pH/ORP sensors, particularly if you are employing standards of low conductivity.

7. Carefully immerse the sensor end of the probe module into the solution.
8. Gently rotate and/or move the probe module up and down to remove any bubbles from the conductivity cell.

NOTE: The sensor must be completely immersed past its vent hole. Using the recommended volumes from Table 6.1 Calibration Volumes, should ensure that the vent hole is covered.

9. Screw the transport/calibration cup on the threaded end of the probe module and securely tighten.

NOTE: Do not over tighten as this could cause damage to the threaded portions.

10. Use the keypad to enter the calibration value of the standard you are using.

NOTE: Be sure to enter the value in **mS/cm at 25°C.**

11. Press Enter. The Conductivity Calibration Screen is displayed.
12. Allow at least one minute for temperature equilibration before proceeding. The current values of all enabled sensors will appear on the screen and will change with time as they stabilize.

13. Observe the reading under Specific Conductance. When the reading shows no significant change for approximately 30 seconds, press Enter. The screen will indicate that the calibration has been accepted and prompt you to press Enter again to Continue.
14. Press Enter. This returns you to the Conductivity Calibrate Selection Screen, See Figure 6.3 Conductivity Calibration Selection Screen.
15. Press Escape to return to the calibrate menu.
16. Rinse the probe module and sensors in tap or purified water and dry.

Dissolved Oxygen Calibration

This procedure calibrates dissolved oxygen. Calibrating any one option (% or mg/L) automatically calibrates the other.

1. Go to the calibrate screen as described in *Accessing the Calibrate Screen.*

   NOTE: The instrument must be on for at least 10 - 15 minutes to polarize the DO sensor before calibrating.

2. Use the arrow keys to highlight the Dissolved Oxygen selection.
3. Press Enter. The dissolved oxygen calibration screen is displayed.

DO Calibration in % Saturation

1. Use the arrow keys to highlight the DO% selection.
2. Press Enter. The DO Barometric Pressure Entry Screen is displayed.
3. Place approximately 3 mm (1/8 inch) of water in the bottom of the transport/calibration cup.
4. Place the probe module into the transport/calibration cup.

   NOTE: Make sure that the DO and temperature sensors are **not** immersed in the water.

5. Engage only 1 or 2 threads of the transport/calibration cup to ensure the DO sensor is vented to the atmosphere.
6. Use the keypad to enter the current local barometric pressure.

   NOTE: If the unit has the optional barometer, no entry is required.

   NOTE: Barometer readings that appear in meteorological reports are generally corrected to sea level and must be uncorrected before use (refer to Section *10.10 Calibrate Barometer, Step 2*).

7. Press Enter. The DO% saturation calibration screen is displayed.
8. Allow approximately ten minutes for the air in the transport/calibration cup to become water saturated and for the temperature to equilibrate before proceeding.
9. Observe the reading under DO %. When the reading shows no significant change for approximately 30 seconds, press Enter. The screen will indicate that the calibration has been accepted and prompt you to press Enter again to Continue. See Figure 6.6 Calibrated.
10. Press Enter. This returns you to the DO calibration screen, See Figure 6.7 DO Calibration Screen.
11. Press Escape to return to the calibrate menu. See Figure 6.2 Calibrate Screen.
12. Rinse the probe module and sensors in tap or purified water and dry.

DO Calibration in mg/L

DO calibration in mg/L is carried out in a water sample which has a known concentration of dissolved oxygen (usually determined by a Winkler titration).

1. Go to the DO calibrate screen as described in Section 6.2.3 Dissolved Oxygen Calibration, steps 1 through 3.
2. Use the arrow keys to highlight the DO mg/L selection.
3. Press Enter. The DO mg/L Entry Screen is displayed.

4. Place the probe module in water with a known DO concentration.

   NOTE: Be sure to completely immerse all the sensors.

5. Use the keypad to enter the known DO concentration of the water.
6. Press Enter. The Dissolved Oxygen mg/L Calibration Screen is displayed.
7. Stir the water with a stir bar, or by rapidly moving the probe module, to provide fresh sample to the DO sensor.
8. Allow at least one minute for temperature equilibration before proceeding. The current values of all enabled sensors will appear on the screen and will change with time as they stabilize.
9. Observe the DO mg/L reading, when the reading is stable (shows no significant change for approximately 30 seconds), press Enter. The screen will indicate that the calibration has been accepted and prompt you to press Enter again to Continue.
10. Press Enter. This returns you to the DO calibration screen. See Figure 6.7 DO Calibration Screen.
11. Press Escape to return to the calibrate menu. See Figure 6.2 Calibrate Screen.
12. Rinse the probe module and sensors in tap or purified water and dry.

pH Calibration

1. Go to the calibrate screen as described in Section 6.2.1 Accessing the Calibrate Screen.
2. Use the arrow keys to highlight the pH selection. See Figure 6.2 Calibrate Screen.
3. Press Enter. The pH calibration screen is displayed.

- Select the **1-point** option only if you are adjusting a previous calibration. If a 2-point or 3-point calibration has been performed previously, you can adjust the calibration by carrying out a one point calibration. The procedure for this calibration is the same as for a 2-point calibration, but the software will prompt you to select only one pH buffer.
- Select the **2-point** option to calibrate the pH sensor using only two calibration standards. Use this option if the media being monitored is known to be either basic or acidic. For example, if the pH of a pond is known to vary between 5.5 and 7, a two-point calibration with pH 7 and pH 4 buffers is sufficient. A three point calibration with an additional pH 10 buffer will not increase the accuracy of this measurement since the pH is not within this higher range.
- Select the **3-point** option to calibrate the pH sensor using three calibration solutions. In this procedure, the pH sensor is calibrated with a pH 7 buffer and two additional buffers. The 3-point calibration method assures maximum accuracy when the pH of the media to be monitored cannot be anticipated. The procedure for this calibration is the same as for a 2-point calibration, but the software will prompt you to select a third pH buffer.

4. Use the arrow keys to highlight the 2-point selection.
5. Press Enter. The pH Entry Screen is displayed.
6. Place the correct amount of pH buffer into a clean, dry or pre-rinsed transport/calibration cup.

   NOTE: Always calibrate with buffer 7 first, regardless if performing a 1, 2, or 3 point calibration.

   WARNING: Calibration reagents may be hazardous to your health. See *Appendix D Health and Safety* for more information.

   NOTE: For maximum accuracy, the pH buffers you choose should be within the same pH range as the water you are preparing to sample.

   NOTE: Before proceeding, ensure that the sensor is as dry as possible. Ideally, rinse the pH sensor with a small amount of buffer that can be discarded. Be certain that you avoid cross-contamination of buffers with other solutions.

7. Carefully immerse the sensor end of the probe module into the solution.
8. Gently rotate and/or move the probe module up and down to remove any bubbles from the pH sensor.

   NOTE: The sensor must be completely immersed. Using the recommended volumes from Table 6.1 Calibration Volumes, should ensure that the sensor is covered.

9. Screw the transport/calibration cup on the threaded end of the probe module and securely tighten

NOTE: Do not over tighten as this could cause damage to the threaded portions.

10. Use the keypad to enter the calibration value of the buffer you are using at the current temperature.

NOTE: pH vs. temperature values are printed on the labels of all YSI pH buffers.

11. Press Enter. The pH calibration screen is displayed.
12. Allow at least one minute for temperature equilibration before proceeding. The current values of all enabled sensors will appear on the screen and will change with time as they stabilize.
13. Observe the reading under pH, when the reading shows no significant change for approximately 30 seconds, press Enter.

    The screen will indicate that the calibration has been accepted and prompt you to press **Enter** again to Continue.

14. Press Enter. This returns you to the specified pH Calibration Screen, See Figure 6.13 pH Entry Screen.
15. Rinse the probe module, transport/calibration cup and sensors in tap or purified water and dry.
16. Repeat steps 6 through 13 above using a second pH buffer.
17. Press Enter. This returns you to the pH Calibration Screen, See Figure 6.12 pH Calibration Screen.
18. Press Escape to return to the calibrate menu. See Figure 6.2 Calibrate Screen.
19. Rinse the probe module and sensors in tap or purified water and dry.

ORP Calibration

1. Go to the calibrate screen as described in *Accessing the Calibrate Screen.*
2. Use the arrow keys to highlight the ORP selection. See Figure 6.2 Calibrate Screen..
3. Press Enter. The ORP calibration screen is displayed.
4. Place the correct amount of a known ORP solution (we recommend Zobell solution) into a clean, dry or pre-rinsed transport/calibration cup.

    WARNING: Calibration reagents may be hazardous to your health. See *Appendix D Health and Safety* for more information.

    NOTE: Before proceeding, ensure that the sensor is as dry as possible. Ideally, rinse the ORP sensor with a small amount of solution that can be discarded. Be certain that you avoid cross-contamination with other solutions.

5. Carefully immerse the sensor end of the probe module into the solution.
6. Gently rotate and/or move the probe module up and down to remove any bubbles from the ORP sensor.

    NOTE: The sensor must be completely immersed. Using the recommended volumes from Table 6.1 Calibration Volumes should ensure that the sensor is covered.

7. Screw the transport/calibration cup on the threaded end of the probe module and securely tighten.

    NOTE: Do not over tighten as this could cause damage to the threaded portions.

8. Use the keypad to enter the correct value of the calibration solution you are using at the current temperature. Refer to Table 6.2 Zobell Solution Values.

Temperature °C	Zobell Solution Value, mV
-5	270.0
0	263.5
5	257.0
10	250.5

15	244.0
20	237.5
25	231.0
30	224.5
35	218.0
40	211.5
45	205.0
50	198.5

Turbidity Calibration

The YSI 556MPS unit does not measure turbidity. When using this groundwater quality meter for site measurements in conjunction with a LaMotte Turbidity Kit, Turbidity Column, 0-200 JTU, Code 7519-01.

Procedure:

This test is performed by comparing the turbidity of a measured amount of the sample with an identical amount of turbidity-free water containing a measured amount of standardized turbidity reagent. The readings are made by looking down through the column of liquid at a black dot. If turbidity is present, it will interfere with the passage of light through the column of liquid. A small amount of turbidity will cause a "blurring " of the black dot in the bottom of the tube. Large amounts of turbidity may provide sufficient cloudiness so that it is not possible to see the black dot when looking down through the column. Any color that may be present in the sample should be disregarded. This determination is concerned only with the haziness or cloudy nature of the sample.

1. Fill one turbidity Column to the 50 ml line with sample water. If the black dot on the bottom of the tube is not visible when looking down through the column of liquid, pour out a sufficient amount of the test sample so that the tube is filled to the 25 ml line.

2. Fill the second Turbidity Column with an amount of turbidity-free water that is equal the amount of sample being measured. Distilled water is preferred; however clear tap water may be used. This is the "clear water" tube.

3. Place the two tubes side by side and note the difference in clarity. If the black dot is equally clear in both tubes, the turbidity is zero. If the black dot in the sample tube is less clear, proceed to Step 4.

4. Shake the Standard Turbidity Reagent vigorously. Add 0.5 ml to the "clear water" tube. Use the stirring rod to stir contents of both tubes to equally distribute turbid particles. Check for amount of turbidity by looking down through the solution at the black dot. If the turbidity of the sample water is greater than that of the 'clear water", continue to add Standard Turbidity Reagent in 0.5 ml increment to the "clear water" tube, mixing after each addition until the turbidity equals that of the sample. Record total amount of Standard Turbidity Reagent added.

5. Each 0.5 ml addition to the 50 ml size sample is equal to 5 Jackson Turbidity Units (JTUs). If a 25 ml sample size is used, each 0.5 ml addition of the Standard Turbidity Reagent is equal to 10 Jackson Turbidity Units (JTUs). See the table below. Rinse both tubes carefully after each determination. JTUs are equal to NTUs.

Turbidity Test Results

Number of Measured Additions	Amount in ml	50 ml Graduation	25 ml Graduation
1	0.5	5 JTU	10 JTU
2	1.0	10 JTU	20 JTU
3	1.5	15 JTU	30 JTU

Horiba U-50 Series Calibration Procedures

Calibration

1. To obtain correct measurement values, the sensors need to be calibrated using standard solution before measurement.
2. You can select simultaneous auto calibration of the pH, COND and TURB sensors in pH4 standard solution and DO and DEP sensors simultaneously in air, or manual calibration of individual measurement parameters.

NOTE:

- Wait at least 20 minutes after turning the system power ON before calibrating the DO sensor.
- Make the DO and COND compensation settings before calibration since these settings are applied during calibration.
- You can select only the desired parameters for calibration and calibrate just those parameters
- Use about 200 mL of standard solution in the calibration cup.
- Calibration data is stored in the sensor probe.

Auto Calibration

TIP:

- The following parameters are calibrated (at 25°C):
  - pH: Set to 4.01 (zero-point calibration); the span is adjusted to the factory default value.
  - COND: 0.449 S/m (4.49 mS/cm, span calibration); the zero point is adjusted to the factory default value.
  - TURB: 0 NTU (zero-point calibration); the span is adjusted to the factory default value.
  - DO: 8.92 mg/L (span calibration); the zero point is adjusted to the factory default value.
  - DEP: 0 m (zero-point calibration); the zero point is adjusted to the factory default value.
- If the air temperature changes, the readout value may not be stable. Ensure that the ambient air temperature is the same temperature as the calibration solution, because the internal probe temperature sensor and external temperature sensor (in the calibration solution) are used for the auto calibration. Allow the probe and standard solution to equilibrate for 1 hour if a thermometer is not available to verify that these temperatures are the same.
- Do not hold the probe while performing the auto calibration. Body temperature may elevate the internal temperature sensor measurement creating DO calibration error.

1. Remove the sensor guard and wash the sensor probe 2 or 3 times with deionized water.
2. Remove the transparent calibration cup.
3. Fill the transparent calibration cup to the line with pH 4 standard solution. The transparent calibration cup has With TURB Measurement and Without TURB Measurement gauge lines.
4. Press the control unit's CAL key to set the calibration mode.
5. Press the down (▼) key to move the cursor to "Auto Calibration", then press the ENTER key.
6. Immerse the sensor probe in the transparent calibration cup. Check that the pH sensor, ORP sensor, reference electrode, COND sensor, TURB sensor and temperature sensor are submerged in the pH 4 standard solution and check that there are no air bubbles on the sensor.
7. With the sensor probe still in the transparent calibration cup, place the transparent calibration cup into the black calibration cup.
8. When all the sensor values have stabilized, press the ENTER key to start calibration.

NOTE:

- Do not remove the sensor probe from the calibration solution. U-53 turbidity data will display "---- " until the calibration is completed.

9. Calibration is finished when the message "Cal complete. MEAS to measure." appears. Press the MEAS key to set the measurement screen, then start measurement.
10. If a calibration error occurs, start calibration after first resolving the issue according to the instructions in the Troubleshooting Section of the Manual.

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 302774

page_____ of_____

Client Name:

Address:

City State Zip

Phone/Fax:

Client Contact: Email:

Project Name/No.:

Site Name:

Site Location:

Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil A=air SL=sludge E=encore X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HC1 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis								

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☐ Y ☐ N

Ice? ☐ Y ☐ N

Temp:

Requested TAT

☐ 1 Business Day ☐ Contract

☐ 2 Business Days ☐ Standard

☐ 3 Business Days

☐ Other_____

Rush TAT requires prior notice

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date	time	2. Received by:
3. Relinquished by:	date	time	4. Received by:
5. Relinquished by:	date	time	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

September 1, 2011 ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: **Former United Oil**

UST Permit #: 11760 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
B. Tax Map		x	$50.00	$0.00
C. Tier II or Comp. Plan /QAPP Appendix B	1	x	$525.00	$525.00
2. Receptor Survey *		x	$500.00	$0.00
3. Survey (500 x 500 feet)				
A. Comprehensive Survey		x	$1,000.00	$0.00
B. Subsurface Geophysical Survey				
1. < 10 meters below grade		x	$2,750.00	$0.00
2. > 10 meters below grade		x	$3,250.00	$0.00
C. Geophysical UST or Drum Survey		x	$1,125.00	$0.00
4. Mob/Demob (Each)				
A. Equipment		x	$575.00	$0.00
B. Personnel 10	1	x	$290.00	$290.00
C. Adverse Terrain Vehicle to install wells		x	$575.00	$0.00
5. Soil Borings (hand auger)* (Feet)		feet x	$14.00	$0.00
6. Soil Borings (drilled) & Field Screening *				
Rate includes collection of water sample or soil sample, and lab or other analyses				
A. Standard		feet x	$17.00	$0.00
C. Fractured Rock		feet x	$27.50	$0.00
7. Soil Leachability Model (Each)		each x	$200.00	$0.00
8. Abandonment* (per foot)				
A. 2" diameter or less		feet x	$5.00	$0.00
B. Greater than 2" to 6" diameter		feet x	$5.50	$0.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$18.00	$0.00
9. Well Installation* (per foot)				
A. Water Table (hand augered)		feet x	$20.00	$0.00
B. Water Table (drill rig)		feet x	$38.00	$0.00
C. Telescoping/ Pit Cased		feet x	$58.00	$0.00
D. Rock Drilling		feet x	$58.00	$0.00
E. 2" Rock Coring		feet x	$45.00	$0.00
G. Rock Multi-sampling ports/screens		feet x	$47.20	$0.00
H. Recovery Well (4 inch diameter)		each x	$45.00	$0.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$18.50	$0.00
J. Rotosonic (2 inch diameter)		each x	$45.00	$0.00
10. Groundwater Sample Collection / Gauge Depth to Water or Product (Each)				
A. Groundwater Purge	31	wells x	$55.00	$1,705.00
B. Air or Vapors		samples x	$90.00	$0.00
C. Water Supply		samples x	$30.00	$0.00
D. Groundwater No Purge or Duplicate	3	samples x	$35.00	$105.00
E. Gauge Well only		per well x	$20.00	$0.00
F. Sample Below Product		wells x	$50.00	$0.00
G. Pasive Diffusion Bag		each x	$40.00	$0.00
H. Field Blank field	2	each x	$5.00	$10.00

11. Laboratory Analyses-Groundwater (Each Sample)					
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol	38	samples x	$100.00		$3,800.00
AA. Lead, Filtered		samples x	$46.00		$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$143.00		$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$40.00		$0.00
D. PAH's		samples x	$120.00		$0.00
E. Lead, Unfiltered		samples x	$20.00		$0.00
F. EDB by EPA 8011	36	samples x	$55.00		$1,980.00
FF. EDB by EPA Method 8011 Rush		samples x	$75.00		$0.00
G. 8 RCRA Metals		samples x	$140.00		$0.00
H. TPH (9070)		samples x	$55.00		$0.00
I. pH		samples x	$10.00		$0.00
J. BOD		samples x	$40.00		$0.00
K. Nitrate		samples x	$20.00		$0.00
L. Sulfate		samples x	$20.00		$0.00
M. Ferrous Iron		samples x	$20.00		$0.00
N. Methane		samples x	$110.00		$0.00
P1. Ethanol		samples x	$21.50		$0.00
11. Analyses-Soil (Each Sample)					
Q. BTEX + Naphth.		samples x	$100.00		$0.00
R. PAH's		samples x	$120.00		$0.00
S. 8 RCRA Metals		samples x	$150.00		$0.00
T. Oil & Grease (9071)		samples x	$60.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$65.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$65.00		$0.00
W. Grain size/hydrometer		samples x	$99.00		$0.00
X. Total Organic Carbon		samples x	$35.00		$0.00
11. Analyses-Air (Each Sample)					
Y. BTEX + Naphthalene		samples x	$247.50		$0.00
11. Analyses-Free Phase Product (Each Sample)					
Z. Hydrocarbon Fuel Identification		samples x	$620.00		$0.00
12. Aquifer Characterization*					
A. Pumping Test		hours x	$120.00		$0.00
B. Slug Test*		tests x	$150.00		$0.00
C. Fractured Rock		tests x	$500.00		$0.00
13. Free Product Recovery Rate Test* (Each)		tests x	$120.00		$0.00
14. Fate/Transport Modeling					
A. Mathematical Model		each x	$300.00		$0.00
B. Computer Model		each x	$500.00		$0.00
15. Risk Evaluation					
A. Tier I Risk Evaluation		x	$300.00		$0.00
B. Tier II Risk Evaluation		x	$500.00		$0.00
16. Subsequent Survey*		x	$300.00		$0.00
17. Disposal* (gallons or tons)					
A. Wastewater	400	gallons x	$0.80		$320.00
B1. Free Product		gallons x	$0.85		$0.00
C. Soil Treatment/Disposal		tons x	$72.50		$0.00
D. Drilling fluids		gallons x	$0.80		$0.00
18. Miscellaneous (attach receipts)					
		x			$0.00
		x			$0.00
		x			$0.00

20. Tier I Assessment (Use DHEC 3665 form)		x			$0.00
21. IGWA (Use DHEC 3666 form)		x			$0.00
22. Corrective Action (Use DHEC 3667 form)		x			$0.00
23. Aggressive Fluid & Vapor Recovery (AFVR)					
A. 8-hour Event*		each x	$3,000.00		$0.00
B. AFVR per-hour Continuance		per hour x	$204.00		$0.00
C. Off-gas treatment per-hour Continuance		per hour x	$35.00		$0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:					
A. New GAC System Installation*		each x	$2,500.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$1,180.00		$0.00
C. Filter replacement/removal*		each x	$450.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$720.00		$0.00
E. GAC System housing		each x	$450.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$4.00		$0.00
25. Well Repair					
A. Additional Copies of the Report Delivered		each x	$32.50		$0.00
B. Repair 2x2 MW pad		each x	$100.00		$0.00
C. Repair 4x4 MW pad		each x	$150.00		$0.00
D. Repair well vault		each x	$225.00		$0.00
F. Replace well cover bolts		each x	$10.00		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$137.50		$0.00
I. Convert Flush-mount to Stick-up		each x	$175.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$125.00		$0.00
K. Replace missing/illegible well ID plate		each x	$22.50		$0.00
Report Prep & Project Management	15%	x	$8,735.00		$1,310.25
TOTAL					$10,045.25

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

JUL 1 5 2013

UST DOCKETING

Re: **Sample Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760; CA #46151
Releases Reported August 1, 1997
QAPP Contractor Addendum received June 27, 2013
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced addendum submitted on your behalf by Cardno ATC, Inc. In order to evaluate the current site conditions, a comprehensive sampling of the monitoring wells is necessary. All work should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 2.0 and must be conducted in compliance with all applicable regulations. A copy of Agency QAPP Revision 2.0 for the UST Management Division is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

Activities at the site should begin immediately upon receipt of this letter. Cost agreement # 46151 has been approved for the amount shown on the enclosed cost agreement form for the sampling of the monitoring wells and analysis for BTEX, naphthalene, MTBE, 1,2-DCA, oxygenates, and EDB. Analyses should be in accordance with Appendix E of the QAPP to include duplicate samples, field and trip blanks.

The Monitoring Report and invoice are due within 60 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Cardno ATC can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding the services and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval is obtained from the Agency. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual CoC in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Agency may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit #11760. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0608 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement
Signed Site Specific QAPP Contractor Addendum

cc: Cardno ATC, 400 Northeast Dr., Unit Q, Columbia, SC 29203 (with enc.)
Technical File (with enclosures)

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For

Former United Oil
UST Permit No. 11760

401 N. Congress St.
Winnsboro, South Carolina

Prepared by: Fred Lyke

CARDNO-ATC
400 Northeast Drive, Unit Q
Columbia, SC 29203

Date: 26/June/2013
Day/Month/Year

CARDNO-ATC
SC Certified Contractor No. 0313

Approvals

Read Miner SC DHEC Project Manager	Signature	Date 7-9-13
Brad Hubbard Contractor QA Manager	Signature	Date 6/25/13
Fred Lyke Site Rehabilitation Contractor	Signature	Date 6/25/13
Ron Benjamin Laboratory Director	Signature	Date 6/25/13

Approved Cost Agreement 46151

Facility: 11760 UNITED EXXON
MINERRS
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		C TIER II/COMP. PLAN/QAPP APP B	1.0000	525.00	525.00
04 MOB/DEMOB					
		B PERSONNEL	1.0000	290.00	290.00
10 SAMPLE COLLECTION					
		A GROUND WATER	32.0000	55.00	1,760.00
		C WATER SUPPLY	1.0000	30.00	30.00
		D GROUNDWATER NO-PURGE	2.0000	35.00	70.00
		H FIELD BLANK	2.0000	5.00	10.00
11 ANALYSES					
	GW GROUNDWATER	A1 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	39.0000	100.00	3,900.00
		F EDB	39.0000	55.00	2,145.00
17 DISPOSAL					
		A WASTEWATER	400.0000	0.80	320.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	9,050.00	1,357.50
			Total Amount		10,407.50

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

May 15, 2007

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

RECEIVED
MAY 15 2007
UNDERGROUND STORAGE TANK PROGRAM

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Shrader:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

UST PROGRAM
DOCKETING # 30Tech

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Environmental Division Manager

Frederick P. Lyke, P.G. #1055

May 15, 2007

RECEIVED
MAY 15 2007
UNDERGROUND STORAGE
TANK PROGRAM

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1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated November 29, 2006. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Free Product Recovery Events

On February 13, 2007, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10, MW-11, and MW-16 by Shamrock Environmental Corporation. The free product removal event was conducted for eight hours, and approximately 310 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for 3.5 hours simultaneously at Monitor Wells MW-10 and MW-16, and 4.5 hours at Monitor Well MW-11. On February 14, 2007, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. This free product removal event was conducted for eight hours, and approximately 156 gallons of liquid were removed from this well. On March 13, 2007, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10 and MW-11 by Shamrock Environmental Corporation. This event was conducted for eight hours, and approximately 321 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for four hours at Monitor Well 10 and four hours at Monitor Well MW-11. On March 14, 2007, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. This free product removal event was conducted for eight hours, and approximately 184 gallons of liquid were removed from this well. A detailed summary of the free product removal activities is presented in Appendix B.

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2.2 Monitor Well Installation

On March 26, 2007, ATC personnel oversaw the installation of one (1) shallow groundwater monitor well, identified as Monitor Well MW-26, by Mr. Brian Thomas of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Thomas, using a track mounted drill rig, installed this well to an approximate depth of 35 feet. Specifically, Monitor Well MW-26 was installed east-southeast of Monitor Well MW-25. Monitor well locations are depicted in Figure 2.

Monitor Well MW-26 is constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. The shallow monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet above the top of the screen and followed by approximately 5 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. Monitor Well MW-26 was completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. Following installation, the monitor well was developed with a clean, centrifugal pump to remove any fine materials that may impede the flow of groundwater into the well. Monitor well construction details and lithologic descriptions are presented in Appendix C.

2.3 Site Hydrogeology

During the April 19, 2007, gauging event, approximately 0.03 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Well MW-2. Groundwater flow direction is toward the south and east-southeast with a hydraulic gradient of 0.0282 feet per foot, as measured between Monitor Wells MW-8 and MW-26. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.4 Groundwater Sampling and Analysis

During the current assessment activities, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-2, MW-3, MW-4R, MW-5, MW-6R, MW-7, MW-8, MW-9R, MW-10 through MW-26, DW-1, and DW-2. A surface water sample, identified as CK-1, was collected from the headwaters of McCulley Creek. Specifically, this sample was collected near Monitor Well MW-25. Samples were not collected from Monitor Well MW-4 since this well was dry. A new, disposable, polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells MW-26, DW-1, and DW-2 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since each well's screen properly bracketed the water table. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix D. New, disposable, nitrile gloves were used to maintain sample integrity during the sampling process. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B; ethylene dibromide (EDB) by EPA method 504.1; and lead by EPA method 6010B. Groundwater samples from Monitor Wells MW-1, MW-2, MW-11, MW-13, MW-15, MW-16, MW-26, and DW-1 were also analyzed for ferrous iron by EPA method HACH 8146, nitrates by EPA method 353.3, and sulfates by EPA method 375.4.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at Monitor Wells MW-2, MW-3, MW-4R, MW-10 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene concentrations

were detected at Monitor Wells MW-2, MW-3, MW-5, MW-10 through MW-16, MW-18, and MW-22. Toluene concentrations may exist at Monitor Well MW-21; however, a high dilution factor yielded results less than detection limits at this well. Ethylbenzene concentrations were detected at Monitor Well MW-2, MW-4R, MW-11, MW-12, MW-13, MW-15, MW-16, MW-18, MW-22, and MW-23. It should be noted that ethylbenzene concentrations may exist at Monitor Wells MW-10, MW-14, and MW-21; however, high dilution factors at these wells yielded results less than detection limits. Xylenes concentrations were detected at Monitor Wells MW-2, MW-3, MW-4R, MW-5, MW-10 through MW-16, MW-18, MW-19, and MW-21 through MW-24. MTBE concentrations were detected at Monitor Wells MW-2, MW-4R, MW-10, MW-11, MW-13, MW-16 through MW-23, DW-1, and DW-2. In addition, MTBE concentrations were detected at Sample CK-1. MTBE concentrations may exist at Monitor Wells MW-12 and MW-14; however, a high dilution factor caused results to be less than detection limits at these locations. Naphthalene concentrations were detected at Monitor Wells MW-2, MW-10 through MW-16, MW-18, MW-22 through MW-25, and DW-2. Naphthalene concentrations may exist at Monitor Well MW-21; however, a high dilution factor caused results to be less than detection limits at this well. EDB concentrations were detected at Monitor Wells MW-2 and MW-18. Lead concentrations were detected at Monitor Wells MW-1, MW-3, MW-4R, MW-5, MW-13, MW-15, MW-16, MW-19, and MW-23 through MW-26. In addition, lead concentrations were detected at Sample CK-1. Ferrous iron concentrations were detected at Monitor Wells MW-11, MW-13, MW-15, and MW-16. Nitrate concentrations were detected at Monitor Wells MW-1, MW-2, MW-15, MW-26, and DW-1. Sulfate concentrations were detected at Monitor Wells MW-1 and MW-26.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Monitor Wells MW-2, MW-3, MW-10 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene concentrations were detected greater than its RBSL of 1000 μg/l at Monitor Wells MW-2, MW-11, MW-12, MW-13, MW-16, and MW-18. Ethylbenzene concentrations were detected greater than its RBSL of 700 μg/l at Monitor Wells MW-2, MW-11, MW-12, MW-13, and MW-16. Xylenes concentrations were detected greater than its RBSL of 10000 μg/l at Monitor Wells MW-2, MW-11, MW-13, and MW-16. MTBE

concentrations were detected greater than its RBSL of 40 µg/l at Monitor Wells MW-2, MW-10, MW-11, MW-13, MW-16, MW-18, and MW-21. Naphthalene concentrations were detected greater than its RBSL of 25 µg/l at Monitor Wells MW-2, MW-10 through MW-16, MW-18, MW-22 through MW-25, and DW-2. It is probable that naphthalene concentrations may exist greater than its RBSL at Monitor Well MW-21 due to a high dilution factor that yielded results less than 250 µg/l at this well. EDB concentrations were detected greater than its RBSL of 0.05 µg/l at Monitor Wells MW-2 and MW-18. Lead concentrations were detected greater than its RBSL of 15 µg/l at Monitor Wells MW-4R, MW-13, MW-15, MW-16, and MW-19. Groundwater laboratory analytical results are summarized in Table II and Figures 4A-4C. Laboratory analytical results and chain-of-custody are presented in Appendix E.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Two free product recovery events were conducted during the current assessment activities at Monitor Well MW-2, and approximately 340 gallons of liquid were removed from this well. Two other free product recovery events were conducted during the current assessment activities at Monitor Wells MW-10, MW-11, and/or MW-16, and approximately 631 gallons were removed from these wells.
- One shallow monitor well, identified as MW-26, was installed during the current assessment activities.
- Groundwater flow at the site is in a southern to east-southeastern direction with a hydraulic gradient of 0.0282 feet per foot, as measured between Monitor Wells MW-8 and MW-26.
- Approximately 0.03 feet of liquid phase hydrocarbons were detected at Monitor Well MW-2 during the April 19, 2007, gauging event.
- During the current assessment activities, a groundwater sample (identified as CK-1) was collected from the headwaters of McCulley Creek located hydraulically down-gradient from the site. Analytical results for this sample detected MTBE concentrations of 15 µg/l and lead concentrations of 2.15 µg/l.

- Total BTEX concentrations have increased at Monitor Wells MW-12, MW-15, MW-18, MW-21, and MW-23 since the previous sampling event of August 2006. Total BTEX concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. MTBE concentrations have increased at Monitor Well MW-10, MW-13, MW-16 through MW-19, MW-23, and DW-2 since the previous sampling event; however, MTBE concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. In addition, MTBE concentrations have increased at Sample CK-1 since the previous sampling event. Naphthalene concentrations have increased at Monitor Wells MW-12 through MW-16, MW-18, MW-21, MW-23, MW-24, and DW-2 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. EDB concentrations have decreased or remained below detection limits at all sampled monitor wells since the previous sampling event. Comparisons can not be made regarding the newly installed well or the wells that weren't sampled during the previous sampling event.

Due to the continued presence of liquid phase hydrocarbons at Monitor Well MW-2, additional free product removal events are recommended at this well. Also, ATC Associates Inc. recommends that additional four groundwater monitor wells be installed (if permitted by the terrain) south of Monitor Wells MW-18, MW-21, MW-22, and MW-23. Furthermore, as a result of Monitor Well DW-2 containing benzene and naphthalene concentrations greater than their respective RBSLs, another telescoping well should be installed at a greater depth adjacent to this well for vertical delineation purposes.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., October 9, 2006, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

FIGURES

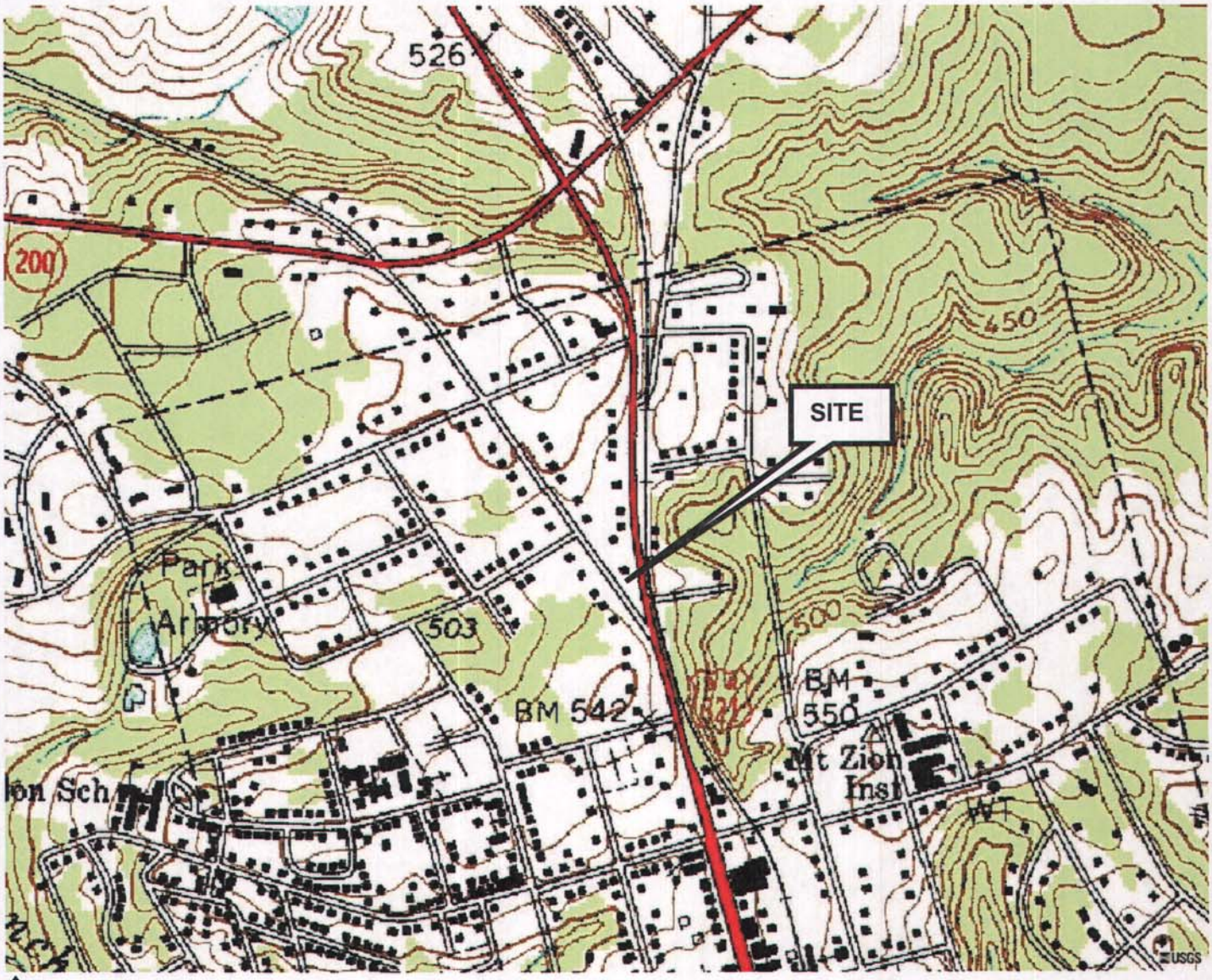

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Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

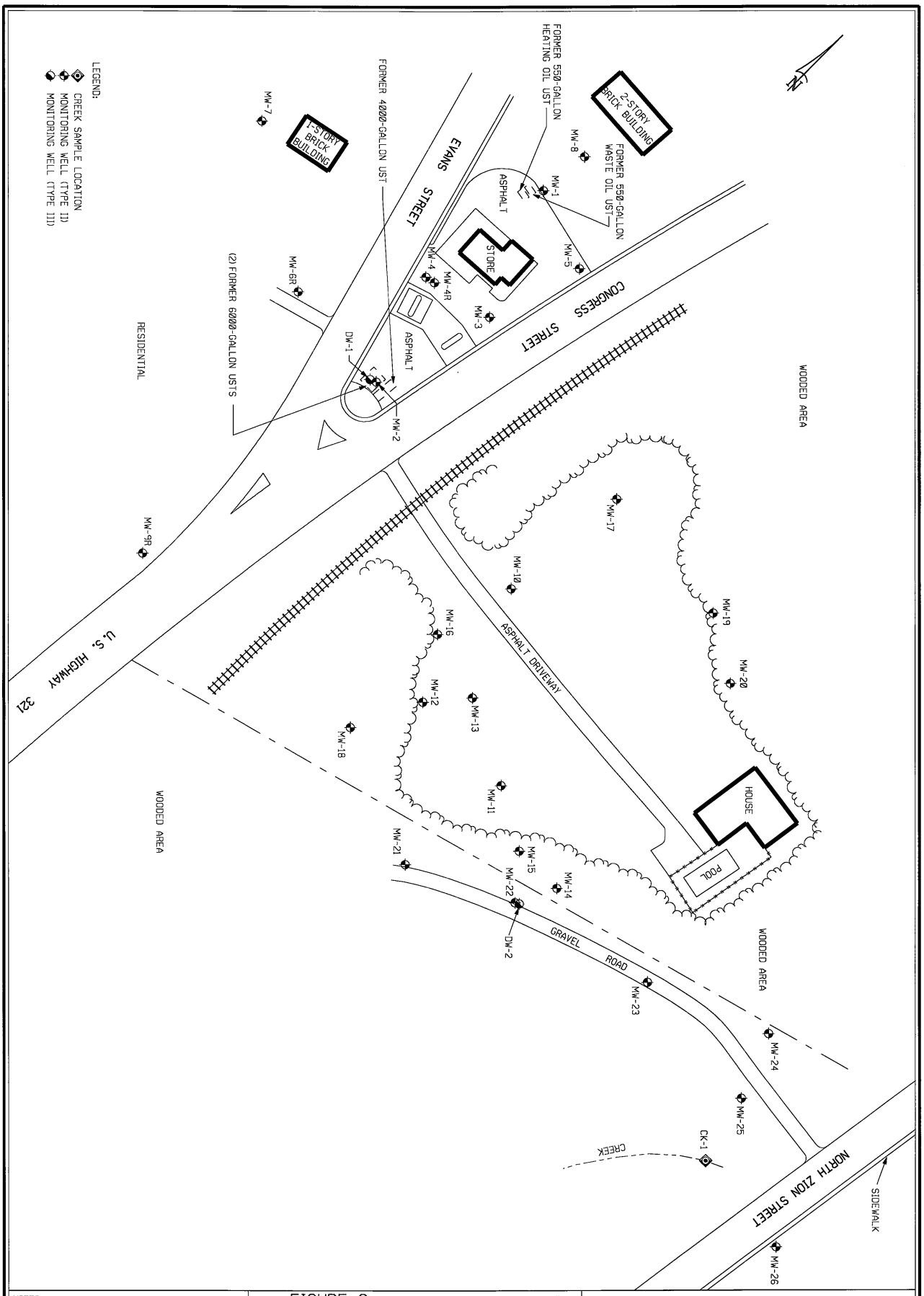
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



NOTES:

TITLE FIGURE 2 UST PERMIT #11760

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
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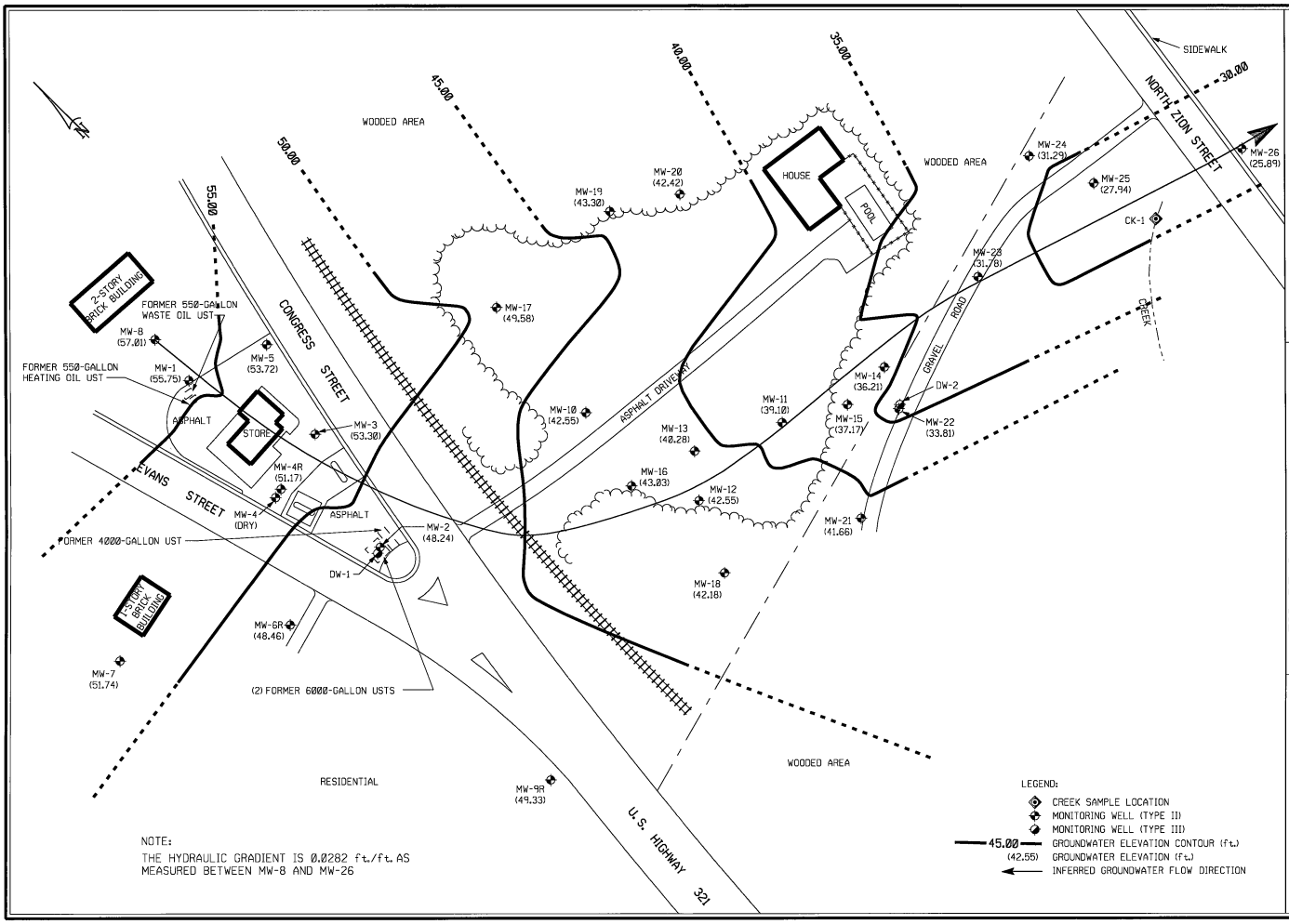

NOTE:
THE HYDRAULIC GRADIENT IS 0.0282 ft./ft. AS MEASURED BETWEEN MW-8 AND MW-26

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 3 UST PERMIT #11760 GROUNDWATER ELEVATION CONTOUR MAP UNITED EXXON 401 NORTH CONGRESS STREET WINNSBORO, SOUTH CAROLINA					
CAD FILE 1252116.DGN	TYPE CODE	PREP. BY BB	REV. BY	SCALE 1" = 80'	DATE 05-14-2007	PROJECT NO. 14.25384.0012

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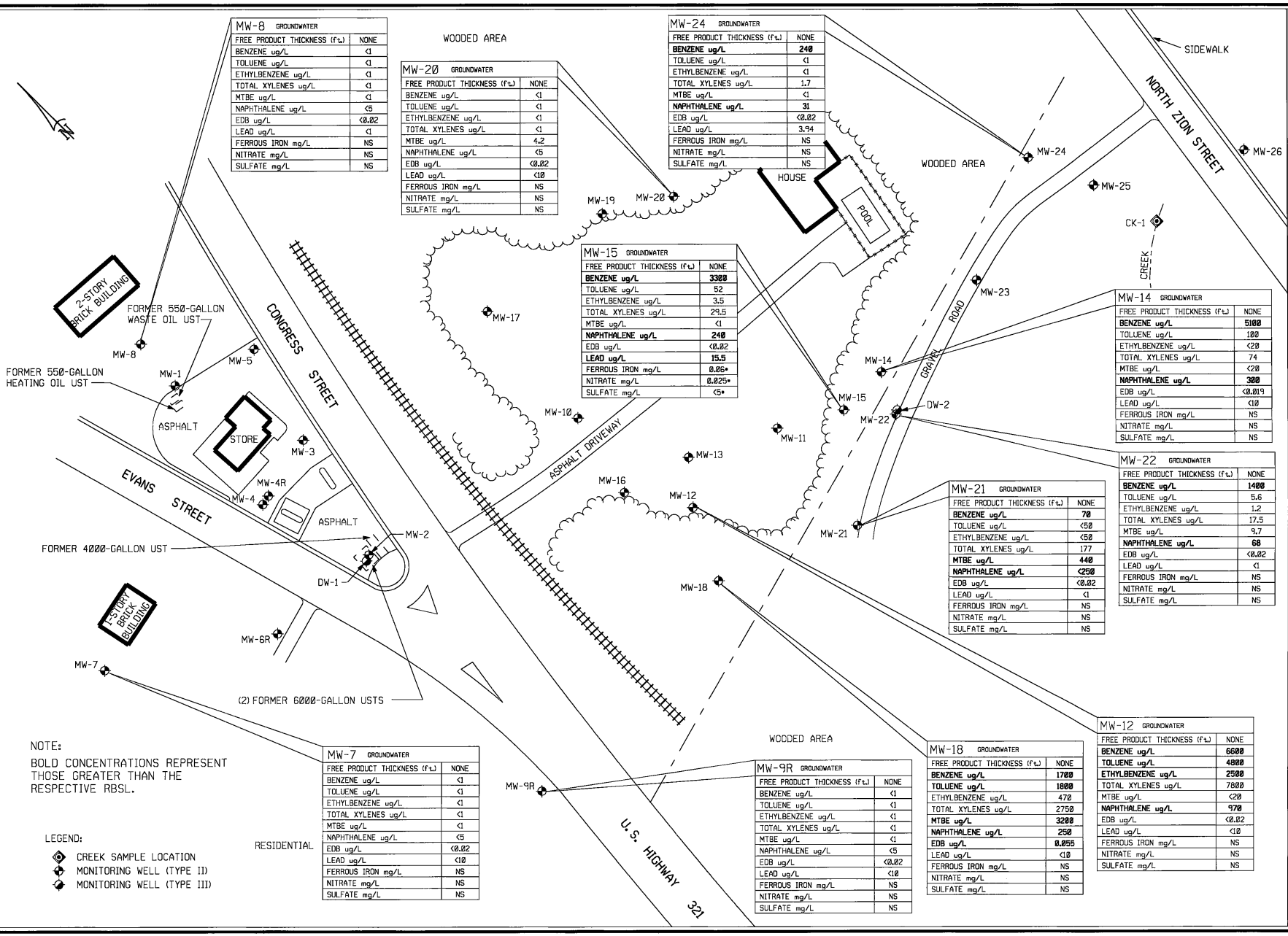


MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-20 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	4.2
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-24 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**240**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	1.7
MTBE ug/L	<1
NAPHTHALENE ug/L	**31**
EDB ug/L	<0.02
LEAD ug/L	3.94
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**3300**
TOLUENE ug/L	52
ETHYLBENZENE ug/L	3.5
TOTAL XYLENES ug/L	29.5
MTBE ug/L	<1
NAPHTHALENE ug/L	**240**
EDB ug/L	<0.02
LEAD ug/L	**15.5**
FERROUS IRON mg/L	0.06*
NITRATE mg/L	0.025*
SULFATE mg/L	<5*

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5100**
TOLUENE ug/L	100
ETHYLBENZENE ug/L	<20
TOTAL XYLENES ug/L	74
MTBE ug/L	<20
NAPHTHALENE ug/L	**300**
EDB ug/L	<0.019
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-22 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**1400**
TOLUENE ug/L	5.6
ETHYLBENZENE ug/L	1.2
TOTAL XYLENES ug/L	17.5
MTBE ug/L	9.7
NAPHTHALENE ug/L	**68**
EDB ug/L	<0.02
LEAD ug/L	<1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-21 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**70**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	177
MTBE ug/L	**440**
NAPHTHALENE ug/L	**<250**
EDB ug/L	<0.02
LEAD ug/L	<1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6600**
TOLUENE ug/L	**4800**
ETHYLBENZENE ug/L	**2500**
TOTAL XYLENES ug/L	7800
MTBE ug/L	<20
NAPHTHALENE ug/L	**970**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-18 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**1700**
TOLUENE ug/L	**1800**
ETHYLBENZENE ug/L	470
TOTAL XYLENES ug/L	2750
MTBE ug/L	**3200**
NAPHTHALENE ug/L	**250**
EDB ug/L	**0.055**
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-9R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

RESIDENTIAL

NOTE:
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

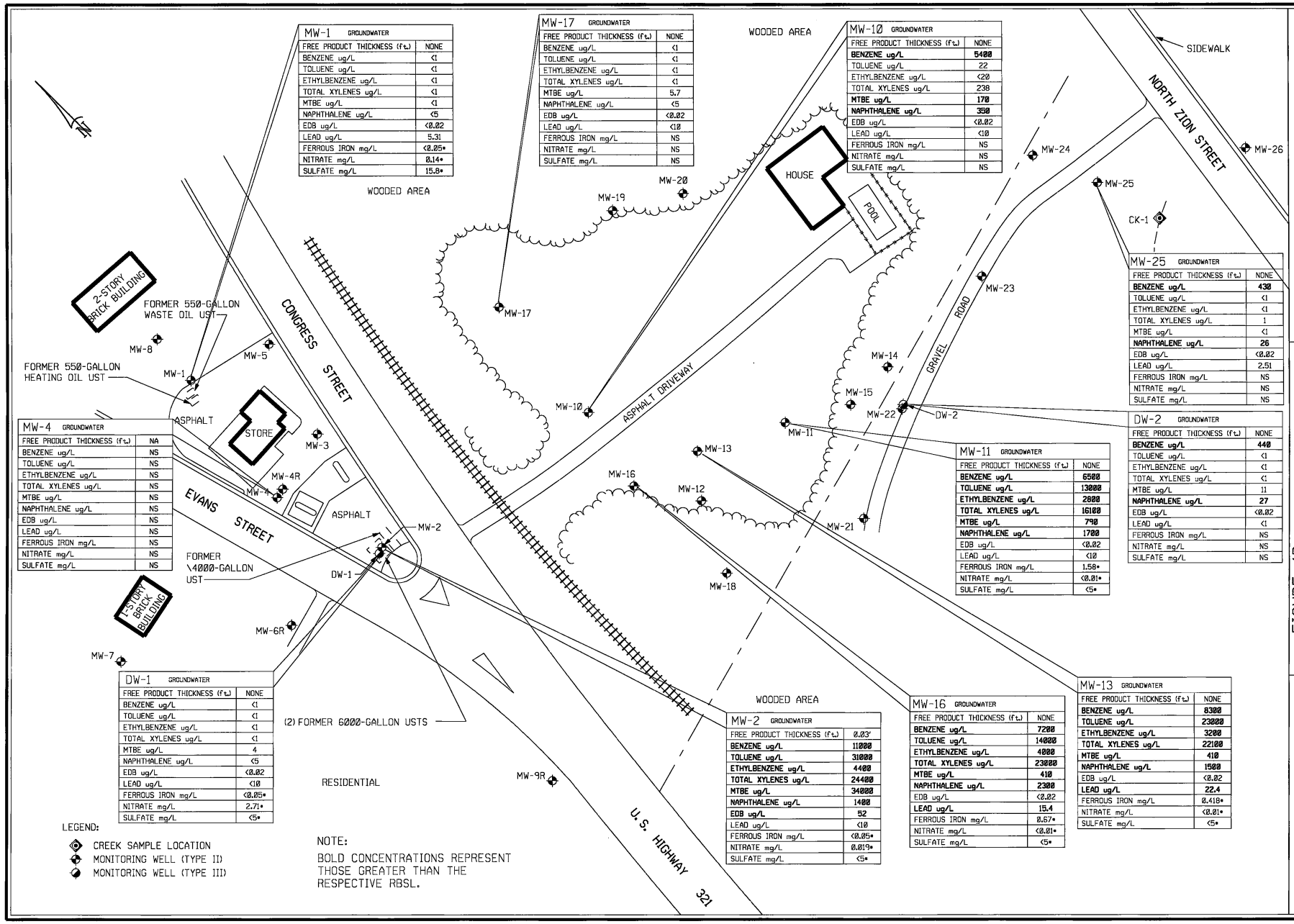
LEGEND:
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 4A UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	05-14-2007	14.25384.0012

NOTES:



MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	5.31
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.14*
SULFATE mg/L	15.8*

MW-17 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	5.7
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5400**
TOLUENE ug/L	22
ETHYLBENZENE ug/L	<20
TOTAL XYLENES ug/L	238
MTBE ug/L	**170**
NAPHTHALENE ug/L	**350**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-25 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**430**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	1
MTBE ug/L	<1
NAPHTHALENE ug/L	**26**
EDB ug/L	<0.02
LEAD ug/L	2.51
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

DW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**440**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	11
NAPHTHALENE ug/L	**27**
EDB ug/L	<0.02
LEAD ug/L	<1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6500**
TOLUENE ug/L	**13000**
ETHYLBENZENE ug/L	**2800**
TOTAL XYLENES ug/L	**16100**
MTBE ug/L	**790**
NAPHTHALENE ug/L	**1700**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	1.58*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*

MW-4 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	4
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.71*
SULFATE mg/L	<5*

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.03'
BENZENE ug/L	**11000**
TOLUENE ug/L	**31000**
ETHYLBENZENE ug/L	**4400**
TOTAL XYLENES ug/L	**24400**
MTBE ug/L	**34000**
NAPHTHALENE ug/L	**1400**
EDB ug/L	**52**
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.019*
SULFATE mg/L	<5*

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**7200**
TOLUENE ug/L	**14000**
ETHYLBENZENE ug/L	**4000**
TOTAL XYLENES ug/L	**23000**
MTBE ug/L	**410**
NAPHTHALENE ug/L	**2300**
EDB ug/L	<0.02
LEAD ug/L	**15.4**
FERROUS IRON mg/L	0.67*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**8300**
TOLUENE ug/L	**23000**
ETHYLBENZENE ug/L	**3200**
TOTAL XYLENES ug/L	**22100**
MTBE ug/L	**410**
NAPHTHALENE ug/L	**1500**
EDB ug/L	<0.02
LEAD ug/L	**22.4**
FERROUS IRON mg/L	0.418*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE:

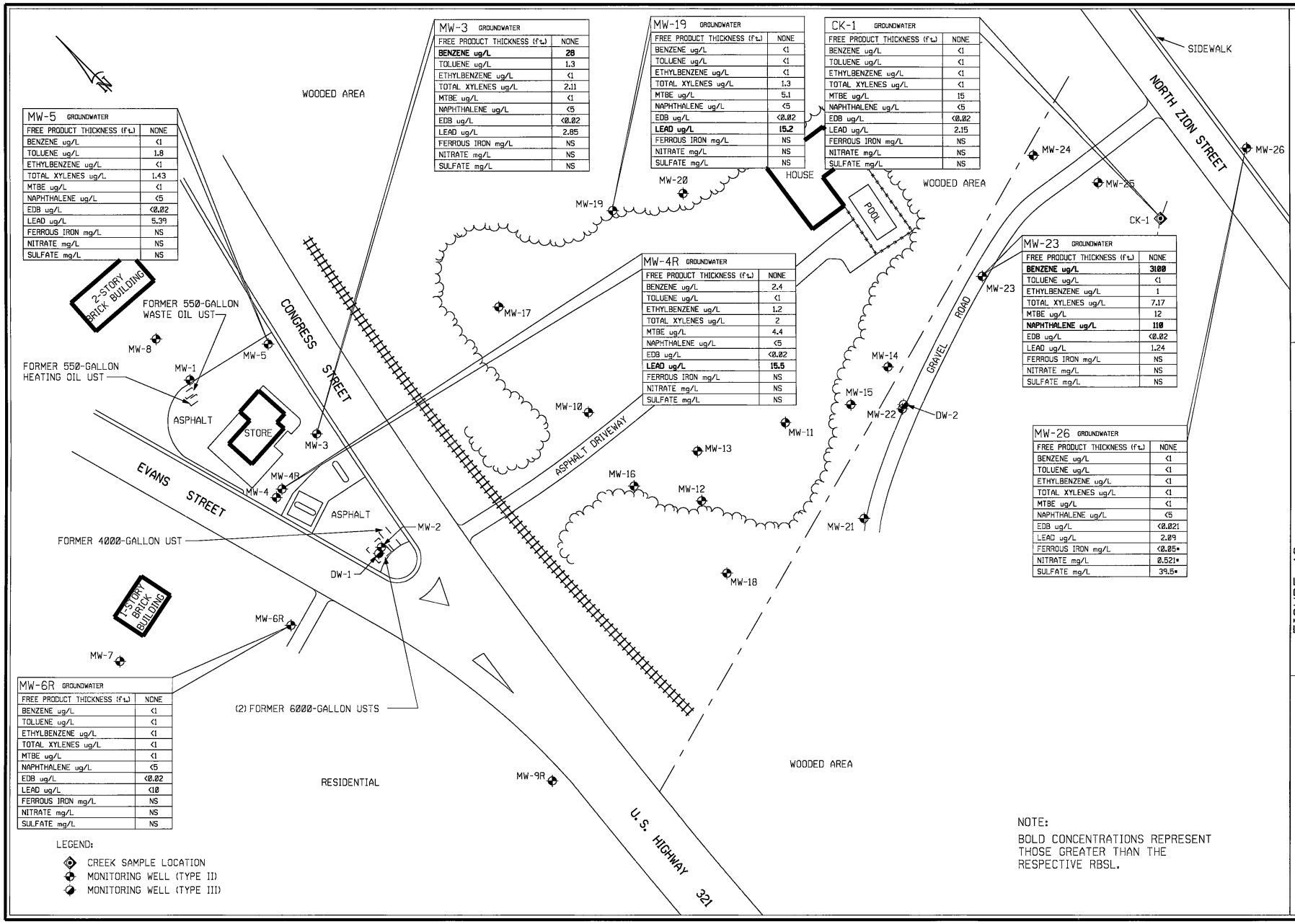
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

NOTES:

TITLE FIGURE 4B UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
125216.DGN		BB		1" = 80'	05-14-2007	14.25384.0012



MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**28**
TOLUENE ug/L	1.3
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	2.11
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	2.85
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-19 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	1.3
MTBE ug/L	5.1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**15.2**
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	15
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	2.15
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	1.8
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	1.43
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	5.39
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-4R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	2.4
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	1.2
TOTAL XYLENES ug/L	2
MTBE ug/L	4.4
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**15.5**
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-23 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**3100**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	1
TOTAL XYLENES ug/L	7.17
MTBE ug/L	12
NAPHTHALENE ug/L	**110**
EDB ug/L	<0.02
LEAD ug/L	1.24
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-26 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.021
LEAD ug/L	2.89
FERROUS IRON mg/L	<0.25*
NITRATE mg/L	0.521*
SULFATE mg/L	39.5*

MW-6R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE:

BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 4C UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	05-14-2007	14.25384.0012

NOTES:

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	04/19/2007	96.54	40.79	0	48	15	55.75
MW-2	04/19/2007	98.17	49.93*	0.03	54	15	48.24
MW-3	04/19/2007	95.81	42.51	0	45	15	53.30
MW-4	04/19/2007	98.52	Dry	0	45	15	Not Applicable
MW-4R	04/19/2007	98.14	46.97	0	60	20	51.17
MW-5	04/19/2007	94.41	40.69	0	45	15	53.72
MW-6R	04/19/2007	103.91	55.45	0	65	20	48.46
MW-7	04/19/2007	102.34	50.60	0	52	15	51.74
MW-8	04/19/2007	97.63	40.62	0	45	15	57.01
MW-9R	04/19/2007	101.13	51.80	0	65	20	49.33
MW-10	04/19/2007	88.26	45.71	0	50	15	42.55
MW-11	04/19/2007	70.63	31.53	0	38	15	39.10
MW-12	04/19/2007	81.21	38.66	0	50	15	42.55
MW-13	04/19/2007	81.02	40.74	0	50	15	40.28
MW-14	04/19/2007	69.55	33.34	0	40	20	36.21
MW-15	04/19/2007	72.06	34.89	0	40	20	37.17
MW-16	04/19/2007	85.19	42.16	0	50	20	43.03
MW-17	04/19/2007	85.66	36.08	0	50	15	49.58
MW-18	04/19/2007	80.83	38.65	0	50	15	42.18

LPH = Liquid Phase Hydrocarbons
* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE I (continued) Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-19	04/19/2007	82.27	38.97	0	46	15	43.30
MW-20	04/19/2007	81.44	39.02	0	46	15	42.42
MW-21	04/19/2007	67.40	25.74	0	40	15	41.66
MW-22	04/19/2007	65.12	31.31	0	40	20	33.81
MW-23	04/19/2007	62.15	30.37	0	40	20	31.78
MW-24	04/19/2007	49.50	18.21	0	25	15	31.29
MW-25	04/19/2007	41.63	13.69	0	23	15	27.94
MW-26	04/19/2007	43.83	17.94	0	35	20	25.89
DW-1	04/19/2007	98.62	50.61	0	80	5	48.01
DW-2	04/19/2007	65.10	33.02	0	80	5	32.08

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II
Groundwater Analytical Results, dated April 19-20, 2007
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
Free Product Thickness	NA	None	0.03'	None	NA	None	None	None	None	None	None
Benzene	5	<1	**11000**	**28**	NS	2.4	<1	<1	<1	<1	<1
Toluene	1000	<1	**31000**	1.3	NS	<1	1.8	<1	<1	<1	<1
Ethylbenzene	700	<1	**4400**	<1	NS	1.2	<1	<1	<1	<1	<1
Xylenes	10000	<1	**24400**	2.11	NS	2	1.43	<1	<1	<1	<1
Total BTEX	NA	<4	70800	<32.41	NA	<6.6	<5.23	<4	<4	<4	<4
MTBE	40	<1	**34000**	<1	NS	4.4	<1	<1	<1	<1	<1
Naphthalene	25	<5	**1400**	<5	NS	<5	<5	<5	<5	<5	<5
EDB	0.05	<0.02	**52**	<0.02	NS	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead	15	5.31	<10	2.85	NS	**15.5**	5.39	<10	<10	<1	<10
Ferrous Iron	NA	<0.05*	<0.05*	NS	NS	NS	NS	NS	NS	NS	NS
Nitrate	NA	0.14*	0.019*	NS	NS	NS	NS	NS	NS	NS	NS
Sulfate	NA	15.8*	<5*	NS	NS	NS	NS	NS	NS	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l

TABLE II (continued)
Groundwater Analytical Results, dated April 19-20, 2007
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None	None
Benzene	5	**5400**	**6500**	**6600**	**8300**	**5100**	**3300**	**7200**	<1	**1700**	<1
Toluene	1000	22	**13000**	**4800**	**23000**	100	52	**14000**	<1	**1800**	<1
Ethylbenzene	700	<20	**2800**	**2500**	**3200**	<20	3.5	**4000**	<1	470	<1
Xylenes	10000	238	**16100**	7800	**22100**	74	29.5	**23000**	<1	2750	1.3
Total BTEX	NA	<5680	38400	21700	56600	<5294	3385	48200	<4	6720	<4.3
MTBE	40	**170**	**790**	<20	**410**	<20	<1	**410**	5.7	**3200**	5.1
Naphthalene	25	**350**	**1700**	**970**	**1500**	**300**	**240**	**2300**	<5	**250**	<5
EDB	0.05	<0.02	<0.02	<0.02	<0.02	<0.019	<0.02	<0.02	<0.02	**0.055**	<0.02
Lead	15	<10	<10	<10	**22.4**	<10	**15.5**	**15.4**	<10	<10	**15.2**
Ferrous Iron	NA	NS	1.58*	NS	0.418*	NS	0.06*	0.67*	NS	NS	NS
Nitrate	NA	NS	<0.01*	NS	<0.01*	NS	0.025*	<0.01*	NS	NS	NS
Sulfate	NA	NS	<5*	NS	<5*	NS	<5*	<5*	NS	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE II (continued)
Groundwater Analytical Results, dated April 19-20, 2007
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	MW-26 (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None	None
Benzene	5	<1	**70**	**1400**	**3100**	**240**	**430**	<1	<1	**440**	<1
Toluene	1000	<1	<50	5.6	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	700	<1	<50	1.2	1	<1	<1	<1	<1	<1	<1
Xylenes	10000	<1	177	17.5	7.17	1.7	1	<1	<1	<1	<1
Total BTEX	NA	<4	<347	1424.3	<3109.17	<243.7	<433	<4	<4	<443	<4
MTBE	40	4.2	**440**	9.7	12	<1	<1	<1	4	11	15
Naphthalene	25	<5	**<250**	**68**	**110**	**31**	**26**	<5	<5	**27**	<5
EDB	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.021	<0.02	<0.02	<0.02
Lead	15	<10	<1	<1	1.24	3.94	2.51	2.09	<10	<1	2.15
Ferrous Iron	NA	NS	NS	NS	NS	NS	NS	<0.05*	<0.05*	NS	NS
Nitrate	NA	NS	NS	NS	NS	NS	NS	0.521*	2.71*	NS	NS
Sulfate	NA	NS	NS	NS	NS	NS	NS	39.5*	<5*	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE III
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-1	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	15	<30	<5	**42**	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	<1.0
	11/02/1998	0.00	<1.0	<1.0	<1.0	7.77	<10.77	<5.0	23.8	<0.05
MW-2	04/19/2007	0.03	**11000**	**31000**	**4400**	**24400**	70800	**34000**	**1400**	**52**
	08/21/2006	0.30	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.20	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**15900**	**90700**	**4800**	**26700**	138100	**82000**	**840**	**127**
	11/02/1998	0.00	**23100**	**89000**	**5380**	**27380**	144860	**227000**	**2140**	**78.65**
MW-3	04/20/2007	0.00	**28**	1.3	<1	2.11	<32.41	<1	<5	<0.02
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**110**	<5	<5	<5	<125	<5	<5	<0.019
	03/08/2005	0.00	**123**	10	**18**	16	167	<5	<5	<0.02
	08/20/2003	0.00	**385**	<25	<25	<25	<460	<25	<25	<0.02
	01/11/2001	0.00	**434**	288	182	146	1050	**89.9**	12.9	**<1.0**
	11/02/1998	0.00	**2260**	52.7	215	889	3416.7	**<50**	<50	<0.02
MW-4	04/20/2007	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	**1781**	610	311	1921	4623	<10	**40**	**<10**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-4R	04/19/2007	0.00	2.4	<1	1.2	2	<6.6	4.4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-5	04/20/2007	0.00	<1	1.8	<1	1.43	<5.23	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5	<5	<5	<15	<30	<1.0	<5.0	**<1.0**
MW-6	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	2.4	19.3	2.6	8.3	32.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-6R	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-7	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.4	13.0	3.1	5.0	22.5	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-8	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.2	1.9	3.5	15.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-9	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	<1.0	2.1	<1.0	<1.0	<5.1	<1.0	<5.0	**<1.0**
MW-9R	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-10	04/19/2007	0.00	**5400**	22	<20	238	<5680	**170**	**350**	<0.02
	08/21/2006	0.00	**5800**	**3700**	**1700**	3620	14820	**<100**	**410**	<0.02
	06/27/2005	0.00	**6000**	**2400**	**1900**	3300	13600	**<1000**	**<1000**	<0.019
	03/08/2005	0.42	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	Sheen	**8010**	**8770**	**2310**	7200	26290	**<250**	**774**	<0.02
	01/11/2001	0.00	**8950**	**49000**	**8550**	**49000**	115500	**22**	**3300**	**<500**
	11/02/1998	0.00	**11200**	**30800**	**3360**	**15500**	60860	**<100**	**766**	**<100**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-11	04/19/2007	0.00	**6500**	**13000**	**2800**	**16100**	38400	**790**	**1700**	<0.02
	08/21/2006	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**5900**	**25000**	**5100**	**31400**	67400	**<2500**	**3000**	**0.34**
	03/08/2005	0.15	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	1.95	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**8000**	**11800**	**3470**	**16400**	39670	**31**	**1440**	**<100**
	11/02/1998	0.00	**6280**	**15600**	**2390**	**10800**	35070	**<100**	**617**	**<50**
MW-12	04/19/2007	0.00	**6600**	**4800**	**2500**	7800	21700	<20	**970**	<0.02
	08/21/2006	0.00	**5800**	<100	<100	<100	<6100	**<100**	**250**	<0.02
	06/27/2005	0.00	**8200**	7.7	6.9	52.2	8266.8	**210**	**410**	<0.019
	03/08/2005	0.00	**7680**	264	52	315	8311	**195**	**173**	<0.02
MW-13	04/19/2007	0.00	**8300**	**23000**	**3200**	**22100**	56600	**410**	**1500**	<0.02
	08/21/2006	0.00	**7300**	**36000**	**3400**	**20600**	67300	**<100**	**1200**	**0.19**
	06/27/2005	0.00	**8600**	**61000**	**2100**	**13000**	84700	**<250**	**620**	<0.019
	03/08/2005	0.00	**13300**	**33600**	**2880**	**16600**	66380	**<100**	**700**	**0.08**
MW-14	04/19/2007	0.00	**5100**	100	<20	74	<5294	<20	**300**	<0.019
	08/21/2006	0.00	**6100**	<100	<100	<100	<6400	**<100**	**260**	<0.02
	06/27/2005	0.00	**4500**	<100	<100	<100	<4800	**<100**	**170**	**0.11**
	03/08/2005	0.00	**6390**	<125	<125	<125	<6765	**<125**	**234**	<0.02
MW-15	04/19/2007	0.00	**3300**	52	3.5	29.5	3385	<1	**240**	<0.02
	08/21/2006	0.00	**2400**	49	5.2	63	2517.2	<5	**120**	<0.02
	06/27/2005	0.00	**680**	13	<5	9.4	<707.4	<5	**63**	<0.019
	03/08/2005	0.00	**11400**	182	<50	96	<11728	**<50**	**485**	<0.02
MW-16	04/19/2007	0.00	**7200**	**14000**	**4000**	**23000**	48200	**410**	**2300**	<0.02
	08/21/2006	0.00	**6700**	<100	<100	<100	<7000	**<100**	**230**	<0.02
	06/27/2005	0.00	**9400**	**28000**	**4800**	**31700**	73900	**<2500**	**3200**	<0.019
	03/08/2005	0.04	NS	NS	NS	NS	NA	NS	NS	NS
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-17	04/20/2007	0.00	<1	<1	<1	<1	<4	5.7	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-18	04/19/2007	0.00	**1700**	**1800**	470	2750	6720	**3200**	**250**	**0.055**
	08/21/2006	0.00	**550**	610	49	570	1779	**1200**	**66**	**0.1**
MW-19	04/20/2007	0.00	<1	<1	<1	1.3	<4.3	5.1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-20	04/20/2007	0.00	<1	<1	<1	<1	<4	4.2	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-21	04/20/2007	0.00	**70**	<50	<50	177	<347	**440**	**<250**	<0.02
	08/21/2006	0.00	**240**	19	<5	26.2	<290.2	**910**	**110**	<0.02
MW-22	04/20/2007	0.00	**1400**	5.6	1.2	17.5	1424.3	9.7	**68**	<0.02
	08/21/2006	0.00	**5000**	<100	<100	<100	<5300	**<100**	**180**	<0.02
MW-23	04/20/2007	0.00	**3100**	<1	1	7.17	<3109.17	12	**110**	<0.02
	08/21/2006	0.00	**230**	<5	<5	<5	<245	<5	<5	<0.02
MW-24	04/20/2007	0.00	**240**	<1	<1	1.7	<243.7	<1	**31**	<0.02
	08/21/2006	0.00	**390**	<5	<5	<5	<405	<5	**26**	<0.02
MW-25	04/20/2007	0.00	**430**	<1	<1	1	<433	<1	**26**	<0.02
	08/21/2006	0.00	**700**	<5	<5	7.7	<717.7	<5	**35**	<0.02
MW-26	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
DW-1	04/19/2007	0.00	<1	<1	<1	<1	<4	4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	8	<5	<5	<23	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.9	<1.0	3.1	<15.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5.0	<5.0	<5.0	<15	<30.0	<5.0	<5.0	**<5.0**
DW-2	04/20/2007	0.00	**440**	<1	<1	<1	<443	11	**27**	<0.02
	08/21/2006	0.00	**450**	<5	<5	<5	<465	5.9	25	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
CK-1	04/20/2007	0.00	<1	<1	<1	<1	<4	15	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	<5	<5	<5	<5	<20	**8**	<5	<0.02
	08/20/2003	0.00	**15**	<5	<5	<5	<30	**295**	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	1.2	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<5.0	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

APPENDIX A

SCDHEC Correspondence

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

NOV 29 2006

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #28411 and 28412; MWA #UMW-20426
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received November 17, 2006
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced plan submitted by ATC Associates, Inc.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Based on the field screening results, up to six monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for five shallow and one deep well. A copy of the approval form is enclosed for your records. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release and the creek should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. Groundwater samples from monitoring wells MW-1, MW-2, MW-11, MW-13, MW-15, MW-16, DW-1 and the five new wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated August 24, 2005. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreement numbers 28411 and 28412 have been approved in the amount shown on the enclosed cost agreement forms for the aforementioned scope of work. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air temperature, general weather conditions during the AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, fax me at (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical (with MWA)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	ATC Associates, Incorporated
On behalf of:	Keenan Energy Incorporated
UST Permit #:	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to five (5) shallow and one (1) deep groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Arthur Shrader (tel: (803) 896-6669 or e-mail: shradeaa@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **November 20, 2006** **Approval #:** **UMW-20426**

Arthur Shrader, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management

APPENDIX B

Free Product Recovery Summary Reports

SHAMROCK
ENVIRONMENTAL CORPORATION

April 5, 2007

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Events
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Events: February 13-14, 2007 and March 13-14, 2007

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents four EFR events recently performed at the above referenced site. The events were conducted February 13-14, 2007 and March 13-14, 2007.

The following table provides the total volume of fluids recovered during the events, the amount of separated free product recovered during each event and the amount of calculated gallons of free product recovered as a result of vapor recovery for each event.

Date of EFR Event	Event Duration (Consecutive Hours)	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
February 13, 2007	8	310	2	0.875
February 14, 2007	8	156	8	2.56
March 13, 2007	8	321	2	0.354
March 14, 2007	8	184	2	1.98

Attachment A contains copies of the manifests used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the events.

Attachment C contains the Field Data Record used to document the pertinent information collected during the events. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following tables provide pre-recovery and post recovery depth to water and depth to product levels in various monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: February 13, 2007

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	46.27	46.26	47.20	NFP
MW-11	32.00	31.99	33.23	NFP
MW-12	39.10	NFP	39.16	NFP
MW-13	41.25	NFP	41.23	NFP
MW-14	NR	NR	NR	NR
MW-15	NR	NR	NR	NR
MW-16	42.68	42.67	44.37	NFP
MW-17	NR	NR	NR	NR
MW-18	NR	NR	NR	NR

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

Pre/Post Recovery Product/Water Levels
Date of Event: February 14, 2007

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	NR	NR	NR	NR
DW-1	51.65	NFP	51.48	NFP
MW-2	50.74	50.70	52.30	NFP
MW-3	43.36	NFP	43.40	NFP
MW-4R	47.80	NFP	47.87	NFP
MW-5	NR	NR	NR	NR

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

Pre/Post Recovery Product/Water Levels
Date of Event: March 13, 2007

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	45.96	45.95	47.15	NFP
MW-11	31.79	NFP	33.29	NFP
MW-12	42.13	NFP	38.65	NFP
MW-13	40.99	NFP	41.00	NFP
MW-14	33.54	NFP	33.53	NFP
MW-15	35.08	NFP	35.18	NFP
MW-16	42.29	NFP	42.25	NFP
MW-18	38.60	NFP	38.61	NFP
MW-19	39.18	NFP	39.16	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

Pre/Post Recovery Product/Water Levels
Date of Event: March 14, 2007

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	41.31	NFP	41.24	NFP
DW-1	50.71	NFP	51.22	NFP
MW-2	50.34	50.32	52.75	NFP
MW-3	42.98	NFP	42.94	NFP
MW-4R	47.41	NFP	47.40	NFP
MW-5	41.14	NFP	41.13	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.
NR=No Reading

The following tables provide vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: February 13, 2007

Time	MW-12 (DTW)	MW-13 (DTW)
0830	39.10	41.25
0900	39.10	41.28
0930	39.10	41.28
1000	39.10	41.28
1030	39.13	41.28
1100	39.13	41.32
1130	39.13	41.32
1200	39.12	41.29
1230	39.12	41.28
1300	39.12	41.23
1330	39.12	41.23
1400	39.12	41.23
1430	39.14	41.23
1500	39.14	41.23
1530	39.16	41.23
1600	39.15	41.23
1630	39.16	41.23

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Influence Data Table
Date of Event: February 14, 2007

Time	MW-3 (DTW)	MW-4R (DTW)
0730	43.36	47.80
0800	43.36	47.80
0830	43.36	47.80
0900	43.36	47.80
0930	43.36	47.80
1000	43.36	47.80
1030	43.36	47.85
1100	43.39	47.85
1130	43.39	47.85
1200	43.39	47.84
1230	43.39	47.84
1300	43.39	47.85
1330	43.38	47.86
1400	43.39	47.86
1430	43.38	47.87
1500	43.40	47.87
1530	43.40	47.87

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Influence Data Table
Date of Event: March 13, 2007

Time	MW-15 (DTW)	MW-13 (DTW)
0730	35.08	40.99
0800	35.11	41.10
0830	35.12	41.03
0900	35.15	41.07
0930	35.17	41.08
1000	35.18	41.09
1030	35.18	41.09
1100	35.19	41.17
1130	35.18	41.10
1200	35.18	41.04
1230	35.18	41.01
1300	35.18	40.99
1330	35.18	40.99
1400	35.18	41.02
1430	35.18	41.01
1500	35.18	41.00
1530	35.18	41.00

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Influence Data Table
Date of Event: March 14, 2007

Time	MW-3 (DTW)	MW-4R (DTW)
0730	42.98	47.41
0800	43.01	47.42
0830	43.10	47.42
0900	43.02	47.42
0930	42.99	47.42
1000	42.95	47.42
1030	42.97	47.42
1100	42.94	47.42
1130	42.94	47.42
1200	42.94	47.42
1230	42.94	47.42
1300	42.94	47.42
1330	42.94	47.42
1400	42.94	47.42
1430	42.94	47.41
1500	42.94	47.41
1530	42.94	47.40

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone	4. Waste Tracking Number 02147

5. Generator's Name and Mailing Address
United Exxon
401 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORPORATION
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	466	G	
	2.					
	3.					
	4.					

SHAMROCK ENVIRONMENTAL CORPORATION

13. Special Handling Instructions and Additional Information
9.1. 2005-0063-BG
Shamrock Job No. 02-AFV-07-0230

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: DANA DEWEZ AGENT FOR ATC
Signature:
Month 02 Day 14 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: DANA DEWEZ
Signature:
Month 02 Day 14 Year 07
Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator) U.S. EPA ID Number
Facility's Phone:
17c. Signature of Alternate Facility (or Generator) Month Day Year

1mo1 1mo3 10sd 40 PH-6.0 FP-RT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name
Signature
Month 02 Day 15 Year 07

GENERATOR | INT'L | TRANSPORTER | DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .
Manifest Doc. No.: 03 # 3.7
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
United Exxon
401 N. Congress Street
Winnsboro, SC

4. Generator's Phone (803) 735-0003 (Agent for Generator)

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name:
8. US EPA ID Number: . . . . . .
B. Transporter's Phone:

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.		X	Gasoline Mixture, 3, UN1203, PG II	001	TT	0.0321	G
b.							
c.							
d.							

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AFV-07-0359
SHEEN
Power Unit #: VT7 Trailer #:
Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: Ryan Stubbs
Signature:
Month 03 Day 13 Year 07

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Paul Jacobs
Signature:
Month 03 Day 13 Year 07

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space
1mol 1mB pH-6.0 2 gal gn PP-RT

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SGC
Printed/Typed Name:
Signature:
Month 03 Day 15 Year 07

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ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 800 881-1098

4. Waste Tracking Number: 03147

5. Generator's Name and Mailing Address: United Exxon, 401 N. Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address)

Generator's Phone: (803) 735-0003 (agent for generator)

6. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORPORATION — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORPORATION, 6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214, (336)-375-1989 — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	184	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information: 03-AFV-07-0359 — 9A. 2005-0063-BG

Sheen

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: (Agent for UC) Paul Jacobs — Signature: [signature] — Month 03 Day 14 Year 07

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S. — Port of entry/exit:

Transporter Signature (for exports only): — Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Paul Jacobs — Signature: [signature] — Month 03 Day 14 Year 07

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

1M01 1M03 2gl yo pH-6.0 PA-RT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: [illegible] — Signature: [signature] — Month 03 Day 15 Year 07

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 13, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	131.2	352	4	352	1872	0.00012	0.920	0.460
30	158.3	460	4	460	2446	0.00015	1.450	0.725
60	117.9	225	4	225	1197	0.00007	0.528	0.264
90	100.4	287	4	287	1526	0.00010	0.574	0.287
120	104.6	174	4	174	925	0.00006	0.363	0.181
150	101.3	190	4	190	1010	0.00006	0.383	0.192
180	101.5	190	4	190	1010	0.00006	0.384	0.192
210	103.0	190	4	190	1010	0.00006	0.390	0.195
240	104.7	211	4	211	1122	0.00007	0.440	0.220
270	106.2	206	4	206	1095	0.00007	0.436	0.218
300	99.2	282	4	282	1500	0.00009	0.557	0.278
330	102.8	377	4	377	2005	0.00013	0.772	0.386
360	96.6	370	4	370	1968	0.00012	0.712	0.356
390	109.6	366	4	366	1946	0.00012	0.799	0.400
420	112.9	360	4	360	1914	0.00012	0.810	0.405
450	107.8	146	4	146	776	0.00005	0.313	0.157
480	104.7	145	4	145	771	0.00005	0.302	0.151
510					**Total emissions in pounds**			**4.916**
			Total Emissions Converted into Gallons:					**0.8747678**

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 14, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	144.2	320	4	320	1702	0.00011	0.919	0.460
30	122.4	1,150	4	1150	6115	0.00038	2.804	1.402
60	157.2	1,182	4	1182	6286	0.00039	3.702	1.851
90	115.8	1,109	4	1109	5897	0.00037	2.557	1.279
120	118.0	1,115	4	1115	5929	0.00037	2.620	1.310
150	97.8	1,121	4	1121	5961	0.00037	2.185	1.092
180	84.0	1,119	4	1119	5951	0.00037	1.872	0.936
210	93.2	1,008	4	1008	5360	0.00033	1.871	0.936
240	102.9	698	4	698	3712	0.00023	1.431	0.716
270	87.7	692	4	692	3680	0.00023	1.209	0.604
300	96.9	682	4	682	3627	0.00023	1.316	0.658
330	101.7	692	4	692	3680	0.00023	1.402	0.701
360	93.3	690	4	690	3669	0.00023	1.282	0.641
390	101.4	558	4	558	2967	0.00019	1.127	0.564
420	78.0	787	4	787	4185	0.00026	1.223	0.611
450	103.8	585	4	585	3111	0.00019	1.210	0.605
480	107.9	690	4	690	3669	0.00023	1.483	0.742
510					**Total emissions in pounds**			**14.365**
			Total Emissions Converted into Gallons:					**2.5560969**

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: March 13, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	105.9	213	4	213	1133	0.00007	0.449	0.225
30	95.0	231	4	231	1228	0.00008	0.437	0.219
60	79.1	100	4	100	532	0.00003	0.158	0.079
90	88.3	184	4	184	978	0.00006	0.323	0.162
120	71.5	190	4	190	1010	0.00006	0.271	0.135
150	70.3	183	4	183	973	0.00006	0.256	0.128
180	78.9	189	4	189	1005	0.00006	0.297	0.148
210	92.8	167	4	167	888	0.00006	0.309	0.154
240	88.6	106	4	106	564	0.00004	0.187	0.094
270	82.4	113	4	113	601	0.00004	0.186	0.093
300	83.1	115	4	115	612	0.00004	0.190	0.095
330	85.7	109	4	109	580	0.00004	0.186	0.093
360	80.8	103	4	103	548	0.00003	0.166	0.083
390	75.4	112	4	112	596	0.00004	0.168	0.084
420	84.4	115	4	115	612	0.00004	0.193	0.097
450	73.6	135	4	135	718	0.00004	0.198	0.099
480	75.6	122	4	122	649	0.00004	0.184	0.092
510					**Total emissions in pounds**			**1.987**
			Total Emissions Converted into Gallons:					**0.3535677**

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: March 14, 2007

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	181.7	783	4	783	4164	0.00026	2.834	1.417
30	136.9	893	4	893	4749	0.00030	2.436	1.218
60	125.3	861	4	861	4579	0.00029	2.150	1.075
90	98.7	698	4	698	3712	0.00023	1.373	0.686
120	92.9	673	4	673	3579	0.00022	1.246	0.623
150	90.1	701	4	701	3728	0.00023	1.258	0.629
180	83.9	698	4	698	3712	0.00023	1.167	0.583
210	79.8	642	4	642	3414	0.00021	1.020	0.510
240	73.9	628	4	628	3340	0.00021	0.925	0.462
270	68.3	696	4	696	3701	0.00023	0.946	0.473
300	72.5	708	4	708	3765	0.00024	1.022	0.511
330	87.6	713	4	713	3792	0.00024	1.244	0.622
360	80.3	692	4	692	3680	0.00023	1.107	0.554
390	92.1	645	4	645	3430	0.00021	1.184	0.592
420	87.9	651	4	651	3462	0.00022	1.140	0.570
450	94.4	659	4	659	3504	0.00022	1.239	0.619
480	82.9	570	4	570	3031	0.00019	0.941	0.470
510					**Total emissions in pounds**			**11.145**
			Total Emissions Converted into Gallons:					**1.9830295**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 14, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/14/2007	7:30	25.0	20.0	3200	6	140	26.1	0.739	144.2	MW-2
2/14/2007	8:00	25.0	20.0	3290	6	150	21.9	0.781	122.4	MW-2
2/14/2007	8:30	25.0	20.0	3360	6	160	28	0.72	157.2	MW-2
2/14/2007	9:00	25.0	20.0	3310	6	180	21.6	0.784	115.8	MW-2
2/14/2007	9:30	25.0	19.0	3610	6	190	20.5	0.795	118.0	MW-2
2/14/2007	10:00	25.0	19.0	3300	6	190	18.6	0.814	97.8	MW-2
2/14/2007	10:30	25.0	19.0	3010	6	190	17.5	0.825	84.0	MW-2
2/14/2007	11:00	25.0	19.0	3110	6	190	18.8	0.812	93.2	MW-2
2/14/2007	11:30	25.0	19.0	3490	6	190	18.5	0.815	102.9	MW-2
2/14/2007	12:00	25.0	19.0	3090	6	190	17.8	0.822	87.7	MW-2
2/14/2007	12:30	25.0	19.0	3340	6	190	18.2	0.818	96.9	MW-2
2/14/2007	13:00	25.0	19.0	3890	6	190	16.4	0.836	101.7	MW-2
2/14/2007	13:30	25.0	19.0	3800	6	190	15.4	0.846	93.3	MW-2
2/14/2007	14:00	25.0	19.0	3720	6	190	17.1	0.829	101.4	MW-2
2/14/2007	14:30	25.0	19.0	3240	6	190	15.1	0.849	78.0	MW-2
2/14/2007	15:00	25.0	19.0	3700	6	190	17.6	0.824	103.8	MW-2
2/14/2007	15:30	25.0	19.0	3720	6	190	18.2	0.818	107.9	MW-2
OL=Off-Line										

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 13, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Well-Head -Vacuum-MW-16 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/13/2007	8:30	27.0	OL	18.0	OL	3140	6	140	24.2	0.758	131.2	MW-11
2/13/2007	9:00	27.0	OL	18.0	OL	3250	6	140	28.2	0.718	158.3	MW-11
2/13/2007	9:30	27.0	OL	18.0	OL	3340	6	180	21.8	0.782	117.9	MW-11
2/13/2007	10:00	26.0	OL	18.0	OL	3070	6	180	20.2	0.798	100.4	MW-11
2/13/2007	10:30	26.0	OL	18.0	OL	3510	6	190	18.7	0.813	104.6	MW-11
2/13/2007	11:00	26.0	OL	18.0	OL	3570	6	190	17.8	0.822	101.3	MW-11
2/13/2007	11:30	26.0	OL	18.0	OL	3500	6	190	18.2	0.818	101.5	MW-11
2/13/2007	12:00	26.0	OL	18.0	OL	3550	6	190	18.2	0.818	103.0	MW-11
2/13/2007	12:30	26.0	OL	18.0	OL	3650	6	190	18	0.82	104.7	MW-11
2/13/2007	13:00	25.0	OL	18.0	OL	3580	6	190	18.6	0.814	106.2	MW-11
2/13/2007	13:30	22.0	17.0	OL	15.0	3110	6	190	20	0.8	99.2	MW-10, MW-16
2/13/2007	14:00	22.0	17.0	OL	15.0	3100	6	190	20.8	0.792	102.8	MW-10, MW-16
2/13/2007	14:30	22.0	17.0	OL	15.0	3190	6	190	19	0.81	96.6	MW-10, MW-16
2/13/2007	15:00	22.0	17.0	OL	15.0	3600	6	190	19.1	0.809	109.6	MW-10, MW-16
2/13/2007	15:30	22.0	17.0	OL	15.0	3690	6	190	19.2	0.808	112.9	MW-10, MW-16
2/13/2007	16:00	22.0	17.0	OL	15.0	3540	6	190	19.1	0.809	107.8	MW-10, MW-16
2/13/2007	16:30	22.0	17.0	OL	15.0	3420	6	190	19.2	0.808	104.7	MW-10, MW-16
OL=Off-Line												

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: March 13, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
3/13/2007	7:30	26.0	OL	23.0	3980	6	140	15.4	0.846	105.9	MW-11
3/13/2007	8:00	26.0	OL	23.0	3620	6	140	15.2	0.848	95.0	MW-11
3/13/2007	8:30	25.0	OL	23.0	3300	6	180	14.8	0.852	79.1	MW-11
3/13/2007	9:00	25.0	OL	22.0	3450	6	180	15.8	0.842	88.3	MW-11
3/13/2007	9:30	24.0	OL	22.0	3180	6	190	14.1	0.859	71.5	MW-11
3/13/2007	10:00	24.0	OL	22.0	3220	6	190	13.7	0.863	70.3	MW-11
3/13/2007	10:30	24.0	OL	22.0	3460	6	190	14.3	0.857	78.9	MW-11
3/13/2007	11:00	25.0	OL	22.0	3130	6	190	18.6	0.814	92.8	MW-11
3/13/2007	11:30	25.0	OL	22.0	3250	6	190	17.1	0.829	88.6	MW-11
3/13/2007	12:00	24.0	22.0	OL	3380	6	190	15.3	0.847	82.4	MW-10
3/13/2007	12:30	24.0	22.0	OL	3120	6	190	16.7	0.833	83.1	MW-10
3/13/2007	13:00	24.0	22.0	OL	3340	6	190	16.1	0.839	85.7	MW-10
3/13/2007	13:30	24.0	22.0	OL	3250	6	190	15.6	0.844	80.8	MW-10
3/13/2007	14:00	24.0	22.0	OL	3330	6	190	14.2	0.858	75.4	MW-10
3/13/2007	14:30	24.0	22.0	OL	3460	6	190	15.3	0.847	84.4	MW-10
3/13/2007	15:00	24.0	22.0	OL	3250	6	190	14.2	0.858	73.6	MW-10
3/13/2007	15:30	24.0	22.0	OL	3140	6	190	15.1	0.849	75.6	MW-10
OL=Off-Line											

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: March 14, 2007

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
3/14/2007	7:30	25.0	21.0	4000	6	140	26.3	0.737	181.7	MW-2
3/14/2007	8:00	26.0	24.0	3490	6	150	23.1	0.769	136.9	MW-2
3/14/2007	8:30	26.0	24.0	3440	6	160	21.8	0.782	125.3	MW-2
3/14/2007	9:00	25.0	24.0	3160	6	180	19.3	0.807	98.7	MW-2
3/14/2007	9:30	25.0	24.0	3220	6	190	18.1	0.819	92.9	MW-2
3/14/2007	10:00	25.0	24.0	3510	6	190	16.1	0.839	90.1	MW-2
3/14/2007	10:30	25.0	24.0	3440	6	190	15.3	0.847	83.9	MW-2
3/14/2007	11:00	25.0	24.0	3550	6	190	14.1	0.859	79.8	MW-2
3/14/2007	11:30	25.0	24.0	3360	6	190	13.8	0.862	73.9	MW-2
3/14/2007	12:00	25.0	23.0	3510	6	190	12.2	0.878	68.3	MW-2
3/14/2007	12:30	25.0	23.0	3180	6	190	14.3	0.857	72.5	MW-2
3/14/2007	13:00	25.0	23.0	3290	6	190	16.7	0.833	87.6	MW-2
3/14/2007	13:30	25.0	23.0	3130	6	190	16.1	0.839	80.3	MW-2
3/14/2007	14:00	25.0	23.0	3360	6	190	17.2	0.828	92.1	MW-2
3/14/2007	14:30	25.0	23.0	3150	6	190	17.5	0.825	87.9	MW-2
3/14/2007	15:00	25.0	23.0	3270	6	190	18.1	0.819	94.4	MW-2
3/14/2007	15:30	25.0	23.0	3150	6	190	16.5	0.835	82.9	MW-2
OL=Off-Line										

APPENDIX C

Monitor Well Construction Log

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-26
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	3/26/2007

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Brian Thomas - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Brownish-orange, soft clayey silt; damp, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Brown, soft clayey silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1.6		15.0	Brown, soft clayey silt with organic odor; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-26

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	Water Level at 17.94 feet on April 19, 2007
					18.5	
					19.0	
					19.5	
20			2.8		20.0	Brown, soft silt with organic odor; moist, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Brown, soft clayey silt; moist, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Brown, soft silty clay; wet, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
34			0.0		34.0	Brown, soft silty clay; wet, no petroleum odor
					34.5	
					35.0	Termination of Boring at 35 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3218
City: COLUMBIA State: SC Zip: 29230
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS
City: WINNSBORO Zip:
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
GRAVEL	1.0	1.0
RED SILTY CLAY	10.0	11.0
TAN SILTY CLAY	16.0	27.0
PARTIALLY WEATHERED ROCK	13.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-26 BENTONITE SEAL FROM 8.0 TO 13.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 03/26/07
35.0 ft. Date Completed: 03/26/07

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 15.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set Between: 15.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13.0 ft. to 35.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 8.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 04/18/07
Well Driller

If D Level Driller, provide supervising driller's name:

APPENDIX D

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs / John Honeycutt
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 40.79 feet
Total Well Depth (TWD) 48.00 feet
Length of the water column (LWC=TWD-DGW) 7.21 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 1.18 gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0825	
pH (s.u.)							5.79	
Specific Conductivity (µmhos/cm)							236	
Water Temperature (°C)							17.53	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: 0.03 feet
Depth to Free Product (DFP) 49.92 feet
Depth to Ground Water (DGW) 49.95 feet
Total Well Depth (TWD) 54.00 feet
Length of the water column (LWC=TWD-DGW) 4.05 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1415	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SHUBSS / JOHN MONAGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON
Site ID#: _____ Monitoring Well # MW-3
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 42.51 feet
Total Well Depth (TWD) 45.00 feet
Length of the water column (LWC=TWD-DGW) 2.49 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0845	
pH (s.u.)							6.13	
Specific Conductivity (µmhos/cm)							158	
Water Temperature (°C)							16.64	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN STUBBS / JOHN HONEYCUTT

General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORD UNITED EXXON

Site ID#: _____ Monitoring Well # MW-4R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 46.97 feet
Total Well Depth (TWD) 60.00 feet
Length of the water column (LWC=TWD-DGW) 13.03 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1440	
pH (s.u.)							6.18	
Specific Conductivity (µmhos/cm)							90	
Water Temperature (°C)							20.94	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN SAUBSS / JOHN MONEGHAN

General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORD UNITED EXXON

Site ID#: _____ Monitoring Well # MW-5

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 40.69 feet
Total Well Depth (TWD) 45.00 feet
Length of the water column (LWC=TWD-DGW) 4.31 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0915	
pH (s.u.)							6.02	
Specific Conductivity (µmhos/cm)							139	
Water Temperature (°C)							16.85	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: Ryan Stubbs / John Honeycutt

General Weather Conditions: Clear/warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon

Site ID#: _____ Monitoring Well # MW-6R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 55.45 feet
Total Well Depth (TWD) 65.00 feet
Length of the water column (LWC=TWD-DGW) 9.55 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1350	
pH (s.u.)							5.73	
Specific Conductivity (µmhos/cm)							112	
Water Temperature (°C)							19.47	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN STUBBS, JOHN MONAGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON
Site ID#: _____ Monitoring Well # MW-7
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 50.60 feet
Total Well Depth (TWD) 52.00 feet
Length of the water column (LWC=TWD-DGW) 1.40 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1415	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, unable to obtain reading slow to no recharge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN STUBBS / JOHN MONEGHAN

General Weather Conditions: CLEAR/WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON

Site ID#: _____ Monitoring Well # MW8

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 40.62 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 4.38 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0930	
pH (s.u.)							5.41	
Specific Conductivity (µmhos/cm)							131	
Water Temperature (°C)							17.58	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN SHUBSS / JOHN HONEGHAN

General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON

Site ID#: _____ Monitoring Well # MW-9R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 51.80 feet
Total Well Depth (TWD) 65.00 feet
Length of the water column (LWC=TWD-DGW) 13.20 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1330	
pH (s.u.)							6.07	
Specific Conductivity (µmhos/cm)							93	
Water Temperature (°C)							18.52	
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: Ryan Stubbs, John Monaghan

General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon

Site ID#: _____ Monitoring Well # MW10

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 45.71 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 4.29 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1100	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department-of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-11
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 31.53 feet
Total Well Depth (TWD) 38.00 feet
Length of the water column (LWC=TWD-DGW) 6.47 feet
1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= — gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1240	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Cloudy, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW12
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 38.66 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 11.34 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1120	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SHUBSS, JOHN MONAGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER EXXON
Site ID#: _____ Monitoring Well # MW13
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 40.74 feet
Total Well Depth (TWD) 50.00 feet
Length of the water column (LWC=TWD-DGW) 9.26 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= — gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1230	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, lot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN STUBBS, JOHN HONEGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: FORMER UNITED EXXON
Site ID#: _____ Monitoring Well # MW14
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 33.34 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 6.64 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1200	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, lost

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SAUBSS, JOHN MONEGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMO UNITED EXXON
Site ID#: _____ Monitoring Well # MW-15
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 34.89 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 5.11 feet
1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1220	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN STUBBS, JOHN MONAGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FMR UNITED EXXON
Site ID#: _____ Monitoring Well # MW16
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 42.16 feet
Total Well Depth (TWD) 50.06 feet
Length of the water column (LWC=TWD-DGW) 7.84 feet
1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= — gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1250	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SHUBBS / JOHN MONAGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMO UNITED EXXON
Site ID#: _____ Monitoring Well # MW17
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 36.08 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 13.92 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1040	
pH (s.u.)							5.56	
Specific Conductivity (µmhos/cm)							188	
Water Temperature (°C)							16.67	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN STUBBS / JOHN MONAGHAN

General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time _____ Received by Date/Time _____

Facility Name: FORMER UNITED EXXON

Site ID#: _____ Monitoring Well # MW18

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 38.65 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 11.35 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1140	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SHUBSS, JOHN MONEGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON
Site ID#: _____ Monitoring Well # MW19
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 38.97 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 7.03 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1020	
pH (s.u.)							5.64	
Specific Conductivity (µmhos/cm)							199	
Water Temperature (°C)							16.33	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW20
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 39.02 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 5.97 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1000	
pH (s.u.)							5.70	
Specific Conductivity (µmhos/cm)							132	
Water Temperature (°C)							16.21	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: Ryan Stubbs, John Monaghan

General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon

Site ID#: _____ Monitoring Well # MW-21

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 25.74 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 14.26 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1040	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs / John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-22
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	31.31	feet
Total Well Depth (TWD)	40.00	feet
Length of the water column (LWC=TWD-DGW)	8.69	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1100	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No Purge, hot

South Carolina Department-of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-23
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 30.37 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 9.63 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1220	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs / John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-24
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 18.21 feet
Total Well Depth (TWD) 25.00 feet
Length of the water column (LWC=TWD-DGW) 6.89 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1240	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

South Carolina Department-of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: Ryan Stubbs, John Monaghan
General Weather Conditions: Clear, warm

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: Fmr United Exxon
Site ID#: _____ Monitoring Well # MW-25
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 13.69 feet
Total Well Depth (TWD) 23.00 feet
Length of the water column (LWC=TWD-DGW) 9.31 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1300	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, hot

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South Carolina Department-of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07

Field Personnel: RYAN STUBBS / JOHN MONEGHAN

General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FMR UNITED EXXON

Site ID#: _____ Monitoring Well # MW26

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 17.94 feet
Total Well Depth (TWD) 35.10 feet
Length of the water column (LWC=TWD-DGW) 3.00 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= 9.00 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1020	
pH (s.u.)	6.10	6.19	6.31	6.26			6.58	
Specific Conductivity (µmhos/cm)	555	424	443	451			432	
Water Temperature (°C)	16.72	17.17	17.41	17.38			17.29	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN STUBBS / JOHN MONEGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FORMER UNITED EXXON
Site ID#: _____ Monitoring Well # DW-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 50.61 feet
Total Well Depth (TWD) 80.00 feet
Length of the water column (LWC=TWD-DGW) 29.39 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 4.79 gals
3 casing volume (3 X CV)= 14.37 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)						1345	1345	
pH (s.u.)	6.43	6.06	6.00	6.05			6.29	
Specific Conductivity (µmhos/cm)	111	107	106	106			106	
Water Temperature (°C)	19.17	20.11	19.58	19.87			19.95	
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 4/19/07
Field Personnel: RYAN SHUBSS, JOHN HANEGHAN
General Weather Conditions: CLEAR, WARM

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: FMR UNITED EXXON
Site ID#: _____ Monitoring Well # DW-2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 33.02 feet
Total Well Depth (TWD) 80.00 feet
Length of the water column (LWC=TWD-DGW) 46.98 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 7.66 gals
3 casing volume (3 X CV)= 22.98 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1200	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Purged + hot

APPENDIX E

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

07040823

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-				
ph: (803) 735-0003	fax:	Date Reported:	4/27/2007	

NOTE: Samples identified as MW-17, MW-19 and MW-20 were not recorded on the chain of custody. The client, via e-mail, for these samples requested Methods 8260, 504 and Lead analyses.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

EXCEPTIONS:
For samples identified as MW-18 and DW-1, for Method 8260, target analyte MTBE was detected above the laboratory reporting limit in the method blank sample for laboratory batch ID: R151077. Associated field sample results possibly affected are reported with a "B" qualifier. For sample identified as MW-18, MTBE concentration exceeded that found in the associated analytical blank(s) by a factor equal to or greater than 10. As a result, any blank contribution to the sample concentration is considered negligible. For sample DW-1, the amount of MTBE in the method blank as compared to the amount in the samples indicaties a potential contribution effect from the blank contamination.
Volatile Organics-Method 8260B: The RPD for MTBE was outside of SPLs derived advisory limits for the LCS/LCSD sample, Lab Batch id R151077.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 36 PAGES

4/30/2007

Alberto E. Granados
ProjectManager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

07040823

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803)735-0003 fax: (803)735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 4/27/2007

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-2	07040823-01	Water	4/19/2007 2:15:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-4R	07040823-02	Water	4/19/2007 2:40:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-6R	07040823-03	Water	4/19/2007 1:50:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-7	07040823-04	Water	4/19/2007 2:15:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-9R	07040823-05	Water	4/19/2007 1:30:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-10	07040823-06	Water	4/19/2007 11:00:00 AM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-11	07040823-07	Water	4/19/2007 12:40:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-12	07040823-08	Water	4/19/2007 11:20:00 AM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-13	07040823-09	Water	4/19/2007 12:30:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-14	07040823-10	Water	4/19/2007 12:00:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-15	07040823-11	Water	4/19/2007 12:20:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-16	07040823-12	Water	4/19/2007 12:50:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-18	07040823-13	Water	4/19/2007 11:40:00 AM	4/20/2007 9:30:00 AM	259938,259939	☐
DW-1	07040823-14	Water	4/19/2007 1:45:00 PM	4/20/2007 9:30:00 AM	259938,259939	☐
MW-19	07040823-15	Water	4/19/2007	4/20/2007 9:30:00 AM	259938,259939	☐
MW-20	07040823-16	Water	4/19/2007	4/20/2007 9:30:00 AM	259938,259939	☐
MW-17	07040823-17	Water	4/19/2007 10:40:00 AM	4/20/2007 9:30:00 AM	259938,259939	☐

4/27/2007
Date

Alberto E. Granados
ProjectManager

Ron Benjamin
LaboratoryDirector

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-2 **Collected:** 04/19/2007 14:15 **SPL Sample ID:** 07040823-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	04/20/07 13:00	CJD	2190947
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	52		2	100	04/27/07 7:33	CH	2196415
Surr: 1-Chloro-2-fluorobenzene	D		% 33-151	100	04/27/07 7:33	CH	2196415

PrepMethod	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.019		0.01	1	04/26/07 9:30	KRR	2194544
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190124
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/25/07 23:29	RJD	2195434

PrepMethod	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	11000		100	100	04/26/07 4:49	RJP	2195649
Ethylbenzene	4400		100	100	04/26/07 4:49	RJP	2195649
Methyl tert-butyl ether	34000		100	100	04/26/07 4:49	RJP	2195649
Naphthalene	1400		500	100	04/26/07 4:49	RJP	2195649
Toluene	31000		100	100	04/26/07 4:49	RJP	2195649
m,p-Xylene	17000		100	100	04/26/07 4:49	RJP	2195649
o-Xylene	7400		100	100	04/26/07 4:49	RJP	2195649
Xylenes,Total	24400		100	100	04/26/07 4:49	RJP	2195649
Surr: 1,2-Dichloroethane-d4	98.6		% 72-122	100	04/26/07 4:49	RJP	2195649
Surr: 4-Bromofluorobenzene	103		% 78-115	100	04/26/07 4:49	RJP	2195649
Surr: Toluene-d8	99.2		% 81-111	100	04/26/07 4:49	RJP	2195649

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-4R **Collected:** 04/19/2007 14:40 **SPL Sample ID:** 07040823-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 13:03	CH	2196262
Surr:1-Chloro-2-fluorobenzene	127		% 33-151	1	04/26/07 13:03	CH	2196262

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0155		0.01	1	04/26/07 0:14	RJD	2195442

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	2.4		1	1	04/26/07 5:14	RJP	2195650
Ethylbenzene	1.2		1	1	04/26/07 5:14	RJP	2195650
Methyl tert-butyl ether	4.4		1	1	04/26/07 5:14	RJP	2195650
Naphthalene	ND		5	1	04/26/07 5:14	RJP	2195650
Toluene	ND		1	1	04/26/07 5:14	RJP	2195650
m,p-Xylene	2		1	1	04/26/07 5:14	RJP	2195650
o-Xylene	ND		1	1	04/26/07 5:14	RJP	2195650
Xylenes,Total	2		1	1	04/26/07 5:14	RJP	2195650
Surr:1,2-Dichloroethane-d4	97.2		% 72-122	1	04/26/07 5:14	RJP	2195650
Surr:4-Bromofluorobenzene	104		% 78-115	1	04/26/07 5:14	RJP	2195650
Surr: Toluene-d8	99.2		% 81-111	1	04/26/07 5:14	RJP	2195650

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-6R **Collected:** 04/19/2007 13:50 **SPL Sample ID:** 07040823-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 13:22	CH	2196263
Surr:1-Chloro-2-fluorobenzene	136		% 33-151	1	04/26/07 13:22	CH	2196263

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.98

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 0:19	RJD	2195443

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 5:40	RJP	2195651
Ethylbenzene	ND		1	1	04/26/07 5:40	RJP	2195651
Methyl tert-butyl ether	ND		1	1	04/26/07 5:40	RJP	2195651
Naphthalene	ND		5	1	04/26/07 5:40	RJP	2195651
Toluene	ND		1	1	04/26/07 5:40	RJP	2195651
m,p-Xylene	ND		1	1	04/26/07 5:40	RJP	2195651
o-Xylene	ND		1	1	04/26/07 5:40	RJP	2195651
Xylenes,Total	ND		1	1	04/26/07 5:40	RJP	2195651
Surr:1,2-Dichloroethane-d4	96.9		% 72-122	1	04/26/07 5:40	RJP	2195651
Surr:4-Bromofluorobenzene	98.8		% 78-115	1	04/26/07 5:40	RJP	2195651
Surr: Toluene-d8	94.7		% 81-111	1	04/26/07 5:40	RJP	2195651

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-7 **Collected:** 04/19/2007 14:15 **SPL Sample ID:** 07040823-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	04/26/07 13:41	CH	2196264
Surr:1-Chloro-2-fluorobenzene	116		%	33-151	1	04/26/07 13:41	CH	2196264

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	04/26/07 0:25	RJD	2195444

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND			1	1	04/26/07 6:05	RJP	2195652
Ethylbenzene	ND			1	1	04/26/07 6:05	RJP	2195652
Methyl tert-butyl ether	ND			1	1	04/26/07 6:05	RJP	2195652
Naphthalene	ND			5	1	04/26/07 6:05	RJP	2195652
Toluene	ND			1	1	04/26/07 6:05	RJP	2195652
m,p-Xylene	ND			1	1	04/26/07 6:05	RJP	2195652
o-Xylene	ND			1	1	04/26/07 6:05	RJP	2195652
Xylenes,Total	ND			1	1	04/26/07 6:05	RJP	2195652
Surr:1,2-Dichloroethane-d4	97.4		%	72-122	1	04/26/07 6:05	RJP	2195652
Surr:4-Bromofluorobenzene	103		%	78-115	1	04/26/07 6:05	RJP	2195652
Surr: Toluene-d8	98.5		%	81-111	1	04/26/07 6:05	RJP	2195652

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-9R **Collected:** 04/19/2007 13:30 **SPL Sample ID:** 07040823-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 13:59	CH	2196265
Surr:1-Chloro-2-fluorobenzene	128		% 33-151	1	04/26/07 13:59	CH	2196265

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 0:31	RJD	2195445

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 6:31	RJP	2195653
Ethylbenzene	ND		1	1	04/26/07 6:31	RJP	2195653
Methyl tert-butyl ether	ND		1	1	04/26/07 6:31	RJP	2195653
Naphthalene	ND		5	1	04/26/07 6:31	RJP	2195653
Toluene	ND		1	1	04/26/07 6:31	RJP	2195653
m,p-Xylene	ND		1	1	04/26/07 6:31	RJP	2195653
o-Xylene	ND		1	1	04/26/07 6:31	RJP	2195653
Xylenes,Total	ND		1	1	04/26/07 6:31	RJP	2195653
Surr:1,2-Dichloroethane-d4	99.0		% 72-122	1	04/26/07 6:31	RJP	2195653
Surr:4-Bromofluorobenzene	97.6		% 78-115	1	04/26/07 6:31	RJP	2195653
Surr: Toluene-d8	98.2		% 81-111	1	04/26/07 6:31	RJP	2195653

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-10 **Collected:** 04/19/2007 11:00 **SPL Sample ID:** 07040823-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 14:18	CH	2196266
Surr:1-Chloro-2-fluorobenzene	160	MI	% 33-151	1	04/26/07 14:18	CH	2196266

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 0:36	RJD	2195446

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5400		20	20	04/26/07 6:56	RJP	2195654
Ethylbenzene	ND		20	20	04/26/07 6:56	RJP	2195654
Methyl tert-butyl ether	170		20	20	04/26/07 6:56	RJP	2195654
Naphthalene	350		100	20	04/26/07 6:56	RJP	2195654
Toluene	22		20	20	04/26/07 6:56	RJP	2195654
m,p-Xylene	200		20	20	04/26/07 6:56	RJP	2195654
o-Xylene	38		20	20	04/26/07 6:56	RJP	2195654
Xylenes,Total	238		20	20	04/26/07 6:56	RJP	2195654
Surr:1,2-Dichloroethane-d4	99.4		% 72-122	20	04/26/07 6:56	RJP	2195654
Surr:4-Bromofluorobenzene	102		% 78-115	20	04/26/07 6:56	RJP	2195654
Surr: Toluene-d8	96.9		% 81-111	20	04/26/07 6:56	RJP	2195654

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Client Sample ID: MW-11 **Collected:** 04/19/2007 12:40 **SPL Sample ID:** 07040823-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	1.58		0.05	1	04/20/07 13:00	CJD	2190948
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 14:36	CH	2196267
Surr:1-Chloro-2-fluorobenzene	109		% 33-151	1	04/26/07 14:36	CH	2196267

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	ND		0.01	1	04/26/07 9:30	KRR	2194547
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190125
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 0:42	RJD	2195447

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	6500		100	100	04/26/07 7:21	RJP	2195655
Ethylbenzene	2800		100	100	04/26/07 7:21	RJP	2195655
Methyl tert-butyl ether	790		100	100	04/26/07 7:21	RJP	2195655
Naphthalene	1700		500	100	04/26/07 7:21	RJP	2195655
Toluene	13000		100	100	04/26/07 7:21	RJP	2195655
m,p-Xylene	11000		100	100	04/26/07 7:21	RJP	2195655
o-Xylene	5100		100	100	04/26/07 7:21	RJP	2195655
Xylenes,Total	16100		100	100	04/26/07 7:21	RJP	2195655
Surr:1,2-Dichloroethane-d4	95.3		% 72-122	100	04/26/07 7:21	RJP	2195655
Surr:4-Bromofluorobenzene	104		% 78-115	100	04/26/07 7:21	RJP	2195655
Surr: Toluene-d8	96.2		% 81-111	100	04/26/07 7:21	RJP	2195655

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-12 **Collected:** 04/19/2007 11:20 **SPL Sample ID:** 07040823-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 15:14	CH	2196412
Surr:1-Chloro-2-fluorobenzene	115		% 33-151	1	04/26/07 15:14	CH	2196412

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.01

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 0:47	RJD	2195448

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	6600		20	20	04/26/07 7:47	RJP	2195656
Ethylbenzene	2500		20	20	04/26/07 7:47	RJP	2195656
Methyl tert-butyl ether	ND		20	20	04/26/07 7:47	RJP	2195656
Naphthalene	970		100	20	04/26/07 7:47	RJP	2195656
Toluene	4800		20	20	04/26/07 7:47	RJP	2195656
m,p-Xylene	5800		20	20	04/26/07 7:47	RJP	2195656
o-Xylene	2000		20	20	04/26/07 7:47	RJP	2195656
Xylenes,Total	7800		20	20	04/26/07 7:47	RJP	2195656
Surr:1,2-Dichloroethane-d4	103		% 72-122	20	04/26/07 7:47	RJP	2195656
Surr:4-Bromofluorobenzene	99.4		% 78-115	20	04/26/07 7:47	RJP	2195656
Surr: Toluene-d8	101		% 81-111	20	04/26/07 7:47	RJP	2195656

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-13 **Collected:** 04/19/2007 12:30 **SPL Sample ID:** 07040823-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.418		0.05	1	04/20/07 13:00	CJD	2190949
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 15:33	CH	2196269
Surr:1-Chloro-2-fluorobenzene	111		% 33-151	1	04/26/07 15:33	CH	2196269

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	ND		0.01	1	04/26/07 9:30	KRR	2194548
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190128
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0224		0.01	1	04/26/07 0:53	RJD	2195449

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	8300		100	100	04/26/07 8:12	RJP	2195657
Ethylbenzene	3200		100	100	04/26/07 8:12	RJP	2195657
Methyl tert-butyl ether	410		100	100	04/26/07 8:12	RJP	2195657
Naphthalene	1500		500	100	04/26/07 8:12	RJP	2195657
Toluene	23000		100	100	04/26/07 8:12	RJP	2195657
m,p-Xylene	15000		100	100	04/26/07 8:12	RJP	2195657
o-Xylene	7100		100	100	04/26/07 8:12	RJP	2195657
Xylenes,Total	22100		100	100	04/26/07 8:12	RJP	2195657
Surr:1,2-Dichloroethane-d4	101		% 72-122	100	04/26/07 8:12	RJP	2195657
Surr:4-Bromofluorobenzene	104		% 78-115	100	04/26/07 8:12	RJP	2195657
Surr: Toluene-d8	97.0		% 81-111	100	04/26/07 8:12	RJP	2195657

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-14 **Collected:** 04/19/2007 12:00 **SPL Sample ID:** 07040823-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	04/26/07 15:52	CH	2196270
Surr:1-Chloro-2-fluorobenzene	134		% 33-151	1	04/26/07 15:52	CH	2196270

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.97

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 1:09	RJD	2195452

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5100		20	20	04/26/07 8:38	RJP	2195658
Ethylbenzene	ND		20	20	04/26/07 8:38	RJP	2195658
Methyl tert-butyl ether	ND		20	20	04/26/07 8:38	RJP	2195658
Naphthalene	300		100	20	04/26/07 8:38	RJP	2195658
Toluene	100		20	20	04/26/07 8:38	RJP	2195658
m,p-Xylene	74		20	20	04/26/07 8:38	RJP	2195658
o-Xylene	ND		20	20	04/26/07 8:38	RJP	2195658
Xylenes,Total	74		20	20	04/26/07 8:38	RJP	2195658
Surr:1,2-Dichloroethane-d4	97.2		% 72-122	20	04/26/07 8:38	RJP	2195658
Surr:4-Bromofluorobenzene	100		% 78-115	20	04/26/07 8:38	RJP	2195658
Surr: Toluene-d8	99.3		% 81-111	20	04/26/07 8:38	RJP	2195658

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: MW-15 **Collected:** 04/19/2007 12:20 **SPL Sample ID:** 07040823-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.06		0.05	1	04/20/07 13:00	CJD	2190950
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 16:10	CH	2196271
Surr:1-Chloro-2-fluorobenzene	113		% 33-151	1	04/26/07 16:10	CH	2196271

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.98

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.025		0.01	1	04/26/07 9:30	KRR	2194549
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190129
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0155		0.01	1	04/26/07 1:15	RJD	2195453

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	3300		50	50	04/27/07 10:19	RWS	2196765
Ethylbenzene	3.5		1	1	04/26/07 9:03	RJP	2195659
Methyl tert-butyl ether	ND		1	1	04/26/07 9:03	RJP	2195659
Naphthalene	240		5	1	04/26/07 9:03	RJP	2195659
Toluene	52		1	1	04/26/07 9:03	RJP	2195659
m,p-Xylene	25		1	1	04/26/07 9:03	RJP	2195659
o-Xylene	4.5		1	1	04/26/07 9:03	RJP	2195659
Xylenes,Total	29.5		1	1	04/26/07 9:03	RJP	2195659
Surr:1,2-Dichloroethane-d4	97.9		% 72-122	50	04/27/07 10:19	RWS	2196765
Surr:1,2-Dichloroethane-d4	106		% 72-122	1	04/26/07 9:03	RJP	2195659
Surr:4-Bromofluorobenzene	98.2		% 78-115	50	04/27/07 10:19	RWS	2196765
Surr:4-Bromofluorobenzene	97.3		% 78-115	1	04/26/07 9:03	RJP	2195659
Surr: Toluene-d8	96.7		% 81-111	50	04/27/07 10:19	RWS	2196765
Surr: Toluene-d8	98.6		% 81-111	1	04/26/07 9:03	RJP	2195659

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-16 **Collected:** 04/19/2007 12:50 **SPL Sample ID:** 07040823-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.67		0.05	1	04/20/07 13:00	CJD	2190953
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 16:29	CH	2196272
Surr:1-Chloro-2-fluorobenzene	153	MI	% 33-151	1	04/26/07 16:29	CH	2196272

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.02

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	ND		0.01	1	04/26/07 9:30	KRR	2194550
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190130
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0154		0.01	1	04/26/07 1:21	RJD	2195454

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	7200		100	100	04/26/07 9:28	RJP	2195660
Ethylbenzene	4000		100	100	04/26/07 9:28	RJP	2195660
Methyl tert-butyl ether	410		100	100	04/26/07 9:28	RJP	2195660
Naphthalene	2300		500	100	04/26/07 9:28	RJP	2195660
Toluene	14000		100	100	04/26/07 9:28	RJP	2195660
m,p-Xylene	16000		100	100	04/26/07 9:28	RJP	2195660
o-Xylene	7000		100	100	04/26/07 9:28	RJP	2195660
Xylenes,Total	23000		100	100	04/26/07 9:28	RJP	2195660
Surr:1,2-Dichloroethane-d4	101		% 72-122	100	04/26/07 9:28	RJP	2195660
Surr:4-Bromofluorobenzene	102		% 78-115	100	04/26/07 9:28	RJP	2195660
Surr: Toluene-d8	100		% 81-111	100	04/26/07 9:28	RJP	2195660

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-18 **Collected:** 04/19/2007 11:40 **SPL Sample ID:** 07040823-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.055		0.02	1	04/26/07 16:48	CH	2196413
Surr:1-Chloro-2-fluorobenzene	106		% 33-151	1	04/26/07 16:48	CH	2196413

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 1:26	RJD	2195455

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	1700		10	10	04/27/07 10:45	RWS	2196766
Ethylbenzene	470		10	10	04/27/07 10:45	RWS	2196766
Methyl tert-butyl ether	3200	B	10	10	04/27/07 10:45	RWS	2196766
Naphthalene	250		5	1	04/26/07 9:54	RJP	2195661
Toluene	1800		10	10	04/27/07 10:45	RWS	2196766
m,p-Xylene	1800		10	10	04/27/07 10:45	RWS	2196766
o-Xylene	950		10	10	04/27/07 10:45	RWS	2196766
Xylenes,Total	2750		10	10	04/27/07 10:45	RWS	2196766
Surr:1,2-Dichloroethane-d4	102		% 72-122	10	04/27/07 10:45	RWS	2196766
Surr:1,2-Dichloroethane-d4	107		% 72-122	1	04/26/07 9:54	RJP	2195661
Surr:4-Bromofluorobenzene	102		% 78-115	10	04/27/07 10:45	RWS	2196766
Surr:4-Bromofluorobenzene	99.1		% 78-115	1	04/26/07 9:54	RJP	2195661
Surr: Toluene-d8	100		% 81-111	10	04/27/07 10:45	RWS	2196766
Surr: Toluene-d8	97.3		% 81-111	1	04/26/07 9:54	RJP	2195661

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: DW-1 **Collected:** 04/19/2007 13:45 **SPL Sample ID:** 07040823-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	04/20/07 13:00	CJD	2190944
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 17:06	CH	2196273
Surr: 1-Chloro-2-fluorobenzene	122		% 33-151	1	04/26/07 17:06	CH	2196273

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	2.71		0.05	5	04/26/07 9:30	KRR	2194551
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	04/23/07 15:30	PFB	2190131
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 1:32	RJD	2195457

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/27/07 11:10	RWS	2196767
Ethylbenzene	ND		1	1	04/27/07 11:10	RWS	2196767
Methyl tert-butyl ether	4	B	1	1	04/27/07 11:10	RWS	2196767
Naphthalene	ND		5	1	04/27/07 11:10	RWS	2196767
Toluene	ND		1	1	04/27/07 11:10	RWS	2196767
m,p-Xylene	ND		1	1	04/27/07 11:10	RWS	2196767
o-Xylene	ND		1	1	04/27/07 11:10	RWS	2196767
Xylenes, Total	ND		1	1	04/27/07 11:10	RWS	2196767
Surr: 1,2-Dichloroethane-d4	103		% 72-122	1	04/27/07 11:10	RWS	2196767
Surr: 4-Bromofluorobenzene	101		% 78-115	1	04/27/07 11:10	RWS	2196767
Surr: Toluene-d8	97.0		% 81-111	1	04/27/07 11:10	RWS	2196767

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Client Sample ID: MW-19 **Collected:** 04/19/2007 0:00 **SPL Sample ID:** 07040823-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 17:25	CH	2196274
Surr: 1-Chloro-2-fluorobenzene	120		% 33-151	1	04/26/07 17:25	CH	2196274

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.01

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0152		0.01	1	04/26/07 1:37	RJD	2195458

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 10:44	RJP	2195663
Ethylbenzene	ND		1	1	04/26/07 10:44	RJP	2195663
Methyl tert-butyl ether	5.1		1	1	04/26/07 10:44	RJP	2195663
Naphthalene	ND		5	1	04/26/07 10:44	RJP	2195663
Toluene	ND		1	1	04/26/07 10:44	RJP	2195663
m,p-Xylene	1.3		1	1	04/26/07 10:44	RJP	2195663
o-Xylene	ND		1	1	04/26/07 10:44	RJP	2195663
Xylenes, Total	1.3		1	1	04/26/07 10:44	RJP	2195663
Surr: 1,2-Dichloroethane-d4	102		% 72-122	1	04/26/07 10:44	RJP	2195663
Surr: 4-Bromofluorobenzene	105		% 78-115	1	04/26/07 10:44	RJP	2195663
Surr: Toluene-d8	97.3		% 81-111	1	04/26/07 10:44	RJP	2195663

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-20 **Collected:** 04/19/2007 0:00 **SPL Sample ID:** 07040823-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 17:44	CH	2196275
Surr:1-Chloro-2-fluorobenzene	126		% 33-151	1	04/26/07 17:44	CH	2196275

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	0.99

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 1:43	RJD	2195459

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 12:03	RJP	2195664
Ethylbenzene	ND		1	1	04/26/07 12:03	RJP	2195664
Methyl tert-butyl ether	4.2		1	1	04/26/07 12:03	RJP	2195664
Naphthalene	ND		5	1	04/26/07 12:03	RJP	2195664
Toluene	ND		1	1	04/26/07 12:03	RJP	2195664
m,p-Xylene	ND		1	1	04/26/07 12:03	RJP	2195664
o-Xylene	ND		1	1	04/26/07 12:03	RJP	2195664
Xylenes,Total	ND		1	1	04/26/07 12:03	RJP	2195664
Surr:1,2-Dichloroethane-d4	95.9		% 72-122	1	04/26/07 12:03	RJP	2195664
Surr:4-Bromofluorobenzene	103		% 78-115	1	04/26/07 12:03	RJP	2195664
Surr: Toluene-d8	97.9		% 81-111	1	04/26/07 12:03	RJP	2195664

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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SCOTT, LA 70583
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Client Sample ID: MW-17 **Collected:** 04/19/2007 10:40 **SPL Sample ID:** 07040823-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 18:03	CH	2196276
Surr:1-Chloro-2-fluorobenzene	104		% 33-151	1	04/26/07 18:03	CH	2196276

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:46	JNS	1.01

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	04/26/07 1:49	RJD	2195460

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	04/21/2007 15:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 12:28	RJP	2195665
Ethylbenzene	ND		1	1	04/26/07 12:28	RJP	2195665
Methyl tert-butyl ether	5.7		1	1	04/26/07 12:28	RJP	2195665
Naphthalene	ND		5	1	04/26/07 12:28	RJP	2195665
Toluene	ND		1	1	04/26/07 12:28	RJP	2195665
m,p-Xylene	ND		1	1	04/26/07 12:28	RJP	2195665
o-Xylene	ND		1	1	04/26/07 12:28	RJP	2195665
Xylenes,Total	ND		1	1	04/26/07 12:28	RJP	2195665
Surr:1,2-Dichloroethane-d4	94.9		% 72-122	1	04/26/07 12:28	RJP	2195665
Surr:4-Bromofluorobenzene	97.6		% 78-115	1	04/26/07 12:28	RJP	2195665
Surr: Toluene-d8	96.5		% 81-111	1	04/26/07 12:28	RJP	2195665

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1 **WorkOrder:** 07040823
Method: E504.1 **Lab Batch ID:** 58492

Method Blank

RunID: PCBB_070425C-2196259 Units: ug/L
Analysis Date: 04/26/2007 11:48 Analyst: CH
PreparationDate: 04/24/2007 14:46 Prep By: JNS Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	111.8	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01B	MW-2
07040823-02B	MW-4R
07040823-03B	MW-6R
07040823-04B	MW-7
07040823-05B	MW-9R
07040823-06B	MW-10
07040823-07B	MW-11
07040823-08B	MW-12
07040823-09B	MW-13
07040823-10B	MW-14
07040823-11B	MW-15
07040823-12B	MW-16
07040823-13B	MW-18
07040823-14B	DW-1
07040823-15B	MW-19
07040823-16B	MW-20
07040823-17B	MW-17

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_070425C-2196260 Units: ug/L
Analysis Date: 04/26/2007 12:07 Analyst: CH
PreparationDate: 04/24/2007 14:46 Prep By: JNS Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.601	0.582	96.8	0.596	0.577	96.8	0.8	30	60	140
Surr:1-Chloro-2-fluorobenzene	151	180	119	149	175	117	3.0	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
(337)237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B
WorkOrder: 07040823
Lab Batch ID: 58426

Method Blank

RunID: ICPDV_070425B-2195432 Units: mg/L
Analysis Date: 04/25/2007 23:18 Analyst: RJD
PreparationDate: 04/21/2007 15:00 Prep By: SA Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01C	MW-2
07040823-02C	MW-4R
07040823-03C	MW-6R
07040823-04C	MW-7
07040823-05C	MW-9R
07040823-06C	MW-10
07040823-07C	MW-11
07040823-08C	MW-12
07040823-09C	MW-13
07040823-10C	MW-14
07040823-11C	MW-15
07040823-12C	MW-16
07040823-13C	MW-18
07040823-14C	DW-1
07040823-15C	MW-19
07040823-16C	MW-20
07040823-17C	MW-17

Laboratory Control Sample (LCS)

RunID: ICPDV_070425B-2195433 Units: mg/L
Analysis Date: 04/25/2007 23:23 Analyst: RJD
PreparationDate: 04/21/2007 15:00 Prep By: SA Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	0.9503	95.03	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

SampleSpiked: 07040823-01
RunID: ICPDV_070425B-2195436 Units: mg/L
Analysis Date: 04/25/2007 23:40 Analyst: RJD
PreparationDate: 04/21/2007 15:00 Prep By: SA Method SW3010A

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: **Total Metals by Method 6010B - water** **WorkOrder:** **07040823**
Method: **SW6010B** **Lab Batch ID:** **58426**

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	0.8764	87.64	1	0.8868	88.68	1.184	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 07040823
Lab Batch ID: R151030

Method Blank

RunID: X_070426A-2195648 Units: ug/L
Analysis Date: 04/26/2007 4:23 Analyst: RJP

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	99.6	72-122
Surr: 4-Bromofluorobenzene	104.2	78-115
Surr: Toluene-d8	98.5	81-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01A	MW-2
07040823-02A	MW-4R
07040823-03A	MW-6R
07040823-04A	MW-7
07040823-05A	MW-9R
07040823-06A	MW-10
07040823-07A	MW-11
07040823-08A	MW-12
07040823-09A	MW-13
07040823-10A	MW-14
07040823-11A	MW-15
07040823-12A	MW-16
07040823-13A	MW-18
07040823-15A	MW-19
07040823-16A	MW-20
07040823-17A	MW-17

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: X_070426A-2195645 Units: ug/L
Analysis Date: 04/26/2007 3:07 Analyst: RJP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	52.2	104	50.0	51.9	104	0.7	16	75	139
Ethylbenzene	50.0	52.4	105	50.0	53.1	106	1.3	20	50	150
Methyl tert-butyl ether	50.0	40.6	81.2	50.0	43.5	87.0	6.9	20	50	150
Naphthalene	50.0	54.9	110	50.0	55.1	110	0.5	20	50	150
Toluene	50.0	51.2	102	50.0	50.5	101	1.4	21	71	118
m,p-Xylene	100	105	105	100	107	107	2.5	20	50	150
o-Xylene	50.0	51.0	102	50.0	52.0	104	2.1	20	50	150
Xylenes,Total	150	156	104	150	159	106	2.4	20	50	150
Surr:1,2-Dichloroethane-d4	50.0	48.5	97.1	50.0	50.7	101	4.3	30	72	122
Surr:4-Bromofluorobenzene	50.0	49.6	99.2	50.0	49.8	99.5	0.3	30	78	115
Surr:Toluene-d8	50.0	49.7	99.3	50.0	49.5	99.1	0.3	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics:Method 8260B+MTBE+Naphthalene**	**WorkOrder:**	**07040823**
Method:	**SW8260B**	**Lab Batch ID:**	**R151030**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040823
Lab Batch ID: R151077

Method Blank

RunID: X_070427A-2196455 Units: ug/L
Analysis Date: 04/27/2007 8:38 Analyst: RWS

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-11A	MW-15
07040823-13A	MW-18
07040823-14A	DW-1

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	3.7	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	102.5	72-122
Surr: 4-Bromofluorobenzene	96.7	78-115
Surr: Toluene-d8	98.0	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: X_070427A-2196440 Units: ug/L
Analysis Date: 04/27/2007 7:47 Analyst: RWS

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	49.9	99.9	50.0	48.3	96.6	3.3	16	75	139
Ethylbenzene	50.0	50.2	100	50.0	50.7	101	1.0	20	50	150
Methyl tert-butyl ether	50.0	40.3	80.6	50.0	56.9	114	34.1 *	20	50	150
Naphthalene	50.0	52.9	106	50.0	47.3	94.5	11.2	20	50	150
Toluene	50.0	48.6	97.2	50.0	48.5	97.0	0.2	21	71	118
m,p-Xylene	100	101	101	100	101	101	0.3	20	50	150
o-Xylene	50.0	49.9	99.8	50.0	50.1	100	0.4	20	50	150
Xylenes,Total	150.0	150.9	100.7	150.0	151.1	100.6	0.1	20	50	150
Surr:1,2-Dichloroethane-d4	50.0	51.0	102	50.0	49.6	99.3	2.8	30	72	122
Surr:4-Bromofluorobenzene	50.0	49.3	98.7	50.0	49.7	99.4	0.7	30	78	115
Surr:Toluene-d8	50.0	50.0	99.9	50.0	48.2	96.4	3.6	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Sulfate, Total
Method: ASTM D516-90

WorkOrder: 07040823
Lab Batch ID: R150746

Method Blank

RunID: WET_070423T-2190116 Units: mg/L
Analysis Date: 04/23/2007 15:30 Analyst: PFB

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01D	MW-2
07040823-07D	MW-11
07040823-09D	MW-13
07040823-11D	MW-15
07040823-12D	MW-16
07040823-14D	DW-1

Laboratory Control Sample (LCS)

RunID: WET_070423T-2190117 Units: mg/L
Analysis Date: 04/23/2007 15:30 Analyst: PFB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.319	93.19	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040702-03
RunID: WET_070423T-2190119 Units: mg/L
Analysis Date: 04/23/2007 15:30 Analyst: PFB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	ND	10	8.201	82.01	10	8.667	86.67	5.525	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Iron, Ferrous
Method: HACH 8146
WorkOrder: 07040823
Lab Batch ID: R150792

Method Blank

RunID: WET_070420Z-2190942 Units: mg/L
Analysis Date: 04/20/2007 13:00 Analyst: CJD

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01E	MW-2
07040823-07E	MW-11
07040823-09E	MW-13
07040823-11E	MW-15
07040823-12E	MW-16
07040823-14E	DW-1

Laboratory Control Sample (LCS)

RunID: WET_070420Z-2190943 Units: mg/L
Analysis Date: 04/20/2007 13:00 Analyst: CJD

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	1.030	103.0	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040823-14
RunID: WET_070420Z-2190945 Units: mg/L
Analysis Date: 04/20/2007 13:00 Analyst: CJD

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	1.110	111.0	1	1.130	113.0	1.786	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Nitrate (as N) **WorkOrder:** 07040823
Method: M4500-NO3 E **Lab Batch ID:** R150965

Method Blank

RunID: WET_070426C-2194541 Units: mg/L
Analysis Date: 04/26/2007 9:30 Analyst: KRR

Analyte	Result	Rep Limit
Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040823-01D	MW-2
07040823-07D	MW-11
07040823-09D	MW-13
07040823-11D	MW-15
07040823-12D	MW-16
07040823-14D	DW-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_070426C-2194542 Units: mg/L
Analysis Date: 04/26/2007 9:30 Analyst: KRR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrate (As N)	0.1500	0.1400	93.33	0.1500	0.1450	96.67	3.5	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040823-01
RunID: WET_070426C-2194545 Units: mg/L
Analysis Date: 04/26/2007 9:30 Analyst: KRR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrate (As N)	0.01900	0.15	0.1580	92.67	0.15	0.1630	96.00	3.115	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Sample Receipt Checklist

Workorder:	**07040823**	Received By:	**JLK**
Date and Time Received:	**4/20/2007 9:30:00 AM**	Carriername:	**FedEx-Std 1 Day PM**
Temperature:	**4°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☐	No ☑	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☑	No ☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: REC'D SAMPLES FOR MW17, MW19 & MW20 NOT LISTED ON COC. DID NOT RECEIVE LEAD CONTAINER FOR MW7

Client Instructions:

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 259938

07040823

page 1 of 2

Client Name: ATC

Address: 400 NE Dr, Suite Q, Columbia, SC

Phone/Fax: 803.735.0003 / 803.735.0443

Client Contact: Bob Bolton Email:

Project Name/No.: 14.25384.0012

Site Name: Former United Exxon

Site Location: Winnsboro, SC

Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other

bottle: P=plastic A=amber glass G=glass V=vial X=other

size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other

pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph + MTBE (8260B)	EDB (504.1)	Lead	Nitrate	Sulfate	Ferrous Iron	UNPRESERVED VOA	
MW-2	4/19/07	1415		X	W	P+V	1,16+40	1+2	9	X	X	X	X	X	X		9
MW-4R		1440							7	X	X	X					7
MW-6R		1350							7	X	X	X					7
X MW-7		1415							7	X	X	X					6
MW-9R		1330							7	X	X	X					7
MW-10		1100							7	X	X	X					7
MW-11		1240							9	X	X	X	X	X	X		9
MW-12		1120							7	X	X	X					7
MW-13		1230							9	X	X	X	X	X	X		9
MW-14		1200							7	X	X	X					7

Client/Consultant Remarks:

Laboratory remarks: C.S on the cooler
(1) pH<2 / RM 4-12 (FSS)
(3W) pH=2 / RM-111 (8)

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 4.0c

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☒ Email ☒ PDF ☒

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by/Sampler: [signature]	date 4/19/07	time 1530	2. Received by: FedEx 8582 8677 6079
3. Relinquished by: FedEx	date 4/20/07	time 0900	4. Received by:
5. Relinquished by:	date 4/20/07	time 0930	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 259939

page 2 of 2

Client Name: ATC
Address: 400 NE Dr, Suite Q, Columbia, SC
Phone/Fax: 803.735.0003 / 803.735.0443
Client Contact: Bob Bolton Email:
Project Name/No.: 14.25384.0012
Site Name: Former United Exxon
Site Location: Winnsboro, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph + MTBE (8260 B)	EDB (504.1)	Lead	Sulfate	Nitrate	Ferrous Iron	UNPRESERVED VOA	
MW-15	4/19/07	1220		X	W	P+V	1,16+40	1+2	9	X	X	X	X	X	X		9
MW-16		1250					1,16+40		9	X	X	X	X	X	X		9
MW-18		1140					16+40		7	X	X	X					7
DW-1		1345					1,16+40		9	X	X	X	X	X	X		9

Requested Analysis

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp 4.5°C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☒ Email ☒ PDF ☒
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 4/19/07	time 1530	2. Received by: Fed Ex
3. Relinquished by: Fed Ex	date 4/20/07	time 0900	4. Received by:
5. Relinquished by:	date 4/20/07	time 0930	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

fedex.com 1.800.GoFedEx 1.800.463.3339

RECIPIENT: PEEL HERE

FedEx Express **US Airbill** FedEx Tracking Number 8582 8677 6079

From This portion can be removed for Recipient's records.

Date 4/19/07 FedEx Tracking Number 858286776079

Sender's Name JOHN MCNAIR Phone 803 735 0003

Company ATC ASSOCIATES

Address 400 NORTHWEST DR Dept./Floor/Suite/Room WATC

City COLUMBIA State SC ZIP 29203

2 Your Internal Billing Reference 142384.0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0347540265

8582 8677 6079

MUR43

Form ID No. 0215 Recipient Copy

4a Express Package Service — Packages up to 150 lbs.

- [ ] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service — Packages over 150 lbs.

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

** To most locations.

* Call for Confirmation:

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Obtain Recip Acct. No.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages 1 Total Weight 705- Total Charges

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. Fee applies.
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. Fee applies.

519

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REMOVE THIS AREA

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RECIPIENT: PEEL HERE

FedEx Express US Airbill

FedEx Tracking Number 8582 8677 5072

MUR43

0215

Recipient's Copy

1 From This portion can be removed for Recipient's records.

Date 4/19/07 FedEx Tracking Number 858286775072

Sender's Name JOHN MONIGHAN Phone 803 735 0003

Company ATC ASSOCIATES

Address 410 NORTHWEST DR UNIT Q

City COLUMBIA State SC ZIP 29203

Dept./Floor/Suite/Room

2 Your Internal Billing Reference 14 25 384 0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0347540265

8582 8677 5072

4a Express Package Service — *Packages up to 150 lbs.*

- [ ] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [x] FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.** Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service — *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation.

** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3

- [ ] SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ___ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

- [ ] Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip Acct. No. [ ]

[redacted] 0705 [redacted]

Total Packages	Total Weight	Total Charges
1	42.0	Credit Card Auth

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

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S AREA

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RECIPIENT: PEEL HERE

FedEx Express — **US Airbill**

FedEx Tracking Number 8582 8677 5050

1 From This portion can be removed for Recipient's records.

Date 4/19/07

FedEx Tracking Number 858286775050

Sender's Name JIM MONGIAN

Company AMC ASSOCIATES

Phone 803 735 0003

Address 400 NORTHEAST DR.

City COLUMBIA

Dept./Floor/Suite/Room UNIT Q

State SC ZIP 29203

2 Your Internal Billing Reference 14 25394.0012.

3 To

Recipient's Name SHIPPING AND RECEIVING

Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

Dept./Floor/Suite/Room

City SCOTT

State LA ZIP 70583-5300

0347540245

8582 8677 5050

Form ID No. 0215 MUR43

Recipient's Copy

4a Express Package Service

- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

Packages up to 150 lbs.

- FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

4b Express Freight Service

- FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

Packages over 150 lbs.

*To most locations.

*Call for Confirmation.

**To most locations.

5 Packaging

- FedEx Envelope*
- FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- FedEx Box
- FedEx Tube
- Other

*Declared value limit $500.

6 Special Handling

- SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- HOLD Weekday at FedEx Location — Not available for FedEx First Overnight. Include FedEx address in Section 3.
- HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- No
- Yes — As per attached Shipper's Declaration.
- Yes — Shipper's Declaration not required.
- Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg
- Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

- Sender — Acct. No. in Section 1 will be billed.
- Recipient
- Third Party
- Credit Card
- Cash/Check — Obtain Recip. Acct. No.

[redacted] 0705-[redacted]

Total Packages 1

Total Weight 43.45 [redacted]

Total Charges

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 NEW Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- No Signature Required — Package may be left without obtaining a signature for delivery.
- Direct Signature — Anyone at recipient's address may sign for delivery. Fee applies.
- Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address

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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

07040878

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	5/1/2007	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 34 PAGES

5/1/2007

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

07040878

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 5/1/2007

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
CK-1	07040878-01	Water	4/20/2007 1:15:00 PM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-1	07040878-02	Water	4/20/2007 8:25:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-3	07040878-03	Water	4/20/2007 8:45:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-5	07040878-04	Water	4/20/2007 9:15:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-8	07040878-05	Water	4/20/2007 9:30:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-21	07040878-06	Water	4/20/2007 10:40:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-22	07040878-07	Water	4/20/2007 11:00:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-23	07040878-08	Water	4/20/2007 12:20:00 PM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-24	07040878-09	Water	4/20/2007 12:40:00 PM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-25	07040878-10	Water	4/20/2007 1:00:00 PM	4/21/2007 9:30:00 AM	259937,259935	☐
MW-26	07040878-11	Water	4/20/2007 10:20:00 AM	4/21/2007 9:30:00 AM	259937,259935	☐
DW-2	07040878-12	Water	4/20/2007 12:00:00 PM	4/21/2007 9:30:00 AM	259937,259935	☐

5/1/2007
Date

Alberto E. Granados
Project Manager

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID CK-1 **Collected:** 04/20/2007 13:15 **SPL Sample ID:** 07040878-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 19:37	CH	2196222
Surr: 1-Chloro-2-fluorobenzene	136		% 33-151	1	04/26/07 19:37	CH	2196222

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.99

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	2.15		1	1	04/26/07 14:45	CAB	2195676

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 23:09	RJP	2197076
Ethylbenzene	ND		1	1	04/26/07 23:09	RJP	2197076
Methyl tert-butyl ether	15		1	1	04/26/07 23:09	RJP	2197076
Naphthalene	ND		5	1	04/26/07 23:09	RJP	2197076
Toluene	ND		1	1	04/26/07 23:09	RJP	2197076
m,p-Xylene	ND		1	1	04/26/07 23:09	RJP	2197076
o-Xylene	ND		1	1	04/26/07 23:09	RJP	2197076
Xylenes,Total	ND		1	1	04/26/07 23:09	RJP	2197076
Surr: 1,2-Dichloroethane-d4	97.2		% 72-122	1	04/26/07 23:09	RJP	2197076
Surr: 4-Bromofluorobenzene	93.7		% 78-115	1	04/26/07 23:09	RJP	2197076
Surr: Toluene-d8	93.6		% 81-111	1	04/26/07 23:09	RJP	2197076

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID MW-1 **Collected:** 04/20/2007 8:25 **SPL Sample ID:** 07040878-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	04/22/07 10:00	CJD	2190962
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 19:56	CH	2196223
Surr: 1-Chloro-2-fluorobenzene	135		% 33-151	1	04/26/07 19:56	CH	2196223

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.14		0.01	1	04/26/07 14:30	KRR	2195544
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	15.8		5	1	04/24/07 18:30	PFB	2192403
TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	5.31		1	1	04/26/07 15:08	CAB	2195684

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 23:34	RJP	2197077
Ethylbenzene	ND		1	1	04/26/07 23:34	RJP	2197077
Methyl tert-butyl ether	ND		1	1	04/26/07 23:34	RJP	2197077
Naphthalene	ND		5	1	04/26/07 23:34	RJP	2197077
Toluene	ND		1	1	04/26/07 23:34	RJP	2197077
m,p-Xylene	ND		1	1	04/26/07 23:34	RJP	2197077
o-Xylene	ND		1	1	04/26/07 23:34	RJP	2197077
Xylenes,Total	ND		1	1	04/26/07 23:34	RJP	2197077
Surr: 1,2-Dichloroethane-d4	98.7		% 72-122	1	04/26/07 23:34	RJP	2197077
Surr: 4-Bromofluorobenzene	101		% 78-115	1	04/26/07 23:34	RJP	2197077
Surr: Toluene-d8	98.3		% 81-111	1	04/26/07 23:34	RJP	2197077

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-3 **Collected:** 04/20/2007 8:45 **SPL Sample ID:** 07040878-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 20:15	CH	2196224
Surr: 1-Chloro-2-fluorobenzene	130		% 33-151	1	04/26/07 20:15	CH	2196224

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	1.01

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	2.85		1	1	04/26/07 15:11	CAB	2195685

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	28		1	1	04/28/07 20:10	RJP	2198378
Ethylbenzene	ND		1	1	04/28/07 20:10	RJP	2198378
Methyl tert-butyl ether	ND		1	1	04/28/07 20:10	RJP	2198378
Naphthalene	ND		5	1	04/28/07 20:10	RJP	2198378
Toluene	1.3		1	1	04/28/07 20:10	RJP	2198378
m,p-Xylene	1.6		1	1	04/28/07 20:10	RJP	2198378
o-Xylene	ND		1	1	04/28/07 20:10	RJP	2198378
Xylenes,Total	1.6		1	1	04/28/07 20:10	RJP	2198378
Surr: 1,2-Dichloroethane-d4	108		% 72-122	1	04/28/07 20:10	RJP	2198378
Surr: 4-Bromofluorobenzene	99.7		% 78-115	1	04/28/07 20:10	RJP	2198378
Surr: Toluene-d8	88.1		% 81-111	1	04/28/07 20:10	RJP	2198378

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-5 **Collected:** 04/20/2007 9:15 **SPL Sample ID:** 07040878-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 20:34	CH	2196225
Surr: 1-Chloro-2-fluorobenzene	137		% 33-151	1	04/26/07 20:34	CH	2196225

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.98

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	5.39		1	1	04/26/07 15:13	CAB	2195686

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/28/07 20:37	RJP	2198379
Ethylbenzene	ND		1	1	04/28/07 20:37	RJP	2198379
Methyl tert-butyl ether	ND		1	1	04/28/07 20:37	RJP	2198379
Naphthalene	ND		5	1	04/28/07 20:37	RJP	2198379
Toluene	1.8		1	1	04/28/07 20:37	RJP	2198379
m,p-Xylene	1		1	1	04/28/07 20:37	RJP	2198379
o-Xylene	ND		1	1	04/28/07 20:37	RJP	2198379
Xylenes,Total	1		1	1	04/28/07 20:37	RJP	2198379
Surr: 1,2-Dichloroethane-d4	113		% 72-122	1	04/28/07 20:37	RJP	2198379
Surr: 4-Bromofluorobenzene	84.4		% 78-115	1	04/28/07 20:37	RJP	2198379
Surr: Toluene-d8	87.5		% 81-111	1	04/28/07 20:37	RJP	2198379

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-8 **Collected:** 04/20/2007 9:30 **SPL Sample ID:** 07040878-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 20:54	CH	2196226
Surr: 1-Chloro-2-fluorobenzene	140		% 33-151	1	04/26/07 20:54	CH	2196226

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.99

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	ND		1	1	04/26/07 15:16	CAB	2195687

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/28/07 21:04	RJP	2198380
Ethylbenzene	ND		1	1	04/28/07 21:04	RJP	2198380
Methyl tert-butyl ether	ND		1	1	04/28/07 21:04	RJP	2198380
Naphthalene	ND		5	1	04/28/07 21:04	RJP	2198380
Toluene	ND		1	1	04/28/07 21:04	RJP	2198380
m,p-Xylene	ND		1	1	04/28/07 21:04	RJP	2198380
o-Xylene	ND		1	1	04/28/07 21:04	RJP	2198380
Xylenes,Total	ND		1	1	04/28/07 21:04	RJP	2198380
Surr: 1,2-Dichloroethane-d4	109		% 72-122	1	04/28/07 21:04	RJP	2198380
Surr: 4-Bromofluorobenzene	100		% 78-115	1	04/28/07 21:04	RJP	2198380
Surr: Toluene-d8	89.8		% 81-111	1	04/28/07 21:04	RJP	2198380

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-21 **Collected:** 04/20/2007 10:40 **SPL Sample ID:** 07040878-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 21:13	CH	2196227
Surr: 1-Chloro-2-fluorobenzene	127		% 33-151	1	04/26/07 21:13	CH	2196227

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.99

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	ND		1	1	04/26/07 15:19	CAB	2195688

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	70		50	50	04/28/07 21:31	RJP	2198381
Ethylbenzene	ND		50	50	04/28/07 21:31	RJP	2198381
Methyl tert-butyl ether	440		50	50	04/28/07 21:31	RJP	2198381
Naphthalene	ND		250	50	04/28/07 21:31	RJP	2198381
Toluene	ND		50	50	04/28/07 21:31	RJP	2198381
m,p-Xylene	120		50	50	04/28/07 21:31	RJP	2198381
o-Xylene	57		50	50	04/28/07 21:31	RJP	2198381
Xylenes,Total	177		50	50	04/28/07 21:31	RJP	2198381
Surr: 1,2-Dichloroethane-d4	116		% 72-122	50	04/28/07 21:31	RJP	2198381
Surr: 4-Bromofluorobenzene	100		% 78-115	50	04/28/07 21:31	RJP	2198381
Surr: Toluene-d8	85.7		% 81-111	50	04/28/07 21:31	RJP	2198381

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID MW-22 **Collected:** 04/20/2007 11:00 **SPL Sample ID:** 07040878-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	04/26/07 21:32	CH	2196228
Surr: 1-Chloro-2-fluorobenzene	142		%	33-151	1	04/26/07 21:32	CH	2196228

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	1.00

TOTAL METALS BY METHOD 200.8					**MCL**	**E200.8**	**Units: ug/L**	
Lead	ND			1	1	04/26/07 15:21	CAB	2195689

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	1400			50	50	04/30/07 6:14	FJA	2200492
Ethylbenzene	1.2			1	1	04/28/07 21:58	RJP	2198382
Methyl tert-butyl ether	9.7			1	1	04/28/07 21:58	RJP	2198382
Naphthalene	68			5	1	04/28/07 21:58	RJP	2198382
Toluene	5.6			1	1	04/28/07 21:58	RJP	2198382
m,p-Xylene	15			1	1	04/28/07 21:58	RJP	2198382
o-Xylene	2.5			1	1	04/28/07 21:58	RJP	2198382
Xylenes,Total	17.5			1	1	04/28/07 21:58	RJP	2198382
Surr: 1,2-Dichloroethane-d4	116		%	72-122	1	04/28/07 21:58	RJP	2198382
Surr: 1,2-Dichloroethane-d4	109		%	72-122	50	04/30/07 6:14	FJA	2200492
Surr: 4-Bromofluorobenzene	94.7		%	78-115	1	04/28/07 21:58	RJP	2198382
Surr: 4-Bromofluorobenzene	96.0		%	78-115	50	04/30/07 6:14	FJA	2200492
Surr: Toluene-d8	85.6		%	81-111	1	04/28/07 21:58	RJP	2198382
Surr: Toluene-d8	83.2		%	81-111	50	04/30/07 6:14	FJA	2200492

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-23 **Collected:** 04/20/2007 12:20 **SPL Sample ID:** 07040878-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	04/26/07 22:11	CH	2196230
Surr: 1-Chloro-2-fluorobenzene	169	MI	%	33-151	1	04/26/07 22:11	CH	2196230

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.98

TOTAL METALS BY METHOD 200.8					**MCL**	**E200.8**	**Units: ug/L**	
Lead	1.24			1	1	04/26/07 15:24	CAB	2195690

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	3100			50	50	04/30/07 6:41	FJA	2200493
Ethylbenzene	1			1	1	04/29/07 2:54	RJP	2198416
Methyl tert-butyl ether	12			1	1	04/29/07 2:54	RJP	2198416
Naphthalene	110			5	1	04/29/07 2:54	RJP	2198416
Toluene	ND			1	1	04/29/07 2:54	RJP	2198416
m,p-Xylene	ND			1	1	04/29/07 2:54	RJP	2198416
o-Xylene	6.4			1	1	04/29/07 2:54	RJP	2198416
Xylenes,Total	6.4			1	1	04/29/07 2:54	RJP	2198416
Surr: 1,2-Dichloroethane-d4	119		%	72-122	1	04/29/07 2:54	RJP	2198416
Surr: 1,2-Dichloroethane-d4	110		%	72-122	50	04/30/07 6:41	FJA	2200493
Surr: 4-Bromofluorobenzene	102		%	78-115	1	04/29/07 2:54	RJP	2198416
Surr: 4-Bromofluorobenzene	97.5		%	78-115	50	04/30/07 6:41	FJA	2200493
Surr: Toluene-d8	88.2		%	81-111	1	04/29/07 2:54	RJP	2198416
Surr: Toluene-d8	88.3		%	81-111	50	04/30/07 6:41	FJA	2200493

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-24 **Collected:** 04/20/2007 12:40 **SPL Sample ID:** 07040878-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 22:30	CH	2196231
Surr: 1-Chloro-2-fluorobenzene	93.4		% 33-151	1	04/26/07 22:30	CH	2196231

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.99

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	3.94		1	1	04/26/07 15:27	CAB	2195691

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	240		1	1	04/26/07 15:59	RJP	2196417
Ethylbenzene	ND		1	1	04/26/07 15:59	RJP	2196417
Methyl tert-butyl ether	ND		1	1	04/26/07 15:59	RJP	2196417
Naphthalene	31		5	1	04/26/07 15:59	RJP	2196417
Toluene	ND		1	1	04/26/07 15:59	RJP	2196417
m,p-Xylene	ND		1	1	04/26/07 15:59	RJP	2196417
o-Xylene	1.7		1	1	04/26/07 15:59	RJP	2196417
Xylenes,Total	1.7		1	1	04/26/07 15:59	RJP	2196417
Surr: 1,2-Dichloroethane-d4	110		% 72-122	1	04/26/07 15:59	RJP	2196417
Surr: 4-Bromofluorobenzene	103		% 78-115	1	04/26/07 15:59	RJP	2196417
Surr: Toluene-d8	89.1		% 81-111	1	04/26/07 15:59	RJP	2196417

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-25 **Collected:** 04/20/2007 13:00 **SPL Sample ID:** 07040878-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	04/26/07 22:50	CH	2196232
Surr: 1-Chloro-2-fluorobenzene	142		% 33-151	1	04/26/07 22:50	CH	2196232

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	0.99

TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	2.51		1	1	04/26/07 15:30	CAB	2195692

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	430		5	5	04/27/07 15:30	RJP	2198029
Ethylbenzene	ND		1	1	04/26/07 16:26	RJP	2196418
Methyl tert-butyl ether	ND		1	1	04/26/07 16:26	RJP	2196418
Naphthalene	26		5	1	04/26/07 16:26	RJP	2196418
Toluene	ND		1	1	04/26/07 16:26	RJP	2196418
m,p-Xylene	ND		1	1	04/26/07 16:26	RJP	2196418
o-Xylene	1		1	1	04/26/07 16:26	RJP	2196418
Xylenes,Total	1		1	1	04/26/07 16:26	RJP	2196418
Surr: 1,2-Dichloroethane-d4	110		% 72-122	1	04/26/07 16:26	RJP	2196418
Surr: 1,2-Dichloroethane-d4	116		% 72-122	5	04/27/07 15:30	RJP	2198029
Surr: 4-Bromofluorobenzene	104		% 78-115	1	04/26/07 16:26	RJP	2196418
Surr: 4-Bromofluorobenzene	106		% 78-115	5	04/27/07 15:30	RJP	2198029
Surr: Toluene-d8	91.6		% 81-111	5	04/27/07 15:30	RJP	2198029
Surr: Toluene-d8	89.2		% 81-111	1	04/26/07 16:26	RJP	2196418

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID MW-26 **Collected:** 04/20/2007 10:20 **SPL Sample ID:** 07040878-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	04/22/07 10:00	CJD	2190965
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021	1	04/26/07 23:09	CH	2196233
Surr: 1-Chloro-2-fluorobenzene	136		% 33-151	1	04/26/07 23:09	CH	2196233

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	1.04

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.521		0.01	1	04/26/07 14:30	KRR	2195545
SULFATE, TOTAL				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	39.5		10	2	04/24/07 18:30	PFB	2192404
TOTAL METALS BY METHOD 200.8				**MCL**	**E200.8**	**Units: ug/L**	
Lead	2.09		1	1	04/25/07 23:08	CAB	2194306

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		1	1	04/26/07 16:55	RJP	2196419
Ethylbenzene	ND		1	1	04/26/07 16:55	RJP	2196419
Methyl tert-butyl ether	ND		1	1	04/26/07 16:55	RJP	2196419
Naphthalene	ND		5	1	04/26/07 16:55	RJP	2196419
Toluene	ND		1	1	04/26/07 16:55	RJP	2196419
m,p-Xylene	ND		1	1	04/26/07 16:55	RJP	2196419
o-Xylene	ND		1	1	04/26/07 16:55	RJP	2196419
Xylenes,Total	ND		1	1	04/26/07 16:55	RJP	2196419
Surr: 1,2-Dichloroethane-d4	108		% 72-122	1	04/26/07 16:55	RJP	2196419
Surr: 4-Bromofluorobenzene	99.0		% 78-115	1	04/26/07 16:55	RJP	2196419
Surr: Toluene-d8	88.8		% 81-111	1	04/26/07 16:55	RJP	2196419

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID DW-2 **Collected:** 04/20/2007 12:00 **SPL Sample ID:** 07040878-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	04/26/07 23:29	CH	2196234
Surr: 1-Chloro-2-fluorobenzene	122		%	33-151	1	04/26/07 23:29	CH	2196234

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	04/24/2007 14:48	JNS	1.01

TOTAL METALS BY METHOD 200.8					**MCL**	**E200.8**	**Units: ug/L**	
Lead	ND			1	1	04/25/07 23:47	CAB	2194315

Prep Method	Prep Date	Prep Initials	Prep Factor
E200.8	04/24/2007 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	440			5	5	04/27/07 15:57	RJP	2198030
Ethylbenzene	ND			1	1	04/26/07 17:22	RJP	2196420
Methyl tert-butyl ether	11			1	1	04/26/07 17:22	RJP	2196420
Naphthalene	27			5	1	04/26/07 17:22	RJP	2196420
Toluene	ND			1	1	04/26/07 17:22	RJP	2196420
m,p-Xylene	ND			1	1	04/26/07 17:22	RJP	2196420
o-Xylene	ND			1	1	04/26/07 17:22	RJP	2196420
Xylenes,Total	ND			1	1	04/26/07 17:22	RJP	2196420
Surr: 1,2-Dichloroethane-d4	107		%	72-122	5	04/27/07 15:57	RJP	2198030
Surr: 1,2-Dichloroethane-d4	112		%	72-122	1	04/26/07 17:22	RJP	2196420
Surr: 4-Bromofluorobenzene	99.0		%	78-115	5	04/27/07 15:57	RJP	2198030
Surr: 4-Bromofluorobenzene	103		%	78-115	1	04/26/07 17:22	RJP	2196420
Surr: Toluene-d8	91.5		%	81-111	5	04/27/07 15:57	RJP	2198030
Surr: Toluene-d8	90.6		%	81-111	1	04/26/07 17:22	RJP	2196420

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1 **WorkOrder:** 07040878
Method: E504.1 **Lab Batch ID:** 58493

Method Blank

RunID: PCBB_070425A-2196219 Units: ug/L
Analysis Date: 04/26/2007 18:40 Analyst: CH
Preparation Date: 04/24/2007 14:48 Prep By: JNS Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	113.6	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-01B	CK-1
07040878-02B	MW-1
07040878-03B	MW-3
07040878-04B	MW-5
07040878-05B	MW-8
07040878-06B	MW-21
07040878-07B	MW-22
07040878-08B	MW-23
07040878-09B	MW-24
07040878-10B	MW-25
07040878-11B	MW-26
07040878-12B	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_070425A-2196220 Units: ug/L
Analysis Date: 04/26/2007 18:59 Analyst: CH
Preparation Date: 04/24/2007 14:48 Prep By: JNS Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.585	0.495	84.6	0.596	0.496	83.3	0.2	30	60	140
Surr: 1-Chloro-2-fluorobenzene	147	169	115	149	187	125	9.8	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 200.8 **WorkOrder:** 07040878
Method: E200.8 **Lab Batch ID:** 58495-I

Method Blank

RunID: ICPMS_070426B-2195674 Units: ug/L
Analysis Date: 04/26/2007 14:39 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Analyte	Result	Rep Limit
Lead	ND	1

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-01C	CK-1
07040878-02C	MW-1
07040878-03C	MW-3
07040878-04C	MW-5
07040878-05C	MW-8
07040878-06C	MW-21
07040878-07C	MW-22
07040878-08C	MW-23
07040878-09C	MW-24
07040878-10C	MW-25

Laboratory Control Sample (LCS)

RunID: ICPMS_070426B-2195675 Units: ug/L
Analysis Date: 04/26/2007 14:42 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	100.0	104.2	104.2	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040878-01
RunID: ICPMS_070426B-2195678 Units: ug/L
Analysis Date: 04/26/2007 14:50 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	2.147	100	110.0	107.8	100	105.3	103.2	4.286	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 200.8 **WorkOrder:** 07040878
Method: E200.8 **Lab Batch ID:** 58496-I

Method Blank

RunID: ICPMS_070425A-2194304 Units: ug/L
Analysis Date: 04/25/2007 22:59 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-11C	MW-26
07040878-12C	DW-2

Analyte	Result	Rep Limit
Lead	ND	1

Laboratory Control Sample (LCS)

RunID: ICPMS_070425A-2194305 Units: ug/L
Analysis Date: 04/25/2007 23:03 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	100.0	94.32	94.32	85	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040878-11
RunID: ICPMS_070425A-2194308 Units: ug/L
Analysis Date: 04/25/2007 23:16 Analyst: CAB
Preparation Date: 04/24/2007 17:00 Prep By: SA Method E200.8

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	2.089	100	96.34	94.25	100	94.23	92.14	2.212	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151018

Method Blank

RunID: I_070426A-2195349 Units: ug/Kg
Analysis Date: 04/26/2007 14:38 Analyst: RJP
Preparation Date: 04/26/2007 14:38 Prep By: Method SW5035

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	110.7	58-165
Surr: 4-Bromofluorobenzene	101.1	47-145
Surr: Toluene-d8	92.2	51-147

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-09A	MW-24
07040878-10A	MW-25
07040878-11A	MW-26
07040878-12A	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_070426A-2195347 Units: ug/Kg
Analysis Date: 04/26/2007 13:17 Analyst: RJP
Preparation Date: 04/26/2007 13:17 Prep By: Method SW5035

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	48.1	96.2	50.0	47.7	95.5	0.8	21	73	136
Ethylbenzene	50.0	48.7	97.4	50.0	50.4	101	3.4	30	50	150
Methyl tert-butyl ether	50.0	52.8	106	50.0	47.1	94.2	11.4	30	50	150
Naphthalene	50.0	56.7	113	50.0	48.8	97.5	15.0	30	50	150
Toluene	50.0	47.4	94.8	50.0	47.9	95.8	1.1	20	65	116
m,p-Xylene	100	103	103	100	103	103	0.0	30	50	150
o-Xylene	50.0	50.4	101	50.0	49.8	99.6	1.3	30	50	150
Xylenes,Total	150.0	153.4	102.0	150.0	152.8	101.6	0.4	30	50	150
Surr: 1,2-Dichloroethane-d4	50.0	56.5	113	50.0	51.0	102	10.2	30	58	165
Surr: 4-Bromofluorobenzene	50.0	53.4	107	50.0	52.4	105	1.8	30	47	145
Surr: Toluene-d8	50.0	49.2	98.4	50.0	48.9	97.9	0.5	30	51	147

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 07040878
Lab Batch ID: R151018

Sample Spiked: 07040864-02
RunID: I_070426A-2196776 Units: ug/Kg
Analysis Date: 04/26/2007 18:43 Analyst: RJP
Preparation Date: 04/20/2007 9:30 Prep By: Field Method SW5035

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	829	4720	4490	77.6	4720	4550	79.0	1.39	22	39	150
Ethylbenzene	35000	4720	37500	N/C	4720	37400	N/C	N/C	30	50	150
Methyl tert-butyl ether	ND	4720	4490	95.2	4720	4380	92.8	2.52	30	50	150
Naphthalene	ND	4720	19500	413 *	4720	20800	440 *	6.41	30	50	150
Toluene	11400	4720	17600	131	4720	17600	132	0.256	39	23	135
m,p-Xylene	65200	9430	69000	N/C	9430	68200	N/C	N/C	30	50	150
o-Xylene	39800	4720	43800	N/C	4720	43200	N/C	N/C	30	50	150
Xylenes,Total	105000	14140	112800	N/C	14140	111400	N/C	N/C	30	50	150
Surr: 1,2-Dichloroethane-d4	ND	9430	9620	102	9430	9700	103	0.842	30	58	165
Surr: 4-Bromofluorobenzene	ND	9430	5950	63.1	9430	5580	59.2	6.41	30	47	145
Surr: Toluene-d8	ND	9430	4660	49.4 *	9430	4630	49.1 *	0.645	30	51	147

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151129

Method Blank

RunID: X_070426B-2197064 Units: ug/L
Analysis Date: 04/26/2007 18:05 Analyst: RJP

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-01A	CK-1
07040878-02A	MW-1

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	102.2	72-122
Surr: 4-Bromofluorobenzene	102.2	78-115
Surr: Toluene-d8	98.5	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: X_070426B-2197062 Units: ug/L
Analysis Date: 04/26/2007 16:17 Analyst: RJP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	51.9	104	50.0	51.1	102	1.6	16	75	139
Ethylbenzene	50.0	52.1	104	50.0	51.0	102	2.1	20	50	150
Methyl tert-butyl ether	50.0	40.3	80.6	50.0	42.3	84.5	4.7	20	50	150
Naphthalene	50.0	52.3	105	50.0	54.3	109	3.7	20	50	150
Toluene	50.0	50.2	100	50.0	49.2	98.4	2.0	21	71	118
m,p-Xylene	100	106	106	100	104	104	2.0	20	50	150
o-Xylene	50.0	51.5	103	50.0	50.4	101	2.3	20	50	150
Xylenes,Total	150.0	157.5	104.8	150.0	154.4	102.7	2.1	20	50	150
Surr: 1,2-Dichloroethane-d4	50.0	50.8	102	50.0	49.5	98.9	2.7	30	72	122
Surr: 4-Bromofluorobenzene	50.0	49.3	98.6	50.0	49.7	99.3	0.7	30	78	115
Surr: Toluene-d8	50.0	49.3	98.7	50.0	50.4	101	2.1	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151138

Method Blank

RunID: I_070427A-2197163 Units: ug/L
Analysis Date: 04/27/2007 13:15 Analyst: RJP

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-10A	MW-25
07040878-12A	DW-2

Analyte	Result	Rep Limit
Benzene	ND	1.0
Surr: 1,2-Dichloroethane-d4	104.6	72-122
Surr: 4-Bromofluorobenzene	92.9	78-115
Surr: Toluene-d8	89.4	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_070427A-2197161 Units: ug/L
Analysis Date: 04/27/2007 11:54 Analyst: RJP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	46.0	91.9	50.0	45.1	90.2	1.8	16	75	139
Surr: 1,2-Dichloroethane-d4	50.0	54.3	109	50.0	50.8	102	6.7	30	72	122
Surr: 4-Bromofluorobenzene	50.0	52.1	104	50.0	52.6	105	1.1	30	78	115
Surr: Toluene-d8	50.0	49.9	99.8	50.0	50.4	101	0.9	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151201

Method Blank

RunID: I_070428B-2198363 Units: ug/L
Analysis Date: 04/28/2007 13:26 Analyst: RJP

Analyte	Result	Rep Limit
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	113.5	72-122
Surr: 4-Bromofluorobenzene	99.0	78-115
Surr: Toluene-d8	85.0	81-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-03A	MW-3
07040878-04A	MW-5
07040878-05A	MW-8
07040878-06A	MW-21
07040878-07A	MW-22

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_070428B-2198361 Units: ug/L
Analysis Date: 04/28/2007 12:05 Analyst: RJP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	47.9	95.8	50.0	47.5	95.1	0.8	16	75	139
Ethylbenzene	50.0	48.4	96.9	50.0	47.6	95.2	1.8	20	50	150
Methyl tert-butyl ether	50.0	50.5	101	50.0	44.7	89.4	12.2	20	50	150
Naphthalene	50.0	50.5	101	50.0	44.8	89.6	12.0	20	50	150
Toluene	50.0	47.1	94.3	50.0	48.2	96.4	2.2	21	71	118
m,p-Xylene	100	103	103	100	103	103	0.0	20	50	150
o-Xylene	50.0	49.8	99.6	50.0	50.9	102	2.1	20	50	150
Xylenes,Total	150.0	152.8	102.0	150.0	153.9	102.7	0.7	20	50	150
Surr: 1,2-Dichloroethane-d4	50.0	56.2	112	50.0	52.9	106	6.0	30	72	122
Surr: 4-Bromofluorobenzene	50.0	54.1	108	50.0	53.0	106	2.0	30	78	115
Surr: Toluene-d8	50.0	49.5	98.9	50.0	46.9	93.7	5.4	30	81	111

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene **WorkOrder:** 07040878
Method: SW8260B **Lab Batch ID:** R151201

Sample Spiked: 07041054-05
RunID: I_070428B-2198370 Units: mg/Kg
Analysis Date: 04/28/2007 16:35 Analyst: RJP
Preparation Date: 04/26/2007 14:55 Prep By: JSL Method SW5035

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	2.55	2.52	98.7	2.55	2.53	99.2	0.512	22	39	150
Ethylbenzene	ND	2.55	2.60	102	2.55	2.61	102	0.279	30	50	150
Methyl tert-butyl ether	ND	2.55	2.71	106	2.55	2.28	89.4	17.3	30	50	150
Naphthalene	ND	2.55	2.20	86.2	2.55	2.23	87.5	1.47	30	50	150
Toluene	ND	2.55	2.51	98.5	2.55	2.52	98.9	0.350	39	23	135
m,p-Xylene	ND	5.1	5.52	108	5.1	5.52	108	0.133	30	50	150
o-Xylene	ND	2.55	2.80	110	2.55	2.60	102	7.57	30	50	150
Xylenes,Total	ND	7.65	8.32	109	7.65	8.12	106	2.40	30	50	150
Surr: 1,2-Dichloroethane-d4	ND	2550	2850	112	2550	2610	102	8.70	30	58	165
Surr: 4-Bromofluorobenzene	ND	2550	2770	109	2550	2670	105	3.90	30	47	145
Surr: Toluene-d8	ND	2550	2550	100	2550	2460	96.5	3.72	30	51	147

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151203

Method Blank

RunID: I_070429A-2198412 Units: ug/L
Analysis Date: 04/29/2007 1:06 Analyst: RJP

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-08A	MW-23

Analyte	Result	Rep Limit
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	112.1	72-122
Surr: 4-Bromofluorobenzene	94.6	78-115
Surr: Toluene-d8	87.2	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_070429A-2198410 Units: ug/L
Analysis Date: 04/28/2007 23:45 Analyst: RJP

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	50.0	49.8	99.6	50.0	48.7	97.3	2.3	20	50	150
Methyl tert-butyl ether	50.0	49.9	99.8	50.0	46.6	93.2	6.8	20	50	150
Naphthalene	50.0	47.7	95.3	50.0	44.3	88.6	7.3	20	50	150
Toluene	50.0	49.5	98.9	50.0	47.3	94.6	4.4	21	71	118
m,p-Xylene	100	107	107	100	104	104	2.8	20	50	150
o-Xylene	50.0	54.4	109	50.0	49.7	99.4	9.1	20	50	150
Xylenes,Total	150.0	161.4	107.3	150.0	153.7	102.2	4.8	20	50	150
Surr: 1,2-Dichloroethane-d4	50.0	54.4	109	50.0	54.6	109	0.4	30	72	122
Surr: 4-Bromofluorobenzene	50.0	54.2	108	50.0	54.6	109	0.8	30	78	115
Surr: Toluene-d8	50.0	50.3	101	50.0	50.9	102	1.0	30	81	111

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040817-05
RunID: I_070429A-2198414 Units: mg/L
Analysis Date: 04/29/2007 2:00 Analyst: RJP

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 07040878
Lab Batch ID: R151203

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Ethylbenzene	ND	0.05	0.0485	93.5	0.05	0.0500	96.4	2.99	20	50	150
Methyl tert-butyl ether	ND	0.05	0.0586	117	0.05	0.0503	101	15.2	20	50	150
Toluene	ND	0.05	0.0466	92.1	0.05	0.0498	98.5	6.63	17	71	135
m,p-Xylene	ND	0.1	0.0987	98.0	0.1	0.102	102	3.59	20	50	150
o-Xylene	ND	0.05	0.0480	95.4	0.05	0.0531	106	10.2	20	50	150
Xylenes,Total	ND	0.15	0.1467	97.14	0.15	0.1551	103.0	5.801	20	50	150
Surr: 1,2-Dichloroethane-d4	ND	50	56.8	114	50	52.4	105	8.03	30	72	122
Surr: 4-Bromofluorobenzene	ND	50	53.9	108	50	53.5	107	0.696	30	78	115
Surr: Toluene-d8	ND	50	49.7	99.4	50	52.2	104	4.96	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 07040878
Lab Batch ID: R151342

Method Blank

RunID: I_070429C-2200478 Units: ug/L
Analysis Date: 04/29/2007 23:58 Analyst: FJA

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-07A	MW-22
07040878-08A	MW-23

Analyte	Result	Rep Limit
Benzene	ND	1.0
Surr: 1,2-Dichloroethane-d4	106.3	72-122
Surr: 4-Bromofluorobenzene	89.1	78-115
Surr: Toluene-d8	88.1	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_070429C-2200476 Units: ug/L
Analysis Date: 04/29/2007 22:37 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	50.9	102	50.0	49.6	99.2	2.6	16	75	139
Surr: 1,2-Dichloroethane-d4	50.0	54.4	109	50.0	53.6	107	1.5	30	72	122
Surr: 4-Bromofluorobenzene	50.0	52.2	104	50.0	51.4	103	1.6	30	78	115
Surr: Toluene-d8	50.0	46.6	93.2	50.0	49.2	98.5	5.5	30	81	111

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Iron, Ferrous
Method: HACH 8146

WorkOrder: 07040878
Lab Batch ID: R150795

Method Blank

RunID: WET_070422A-2190960 Units: mg/L
Analysis Date: 04/22/2007 10:00 Analyst: CJD

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-02E	MW-1
07040878-11E	MW-26

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Laboratory Control Sample (LCS)

RunID: WET_070422A-2190961 Units: mg/L
Analysis Date: 04/22/2007 10:00 Analyst: CJD

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	1.010	101.0	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040878-02
RunID: WET_070422A-2190963 Units: mg/L
Analysis Date: 04/22/2007 10:00 Analyst: CJD

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	0.9290	92.90	1	0.9750	97.50	4.832	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Sulfate, Total
Method: ASTM D516-90

WorkOrder: 07040878
Lab Batch ID: R150856

Method Blank

RunID: WET_070424Q-2192396 Units: mg/L
Analysis Date: 04/24/2007 18:30 Analyst: PFB

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-02D	MW-1
07040878-11D	MW-26

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Laboratory Control Sample (LCS)

RunID: WET_070424Q-2192397 Units: mg/L
Analysis Date: 04/24/2007 18:30 Analyst: PFB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.133	91.33	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040869-01
RunID: WET_070424Q-2192399 Units: mg/L
Analysis Date: 04/24/2007 18:30 Analyst: PFB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	59.83	20	76.23	82.00	20	76.97	85.70	0.9661	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Nitrate (as N) **WorkOrder:** 07040878
Method: M4500-NO3 E **Lab Batch ID:** R151023

Method Blank

RunID: WET_070426K-2195391 Units: mg/L
Analysis Date: 04/26/2007 14:30 Analyst: KRR

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
07040878-02D	MW-1
07040878-11D	MW-26

Analyte	Result	Rep Limit
Nitrate (As N)	ND	0.010

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_070426K-2195422 Units: mg/L
Analysis Date: 04/26/2007 14:30 Analyst: KRR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrate (As N)	0.1500	0.1360	90.67	0.1500	0.1390	92.67	2.2	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 07040869-01
RunID: WET_070426K-2195523 Units: mg/L
Analysis Date: 04/26/2007 14:30 Analyst: KRR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrate (As N)	ND	0.15	0.1260	84.00	0.15	0.1280	85.33	1.575	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	07040878	Received By:	DMF
Date and Time Received:	4/21/2007 9:30:00 AM	Carrier name:	FedEx-Pri Saturday Del
Temperature:	3°C	Chilled by:	Water Ice

1.	Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2.	Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
3.	Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4.	Chain of custody present?	Yes ☑	No ☐	
5.	Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
6.	Chain of custody agrees with sample labels?	Yes ☑	No ☐	
7.	Samples in proper container/bottle?	Yes ☑	No ☐	
8.	Sample containers intact?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test?	Yes ☑	No ☐	
10.	All samples received within holding time?	Yes ☐	No ☑	
11.	Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
12.	Water - VOA vials have zero headspace?	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	Water - Preservation checked upon receipt (except VOA*)?	Yes ☑	No ☐	Not Applicable ☐

*VOA Preservation Checked After Sample Analysis

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

E THIS AREA

RECIPIENT: PEEL HERE

Saturday

FedEx Express **US Airbill**

FedEx Tracking Number 8582 8677 6068

1 From This portion can be removed for Recipient's records.

Date 4/20/07 FedEx Tracking Number 858286776068

Sender's Name JOHN MONTGOMERY Phone 713 735 0003

Company MC ASSOCIATES

Address 400 NORTHEAST DR UNIT G

Dept./Floor/Suite/Room

City COLUMBIA State SC ZIP 29203

2 Your Internal Billing Reference 1478384.0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0347540265

8582 8677 6068

MUR43

Form ID No. 0215

Recipient's Copy

4a Express Package Service *Packages up to 150 lbs.*

[redacted] FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

[redacted] ight

☐ FedEx First Overnight Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

☐ FedEx 2Day Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx Express Saver Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

☐ FedEx 1Day Freight* Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx 2Day Freight Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

☐ FedEx 3Day Freight Third business day.** Saturday Delivery NOT available.

* Call for Confirmation. ** To most locations.

5 Packaging

☐ FedEx Envelope* ☐ FedEx Pak* Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. ☐ FedEx Box ☐ FedEx Tube ☐ Other

* Declared value limit $500.

[redacted] Include FedEx address in Section 3.

☐ HOLD Weekday at FedEx Location Not available for FedEx First Overnight.

☒ HOLD Saturday at FedEx Location Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

[redacted] ods?

☒ No ☐ Yes As per attached Shipper's Declaration. ☐ Yes Shipper's Declaration not required. ☐ Dry Ice Dry Ice, 9, UN 1845 _____ x _____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging. ☐ Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender Acct. No. in Section 1 will be billed. ☒ Recipient ☐ Third Party ☐ Cred* ☐ Recip. No. ☒ Cash/Check

[redacted] 705-[redacted]

Total Packages	Total Weight	[redacted]	Total Charges
1	30		Credit Card Auth.

*Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

☐ No Signature Required Package may be left without obtaining a signature for delivery.

☐ Direct Signature Anyone at recipient's address may sign for delivery. *Fee applies.*

☐ Indirect Signature If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

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MUR43

MUR43

Form ID No. 0215

Recipient's Copy

fedEx Express **US Airbill**

FedEx Tracking Number 8582 8677 6046

1 From This portion can be removed for Recipient's records.

Date 4/20/07 FedEx Tracking Number 858286776046

Sender's Name JOW MORRISON Phone 903 735 1023

Company MC MOSCO

Address 400 NORTHWEST DR UNIT C

Dept./Floor/Suite/Room

City PLANO State TX ZIP 75093

2 Your Internal Billing Reference 1425384.0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0347540265

8582 8677 6046

Saturday

PEEL HERE

4a Express Package Service — *Packages up to 150 lbs.*

- [x] FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [redacted]
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- [ ] FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service — *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- [ ] FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

* Declared value limit $500.

[redacted]

Include FedEx address in Section 3.

- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight
- [x] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

[redacted]

- [x] No
- [ ] Yes — As per attached Shipper's Declaration.
- [ ] Yes — Shipper's Declaration not required.
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Obtain Recip. Acct. No. [ ]

[redacted]

Total Packages	Total Weight	[redacted]	Total Charges
1	30		Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- [ ] No Signature Required — Package may be left without obtaining a signature for delivery.
- [ ] Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- [ ] Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

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SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 259937

07040878

page 1 of 2

Client Name: ATC
Address: 400 NE Dr., Suite Q, Columbia, SC
Phone/Fax: 803·735·0003/803·735·0443
Client Contact: Rob Bolton Email:
Project Name/No.: 14.25384.0012
Site Name: Former United Exxon
Site Location: Winnsboro, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph, MTBE (8260B)	EDB	Lead	Nitrate	Sulfate	Ferrous Iron			
CK1	4/20/07	1315		X	W	P+V	16+40	1+2	7	X	X	X						
MW-1		0825					1,16+40		9	X	X	X	X	X	X			
MW-3		0845					16+40		7	X	X	X						
MW-5		0915								X	X	X						
MW-8		0930								X	X	X						
MW-21		1040								X	X	X						
MW-22		1100								X	X	X						6
MW-23		1220								X	X	X						
MW-24		1240								X	X	X						
MW-25		1300								X	X	X						

Client/Consultant Remarks:

Laboratory remarks: W-504(8) W-70(FS-2) (30) (1)

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 3.0

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☒ Email ☒ PDF ☒

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: R. Kuhl	date 4/20/07	time 1415	2. Received by: Fedex
3. Relinquished by: Fedex	date 4/21/07	time 9:00	4. Received by: Delle Fra
5. Relinquished by: Delle Fra	date 4/21/07	time 9:30	6. Received by Laboratory: Delle Fra

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 259935

page 2 of 2

Client Name: ATC
Address: 400 NE Dr. Suite Q, Columbia, SC
Phone/Fax: 803.735.0003 / 803.735.0443
Client Contact: Bob Bolton Email:
Project Name/No.: 14.25384.0012
Site Name: Former United Exxon
Site Location: Winnsboro, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph + MTBE (8260B)	EDB	Lead	Nitrate	Sulfate	Ferrous Iron			
MW-26	4/20/07	1020		X	W	P+V	16+40	1+2	9	X	X	X	X	X	X			
DW-2	1	1200		X	W	P+V	16+40	1+2	9	X	X	X						

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 3.0

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☒
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☒ Email ☒ PDF ☒

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by: Sampler	date 4/20/07	time 1415	2. Received by: Fedex
3. Relinquished by: Fedex	date 4/21/07	time 9:00	4. Received by: Delle Fra
5. Relinquished by: Delle Fra	date 4/21/07	time 9:30	6. Received by Laboratory: Delle Fra

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

APPENDIX F

Disposal Manifests

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:
2. Page 1 of 1
3. Emergency Response Phone:
4. Waste Tracking Number: 02147

5. Generator's Name and Mailing Address
United Exxon
401 N. Congress Street
Winnsboro, SC
Generator's Phone: 803-735-0003 (Agent for Generator)

Generator's Site Address (if different than mailing address):

6. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORPORATION
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name:
U.S. EPA ID Number:

8. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORPORATION
6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214
(336)-375-1989
Facility's Phone:
U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	466 ~~1500~~	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
9.1. 2005-0063-BG
Shamrock Job No. 02-AFV-07-0230

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Generator's/Offeror's Printed/Typed Name: DANA DEWEZ AGENT FOR ATC
Signature:
Month 02 Day 14 Year 07

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: DANA DEWEZ
Signature:
Month 02 Day 14 Year 07
Transporter 2 Printed/Typed Name:
Signature:
Month Day Year

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:
17b. Alternate Facility (or Generator)
U.S. EPA ID Number:
Facility's Phone:
17c. Signature of Alternate Facility (or Generator)
Month Day Year

1mm01 1mm03 10yd gas PH-6.0 FP-RT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: D7 Gm
Signature:
Month 02 Day 15 Year 07

DESIGNATED FACILITY TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 03037

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address

United Exxon
401 N. Congress Street
Winnsboro, SC

4. Generator's Phone (803) 735-0003 (Agent for Generator)

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline Mixture, 3, UN1203, PG II	001	TT	0.0321	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-07-0359

SHEEN

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063-BG

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Ryan Stubbs | Signature | Month 03 Day 13 Year 07

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Paul Jacobs | Signature | Month 03 Day 13 Year 07

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

1mol 1mB pH-6.0 2 gal gas PP-RT

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SEE

Printed/Typed Name | Signature | Month 03 Day 15 Year 07

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ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone 800 881-1098	4. Waste Tracking Number 03147

5. Generator's Name and Mailing Address: United Exxon, 401 N. Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address)

Generator's Phone: (803) 735-0003 (agent for generator)

6. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORPORATION — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORPORATION, 6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214, (336)-375-1989 — U.S. EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
X	1. Gasoline Mixture, 3, UN1203, PG II	001	TT	184	G	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information: 03-AFV-07-0359 — PA. 2005-0063-BG — Sheen

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: (Agent for UC) Paul Jacobs — Signature: [signature] — Month 03 Day 14 Year 07

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S. — Port of entry/exit:

Transporter Signature (for exports only): — Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Paul Jacobs — Signature: [signature] — Month 03 Day 14 Year 07

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

17. Discrepancy

17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month — Day — Year

1M01 1M03 2gl ga pH-6.0 FP-RT

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: [illegible] — Signature: [signature] — Month 03 Day 15 Year 07

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

DESIGNATED FACILITY TO GENERATOR

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-03260792

Page of

Job No. D-03260792

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: Former United Exxon

US EPA ID No.

Street Address: 401 N. Congress St. Winnsboro, SC

Mailing Address: For Bryce - ATC 400 NE Drive Suite 9 Columbia, SC

Phone No. 803-735-0003

Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non-Haz Solid, NOS	—	—	—	3	DM	3	DM
b.		Non-Haz Liquid, NOS							
c.									.68 Tons

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Soil		JB-0806765	Approved for Disposal
b.	Water			
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Johnny Horn

Signature:

Mo./Day/Yr. 3/26/07

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Transporter or EPA ID No.: SCR000004358

Unit No. 25

Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: Shipment Date 03/26/07

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: Delivery Date 03/26/07

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: Receipt Date

Discrepancies	Routing Codes	Handling Methods.
a.	CQ6803	
b.		
c.		

Original - Facility Retain **COPY 2 - Return to Generator** **COPY 3 - Transporter Retain** **COPY 4 - Generator Retain**

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-0425 1176

Page of

Job No. D-0425 1176

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: FMR UNITED EXXON

US EPA ID No.

Street Address: WINNSBORO, SC

Mailing Address FOR PAYEE
ATC ASSOCIATES
400 NORTHEAST DR
UNIT Q
COLUMBIA, SC 29203

Phone No. FOR PAYEE (803) 735-0003

Contact FOR PAYEE BOB BOLTON

FMR PHILLIPS FABRIC

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON-HAZ LIQ	—	—	—	1DM		1	DM
b.									
c.									.23 TONS

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	WATER		AT-1106857	Approved for Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: JOHN MONEGHAN-ATC

Signature: AGENT FOR SITE

Mo./Day/Yr. 4/25/07

TRANSPORTER INFORMATION

Transporter: ATC ASSOCIATES

Address: 400 NORTHEAST DR UNIT Q COLUMBIA, SC 29203

Transporter or EPA ID No.

Unit No.

Phone (803) 735-0003

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature

Shipment Date 4/25/07

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature

Delivery Date 4/25/07

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No. SCR000004358

Phone 864-583-2717

Contact Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature

Receipt Date 4/25/07

Discrepancies	Routing Codes	Handling Methods.
a.	WM-3219	
b.		
c.		

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED
NOV 17 2006
UNDERGROUND STORAGE TANK PROGRAM

November 16, 2006

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Proposal
United Exxon
Fairfield County
UST Permit # 11760

Dear Mr. Shrader:

Please find enclosed the Groundwater Assessment proposal for United Exxon per your request. Since there are two active releases at this site, the proposed costs have been split between the two releases. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Bob Bolton
Environmental Division Manager

UST PROGRAM DOCKETING # 31 Tech

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

DHEC
PROMOTE PROTECT PROSPER

Tier II Plan
Division of Underground Storage Tank Management

RECEIVED
NOV 17 2006
UNDERGROUND STORAGE TANK PROGRAM

UST Permit #: 11760 County: Fairfield Facility Name: United Exxon

Facility Address: 401 North Congress St, Winnsboro, SC

Responsible Party: Keenan Energy Company Address: P.O. Box 3218, Columbia, SC

No. USTs: 5 Removed? Yes (date) Replaced? (date)

Current use of facility/property: Propane Sales

Current property owner name: Keenan Energy Company

Current property owner address: P.O. Box 3218, Columbia, SC

Field Screening Methodology

Specify the field screening methodology to be used. The use of field screening methods to optimize the number and location of permanent wells is required.

A PID will be used for field screening purposes during the drilling activities.

Permanent Monitoring Wells (estimate number and total completed depth)

# of shallow wells: 5 Total depth: 180'

# of deep wells: 1 Total depth: 150' (if necessary)

Comments, if warranted:

Analyses

List the analytical parameters (e.g., BTEX, MTBE) and estimated number.

BTEX, NAph, MTBE, EDB, Lead - 33
Ferrous Iron, Nitrate, Sulfate - 6 (new wells only)
BTEX, NAph, MTBE, EDB - 1 (creek sample)

Implementation Schedule

Start up date: Completion date:

Report submittal date:

UST Permit #: 11760 Facility Name: United Exxon

Site Maps

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.

2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

North arrow	Legend with facility name and address, UST Permit number, date, and a bar scale
Location of property lines	Streets or highways (indicate names and numbers)
Location of buildings	Identification of located buildings
Paved areas on or adjacent to site	Location of all present and former ASTs and USTs
Previous soil sampling locations	Underground and above ground utilities on or adjacent to site
Previous monitoring well locations	Location of any other potential receptor

Aquifer Characterization (check one and provide explanation for choice)

Pump test: Slug tests:

Not Applicable

Small Volume Disposal Type and Method

Soil: Drummed for proper disposal

Purge water: Drummed for proper disposal

Additional comments:

Two EFR events (30 days apart) are proposed at MW-2 located on the subject property. Also, Two EFR events (30 days apart) are proposed at the wells containing free product on the VANCE property.

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Program
State Underground Petroleum Environmental Response Bank Account

RECEIVED
NOV 17 2006
UNDERGROUND STORAGE TANK PROGRAM

Facility Name **Former United Exxon (Release #2)**
UST Permit # 11760 Cost Agreement #

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
A. Plan Preparation	0.5	x	$100.00	$50.00
B. Tax Map		x	$50.00	$0.00
2. Receptor Survey *		x	$500.00	$0.00
3. Comprehensive Survey		x	$1,000.00	$0.00
4. Mob/Demob				
A. Equipment 9,23,23,23,23	2.5	x	$550.00	$1,375.00
B. Personnel 9,10,16,17,23,23,23,23	4	each x	$275.00	$1,100.00
C. Adverse Train Vehicle 9,9	1	x	$550.00	$550.00
5. Soil Borings (hand auger)*		feet x	$14.00	$0.00
6. Soil Borings (drilled) & Field Screening				
A. Standard		feet x	$17.00	$0.00
B. Alternative, on-site		feet x	$12.50	$0.00
C. Fractured Rock		feet x	$27.50	$0.00
7. Soil Leachability Model		each x	$200.00	$0.00
8. Abandonment*		feet x	$5.00	$0.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	$20.00	$0.00
B. Water Table (drilled)	45	feet x	$38.00	$1,710.00
C. Telescoping	75	feet x	$58.00	$4,350.00
D. Rock Drilling	45	feet x	$58.00	$2,610.00
E. 2" Rock Coring		feet x	$44.10	$0.00
F. 4" Rock Coring		feet x	$50.40	$0.00
G. multi sampling port/screen		each x	$47.20	$0.00
10. Groundwater Sample Collection				
A.Groundwater	4	samples x	$55.00	$220.00
B. Air Vapor		samples x	$90.00	$0.00
C. Water Supply	0.5	samples x	$25.00	$12.50
D. Groundwater No Purge	12.5	samples x	$35.00	$437.50
E. Gauge Well only	0.5	per well x	$20.00	$10.00
F. Sample Below Product		samples x	$50.00	$0.00
G. Passive Diffusion Bag		each x	$40.00	$0.00
11. Analyses-Groundwater (See Analytical Methodology for analyses)				
A. BTEX+Napth.+MTBE	17	samples x	$100.00	$1,700.00
B. Rush BTEX analysis		samples x	$120.00	$0.00
D. PAH's		samples x	$120.00	$0.00
E. Lead	16.5	samples x	$20.00	$330.00
F. EDB	17	samples x	$55.00	$935.00
G. 8 RCRA Metals		samples x	$140.00	$0.00
H.TPH (9070)		samples x	$55.00	$0.00
J. BOD		samples x	$40.00	$0.00
K. Nitrate	6 ~~3~~	samples x	$20.00	$60.00
L. Sulfate	6 ~~3~~	samples x	$20.00	$60.00
M. Ferrous Iron	6 ~~3~~	samples x	$20.00	$60.00
N. Methane		samples x	$110.00	$0.00
O. Organic Lead		samples x	$100.00	$0.00
P. 8 Oxygenates		samples x	$85.00	$0.00
AA. Filtered Lead		samples x	$46.00	$0.00
BB. 1,2-DCA		samples x	$10.75	$0.00

11. Analyses-Soil				
Q. BTEX + Napth.		samples x	$100.00	$0.00
R. PAH's		samples x	$120.00	$0.00
S. 8 RCRA Metals		samples x	$150.00	$0.00
T. TPH (9071)		samples x	$60.00	$0.00
U. TPH (3550B/8015B)		samples x	$65.00	$0.00
V. TPH (5030B/8015B)		samples x	$65.00	$0.00
W. Grain size/hydrometer		samples x	$75.00	$0.00
X. Total Organic Carbon		samples x	$35.00	$0.00
11. Analyses-Air				
Y. BTEX + Napth.		samples x	$247.50	$0.00
11. Z. Hydrocarbon Fuel Identification		samples x	$620.00	$0.00
12. A. Pumping Test*		hours x	$120.00	$0.00
B. Slug Test*		tests x	$150.00	$0.00
C. Fractured Rock		tests x	$500.00	$0.00
13. Free Product Recovery Rate Test*		tests x	$120.00	$0.00
14. A. Mathematical Model		each x	$300.00	$0.00
B. Computer Model		each x	$500.00	$0.00
15. A. Tier 1 Risk Evaluation		x	$300.00	$0.00
B. Tier II Risk Evaluation		x	$500.00	$0.00
16. Subsequent Survey*	0.5	x	$260.00	$130.00
17. Disposal*				
A. Wastewater				
1. Purging/Sampling	4	drums x	$90.00	$360.00
2. Pumping Test/EFR	500	gallons x	$0.60	$300.00
B. Free Product		drums x	$110.00	$0.00
C. Soil (Treatment/Disposal)	14	drum/ton x	$50.00	$700.00
18. Miscellaneous (attach receipts)				
Convert above-grades to flush mounted	2.5	x	~~$450.00~~ 250	$1,125.00
		x		$0.00
23. EFR				
A. 8-hour Event*	2	each x	$3,000.00	$6,000.00
B. Additional Hour		per hour x	$204.00	$0.00
C. Off-gas treatment		per hour x	$35.00	$0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:				
A. New GAC System Installation*		each x	$2,500.00	$0.00
B. Refurbished GAC Sys. Install*		each x	$850.00	$0.00
C. Filter replacement/removal*		each x	$450.00	$0.00
D. GAC System removal, cleaning, & refurbishment*		each x	$450.00	$0.00
E. GAC System housing		each x	$450.00	$0.00
F. In-line particulate filter		each x	$140.00	$0.00
G. Additional piping & fittings		feet x	$4.00	$0.00
25. Well Repair				
A. Additional Copies of Report		each x	$25.00	$0.00
B. Repair 2x2 MW pad		each x	$100.00	$0.00
C. Repair 4x4 MW pad		each x	$150.00	$0.00
D. Repair well vault		each x	$225.00	$0.00
E. Replace well cover & gasket		each x	$30.00	$0.00
F. Replace well cover bolts		each x	$10.00	$0.00
G. Replace locking well cap & lock		each x	$15.00	$0.00
19. Report/Project Management and Coordination	15%	x	$24,185.00	$3,627.75
25. **TOTAL**				$27,812.75

*The appropriate mobilization cost can be added to complete these tasks, as necessary

11. Analyses-Soil				
Q. BTEX + Napth.		samples x	$100.00	$0.00
R. PAH's		samples x	$120.00	$0.00
S. 8 RCRA Metals		samples x	$150.00	$0.00
T. TPH (9071)		samples x	$60.00	$0.00
U. TPH (3550B/8015B)		samples x	$65.00	$0.00
V. TPH (5030B/8015B)		samples x	$65.00	$0.00
W. Grain size/hydrometer		samples x	$75.00	$0.00
X. Total Organic Carbon		samples x	$35.00	$0.00
11. Analyses-Air				
Y. BTEX + Napth.		samples x	$247.50	$0.00
11. Z. Hydrocarbon Fuel Identification		samples x	$620.00	$0.00
12. A. Pumping Test*		hours x	$120.00	$0.00
B. Slug Test*		tests x	$150.00	$0.00
C. Fractured Rock		tests x	$500.00	$0.00
13. Free Product Recovery Rate Test*		tests x	$120.00	$0.00
14. A. Mathematical Model		each x	$300.00	$0.00
B. Computer Model		each x	$500.00	$0.00
15. A. Tier 1 Risk Evaluation		x	$300.00	$0.00
B. Tier II Risk Evaluation		x	$500.00	$0.00
16. Subsequent Survey*	0.5	x	$260.00	$130.00
17. Disposal*				
A. Wastewater				
1. Purging/Sampling	4	drums x	$90.00	$360.00
2. Pumping Test/EFR	500	gallons x	$0.60	$300.00
B. Free Product		drums x	$110.00	$0.00
C. Soil (Treatment/Disposal)	14	drum/ton x	$50.00	$700.00
18. Miscellaneous (attach receipts)				
Convert above-grades to flush mounted	2.5	x	$450.00	$1,125.00
		x		$0.00
23. EFR				
A. 8-hour Event*	2	each x	$3,000.00	$6,000.00
B. Additional Hour		per hour x	$204.00	$0.00
C. Off-gas treatment		per hour x	$35.00	$0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:				
A. New GAC System Installation*		each x	$2,500.00	$0.00
B. Refurbished GAC Sys. Install*		each x	$850.00	$0.00
C. Filter replacement/removal*		each x	$450.00	$0.00
D. GAC System removal, cleaning, & refurbishment*		each x	$450.00	$0.00
E. GAC System housing		each x	$450.00	$0.00
F. In-line particulate filter		each x	$140.00	$0.00
G. Additional piping & fittings		feet x	$4.00	$0.00
25. Well Repair				
A. Additional Copies of Report		each x	$25.00	$0.00
B. Repair 2x2 MW pad		each x	$100.00	$0.00
C. Repair 4x4 MW pad		each x	$150.00	$0.00
D. Repair well vault		each x	$225.00	$0.00
E. Replace well cover & gasket		each x	$30.00	$0.00
F. Replace well cover bolts		each x	$10.00	$0.00
G. Replace locking well cap & lock		each x	$15.00	$0.00
19. Report/Project Management and Coordination	15%	x	$24,185.00	$3,627.75
25. **TOTAL**				$27,812.75

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

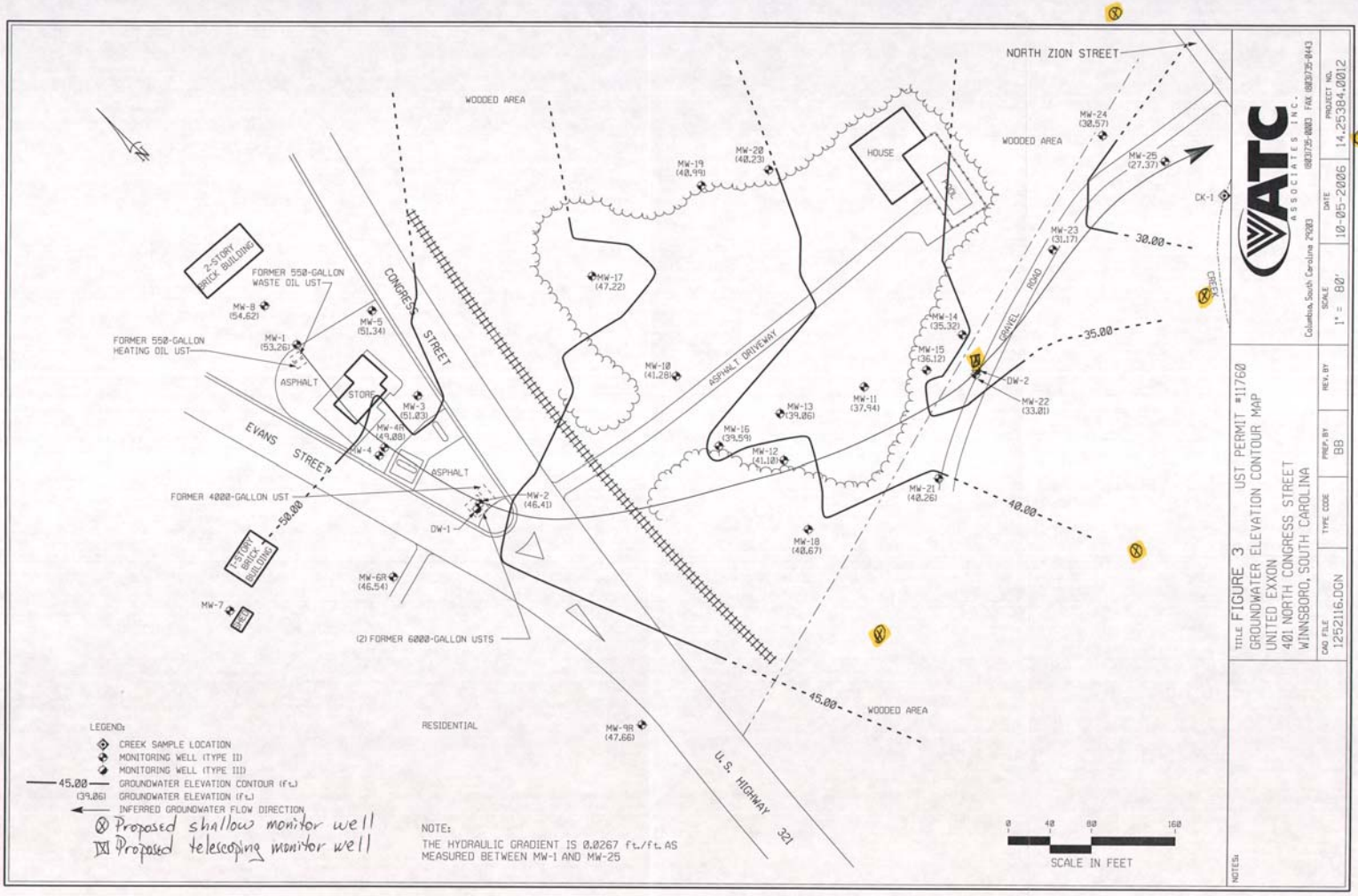
ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Program
State Underground Petroleum Environmental Response Bank Account

RECEIVED
NOV 17 2006

Facility Name **Former United Exxon (Release #3)**

UST Permit # 11760 Cost Agreement #

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
A. Plan Preparation	0.5	x	$100.00	$50.00
B. Tax Map		x	$50.00	$0.00
2. Receptor Survey *		x	$500.00	$0.00
3. Comprehensive Survey		x	$1,000.00	$0.00
4. Mob/Demob				
A. Equipment 9,23,23,23,23	2.5	x	$550.00	$1,375.00
B. Personnel 9,10,16,17,23,23,23,23	4	each x	$275.00	$1,100.00
C. Adverse Train Vehicle 9,9	1	x	$550.00	$550.00
5. Soil Borings (hand auger)*		feet x	$14.00	$0.00
6. Soil Borings (drilled) & Field Screening				
A. Standard		feet x	$17.00	$0.00
B. Alternative, on-site		feet x	$12.50	$0.00
C. Fractured Rock		feet x	$27.50	$0.00
7. Soil Leachability Model		each x	$200.00	$0.00
8. Abandonment*		feet x	$5.00	$0.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	$20.00	$0.00
B. Water Table (drilled)	45	feet x	$38.00	$1,710.00
C. Telescoping	75	feet x	$58.00	$4,350.00
D. Rock Drilling	45	feet x	$58.00	$2,610.00
E. 2" Rock Coring		feet x	$44.10	$0.00
F. 4" Rock Coring		feet x	$50.40	$0.00
G. multi sampling port/screen		each x	$47.20	$0.00
10. Groundwater Sample Collection				
A.Groundwater	4	samples x	$55.00	$220.00
B. Air Vapor		samples x	$90.00	$0.00
C. Water Supply	0.5	samples x	$25.00	$12.50
D. Groundwater No Purge	12.5	samples x	$35.00	$437.50
E. Gauge Well only	0.5	per well x	$20.00	$10.00
F. Sample Below Product		samples x	$50.00	$0.00
G. Passive Diffusion Bag		each x	$40.00	$0.00
11. Analyses-Groundwater (See Analytical Methodology for analyses)				
A. BTEX+Napth.+MTBE	17	samples x	$100.00	$1,700.00
B. Rush BTEX analysis		samples x	$120.00	$0.00
D. PAH's		samples x	$120.00	$0.00
E. Lead	16.5	samples x	$20.00	$330.00
F. EDB	17	samples x	$55.00	$935.00
G. 8 RCRA Metals		samples x	$140.00	$0.00
H.TPH (9070)		samples x	$55.00	$0.00
J. BOD		samples x	$40.00	$0.00
K. Nitrate	3	samples x	$20.00	$60.00
L. Sulfate	3	samples x	$20.00	$60.00
M. Ferrous Iron	3	samples x	$20.00	$60.00
N. Methane		samples x	$110.00	$0.00
O. Organic Lead		samples x	$100.00	$0.00
P. 8 Oxygenates		samples x	$85.00	$0.00
AA. Filtered Lead		samples x	$46.00	$0.00
BB. 1,2-DCA		samples x	$10.75	$0.00


NORTH ZION STREET
WOODED AREA
HOUSE
WOODED AREA
MW-24 (30.57)
MW-25 (27.37)
CK-1
MW-23 (31.17)
30.00
MW-19 (40.99)
MW-20 (40.23)
MW-17 (47.22)
2-STORY BRICK BUILDING
FORMER 550-GALLON WASTE OIL UST
MW-8 (54.62)
MW-5 (51.34)
MW-1 (53.26)
FORMER 550-GALLON HEATING OIL UST
ASPHALT
STORE
MW-3 (51.03)
MW-4B (49.08)
MW-4
CONGRESS STREET
EVANS STREET
ASPHALT
FORMER 4000-GALLON UST
50.00
MW-2 (46.41)
DW-1
1-STORY BRICK BUILDING
MW-6R (46.54)
MW-7
(2) FORMER 6000-GALLON USTS
MW-10 (41.28)
ASPHALT DRIVEWAY
MW-13 (39.06)
MW-16 (39.59)
MW-12 (41.10)
MW-11 (37.94)
MW-14 (35.32)
MW-15 (36.12)
GRAVEL ROAD
35.00
DW-2
MW-22 (33.01)
MW-21 (40.26)
40.00
MW-18 (40.67)
CREEK
45.00
WOODED AREA
RESIDENTIAL
MW-9R (47.66)
U.S. HIGHWAY 321
LEGEND:
CREEK SAMPLE LOCATION
MONITORING WELL (TYPE II)
MONITORING WELL (TYPE III)
45.00 GROUNDWATER ELEVATION CONTOUR (ft.)
(39.06) GROUNDWATER ELEVATION (ft.)
INFERRED GROUNDWATER FLOW DIRECTION
Proposed shallow monitor well
Proposed telescoping monitor well
NOTE:
THE HYDRAULIC GRADIENT IS 0.0267 ft./ft. AS MEASURED BETWEEN MW-1 AND MW-25
0 40 80 160
SCALE IN FEET
ATC ASSOCIATES INC.
Columbia, South Carolina 29203
(803)735-6003 FAX (803)735-0443
PROJECT NO. 14.25384.0012
DATE 10-05-2006
SCALE 1" = 80'
REV. BY
PREP. BY BB
TYPE CODE
CAD FILE 1252116.DGN
TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA
NOTES:

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Plan

RECEIVED
OCT 11 2006
UNDERGROUND STORAGE TANK PROGRAM

October 9, 2006

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Shrader:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST PROGRAM
DOCKETING # 32 Tech

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

RECEIVED
OCT 11 2006
UNDERGROUND STORAGE TANK PROGRAM

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Environmental Division Manager

Frederick P. Lyke, P.G. #1055

October 9, 2006

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APPENDIX B	Free Product Recovery Summary Reports
APPENDIX C	Monitor Well Construction Logs
APPENDIX D	Groundwater Sampling Field Measurements
APPENDIX E	Laboratory Analytical Results and Chain-of-Custody
APPENDIX F	Disposal Manifests
APPENDIX G	Surveyed Site Map

1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated December 12, 2005. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Free Product Recovery Events

On February 3, 2006, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. The free product removal event was conducted for eight hours, and approximately 197 gallons of liquid were removed from this monitor well. On April 6, 2006, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10 and MW-11 by Shamrock Environmental Corporation. This free product removal event was conducted for 5.75 hours (due to time restraints set by the property owner), and approximately 198 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for one hour at Monitor Well MW-10 and 4.5 hours at Monitor Well MW-11. On June 21, 2006, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. This event was conducted for eight hours, and approximately 99 gallons of liquid were removed from this monitor well. On July 18, 2006, ATC personnel oversaw the free product removal activities from Monitor Wells MW-10 through MW-13 and MW-16 by Shamrock Environmental Corporation. This event was conducted for 7.5 hours, and approximately 853 gallons of liquid were removed from these monitor wells. Specifically, the event was conducted for one hour at Monitor Well MW-10; 2.5 hours at Monitor Well MW-11; three hours at Monitor Wells MW-12 and MW-16; and six hours at Monitor Well MW-13. On July 19, 2006, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental

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Corporation. This event was conducted for eight hours, and approximately 249 gallons of liquid were removed from this monitor well. A detailed summary of the free product removal activities is presented in Appendix B.

2.2 Monitor Well Installations

On May 17, 2006, ATC personnel oversaw the installation of two (2) shallow groundwater monitor wells, identified as Monitor Wells MW-17 andMW-18, by Mr. Brian Thomas of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Thomas, using a track mounted drill rig, installed both wells to an approximate depth of 50 feet. Specifically, Monitor Well MW-17 was installed north of Monitor Well MW-10, and Monitor Well MW-18 was installed southwest of Monitor Well MW-12.

On July 17-19, 2006, ATC personnel oversaw the installation of seven (7) shallow groundwater monitor wells, identified as Monitor Wells MW-19 through MW-25, and one (1) telescoping groundwater monitor well, identified as DW-2, by Mr. Brian Thomas, Mr. Mike McConahey, and Mr. Jason Mantak of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Thomas, using a track mounted drill rig, installed Monitor Wells MW-19 and MW-20 to an approximate depth of 46 feet each. Mr. McConahey, using a track mounted Diedrich D-50 Turbo drill rig, installed Monitor Wells MW-21, MW-24, and MW-25 to approximate depths of 40 feet, 25 feet, and 23 feet, respectively. Mr. Mantak, using a Drilltech D-25K drill rig, installed Monitor Wells MW-22 and MW-23 to an approximate depth of 40 feet each. In addition, Mr. Mantak installed Monitor Well DW-2 to an approximate depth of 80 feet. Specifically, Monitor Wells MW-19 and MW-20 were installed northeast of Monitor Well MW-10, and Monitor Well MW-21 was installed southeast of Monitor Well MW-12. Monitor Wells MW-22 and DW-2 were installed southeast of Monitor Well MW-15. Monitor Well MW-23 was installed east of Monitor Well MW-23, and Monitor Well MW-24 was installed northeast of Monitor Well MW-23. Monitor Well MW-25 was installed southeast of Monitor Well MW-24, and this location is near the headwaters of McCulley Creek. Monitor well locations are depicted in Figure 2.

The monitor wells are constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. Each shallow monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet to 2.5 feet above the top of the screen and followed by approximately 3 feet to 4 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. Monitor Well MW-17 was completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. The remaining monitor wells were completed with a water tight, locking PVC cap, protected by an above-grade stand. Following installations, each monitor well was developed with a clean, centrifugal pump to remove any fine materials that may impede the flow of groundwater into the well. Monitor Well DW-2 was similarly constructed with the exception of a 6.25-inch diameter outer casing set in rock at an approximate depth of 70 feet. Air rotary techniques were used to drill through the outer casing and complete the well (from approximately 70 to 80 feet bgs) the following day. Monitor well construction details and lithologic descriptions are presented in Appendix C.

2.3 Site Hydrogeology

During the August 21, 2006, gauging event, approximately 0.30 feet and 0.02 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2 and MW-11, respectively. Groundwater flow direction is toward the south and east with a hydraulic gradient of 0.0267 feet per foot, as measured between Monitor Wells MW-1 and MW-25. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.4 Groundwater Sampling and Analysis

During the current assessment activities, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-4R, MW-5, MW-6R, MW-7, MW-8, MW-9R, MW-10, MW-11 through MW-25, DW-1, and DW-2. A surface water sample, identified as CK-1, was collected

from the headwaters of McCulley Creek. Specifically, this sample was collected near Monitor Well MW-25. Samples were not obtained from Monitor Wells MW-2 and MW-11 due to the presence of LPH. In addition, samples were not collected from Monitor Wells MW-3, MW-4, and MW-7 since these wells were either dry or did not contain enough water for sample collection. A new, disposable, polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells MW-17 through MW-25, DW-1, and DW-2 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since the wells' screen properly bracketed the water table. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix D. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B; ethylene dibromide (EDB) by EPA method 504.1; and lead by EPA method 6010B. Groundwater samples from Monitor Wells MW-17 through MW-25 were also analyzed for ferrous iron by EPA method HACH 8146, nitrates by EPA method 353.3, and sulfates by EPA method 375.4.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at Monitor Wells MW-10, MW-12 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene concentrations were detected at Monitor Wells MW-10, MW-13, MW-15, MW-18, and MW-21. Ethylbenzene concentrations were detected at Monitor Well MW-10, MW-13, MW-15, and MW-18. It should be noted that toluene and ethylbenzene concentrations may exist at Monitor Wells MW-12, MW-14, MW-16,

and MW-25; however, a high dilution factor caused results to be less than 100 μg/l for each constituent at these locations. Xylenes concentrations were detected at Monitor Wells MW-10, MW-12, MW-13, MW-15, MW-18, MW-21, and MW-25. It should be noted that xylenes concentrations may exist at Monitor Wells MW-14, MW-16, and MW-22; however, a high dilution factor yielded results less than 100 μg/l at these locations. MTBE concentrations were detected at Monitor Wells MW-18, MW-21, and DW-2. MTBE concentrations may exist at Monitor Wells MW-10, MW-12 through MW-14, MW-16, and MW-22; however, a high dilution factor caused results to be less than detection limits at these locations. Naphthalene concentrations were detected at Monitor Wells MW-10, MW-12 through MW-16, MW-18, MW-21, MW-22, MW-24, MW-25, and DW-2. EDB concentrations were detected at Monitor Wells MW-13 and MW-18. Lead concentrations were detected at Monitor Wells MW-5, MW-8, MW-17 through MW-21, and MW-24. Ferrous iron concentrations were detected at Monitor Well MW-24. Nitrate concentrations were detected at all sampled locations. Sulfate concentrations were detected at Monitor Wells MW-18, MW-22, MW-24, MW-25, and DW-2.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Monitor Wells MW-10, MW-12 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene and ethylbenzene concentrations were detected greater than their respective RBSLs of 1000 μg/l at Monitor Wells MW-10 and MW-13. Xylenes concentrations were detected greater than its RBSL of 10000 μg/l at Monitor Well MW-13. MTBE concentrations were detected greater than its RBSL of 40 μg/l at Monitor Wells MW-18 and MW-21. However, it is probable that MTBE concentrations may be greater than its RBSL at Monitor Wells MW-10, MW-12 through MW-14, MW-16, and MW-22 due to a high dilution factor which caused results to be less 100 μg/l at each of these locations. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Monitor Wells MW-10, MW-12 through MW-16, MW-18, MW-21, MW-22, MW-24, and MW-25. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Wells MW-13 and MW-18. Lead concentrations were detected greater than its RBSL of 15 μg/l at Monitor Wells MW-5, MW-18, MW-20, and MW-24. Groundwater laboratory analytical results are summarized in Table II and Figures 4A-4B. Laboratory analytical results and chain-of-custody are presented in Appendix E.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Three free product recovery events were conducted during the current assessment activities at Monitor Well MW-2, and approximately 545 gallons of liquid were removed from this well. Two other free product recovery events were conducted during the current assessment activities at Monitor Wells MW-10 through MW-13 and/or MW-16, and approximately 1051 gallons were removed from these wells.
- Nine shallow monitor wells, identified as MW-17 through MW-25, and one telescoping monitor well, identified as DW-2, was installed during the current assessment activities.
- Groundwater flow at the site is in a southern to eastern direction with a hydraulic gradient of 0.0267 feet per foot, as measured between Monitor Wells MW-1 and MW-25.
- Approximately 0.30 feet and 0.02 feet of liquid phase hydrocarbons were detected at Monitor Wells MW-2 and MW-11, respectively during the August 21, 2006, gauging event.
- During the current assessment activities, a groundwater sample (identified as CK-1) was collected from the headwaters of McCulley Creek located hydraulically down-gradient from the site. Analytical results for this sample did not detect sampled petroleum hydrocarbons greater than their respective detection limits.
- Total BTEX concentrations have increased at Monitor Wells MW-10, MW-14, and MW-15 since the previous sampling event of June 27, 2005. Total BTEX concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. MTBE concentrations have increased at Monitor Well MW-10 since the previous sampling event; however, MTBE concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. Naphthalene concentrations have increased at Monitor Wells MW-10, MW-13, MW-14, and MW-15 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. EDB concentrations have increased at Monitor Well MW-13 since the previous sampling event; however, EDB concentrations have decreased or remained below detection limits at the remaining sampled monitor wells for the same period. Comparisons can not be

made regarding the newly installed wells; the wells that were dry; or the wells that contained liquid phase hydrocarbons.

Due to the continued presence of liquid phase hydrocarbons at Monitor Wells MW-2 and MW-11, additional free product removal events are recommended. Also, ATC Associates Inc. recommends that additional four groundwater monitor wells be installed (if permitted by the terrain) south of Monitor Wells MW-18, MW-21, MW-22, and MW-23. Since Monitor Well MW-25 (which is the furthermost hydraulically down-gradient well and located near the creek) contains benzene and naphthalene concentrations greater than their respective RBSLs, an additional groundwater monitor well should be installed across the creek and along North Zion Street. Furthermore, as a result of Monitor Well DW-2 containing benzene concentrations greater than its RBSL, another telescoping well should be installed at a greater depth adjacent to this well for vertical delineation purposes.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., August 4, 2005, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	08/21/2006	96.54	43.28	0	48	15	53.26
MW-2	08/21/2006	98.17	51.76*	0.30	54	15	46.41
MW-3	08/21/2006	95.81	44.78	0	45	15	51.03
MW-4	08/21/2006	98.52	Dry	0	45	15	Not Applicable
MW-4R	08/21/2006	98.14	49.06	0	60	20	49.08
MW-5	08/21/2006	94.41	43.07	0	45	15	51.34
MW-6R	08/21/2006	103.91	57.37	0	65	20	46.54
MW-7	08/21/2006	102.34	Dry	0	52	15	Not Applicable
MW-8	08/21/2006	97.63	43.01	0	45	15	54.62
MW-9R	08/21/2006	101.13	53.47	0	65	20	47.66
MW-10	08/21/2006	88.26	46.98	0	50	15	41.28
MW-11	08/21/2006	70.63	32.69*	0.02	38	15	37.94
MW-12	08/21/2006	81.21	40.11	0	50	15	41.10
MW-13	08/21/2006	81.02	41.96	0	50	15	39.06
MW-14	08/21/2006	69.55	34.23	0	40	20	35.32
MW-15	08/21/2006	72.06	35.94	0	40	20	36.12
MW-16	08/21/2006	85.19	45.60	0	50	20	39.59
MW-17	08/21/2006	85.66	38.44	0	50	15	47.22
MW-18	08/21/2006	80.83	40.16	0	50	15	40.67

LPH = Liquid Phase Hydrocarbons
* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE I (continued) Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-19	08/21/2006	82.27	41.28	0	46	15	40.99
MW-20	08/21/2006	81.44	41.21	0	46	15	40.23
MW-21	08/21/2006	67.40	27.14	0	40	15	40.26
MW-22	08/21/2006	65.12	32.11	0	40	20	33.01
MW-23	08/21/2006	62.15	30.98	0	40	20	31.17
MW-24	08/21/2006	49.50	18.93	0	25	15	30.57
MW-25	08/21/2006	41.63	14.26	0	23	15	27.37
DW-1	08/21/2006	98.62	52.24	0	80	5	46.38
DW-2	08/21/2006	65.10	32.83	0	80	5	32.27

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II
Groundwater Analytical Results, dated August 21-22, 2006
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
Free Product Thickness	NA	None	0.30'	None	NA	None	None	None	None	None	None
Benzene	5	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
Toluene	1000	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
Ethylbenzene	700	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
Xylenes	10000	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
Total BTEX	NA	<20	NA	NA	NA	<20	<20	<20	NA	<20	<20
MTBE	40	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
Naphthalene	25	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
EDB	0.05	<0.02	NS	NS	NS	<0.02	<0.02	<0.02	NS	<0.02	<0.02
Lead	15	<10	NS	NS	NS	<10	**109**	<10	NS	13.2	<10
Ferrous Iron	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nitrate	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Sulfate	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l

TABLE II (continued)
Groundwater Analytical Results, dated August 21-22, 2006
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
Free Product Thickness	NA	None	0.02	None	None	None	None	None	None	None	None
Benzene	5	**5800**	NS	**5800**	**7300**	**6100**	**2400**	**6700**	<5	**550**	<5
Toluene	1000	**3700**	NS	<100	**36000**	<100	49	<100	<5	610	<5
Ethylbenzene	700	**1700**	NS	<100	**3400**	<100	5.2	<100	<5	49	<5
Xylenes	10000	3620	NS	100	**20600**	<100	63	<100	<5	570	<5
Total BTEX	NA	14820	NA	<6100	67300	<6400	2517.2	<7000	<20	1779	<20
MTBE	40	**<100**	NS	**<100**	**<100**	**<100**	<5	**<100**	<5	**1200**	<5
Naphthalene	25	**410**	NS	**250**	**1200**	**260**	**120**	**230**	<5	**66**	<5
EDB	0.05	<0.02	NS	<0.02	**0.19**	<0.02	<0.02	<0.02	<0.02	**0.1**	<0.02
Lead	15	<10	NS	<10	<10	<10	<0.10	<10	12.9	**80.6**	11.4
Ferrous Iron	NA	NS	NS	NS	NS	NS	NS	NS	<0.05*	<0.05*	<0.05*
Nitrate	NA	NS	NS	NS	NS	NS	NS	NS	2.14*	0.0251*	6.52*
Sulfate	NA	NS	NS	NS	NS	NS	NS	NS	<5*	24.8*	<5*

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE II (continued) Groundwater Analytical Results, dated August 21-22, 2006 Former United Exxon / Winnsboro, South Carolina										
Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None
Benzene	5	<5	**240**	**5000**	**230**	**390**	**700**	<5	**450**	<5
Toluene	1000	<5	19	<100	<5	<5	<5	<5	<5	<5
Ethylbenzene	700	<5	<5	<100	<5	<5	<5	<5	<5	<5
Xylenes	10000	<5	26.2	<100	<5	<5	7.7	<5	<5	<5
Total BTEX	NA	<20	<290.2	<5300	<245	<405	<717.7	<20	<465	<20
MTBE	40	<5	**910**	**<100**	<5	<5	<5	<5	5.9	<5
Naphthalene	25	<5	**110**	**180**	<5	**26**	**35**	<5	25	<5
EDB	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead	15	**52.1**	12.3	<10	<10	**31.3**	<10	<10	<10	<10
Ferrous Iron	NA	<0.05*	<0.05*	<0.05*	<0.05*	1.31*	<0.05*	NS	<0.05*	NS
Nitrate	NA	0.424*	0.16*	0.244*	0.316*	3.24*	6.83*	NS	0.032*	NS
Sulfate	NA	<5*	<5*	30.9*	<5*	22.9*	29.5*	NS	10.4*	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE III
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-1	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	15	<30	<5	**42**	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	<1.0
	11/02/1998	0.00	<1.0	<1.0	<1.0	7.77	<10.77	<5.0	23.8	<0.05
MW-2	08/21/2006	0.30	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.20	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**15900**	**90700**	**4800**	**26700**	138100	**82000**	**840**	**127**
	11/02/1998	0.00	**23100**	**89000**	**5380**	**27380**	144860	**227000**	**2140**	**78.65**
MW-3	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**110**	<5	<5	<5	<125	<5	<5	<0.019
	03/08/2005	0.00	**123**	10	18	16	167	<5	<5	<0.02
	08/20/2003	0.00	**385**	<25	<25	<25	<460	<25	<25	<0.02
	01/11/2001	0.00	**434**	288	182	146	1050	**89.9**	12.9	**<1.0**
	11/02/1998	0.00	**2260**	52.7	215	889	3416.7	**<50**	<50	<0.02
MW-4	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	**1781**	610	311	1921	4623	<10	**40**	**<10**
MW-4R	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-5	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5	<5	<5	<15	<30	<1.0	<5.0	**<1.0**
MW-6	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	2.4	19.3	2.6	8.3	32.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-6R	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-7	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.4	13.0	3.1	5.0	22.5	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-8	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.2	1.9	3.5	15.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-9	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	<1.0	2.1	<1.0	<1.0	<5.1	<1.0	<5.0	**<1.0**
MW-9R	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-10	08/21/2006	0.00	**5800**	**3700**	**1700**	3620	14820	**<100**	**410**	<0.02
	06/27/2005	0.00	**6000**	**2400**	**1900**	3300	13600	**<1000**	**<1000**	<0.019
	03/08/2005	0.42	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	Sheen	**8010**	**8770**	**2310**	7200	26290	**<250**	**774**	<0.02
	01/11/2001	0.00	**8950**	**49000**	**8550**	**49000**	115500	**22**	**3300**	**<500**
	11/02/1998	0.00	**11200**	**30800**	**3360**	**15500**	60860	**<100**	**766**	**<100**
MW-11	08/21/2006	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**5900**	**25000**	**5100**	**31400**	67400	**<2500**	**3000**	**0.34**
	03/08/2005	0.15	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	1.95	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**8000**	**11800**	**3470**	**16400**	39670	**31**	**1440**	**<100**
	11/02/1998	0.00	**6280**	**15600**	**2390**	**10800**	35070	**<100**	**617**	**<50**
MW-12	08/21/2006	0.00	**5800**	<100	<100	<100	<6100	**<100**	**250**	<0.02
	06/27/2005	0.00	**8200**	7.7	6.9	52.2	8266.8	**210**	**410**	<0.019
	03/08/2005	0.00	**7680**	264	52	315	8311	**195**	**173**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-13	08/21/2006	0.00	**7300**	**36000**	**3400**	**20600**	67300	**<100**	**1200**	**0.19**
	06/27/2005	0.00	**8600**	**61000**	**2100**	**13000**	84700	**<250**	**620**	<0.019
	03/08/2005	0.00	**13300**	**33600**	**2880**	**16600**	66380	**<100**	**700**	**0.08**
MW-14	08/21/2006	0.00	**6100**	<100	<100	<100	<6400	**<100**	**260**	<0.02
	06/27/2005	0.00	**4500**	<100	<100	<100	<4800	**<100**	**170**	**0.11**
	03/08/2005	0.00	**6390**	<125	<125	<125	<6765	**<125**	**234**	<0.02
MW-15	08/21/2006	0.00	**2400**	49	5.2	63	2517.2	<5	**120**	<0.02
	06/27/2005	0.00	**680**	13	<5	9.4	<707.4	<5	**63**	<0.019
	03/08/2005	0.00	**11400**	182	<50	96	<11728	**<50**	**485**	<0.02
MW-16	08/21/2006	0.00	**6700**	<100	<100	<100	<7000	**<100**	**230**	<0.02
	06/27/2005	0.00	**9400**	**28000**	**4800**	**31700**	73900	**<2500**	**3200**	<0.019
	03/08/2005	0.04	NS	NS	NS	NS	NA	NS	NS	NS
MW-17	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-18	08/21/2006	0.00	**550**	610	49	570	1779	**1200**	**66**	**0.1**
MW-19	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-20	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-21	08/21/2006	0.00	**240**	19	<5	26.2	<290.2	**910**	**110**	<0.02
MW-22	08/21/2006	0.00	**5000**	<100	<100	<100	<5300	**<100**	**180**	<0.02
MW-23	08/21/2006	0.00	**230**	<5	<5	<5	<245	<5	<5	<0.02
MW-24	08/21/2006	0.00	**390**	<5	<5	<5	<405	<5	**26**	<0.02
MW-25	08/21/2006	0.00	**700**	<5	<5	7.7	<717.7	<5	**35**	<0.02
DW-1	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	8	<5	<5	<23	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.9	<1.0	3.1	<15.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5.0	<5.0	<5.0	<15	<30.0	<5.0	<5.0	**<5.0**
DW-2	08/21/2006	0.00	**450**	<5	<5	<5	<465	5.9	25	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

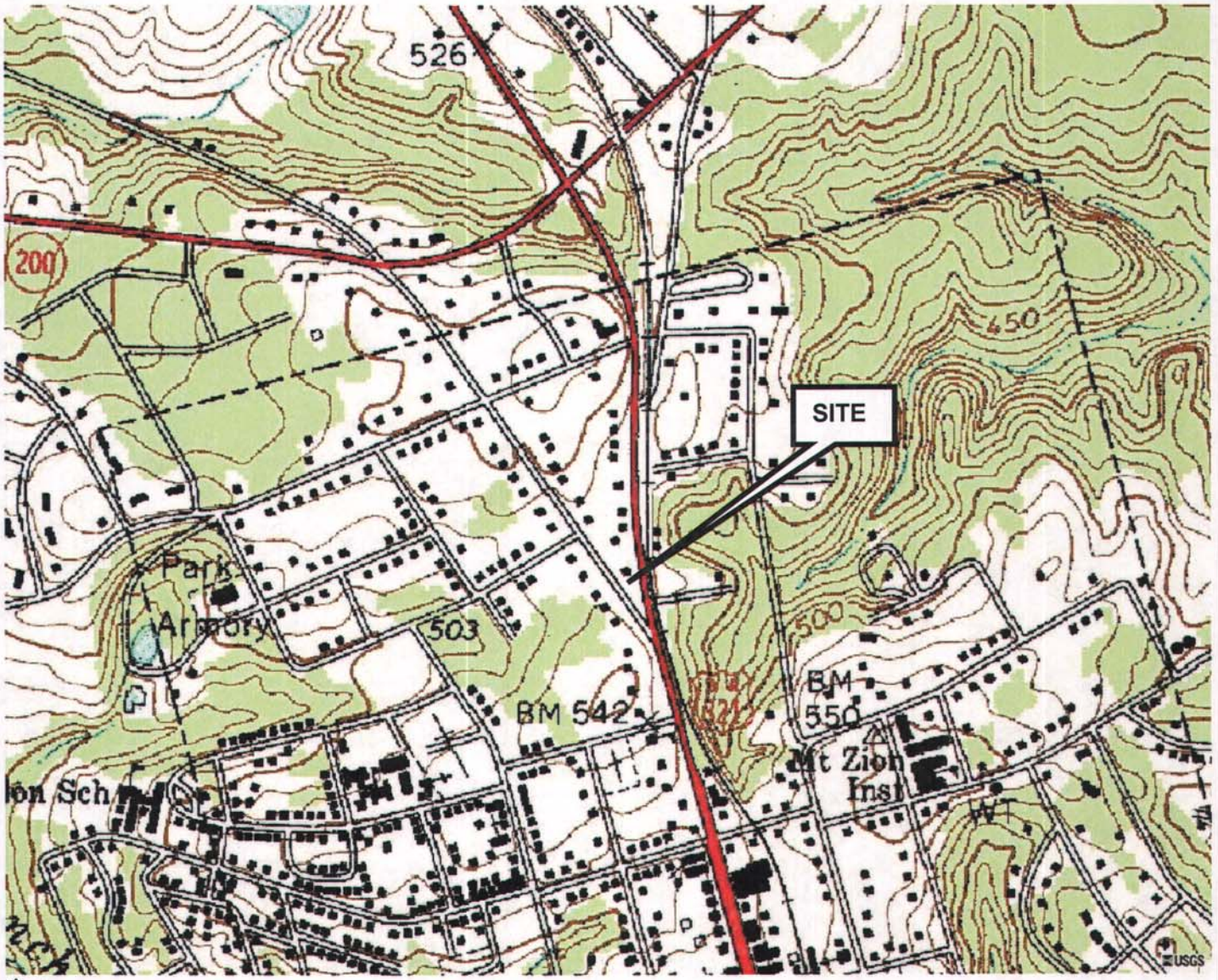
RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
CK-1	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	<5	<5	<5	<5	<20	8	<5	<0.02
	08/20/2003	0.00	**15**	<5	<5	<5	<30	**295**	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	1.2	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<5.0	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled
Bold concentrations represent those greater than the respective RBSL.

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

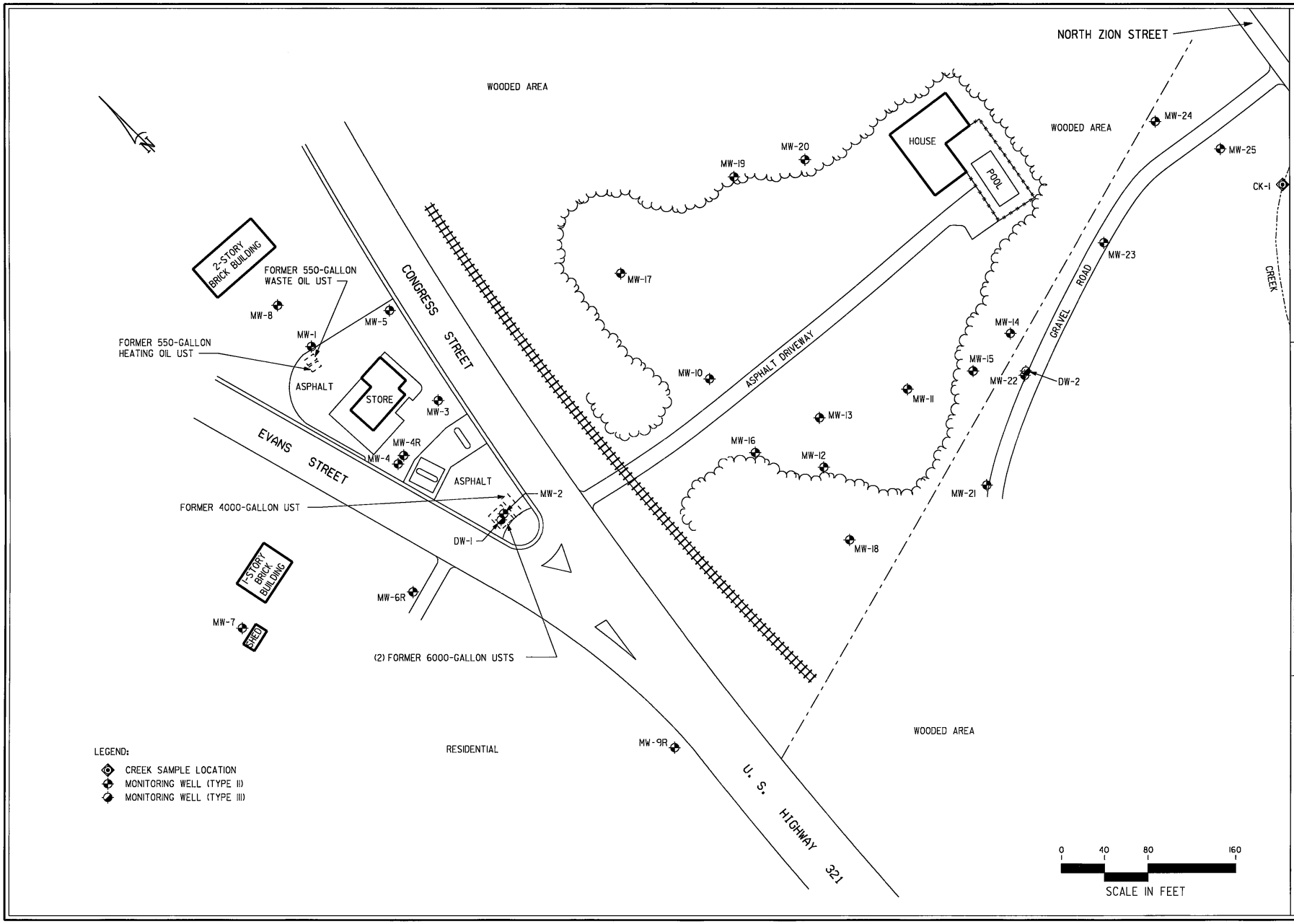
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 1,885'



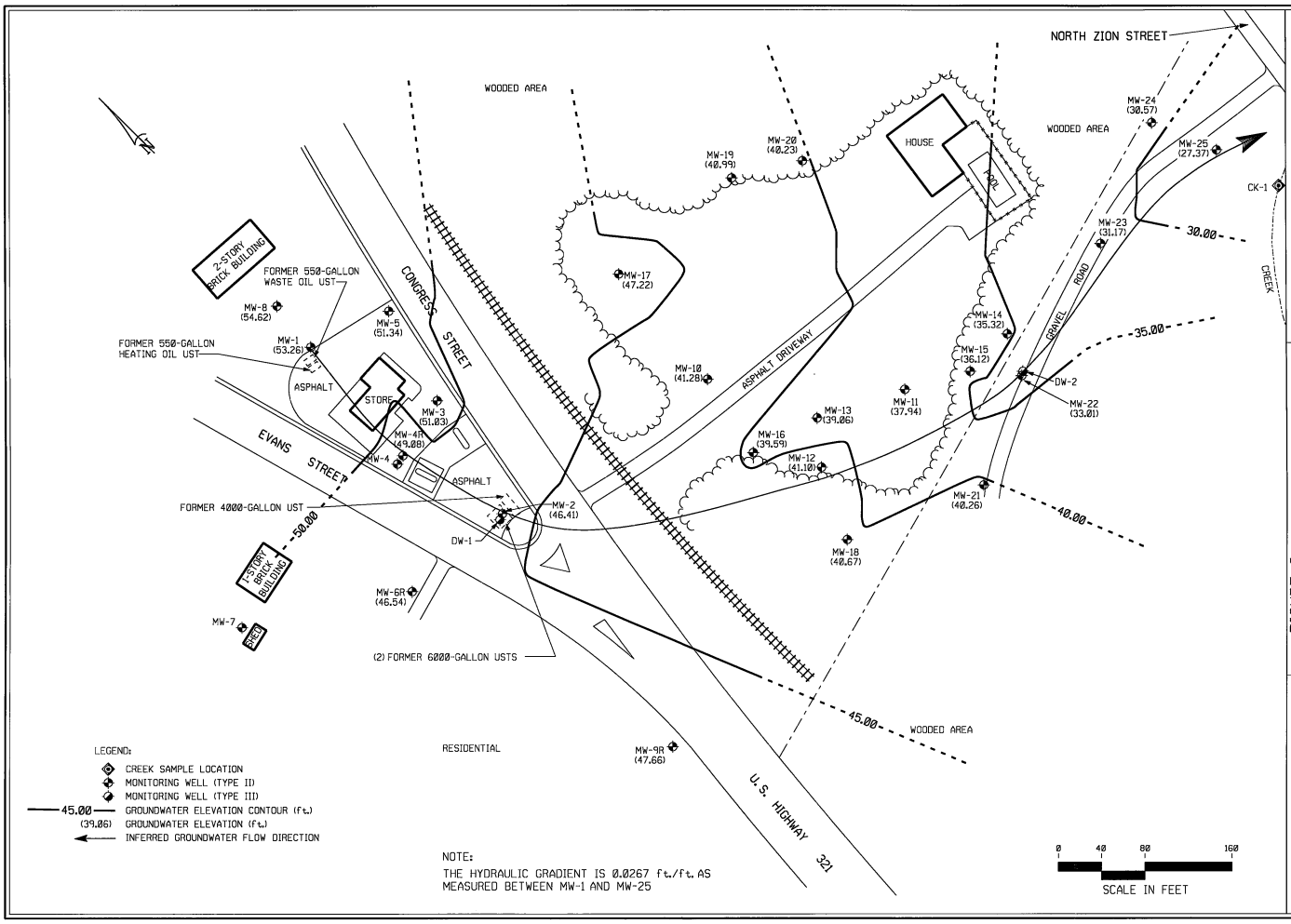
ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	10-05-2006	14.25384.0012

REV. BY	PREP. BY	TYPE CODE	CAD FILE
	BB		1252116.DGN

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

NOTES:



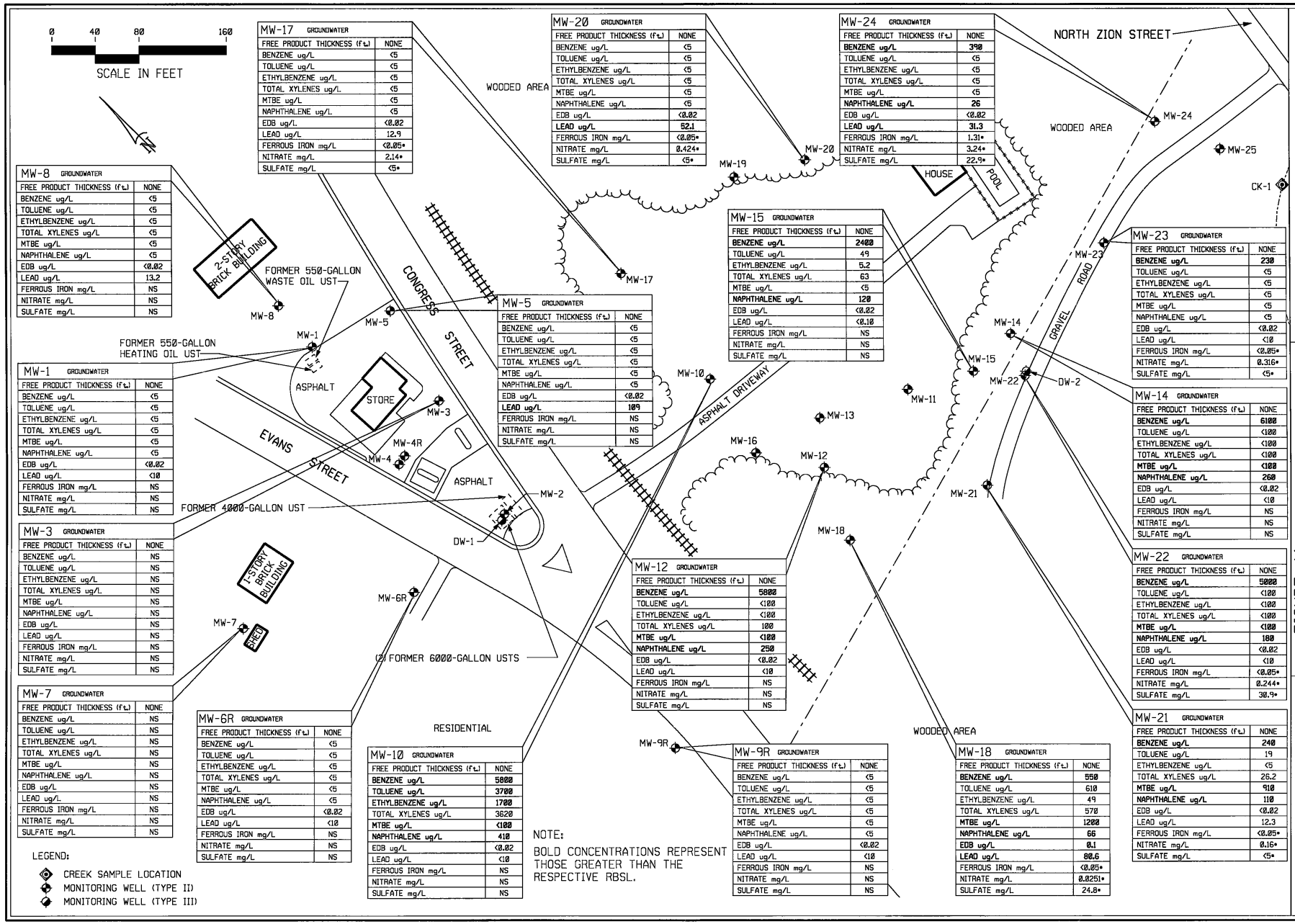
ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-9003 FAX (803)735-9443

SCALE	DATE	PROJECT NO.
1" = 80'	10-05-2006	14.25384.0012

REV. BY	PREP. BY	TYPE CODE	CAD FILE
	BB		1252116.DGN

TITLE FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA
UST PERMIT #11760

NOTES:



MW-17 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	12.9
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.14*
SULFATE mg/L	<5*

MW-20 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**52.1**
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.424*
SULFATE mg/L	<5*

MW-24 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**390**
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	**26**
EDB ug/L	<0.02
LEAD ug/L	**31.3**
FERROUS IRON mg/L	1.31*
NITRATE mg/L	3.24*
SULFATE mg/L	22.9*

MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	13.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**109**
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**2400**
TOLUENE ug/L	49
ETHYLBENZENE ug/L	5.2
TOTAL XYLENES ug/L	63
MTBE ug/L	<5
NAPHTHALENE ug/L	**120**
EDB ug/L	<0.02
LEAD ug/L	<0.10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-23 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**230**
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.316*
SULFATE mg/L	<5*

MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6100**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<100
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**260**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5800**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	100
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**250**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-22 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5000**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<100
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**180**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.244*
SULFATE mg/L	30.9*

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-6R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5800**
TOLUENE ug/L	**3700**
ETHYLBENZENE ug/L	**1700**
TOTAL XYLENES ug/L	3620
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**410**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-9R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-18 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**550**
TOLUENE ug/L	610
ETHYLBENZENE ug/L	49
TOTAL XYLENES ug/L	570
MTBE ug/L	**1200**
NAPHTHALENE ug/L	**66**
EDB ug/L	**0.1**
LEAD ug/L	**80.6**
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.0251*
SULFATE mg/L	24.8*

MW-21 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**240**
TOLUENE ug/L	19
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	26.2
MTBE ug/L	**910**
NAPHTHALENE ug/L	**110**
EDB ug/L	<0.02
LEAD ug/L	12.3
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.16*
SULFATE mg/L	<5*

NOTE:
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

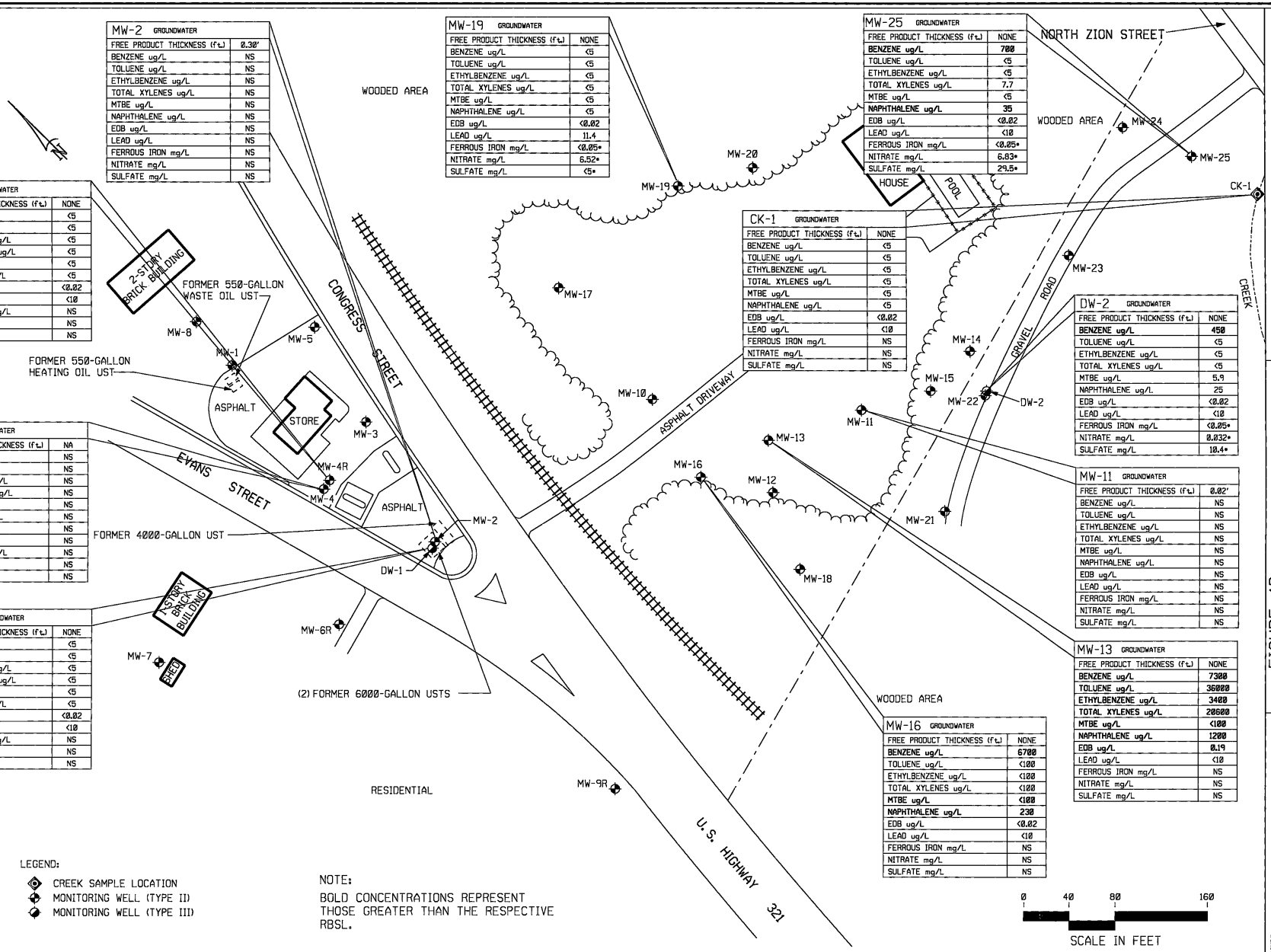
LEGEND:
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

TITLE FIGURE 4A
UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203
(803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	10-05-2006	14.25384.0012



MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.30'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-19 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	11.4
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	6.52*
SULFATE mg/L	<5*

MW-25 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**700**
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	7.7
MTBE ug/L	<5
NAPHTHALENE ug/L	**35**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	6.83*
SULFATE mg/L	29.5*

MW-4R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

DW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**450**
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	5.9
NAPHTHALENE ug/L	25
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.032*
SULFATE mg/L	10.4*

MW-4 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.02'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**7300**
TOLUENE ug/L	**36000**
ETHYLBENZENE ug/L	**3400**
TOTAL XYLENES ug/L	**20600**
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**1200**
EDB ug/L	**0.19**
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6700**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<100
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**230**
EDB ug/L	<0.02
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE:

BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

NOTES:

TITLE FIGURE 4B UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203
(803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	10-05-2006	14.25384.0012

APPENDIX A

SCDHEC Correspondence

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

December 12, 2005

RECEIVED

DEC 15 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #26139 and 26140; MWA #UMW-19699
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Enhanced Fluid Recovery and Assessment Report received August 9, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced report and needs the installation of additional groundwater monitoring wells to define the plume before active corrective action can be initiated.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Up to eleven (11) monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for these new wells. A copy of the map showing the approximate location of these wells is enclosed for your records. Please contact the Program prior to well installation for concurrence regarding the final well locations for these new wells. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release and a sample from the stream should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. The groundwater samples from the eleven (11) new monitoring wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated June 1, 2004. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreements number 26139 and 26140 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air temperature, general weather conditions during the AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- Revised geological cross sections based on the newly installed monitoring wells.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and up to 3,000 gallons of groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis,

are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 26139 and 26140. If there are any questions concerning this project, please contact me at (803) 896-6669, fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Two Approved Cost Agreements (ACA)
Monitoring Well Approval (MWA)
Map

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical (with enc.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	ATC Associates, Incorporated
(On behalf of):	Keenan Energy Company, Incorporated
Facility:	United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit Number:	11760
County:	Fairfield

This approval is for the installation of eleven (11) monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Arthur Shrader (tel: (803) 896-6669 or e-mail: shradeaa@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **December 8, 2005** **Approval #:** **UMW-19699**

Arthur Shrader, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management

APPENDIX B

Free Product Recovery Summary Reports

SHAMROCK
ENVIRONMENTAL CORPORATION

March 16, 2006

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Event: February 3, 2006

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on February 3, 2006.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
February 3, 2006	197	2	2.360

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following table provides vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: February 3, 2006

Time	MW-3 (DTW)	MW-4R (DTW)
0700	44.09	48.30
0730	44.12	48.31
0800	44.14	48.32
0830	44.14	48.33
0900	44.14	48.33
0930	44.14	48.34
1000	44.14	48.34
1030	44.14	48.34
1100	44.14	48.34
1130	44.13	48.34
1200	44.12	48.33
1230	44.10	48.32
1300	44.09	48.30
1330	44.09	48.30
1400	44.09	48.30
1430	44.09	48.30
1500	44.09	48.30
DTW=Depth to Water in feet below well casing		

The following table provide pre-recovery and post recovery depth to water and depth to product levels in various on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: February 3, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
DW-1	51.34	NFP	51.62	NFP
MW-1	42.85	NFP	42.85	NFP
MW-2	50.85	50.74	51.04	NFP
MW-3	44.09	NFP	44.09	NFP
MW-4R	48.30	NFP	48.30	NFP
MW-5	42.36	NFP	42.36	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 02036

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
United Exxon
401 N. Congress St.
Winnsboro, SC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number: . . . . . .

B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline Mixture, 3, UN1203, PG II	001	TT	00197	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0171

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG ~~2004-0774-BG~~
11B.
11C.
11D.

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
(AGENT FOR ATC) Paul Jacobs		02	03	06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Paul Jacobs		02	03	06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

1M01 1M03 2gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBC

Printed/Typed Name	Signature	Month	Day	Year
		02	03	06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 3, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	119.3	983	4	983	5227	0.00033	2.336	1.168
30	106.4	976	4	976	5190	0.00032	2.068	1.034
60	100.7	958	4	958	5094	0.00032	1.921	0.961
90	108.9	927	4	927	4930	0.00031	2.011	1.006
120	102.3	893	4	893	4749	0.00030	1.819	0.910
150	93.2	875	4	875	4653	0.00029	1.624	0.812
180	88.5	869	4	869	4621	0.00029	1.532	0.766
210	89.2	878	4	878	4669	0.00029	1.561	0.780
240	88.6	858	4	858	4563	0.00028	1.514	0.757
270	85.0	832	4	832	4424	0.00028	1.408	0.704
300	85.5	807	4	807	4291	0.00027	1.375	0.688
330	83.9	779	4	779	4143	0.00026	1.303	0.651
360	78.8	768	4	768	4084	0.00025	1.205	0.603
390	77.5	771	4	771	4100	0.00026	1.191	0.595
420	80.1	792	4	792	4212	0.00026	1.263	0.632
450	69.1	820	4	820	4361	0.00027	1.128	0.564
480	78.9	806	4	806	4286	0.00027	1.267	0.633
510					**Total emissions in pounds**			**13.263**
			Total Emissions Converted into Gallons:					**2.3598776**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 3, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/3/2006	7:00	26.0	24.0	3090	6	160	23.1	0.769	119.3	MW-2
2/3/2006	7:30	26.0	24.0	2980	6	170	21.7	0.783	106.4	MW-2
2/3/2006	8:00	26.0	24.0	2810	6	185	22.3	0.777	100.7	MW-2
2/3/2006	8:30	26.0	24.0	3120	6	190	21.9	0.781	108.9	MW-2
2/3/2006	9:00	26.0	24.0	3160	6	190	20.3	0.797	102.3	MW-2
2/3/2006	9:30	26.0	24.0	3020	6	195	19.5	0.805	93.2	MW-2
2/3/2006	10:00	26.0	24.0	3080	6	200	18.3	0.817	88.5	MW-2
2/3/2006	10:30	26.0	24.0	2960	6	200	19.2	0.808	89.2	MW-2
2/3/2006	11:00	26.0	24.0	3050	6	200	18.5	0.815	88.6	MW-2
2/3/2006	11:30	26.0	24.0	2990	6	200	18.1	0.819	85.0	MW-2
2/3/2006	12:00	26.0	24.0	2830	6	205	19.4	0.806	85.5	MW-2
2/3/2006	12:30	26.0	24.0	2960	6	205	18.2	0.818	83.9	MW-2
2/3/2006	13:00	26.0	24.0	2840	6	205	17.8	0.822	78.8	MW-2
2/3/2006	13:30	26.0	24.0	2910	6	205	17.1	0.829	77.5	MW-2
2/3/2006	14:00	26.0	24.0	2860	6	210	18.1	0.819	80.1	MW-2
2/3/2006	14:30	26.0	24.0	2740	6	210	16.3	0.837	69.1	MW-2
2/3/2006	15:00	26.0	24.0	2850	6	210	17.9	0.821	78.9	MW-2

SHAMROCK
ENVIRONMENTAL CORPORATION

May 22, 2006

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Event: April 6, 2006

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on April 6, 2006.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
April 6, 2006	198	4	0.393

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following table provide pre-recovery and post recovery depth to water and depth to product levels in the two wells used for recovery operations. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: April 6, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	46.35	46.33	47.21	NFP
MW-11	33.00	32.30	33.56	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 0.4.6.0.6

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
ATTN: Ryan Stubbs
United Exxon
401 N. Congress St.
Winnsboro, SC

4. Generator's Phone (803) 422-6714

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name
8. US EPA ID Number: . . . . . .
B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline Mixture, 3, UN1203, PG II	0. 0. 1	T. T	0.0.1.98	G
b.			. .	.	. . . . .	
c.			. .	.	. . . . .	
d.			. .	.	. . . . .	

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0428

Power Unit #: RT-7 Trailer #: NA

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063-BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Ryan Stubbs
Signature: Ryan Stubbs
Month 04 Day 06 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Ken Carpenter
Signature:
Month 04 Day 06 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

1Mn01 1Mn03 4 gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SRC

Printed/Typed Name
Signature
Month 04 Day 07 Year 06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: April 6, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	81.7	321	4	321	1707	0.00011	0.522	0.261
30	79.4	335	4	335	1781	0.00011	0.530	0.265
60	89.8	225	4	225	1197	0.00007	0.402	0.201
90	67.8	128	4	128	681	0.00004	0.173	0.086
120	102.0	132	4	132	702	0.00004	0.268	0.134
150	99.4	156	4	156	830	0.00005	0.309	0.155
180	94.3	141	4	141	750	0.00005	0.265	0.132
210	98.5	162	4	162	861	0.00005	0.318	0.159
240	96.8	161	4	161	856	0.00005	0.310	0.155
270	98.6	163	4	163	867	0.00005	0.320	0.080
285	94.6	165	4	165	877	0.00005	0.311	0.155
315	99.1	209	4	209	1111	0.00007	0.412	0.206
345	99.1	220	4	220	1170	0.00007	0.434	0.217
375					**Total emissions in pounds**			**2.208**
			Total Emissions Converted into Gallons:					**0.3928117**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: April 6, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
4/6/2006	9:00	27.0	OL	27.0	3850	6	170	12.9	0.871	81.7	MW-11
4/6/2006	9:30	27.0	OL	27.0	3950	6	195	12.7	0.873	79.4	MW-11
4/6/2006	10:00	27.0	OL	27.0	4000	6	200	14.3	0.857	89.8	MW-11
4/6/2006	10:30	26.0	OL	23.0	3200	6	200	13.5	0.865	67.8	MW-11
4/6/2006	11:00	26.0	OL	22.0	3590	6	200	18.1	0.819	102.0	MW-11
4/6/2006	11:30	26.0	OL	22.0	3950	6	215	16.4	0.836	99.4	MW-11
4/6/2006	12:00	26.0	OL	22.0	3570	6	215	17.2	0.828	94.3	MW-11
4/6/2006	12:30	26.0	OL	22.0	3730	6	215	17.2	0.828	98.5	MW-11
4/6/2006	13:00	26.0	OL	22.0	3650	6	220	17.4	0.826	96.8	MW-11
4/6/2006	13:30	26.0	OL	22.0	3720	6	220	17.4	0.826	98.6	MW-11
4/6/2006	13:45	27.0	24.0	OL	3970	6	210	15.4	0.846	94.6	MW-10
4/6/2006	14:15	27.0	25.0	OL	3940	6	220	16.5	0.835	99.1	MW-10
4/6/2006	14:45	27.0	25.0	OL	4020	6	225	16.3	0.837	99.1	MW-10

SHAMROCK
ENVIRONMENTAL CORPORATION

August 3, 2006

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Event: June 21, 2006

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on June 21, 2006. The event duration was eight consecutive hours.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
June 21, 2006	99	1	2.65

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following table provide pre-recovery and post recovery depth to water and depth to product levels in the two wells used for recovery operations. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: June 21, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	43.19	NFP	43.18	NFP
MW-2	51.76	51.35	53.15	NFP
MW-3	44.54	NFP	44.55	NFP
MW-4R	48.81	NFP	48.81	NFP
MW-5	42.82	NFP	42.82	NFP
DMW-1	51.85	NFP	52.34	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

The following table provides vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: June 21, 2006

Time	MW-3 (DTW)	MW-4R (DTW)
0700	44.54	48.81
0730	44.55	48.81
0800	44.55	48.81
0830	44.55	48.81
0900	44.55	48.81
0930	44.55	48.81
1000	44.55	48.81
1030	44.55	48.81
1100	44.55	48.81
1130	44.55	48.81
1200	44.55	48.81
1230	44.55	48.81
1300	44.55	48.81
1330	44.55	48.81
1400	44.55	48.81
1430	44.55	48.81
1500	44.55	48.81

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 0.6 2 1.6

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon, 401 N. Congress St., Winnsboro, SC

ATTN: Bob Bolton

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name:

8. US EPA ID Number: . . . . . .

B. Transporter's Phone:

9. Designated Facility Name and Site Address:
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.		X	Gasoline Mixture, 3, UN1203, PG II	0·0·1	T·T	00.099	G
b.				. .	.	. . . . .	
c.				. .	.	. . . . .	
d.				. .	.	. . . . .	

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0737

Shawn

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063-BG

11B.

11C.

11D.

TRANSPORTER

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS — Signature: [signature] — Month 06 Day 21 Year 06

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS — Signature: [signature] — Month 06 Day 21 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

1MM01 1MM03 1 gal go

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SGC

Printed/Typed Name: [signature] — Signature: [signature] — Month 06 Day 29 Year 06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: June 21, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	140.3	810	4	810	4307	0.00027	2.263	1.131
30	135.9	755	4	755	4015	0.00025	2.044	1.022
60	117.4	978	4	978	5201	0.00032	2.287	1.143
90	107.4	959	4	959	5100	0.00032	2.051	1.025
120	100.9	878	4	878	4669	0.00029	1.765	0.883
150	95.7	898	4	898	4775	0.00030	1.712	0.856
180	95.2	791	4	791	4206	0.00026	1.501	0.750
210	100.2	872	4	872	4637	0.00029	1.740	0.870
240	97.4	840	4	840	4467	0.00028	1.630	0.815
270	95.8	910	4	910	4839	0.00030	1.736	0.868
300	93.9	832	4	832	4424	0.00028	1.556	0.778
330	98.9	799	4	799	4249	0.00027	1.574	0.787
360	92.0	845	4	845	4494	0.00028	1.549	0.775
390	95.8	793	4	793	4217	0.00026	1.513	0.757
420	97.4	851	4	851	4525	0.00028	1.651	0.825
450	96.9	833	4	833	4430	0.00028	1.608	0.804
480	94.2	875	4	875	4653	0.00029	1.642	0.821
510					**Total emissions in pounds**			**14.911**
			Total Emissions Converted into Gallons:					**2.6532212**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: June 21, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
6/21/2006	7:00	26.0	OL	3850	6	180	22.5	0.775	140.3	MW-2
6/21/2006	7:30	26.0	OL	3730	6	180	22.5	0.775	135.9	MW-2
6/21/2006	8:00	26.0	OL	3510	6	200	21.3	0.787	117.4	MW-2
6/21/2006	8:30	26.0	OL	3560	6	210	19.5	0.805	107.4	MW-2
6/21/2006	9:00	26.0	OL	3490	6	210	18.7	0.813	100.9	MW-2
6/21/2006	9:30	26.0	OL	3420	6	210	18.1	0.819	95.7	MW-2
6/21/2006	10:00	26.0	OL	3460	6	210	17.8	0.822	95.2	MW-2
6/21/2006	10:30	26.0	OL	3520	6	210	18.4	0.816	100.2	MW-2
6/21/2006	11:00	26.0	OL	3480	6	210	18.1	0.819	97.4	MW-2
6/21/2006	11:30	26.0	OL	3460	6	210	17.9	0.821	95.8	MW-2
6/21/2006	12:00	26.0	24.0	3510	6	210	17.3	0.827	93.9	MW-2
6/21/2006	12:30	26.0	25.0	3420	6	210	18.7	0.813	98.9	MW-2
6/21/2006	13:00	26.0	25.0	3480	6	210	17.1	0.829	92.0	MW-2
6/21/2006	13:30	26.0	25.0	3540	6	210	17.5	0.825	95.8	MW-2
6/21/2006	14:00	26.0	25.0	3460	6	210	18.2	0.818	97.4	MW-2
6/21/2006	14:30	26.0	25.0	3520	6	210	17.8	0.822	96.9	MW-2
6/21/2006	15:00	26.0	25.0	3520	6	210	17.3	0.827	94.2	MW-2

SHAMROCK
ENVIRONMENTAL CORPORATION

August 31, 2006

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Events
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Events: July 18-19, 2006

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents two EFR events recently performed at the above referenced site. The events were conducted on July 18 and19, 2006.

The following table provides the total volume of fluids recovered during the events, the amount of separated free product recovered during each event and the amount of calculated gallons of free product recovered as a result of vapor recovery for each event.

Date of EFR Event	Event Duration	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
July 18, 2006	7.5 Consecutive Hours	853	9	1.14
July 19, 2006	8.0 Consecutive Hours	249	3	2.54

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the events.

Attachment C contains the Field Data Record used to document the pertinent information collected during the events. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following tables provide pre-recovery and post recovery depth to water and depth to product levels in various monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: July 18, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	46.86	46.85	47.15	NFP
MW-11	32.08	32.07	34.69	NFP
MW-12	39.90	39.89	40.25	NFP
MW-13	40.79	40.78	43.13	NFP
MW-14	34.03	NFP	34.05	NFP
MW-15	35.76	NFP	35.81	NFP
MW-16	43.40	43.39	43.71	NFP
MW-17	38.11	NFP	38.10	NFP
MW-18	39.95	NFP	39.98	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Pre/Post Recovery Product/Water Levels
Date of Event: July 19, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	43.22	NFP	43.20	NFP
DMW-1	52.09	NFP	52.47	NFP
MW-2	51.74	51.52	52.95	NFP
MW-3	44.65	NFP	44.65	NFP
MW-4R	48.90	NFP	48.92	NFP
MW-5	42.90	NFP	42.90	NFP

DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

The following tables provide vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: July 18, 2006

Time	MW-15 (DTW)
0830	35.76
0900	35.76
0930	35.77
1000	35.79
1030	35.79
1100	35.79
1130	35.79
1200	35.79
1230	35.79
1300	35.79
1330	35.79
1400	35.79
1430	35.79
1500	35.80
1530	35.80
1600	35.81

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Influence Data Table
Date of Event: July 19, 2006

Time	MW-3 (DTW)	MW-4R (DTW)
0700	44.65	48.90
0730	44.65	48.92
0800	44.65	48.92
0830	44.65	48.92
0900	44.65	48.92
0930	44.65	48.92
1000	44.65	48.92
1030	44.65	48.92
1100	44.65	48.92
1130	44.65	48.92
1200	44.65	48.92
1230	44.65	48.92
1300	44.65	48.92
1330	44.65	48.92
1400	44.65	48.92
1430	44.65	48.92
1500	44.65	48.92

DTW=Depth to Water in feet below well casing.
ND=Not Determined

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .
Manifest Doc. No.: 0.7.1.8.6
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon (Residence)
401 N. Congress Street
Winnsboro, SC
ATTN: Bob Bolton
4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name:
8. US EPA ID Number: . . . . . .
B. Transporter's Phone:

9. Designated Facility Name and Site Address:
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	Gasoline Mixture, 3, UN1203, PG II	X	001	TT	0085.3	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0896

Power Unit #: VT7 Trailer #: shared

Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (Agent For ATC) PAUL JACOBS
Signature:
Month 07 Day 18 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS
Signature:
Month 07 Day 18 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

pH-7.0 FA-RT

1mol 1mol3 9 gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBL

Printed/Typed Name:
Signature:
Month 07 Day 21 Year 06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 18, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	135.9	688	4	688	3659	0.00023	1.862	0.931
30	136.0	565	4	565	3005	0.00019	1.531	0.765
60	113.9	583	4	583	3100	0.00019	1.323	0.661
90	110.5	452	4	452	2404	0.00015	0.994	0.497
120	104.2	410	4	410	2180	0.00014	0.851	0.426
150	104.4	445	4	445	2366	0.00015	0.925	0.463
180	104.0	444	4	444	2361	0.00015	0.920	0.460
210	91.5	269	4	269	1430	0.00009	0.490	0.245
240	94.3	293	4	293	1558	0.00010	0.550	0.275
270	97.3	326	4	326	1734	0.00011	0.632	0.316
300	91.4	308	4	308	1638	0.00010	0.561	0.280
330	86.5	402	4	402	2138	0.00013	0.692	0.346
360	92.6	386	4	386	2053	0.00013	0.712	0.356
390	91.0	114	4	114	606	0.00004	0.207	0.103
420	89.1	160	4	160	851	0.00005	0.284	0.142
450	86.9	130	4	130	691	0.00004	0.225	0.113
480					**Total emissions in pounds**			**6.380**
			Total Emissions Converted into Gallons:					**1.1352081**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 18, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Well-Head -Vacuum-MW-12 (inches of Hg)	Well-Head -Vacuum-MW-13 (inches of Hg)	Well-Head -Vacuum-MW-16 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
7/18/2006	8:30	25.0	OL	OL	16.0	18.0	16.0	3840	6	190	22.2	0.778	135.9	MW-12, MW-13, MW-16
7/18/2006	9:00	25.0	OL	OL	16.0	18.0	16.0	3860	6	190	22.1	0.779	136.0	MW-12, MW-13, MW-16
7/18/2006	9:30	24.0	OL	OL	16.0	18.0	16.0	3610	6	200	20.1	0.799	113.9	MW-12, MW-13, MW-16
7/18/2006	10:00	24.0	OL	OL	16.0	18.0	16.0	3580	6	205	19.8	0.802	110.5	MW-12, MW-13, MW-16
7/18/2006	10:30	24.0	OL	OL	16.0	18.0	16.0	3510	6	210	19.2	0.808	104.2	MW-12, MW-13, MW-16
7/18/2006	11:00	24.0	OL	OL	16.0	18.0	16.0	3470	6	215	19.6	0.804	104.4	MW-12, MW-13, MW-16
7/18/2006	11:30	25.0	OL	OL	16.0	18.0	16.0	3510	6	215	19.3	0.807	104.0	MW-12, MW-13, MW-16
7/18/2006	12:00	26.0	OL	18.0	OL	22.0	OL	3280	6	220	18.3	0.817	91.5	MW-11, MW-13
7/18/2006	12:30	25.0	OL	18.0	OL	21.0	OL	3310	6	220	18.7	0.813	94.3	MW-11, MW-13
7/18/2006	13:00	25.0	OL	18.0	OL	21.0	OL	3450	6	220	18.5	0.815	97.3	MW-11, MW-13
7/18/2006	13:30	25.0	OL	18.0	OL	21.0	OL	3370	6	220	17.8	0.822	91.4	MW-11, MW-13
7/18/2006	14:00	25.0	OL	18.0	OL	21.0	OL	3280	6	220	17.3	0.827	86.5	MW-11, MW-13
7/18/2006	14:30	25.0	OL	18.0	OL	21.0	OL	3320	6	220	18.3	0.817	92.6	MW-11, MW-13
7/18/2006	15:00	26.0	22.0	OL	OL	OL	OL	3280	6	220	18.2	0.818	91.0	MW-10
7/18/2006	15:30	26.0	22.0	OL	OL	OL	OL	3440	6	220	17.0	0.83	89.1	MW-10
7/18/2006	16:00	26.0	22.0	OL	OL	OL	OL	3260	6	220	17.5	0.825	86.9	MW-10

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 07196

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon, 401 N. Congress Street, Winnsboro, NC

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP., 6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	Gasoline mixture, 3, UN1203, PG II	X	001	TT	00249	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0896 shosw

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A.

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (Agent for ATC) Paul Jacobs — Signature — Month 07 Day 19 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Paul Jacobs — Signature — Month 07 Day 19 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space: pH-7.0 FP-RT 1Imol 1ImB 3gl yo

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBE

Printed/Typed Name — Signature — Month 07 Day 21 Year 06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 19, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	134.2	1,450	4	1450	7711	0.00048	3.876	1.938
30	118.2	1,150	4	1150	6115	0.00038	2.708	1.354
60	110.6	993	4	993	5281	0.00033	2.187	1.093
90	89.3	1,014	4	1014	5392	0.00034	1.803	0.902
120	89.1	997	4	997	5302	0.00033	1.770	0.885
150	86.0	946	4	946	5031	0.00031	1.620	0.810
180	79.6	927	4	927	4930	0.00031	1.470	0.735
210	81.7	956	4	956	5084	0.00032	1.556	0.778
240	78.2	899	4	899	4781	0.00030	1.400	0.700
270	84.0	962	4	962	5116	0.00032	1.609	0.805
300	78.5	947	4	947	5036	0.00031	1.481	0.740
330	76.0	951	4	951	5057	0.00032	1.440	0.720
360	83.2	963	4	963	5121	0.00032	1.596	0.798
390	75.8	927	4	927	4930	0.00031	1.399	0.699
420	73.1	910	4	910	4839	0.00030	1.325	0.663
450	77.4	892	4	892	4743	0.00030	1.376	0.688
480	72.2	924	4	924	4914	0.00031	1.329	0.664
510					**Total emissions in pounds**			**14.308**
			Total Emissions Converted into Gallons:					**2.5459398**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: July 19, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
7/19/2006	7:00	26.0	22.0	3980	6	170	20.5	0.795	134.2	MW-2
7/19/2006	7:30	26.0	22.0	3880	6	210	19.7	0.803	118.2	MW-2
7/19/2006	8:00	25.0	21.0	3470	6	210	20.6	0.794	110.6	MW-2
7/19/2006	8:30	25.0	21.0	3120	6	210	18.5	0.815	89.3	MW-2
7/19/2006	9:00	25.0	21.0	3370	6	210	17.1	0.829	89.1	MW-2
7/19/2006	9:30	25.0	21.0	3410	6	210	16.3	0.837	86.0	MW-2
7/19/2006	10:00	25.0	21.0	3220	6	215	16.1	0.839	79.6	MW-2
7/19/2006	10:30	25.0	21.0	3150	6	215	16.9	0.831	81.7	MW-2
7/19/2006	11:00	25.0	21.0	3110	6	220	16.5	0.835	78.2	MW-2
7/19/2006	11:30	25.0	21.0	3280	6	220	16.8	0.832	84.0	MW-2
7/19/2006	12:00	25.0	21.0	3160	6	220	16.3	0.837	78.5	MW-2
7/19/2006	12:30	25.0	21.0	3080	6	220	16.2	0.838	76.0	MW-2
7/19/2006	13:00	25.0	21.0	3310	6	220	16.5	0.835	83.2	MW-2
7/19/2006	13:30	25.0	21.0	3190	6	225	15.7	0.843	75.8	MW-2
7/19/2006	14:00	24.0	20.0	3180	6	225	15.2	0.848	73.1	MW-2
7/19/2006	14:30	24.0	20.0	3240	6	225	15.8	0.842	77.4	MW-2
7/19/2006	15:00	24.0	20.0	3160	6	225	15.1	0.849	72.2	MW-2

APPENDIX C

Monitor Well Construction Logs

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-17
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	5/30/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Brian Thomas - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Jesse Keeffe	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			88.6		5.0	Reddish-brown, stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			286		10.0	Reddish-brown, stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1995		15.0	Brown, stiff silt; dry, moderate petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-17

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			1430		20.0	Tan, stiff silt; dry, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			1640		25.0	Tan, stiff silt with mica; dry, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			70.1		30.0	Tan, stiff silt with mica; dry, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			24.5		35.0	Tan, stiff silt with mica; dry, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	Water Level at 38.44 feet on August 21, 2006
					39.0	
					39.5	
40			377		40.0	Tan, silt with mica; dry, slight chemical odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-17

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			782		45.0	Reddish-brown, silt; dry, slight petroleum odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
49			381		49.0	Reddish-brown, silt; moist, slight petroleum odor
					49.5	
					50.0	Termination of Boring at 50 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip: 29230
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED SILTY CLAY	16.0	16.0
TAN SILTY CLAY	19.0	35.0
PARTIALLY WEATHERED ROCK	15.0	50.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-17 BENTONITE SEAL FROM 29.0 TO 33.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 05/30/06
50.0 ft. Date Completed: 05/31/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 35.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 35.0 ft. and 50.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 25.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 33.0 ft. to 50.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 29.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not Installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: _____ Date: 06/19/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-18
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	5/30/2006

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Brian Thomas - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Jesse Keeffe	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			1.0		5.0	Reddish-brown, stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.1		10.0	Reddish-brown, stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.4		15.0	Reddish-brown, stiff silt; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-18

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			1.5		20.0	Reddish-brown, silt; dry, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.8		25.0	Reddish-brown, silt; dry, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.1		30.0	Brown, stiff silt; dry, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			336		35.0	Brown, stiff silt; dry, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			27.7		40.0	Brown, stiff silt; dry, slight petroleum odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-18

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	Water Level at 40.16 feet on August 21, 2006
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			158		45.0	Brown, stiff silt; dry, slight petroleum odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
49			6.5		49.0	Brown, silt; moist, slight petroleum odor
					49.5	
					50.0	Termination of Boring at 50 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip: 29230
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED SILTY CLAY	16.0	16.0
TAN SILTY CLAY	19.0	35.0
PARTIALLY WEATHERED ROCK	15.0	50.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-18 BENTONITE SEAL FROM 29.0 TO 33.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 05/30/06
50.0 ft. Date Completed: 05/31/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 35.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 0.0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 35.0 ft. and 50.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 25.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 33.0 ft. to 50.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 29.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date Installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 06/19/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-19
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/17/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Brian Thomas - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Jesse Keeffe	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			108		5.0	Reddish-brown, stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			1034		10.0	Reddish-brown, stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1917		15.0	Reddish-brown, stiff silt; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-19

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			1525		20.0	Brown, stiff silt with mica; dry, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			1542		25.0	Brown, stiff silt with mica; dry, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1305		30.0	Brown, stiff silt; dry, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			1820		35.0	Brown, stiff silt with mica; dry, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			1100		40.0	Brown, stiff silt with mica; dry, slight petroleum odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)				PROJECT NO.: 14.25384.0012		BORING I.D.: MW-19
SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	Water Level at 41.28 feet on August 21, 2006
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			1558		45.0	Brown, silt with mica; wet, no petroleum odor
					45.5	
					46.0	Termination of Boring at 46 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED SILTY CLAY	18.0	18.0
TAN SILTY CLAY	19.0	37.0
TAN/GREY SANDY CLAY	9.0	46.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-19 BENTONITE SEAL FROM 25.0 TO 29.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/17/06
46.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 31.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 31.0 ft. and 46.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 29.0 ft. to 46.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 25.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-20
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/17/2006

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Brian Thomas - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Jesse Keeffe	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			7.7		5.0	Brown stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			24.8		10.0	Brown, stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			14.3		15.0	Tan, stiff silt; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-20

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			23.8		20.0	Brown, stiff silt; dry, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			121		25.0	Brown, stiff silt; dry, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			113		30.0	Brown, stiff silt; dry, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			93		35.0	Brown, stiff silt; dry, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			73		40.0	Brown, stiff silt; dry, no petroleum odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-20

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	Water Level at 41.21 feet on August 21, 2006
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			100		45.0	Brown, silt; moist, no petroleum odor
					45.5	
					46.0	Termination of Boring at 46 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
RED SILTY CLAY	14.0	14.0
TAN SILTY CLAY	15.0	29.0
PARTIALLY WEATHERED ROCK	17.0	46.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-20 BENTONITE SEAL FROM 25.0 TO 29.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/17/06
46.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 31.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 31.0 ft. and 46.0 ft. **NOTE: MULTIPLE SCREENS**
_____ ft. and _____ ft. **USE SECOND SHEET**
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 29.0 ft. to 46.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 25.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: BRIAN THOMAS **CERT. NO.:** 01465
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Brian Thomas Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-21
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/17/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Red, medium stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Reddish-brown, soft, clayey silt; moist, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Reddish-brown, soft, clayey silt; moist, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-21

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Brown, soft, silty clay; damp, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Brown, soft, silty clay; damp, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	Water Level at 27.14 feet on August 21, 2006
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Brown, soft clay; wet, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			0.0		35.0	Brown, soft clay with pebbles; wet, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
39			0.0		39.0	Brown, soft clay with pebbles; wet, no petroleum odor
					39.5	
					40.0	Termination of Boring at 40 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
WEEDS/TOPSOIL	1.0	1.0
TAN/ORANGE CLAYEY SILT	4.0	5.0
BROWN/RED/ORANGE CLAYEY		
SANDY SILT	5.0	10.0
RED/ORANGE SANDY SILT	10.0	20.0
ORANGE/TAN SILTY FINE SAND	20.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-21 BENTONITE SEAL FROM 19.0 TO 22.5 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/17/06
40.0 ft. Date Completed: 07/17/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 25.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 30.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 22.5 ft. to 40.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 19.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date Installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE McCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mike McConahey Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-22
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/18/2006

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Jason Mantak - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Red, medium stiff silt; moist, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Reddish-brown, soft, clayey silt; moist, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Tan, medium stiff silt; moist, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-22

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Tan, medium stiff silt; moist, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Brown, silt mixed with saprolite; dry, no petroleum odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Brown, silt mixed with saprolite; dry, no petroleum odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	Water Level at 32.11 feet on August 21, 2006
					33.0	
					33.5	
					34.0	
					34.5	
35			0.0		35.0	Brown, silt with mica; wet, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
39			0.0		39.0	Brown, silt with mica; wet, no petroleum odor
					39.5	
					40.0	Termination of Boring at 40 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SOIL	2.0	2.0
TAN CLAY	23.0	25.0
GREY SANDY CLAY	11.0	36.0
BROWN WEATHERED ROCK	4.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-22 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/18/06
40.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set Between: 20.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 30.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 40.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 14.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JASON MANTAK **CERT. NO.:** 01494
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Jason Mantak Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-23
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/18/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Jason Mantak - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Light brown, medium stiff silt with saprolite; dry,
					5.5	no petroleum odor
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Light brown, medium stiff, clayey silt with saprolite; dry,
					10.5	no petroleum odor
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Light brown, medium stiff, clayey silt with saprolite; dry,
					15.5	no petroleum odor
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-23

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Light brown, medium stiff, clayey silt with saprolite; dry,
					20.5	no petroleum odor
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Light brown, medium stiff, clayey silt with saprolite; dry,
					25.5	no petroleum odor
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Light brown, stiff silt; dry, no petroleum odor
					30.5	
					31.0	Water Level at 30.98 feet on August 21, 2006
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			0.0		35.0	Light brown, soft silt; damp, no petroleum odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
39			0.0		39.0	Light brown, soft silt; wet, no petroleum odor
					39.5	
					40.0	Termination of Boring at 40 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SILT	2.0	2.0
TAN CLAY	38.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-23 BENTONITE SEAL FROM 14.0 TO 18.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/18/06
40.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set Between: 20.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 30.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 18.0 ft. to 40.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From _____ ft. to _____ ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JASON MANTAK **CERT. NO.:** 01494
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-8248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Jason Mantak Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-24
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/18/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey - GEX
		DRILL METHOD:	Rock Cored
		BORING DIAMETER:	4.25"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Grab
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Brown, fine grained, silty sand; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Brown, fine grained, soft silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Whitish-gray and pink granite
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)				PROJECT NO.: 14.25384.0012		BORING I.D.: MW-24
SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	Water Level at 18.93' on August 21, 2006
					19.5	
20			0.0		20.0	Black and white weathered granite
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
24			0.0		24.0	Black and white weathered granite
					24.5	
					25.0	Termination of Boring at 25 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
WEEDS/TOPSOIL	1.0	1.0
TAN/ORANGE SANDY SILT	4.0	5.0
WHITE/TAN SILTY FINE SAND	11.5	16.5
WEATHERED GRANITE	8.5	25.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-24 BENTONITE SEAL FROM 5.0 TO 8.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/17/06
25.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 10.0 ft. and 25.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 8.0 ft. to 25.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 5.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not Installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE McCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mike McConahey Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	MW-25
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	7/19/2006
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey - GEX
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Tan, medium stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Reddish-brown, medium stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	Water Level at 14.26' on August 21, 2006
15			0.0		15.0	Brown, stiff silt; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-25

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Brown, silt; wet, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	Termination of Boring at 23 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
WEEDS/TOPSOIL	1.0	1.0
WHITE/TAN SANDY SILT	4.0	5.0
ORANGE/TAN/RED CLAYEY		
SILTY SAND	5.0	10.0
ORANGE SILT/FINE SAND	15.0	25.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-25 BENTONITE SEAL FROM 2.0 TO 6.0 FT.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/18/06
23.0 ft. Date Completed: 07/19/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 8.0 ft. depth
_____ in. to _____ ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set Between: 8.0 ft. and 23.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 10.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 6.0 ft. to 23.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 2.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P._____ Volts_____ Length of drop pipe ___ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: MIKE McCONAHEY **CERT. NO.:** 01276
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☑ B ☐ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Mike McConahey Date: 07/27/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	Former United Exxon	BORING I.D.:	DW-2
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	07/17/06-07/18/06
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Jason Mantak - GEX
		DRILL METHOD:	Air Rotary
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Grab
LOGGED BY:	Johnny Horn	REMARKS:	This is an above-grade well.

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Reddish brown, stiff silt; dry, no petroleum odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Brown, stiff silt; dry, no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Brown, stiff silt; dry, no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 4)				PROJECT NO.: 14.25384.0012		BORING I.D.: DW-2
SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Brown, stiff silt; dry, no petroleum odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Tan, fine grained silty sand with some saprolite; dry,
					25.5	no petroleum odor
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Brown, fine grained silty sand with some saprolite; dry,
					30.5	no petroleum odor
					31.0	
					31.5	
					32.0	
					32.5	
				▽	33.0	Water Level at 32.83 on August 21, 2006
					33.5	
					34.0	
					34.5	
35			0.0		35.0	Brown, fine grained silty sand with some saprolite; dry,
					35.5	no petroleum odor
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	Tan, fine grained silty sand with some saprolite; dry,
40			0.0		40.0	no petroleum odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 4)	PROJECT NO.: 14.25384.0012	BORING I.D.: DW-2

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			0.0		45.0	Blackish-gray, fine grained sandy silt mixed with small
					45.5	pebbles; moist, no petroleum odor
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
50			0.0		50.0	Blackish-gray, fine grained sandy silt mixed with small
					50.5	pebbles; moist, no petroleum odor
					51.0	
					51.5	
					52.0	
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			0.0		55.0	Blackish-gray, fine grained sandy silt mixed with small
					55.5	pebbles; moist, no petroleum odor
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
60			0.0		60.0	Brownish-black, fine grained sandy silt; moist,
					60.5	no petroleum odor
					61.0	
					61.5	
					62.0	
					62.5	
					63.0	
					63.5	
					64.0	
					64.5	Brownish-black, fine grained sandy silt with saprolite; moist,
65			0.0		65.0	no petroleum odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 4 of 4)	PROJECT NO.: 14.25384.0012	BORING I.D.: DW-2

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					65.5	
					66.0	
					66.5	
					67.0	
					67.5	
					68.0	
					68.5	
					69.0	
					69.5	
70			N/A		70.0	Gneiss with quartz crystals; 6.25" outer casing set here.
					70.5	
					71.0	
					71.5	
					72.0	
					72.5	
					73.0	
					73.5	
					74.0	
					74.5	
75			N/A		75.0	Tan, weathered rock
					75.5	
					76.0	
					76.5	
					77.0	
					77.5	
					78.0	
					78.5	
					79.0	
					79.5	
					80.0	Termination of Boring at 80 feet.

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: KEENAN ENERGY (last) (first)
Address: P.O. BOX 3281
City: COLUMBIA State: SC Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: SC **COUNTY:** FAIRFIELD
Name: UNITED EXXON
Street Address: 401 N. CONGRESS STREET
City: WINNSBORO Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BROWN SOIL	2.0	2.0
TAN CLAY	23.0	25.0
GREEN SANDY CLAY	11.0	36.0
BROWN WEATHERED ROCK	24.0	60.0
BROWN FRACTURED ROCK	7.0	67.0
GREY ROCK	7.0	74.0
TAN WEATHERED ROCK	6.0	80.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
DW-2 BENTONITE SEAL FROM 68.0 TO 73.0 FT. 6 1/4 GALVANIZED GROUTED FROM 0.0 TO 70.0 FEET.

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other AUGER

7. PERMIT NUMBER:

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 07/17/06
80.0 ft. Date Completed: 07/18/06

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 INCH
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 20.0 ft. depth
6 1/4 in. to 70.0 ft. depth
Height: Above ☐ Below ☐
Surface 2.5 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

11. SCREEN:
Type: SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 5.0 FEET
Set Between: 75.0 ft. and 80.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 30.0 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
_____ ft. after _____ hrs. Pumping _____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: _____

14. WATER QUALITY
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 73.0 ft. to 80.0 ft.
Effective size 1.43 Uniformity Coefficient 1.30

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 0.0 ft. to 68.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type _____
Well Disinfected ☐ Yes ☐ No Type: _____ Amount: _____

18. PUMP: Date installed: _____ Not installed ☐
Mfr. Name: _____ Model No.: _____
H.P. _____ Volts _____ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: JASON MANTAK **CERT. NO.:** 01494
Address: (Print) 176 COMMERCE BLVD
STATESVILLE, NC 28625
Level: A ☐ B ☑ C ☐ D ☐ (circle one)
Telephone No.: 704-872-7686 Fax No.: 704-872-0248

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Jason Mantak Date: 07/26/06
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (07/2003) **COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)**

APPENDIX D

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW1
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 43.28 feet
Total Well Depth (TWD) 48.0 feet
Length of the water column (LWC=TWD-DGW) 4.72 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1210	
pH (s.u.)							5.53	
Specific Conductivity (µmhos/cm)							212	
Water Temperature (°C)							23.49	
Dissolved Oxygen							3.48	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) 51.69 feet
Depth to Ground Water (DGW) 51.99 feet
Total Well Depth (TWD) 54.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW3
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 44.78 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: UNABLE TO SAMPLE, NOT ENOUGH WATER IN WELL FOR BAILER

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW4R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 49.06 feet
Total Well Depth (TWD) 60.0 feet
Length of the water column (LWC=TWD-DGW) 10.96 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1045	
pH (s.u.)							5.73	
Specific Conductivity (µmhos/cm)							104	
Water Temperature (°C)							23.33	
Dissolved Oxygen							7.11	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW5
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 43.07 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 1.93 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1235	
pH (s.u.)							5.49	
Specific Conductivity (µmhos/cm)							233	
Water Temperature (°C)							24.34	
Dissolved Oxygen							7.02	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW 6R
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 57.37 feet
Total Well Depth (TWD) 65.0 feet
Length of the water column (LWC=TWD-DGW) 7.63 feet
1 casing volume (CV=LWC X C)= _____ X _____ = NP gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1025	
pH (s.u.)							5.71	
Specific Conductivity (µmhos/cm)							162	
Water Temperature (°C)							20.59	
Dissolved Oxygen							6.13	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW7
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 520 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW8
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 43.01 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 1.99 feet
1 casing volume (CV=LWC X C)= _____ X _____ = NR gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1140	
pH (s.u.)							5.21	
Specific Conductivity (µmhos/cm)							167	
Water Temperature (°C)							23.86	
Dissolved Oxygen							5.88	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW9R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 53.47 feet
Total Well Depth (TWD) 65.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = NP gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1005	
pH (s.u.)							5.20	
Specific Conductivity (µmhos/cm)							135	
Water Temperature (°C)							20.95	
Dissolved Oxygen							5.71	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW-10
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	46.98	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	3.02	feet

1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1000	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NP / Hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW-11
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.02	feet
Depth to Free Product (DFP)	32.69	feet
Depth to Ground Water (DGW)	32.71	feet
Total Well Depth (TWD)	40.00	feet
Length of the water column (LWC=TWD-DGW)	7.29	feet

1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW12
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 40.11 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 9.89 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1110	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW-13
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 41.96 feet
Total Well Depth (TWD) 50.00 feet
Length of the water column (LWC=TWD-DGW) 8.04 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1000	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge / Hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW14
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 34.23 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 5.77 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1235	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW-15
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 35.94 feet
Total Well Depth (TWD) 50.00 feet
Length of the water column (LWC=TWD-DGW) 14.06 feet
1 casing volume (CV=LWC X C)= _____ X _____ = NP gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1145	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge / Hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW-16
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	45.60	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	4.40	feet

1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1015	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NP/Hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW17
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	38.44	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	11.56	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 200 gals
3 casing volume (3 X CV)= 6.00 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 520 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1030	
pH (s.u.)	4.97	5.12	5.18				5.30	
Specific Conductivity (µmhos/cm)	288	225	208				209	
Water Temperature (°C)	19.6°	18.57	18.32				18.53	
Dissolved Oxygen	5.74	5.24					6.54	
PID readings, if required								

Remarks: BALLGO ONY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW18
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 40.16 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 9.84 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 1.60 gals
3 casing volume (3 X CV)= 4.80 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1210	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: on on

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW19
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	41.28	feet
Total Well Depth (TWD)	46.0	feet
Length of the water column (LWC=TWD-DGW)	4.72	feet

1 casing volume (CV=LWC X C)= _____ X _____ = .75 gals
3 casing volume (3 X CV)= 2.25 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 4.5 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1130	
pH (s.u.)	5.93	5.57					5.32	
Specific Conductivity (µmhos/cm)	164	172					173	
Water Temperature (°C)	19.47	18.16					18.60	
Dissolved Oxygen	6.69	7.37					6.15	
PID readings, if required								

Remarks: BAILED DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW20
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 44.21 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 4.79 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 0.80 gals
3 casing volume (3 X CV)= 2.40 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.5 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1100	
pH (s.u.)	5.66	5.62					5.47	
Specific Conductivity (µmhos/cm)	8.04	192					180	
Water Temperature (°C)	19.4	18.11					18.04	
Dissolved Oxygen	6.02	7.08					6.02	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW21
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 27.14 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 12.86 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 2.00 gals
3 casing volume (3 X CV)= 6.00 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1310	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW22
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	32.11	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	7.89	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 1.50 gals
3 casing volume (3 X CV)= 3.90 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1415	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Odor ?

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** MW23
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 30.98 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 9.02 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 1.50 gals
3 casing volume (3 X CV)= 4.50 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1345	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # MW24
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 18.93 feet
Total Well Depth (TWD) 25.0 feet
Length of the water column (LWC=TWD-DGW) 6.07 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 1.00 gals
3 casing volume (3 X CV)= 300 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1425	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Odor (?)

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon MW-25
Site ID#: _____ Monitoring Well # ~~MW-25~~
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) 14.26 feet
Total Well Depth (TWD) 23.00 feet
Length of the water column (LWC=TWD-DGW) 8.74 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 1.42 gals
3 casing volume (3 X CV)= 4.27 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling
Time (military)							1445 ~~1415~~
pH (s.u.)							
Specific Conductivity (µmhos/cm)							
Water Temperature (°C)							
Dissolved Oxygen							
PID readings, if required							

Remarks: Odor ?

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # DMW1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 52.24 feet
Total Well Depth (TWD) 89.0 feet
Length of the water column (LWC=TWD-DGW) 36.76 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 6.00 gals
3 casing volume (3 X CV)= 18.00 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0940	
pH (s.u.)	6.36	5.73	5.66				5.73	
Specific Conductivity (µmhos/cm)	117	120	118				118	
Water Temperature (°C)	22.08	20.37	19.69				20.03	
Dissolved Oxygen	3.68	6.11	7.96				5.86	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 08/21/06
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: _____

Ambient Air Temperature: 85 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ Monitoring Well # DW2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 32.11 feet
Total Well Depth (TWD) 80.0 feet
Length of the water column (LWC=TWD-DGW) 47.89 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 8.00 gals
3 casing volume (3 X CV)= 24.00 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1345	
pH (s.u.)	5.95	5.80	6.00	5.99			6.21	
Specific Conductivity (µmhos/cm)	242	244	241	238			235	
Water Temperature (°C)	20.98	18.61	18.35	18.05			18.51	
Dissolved Oxygen	5.06	4.11	7.45	7.20			7.69	
PID readings, if required								

Remarks: _____

APPENDIX E

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337)237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

06080855

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	8/29/2006	
ph: (803)735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC). Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry. The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples. The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between intial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 20 PAGES

8/29/2006

Alberto E. Granados
ProjectManager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

06080855

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 8/29/2006

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	06080855-01	Water	8/22/2006 12:10:00 PM	8/23/2006 9:45:00 AM	187498	☐
MW-4R	06080855-02	Water	8/22/2006 10:45:00 AM	8/23/2006 9:45:00 AM	187498	☐
MW-5	06080855-03	Water	8/22/2006 12:35:00 PM	8/23/2006 9:45:00 AM	187498	☐
MW-6R	06080855-04	Water	8/22/2006 10:25:00 AM	8/23/2006 9:45:00 AM	187498	☐
MW-8	06080855-05	Water	8/22/2006 11:40:00 AM	8/23/2006 9:45:00 AM	187498	☐
MW-9R	06080855-06	Water	8/22/2006 10:05:00 AM	8/23/2006 9:45:00 AM	187498	☐
MW-12	06080855-07	Water	8/22/2006 11:10:00 AM	8/23/2006 9:45:00 AM	187498	☐
DMW-1	06080855-08	Water	8/22/2006 9:40:00 AM	8/23/2006 9:45:00 AM	187498	☐

8/29/2006
Date

Alberto E. Granados
ProjectManager

Ron Benjamin
LaboratoryDirector

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-1 **Collected:** 08/22/2006 12:10 **SPL Sample ID:** 06080855-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 5:29	CCT	1943149
Surr: 1-Chloro-2-fluorobenzene	98.7		% 33-151	1	08/26/06 5:29	CCT	1943149

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 23:49	KEL	1942252

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/25/06 17:14	FJA	1944527
Ethylbenzene	ND		5	1	08/25/06 17:14	FJA	1944527
Methyl tert-butyl ether	ND		5	1	08/25/06 17:14	FJA	1944527
Naphthalene	ND		5	1	08/25/06 17:14	FJA	1944527
Toluene	ND		5	1	08/25/06 17:14	FJA	1944527
m,p-Xylene	ND		5	1	08/25/06 17:14	FJA	1944527
o-Xylene	ND		5	1	08/25/06 17:14	FJA	1944527
Xylenes, Total	ND		5	1	08/25/06 17:14	FJA	1944527
Surr: 1,2-Dichloroethane-d4	79.3		% 72-122	1	08/25/06 17:14	FJA	1944527
Surr: 4-Bromofluorobenzene	90.2		% 78-115	1	08/25/06 17:14	FJA	1944527
Surr: Toluene-d8	95.3		% 81-111	1	08/25/06 17:14	FJA	1944527

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID: MW-4R **Collected:** 08/22/2006 10:45 **SPL Sample ID:** 06080855-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 5:48	CCT	1943150
Surr: 1-Chloro-2-fluorobenzene	95.6		% 33-151	1	08/26/06 5:48	CCT	1943150

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/25/06 0:55	KEL	1942261

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/25/06 17:43	FJA	1944528
Ethylbenzene	ND		5	1	08/25/06 17:43	FJA	1944528
Methyl tert-butyl ether	ND		5	1	08/25/06 17:43	FJA	1944528
Naphthalene	ND		5	1	08/25/06 17:43	FJA	1944528
Toluene	ND		5	1	08/25/06 17:43	FJA	1944528
m,p-Xylene	ND		5	1	08/25/06 17:43	FJA	1944528
o-Xylene	ND		5	1	08/25/06 17:43	FJA	1944528
Xylenes, Total	ND		5	1	08/25/06 17:43	FJA	1944528
Surr: 1,2-Dichloroethane-d4	77.3		% 72-122	1	08/25/06 17:43	FJA	1944528
Surr: 4-Bromofluorobenzene	91.2		% 78-115	1	08/25/06 17:43	FJA	1944528
Surr: Toluene-d8	96.1		% 81-111	1	08/25/06 17:43	FJA	1944528

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-5 **Collected:** 08/22/2006 12:35 **SPL Sample ID:** 06080855-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 6:08	CCT	1943151
Surr:1-Chloro-2-fluorobenzene	98.3		% 33-151	1	08/26/06 6:08	CCT	1943151

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.109		0.01	1	08/25/06 1:02	KEL	1942262

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/25/06 18:11	FJA	1944529
Ethylbenzene	ND		5	1	08/25/06 18:11	FJA	1944529
Methyl tert-butyl ether	ND		5	1	08/25/06 18:11	FJA	1944529
Naphthalene	ND		5	1	08/25/06 18:11	FJA	1944529
Toluene	ND		5	1	08/25/06 18:11	FJA	1944529
m,p-Xylene	ND		5	1	08/25/06 18:11	FJA	1944529
o-Xylene	ND		5	1	08/25/06 18:11	FJA	1944529
Xylenes,Total	ND		5	1	08/25/06 18:11	FJA	1944529
Surr:1,2-Dichloroethane-d4	79.2		% 72-122	1	08/25/06 18:11	FJA	1944529
Surr:4-Bromofluorobenzene	90.8		% 78-115	1	08/25/06 18:11	FJA	1944529
Surr: Toluene-d8	96.1		% 81-111	1	08/25/06 18:11	FJA	1944529

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-6R **Collected:** 08/22/2006 10:25 **SPL Sample ID:** 06080855-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 6:27	CCT	1943152
Surr: 1-Chloro-2-fluorobenzene	91.1		% 33-151	1	08/26/06 6:27	CCT	1943152

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/25/06 1:09	KEL	1942263

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/25/06 18:40	FJA	1944530
Ethylbenzene	ND		5	1	08/25/06 18:40	FJA	1944530
Methyl tert-butyl ether	ND		5	1	08/25/06 18:40	FJA	1944530
Naphthalene	ND		5	1	08/25/06 18:40	FJA	1944530
Toluene	ND		5	1	08/25/06 18:40	FJA	1944530
m,p-Xylene	ND		5	1	08/25/06 18:40	FJA	1944530
o-Xylene	ND		5	1	08/25/06 18:40	FJA	1944530
Xylenes, Total	ND		5	1	08/25/06 18:40	FJA	1944530
Surr: 1,2-Dichloroethane-d4	79.1		% 72-122	1	08/25/06 18:40	FJA	1944530
Surr: 4-Bromofluorobenzene	91.3		% 78-115	1	08/25/06 18:40	FJA	1944530
Surr: Toluene-d8	95.2		% 81-111	1	08/25/06 18:40	FJA	1944530

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-8 **Collected:** 08/22/2006 11:40 **SPL Sample ID:** 06080855-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 6:47	CCT	1943153
Surr: 1-Chloro-2-fluorobenzene	97.9		% 33-151	1	08/26/06 6:47	CCT	1943153

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0132		0.01	1	08/25/06 1:16	KEL	1942264

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/25/06 19:08	FJA	1944531
Ethylbenzene	ND		5	1	08/25/06 19:08	FJA	1944531
Methyl tert-butyl ether	ND		5	1	08/25/06 19:08	FJA	1944531
Naphthalene	ND		5	1	08/25/06 19:08	FJA	1944531
Toluene	ND		5	1	08/25/06 19:08	FJA	1944531
m,p-Xylene	ND		5	1	08/25/06 19:08	FJA	1944531
o-Xylene	ND		5	1	08/25/06 19:08	FJA	1944531
Xylenes, Total	ND		5	1	08/25/06 19:08	FJA	1944531
Surr: 1,2-Dichloroethane-d4	80.0		% 72-122	1	08/25/06 19:08	FJA	1944531
Surr: 4-Bromofluorobenzene	91.6		% 78-115	1	08/25/06 19:08	FJA	1944531
Surr: Toluene-d8	97.0		% 81-111	1	08/25/06 19:08	FJA	1944531

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-9R **Collected:** 08/22/2006 10:05 **SPL Sample ID:** 06080855-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	08/26/06 7:06	CCT	1943154
Surr: 1-Chloro-2-fluorobenzene	97.5		%	33-151	1	08/26/06 7:06	CCT	1943154

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	08/25/06 1:24	KEL	1942265

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND			5	1	08/25/06 19:37	FJA	1944532
Ethylbenzene	ND			5	1	08/25/06 19:37	FJA	1944532
Methyl tert-butyl ether	ND			5	1	08/25/06 19:37	FJA	1944532
Naphthalene	ND			5	1	08/25/06 19:37	FJA	1944532
Toluene	ND			5	1	08/25/06 19:37	FJA	1944532
m,p-Xylene	ND			5	1	08/25/06 19:37	FJA	1944532
o-Xylene	ND			5	1	08/25/06 19:37	FJA	1944532
Xylenes, Total	ND			5	1	08/25/06 19:37	FJA	1944532
Surr: 1,2-Dichloroethane-d4	81.4		%	72-122	1	08/25/06 19:37	FJA	1944532
Surr: 4-Bromofluorobenzene	92.7		%	78-115	1	08/25/06 19:37	FJA	1944532
Surr: Toluene-d8	95.3		%	81-111	1	08/25/06 19:37	FJA	1944532

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 08/22/2006 11:10 **SPL Sample ID:** 06080855-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	08/26/06 7:26	CCT	1943155
Surr:1-Chloro-2-fluorobenzene	153	MI	%	33-151	1	08/26/06 7:26	CCT	1943155

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	08/25/06 1:31	KEL	1942266

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5800			100	20	08/28/06 16:12	FJA	1945832
Ethylbenzene	ND			100	20	08/28/06 16:12	FJA	1945832
Methyl tert-butyl ether	ND			100	20	08/28/06 16:12	FJA	1945832
Naphthalene	250			100	20	08/28/06 16:12	FJA	1945832
Toluene	ND			100	20	08/28/06 16:12	FJA	1945832
m,p-Xylene	100			100	20	08/28/06 16:12	FJA	1945832
o-Xylene	ND			100	20	08/28/06 16:12	FJA	1945832
Xylenes,Total	100			100	20	08/28/06 16:12	FJA	1945832
Surr:1,2-Dichloroethane-d4	79.5		%	72-122	20	08/28/06 16:12	FJA	1945832
Surr:4-Bromofluorobenzene	93.2		%	78-115	20	08/28/06 16:12	FJA	1945832
Surr: Toluene-d8	95.7		%	81-111	20	08/28/06 16:12	FJA	1945832

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DMW-1 **Collected:** 08/22/2006 9:40 **SPL Sample ID:** 06080855-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 7:45	CCT	1943156
Surr: 1-Chloro-2-fluorobenzene	93.6		% 33-151	1	08/26/06 7:45	CCT	1943156

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:11	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/25/06 1:38	KEL	1942267

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/23/2006 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/28/06 15:29	FJA	1944852
Ethylbenzene	ND		5	1	08/28/06 15:29	FJA	1944852
Methyl tert-butyl ether	ND		5	1	08/28/06 15:29	FJA	1944852
Naphthalene	ND		5	1	08/28/06 15:29	FJA	1944852
Toluene	ND		5	1	08/28/06 15:29	FJA	1944852
m,p-Xylene	ND		5	1	08/28/06 15:29	FJA	1944852
o-Xylene	ND		5	1	08/28/06 15:29	FJA	1944852
Xylenes, Total	ND		5	1	08/28/06 15:29	FJA	1944852
Surr: 1,2-Dichloroethane-d4	81.8		% 72-122	1	08/28/06 15:29	FJA	1944852
Surr: 4-Bromofluorobenzene	85.8		% 78-115	1	08/28/06 15:29	FJA	1944852
Surr: Toluene-d8	95.0		% 81-111	1	08/28/06 15:29	FJA	1944852

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1 **WorkOrder:** 06080855
Method: E504.1 **Lab Batch ID:** 51947

Method Blank

RunID: PCBB_060826A-1943146 Units: ug/L
Analysis Date: 08/26/2006 4:31 Analyst: CCT
PreparationDate: 08/23/2006 15:11 Prep By: JNS Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	99.2	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080855-01B	MW-1
06080855-02B	MW-4R
06080855-03B	MW-5
06080855-04B	MW-6R
06080855-05B	MW-8
06080855-06B	MW-9R
06080855-07B	MW-12
06080855-08B	DMW-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_060826A-1943147 Units: ug/L
Analysis Date: 08/26/2006 4:50 Analyst: CCT
PreparationDate: 08/23/2006 15:11 Prep By: JNS Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.475	83.3	0.570	0.495	86.8	4.2	30	60	140

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B

WorkOrder: 06080855
Lab Batch ID: 51955

Method Blank

RunID: ICPDV_060824D-1942250 Units: mg/L
Analysis Date: 08/24/2006 23:35 Analyst: KEL
PreparationDate: 08/23/2006 17:00 Prep By: SA Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080855-01C	MW-1
06080855-02C	MW-4R
06080855-03C	MW-5
06080855-04C	MW-6R
06080855-05C	MW-8
06080855-06C	MW-9R
06080855-07C	MW-12
06080855-08C	DMW-1

Laboratory Control Sample (LCS)

RunID: ICPDV_060824D-1942251 Units: mg/L
Analysis Date: 08/24/2006 23:43 Analyst: KEL
PreparationDate: 08/23/2006 17:00 Prep By: SA Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	0.9749	97.49	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06080855-01
RunID: ICPDV_060824D-1942254 Units: mg/L
Analysis Date: 08/25/2006 0:04 Analyst: KEL
PreparationDate: 08/23/2006 17:00 Prep By: SA Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	1.224	122.4	1	1.128	112.8	8.188	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 06080855
Lab Batch ID: R134815

Method Blank

RunID: IB_060825A-1944513 Units: ug/L
Analysis Date: 08/25/2006 10:32 Analyst: FJA

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	82.2	72-122
Surr: 4-Bromofluorobenzene	90.6	78-115
Surr: Toluene-d8	94.9	81-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080855-01A	MW-1
06080855-02A	MW-4R
06080855-03A	MW-5
06080855-04A	MW-6R
06080855-05A	MW-8
06080855-06A	MW-9R

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: IB_060825A-1944511 Units: ug/L
Analysis Date: 08/25/2006 9:35 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	40.8	81.5	50.0	41.6	83.2	2.0	23	69	129
Benzene	50.0	48.8	97.7	50.0	49.9	99.8	2.2	16	75	139
Chlorobenzene	50.0	49.2	98.5	50.0	49.3	98.6	0.2	20	72	122
Toluene	50.0	50.1	100	50.0	48.5	97.1	3.2	21	71	118
Trichloroethene	50.0	48.2	96.4	50.0	49.0	98.0	1.7	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 06080855
Lab Batch ID: R134847

Method Blank

RunID: I_060828A-1944845 Units: ug/L
Analysis Date: 08/28/2006 12:09 Analyst: FJA

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080855-08A	DMW-1

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	80.7	72-122
Surr: 4-Bromofluorobenzene	85.6	78-115
Surr: Toluene-d8	96.3	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_060828A-1944842 Units: ug/L
Analysis Date: 08/28/2006 11:11 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	46.2	92.5	50.0	45.3	90.7	2.0	23	69	129
Benzene	50.0	50.4	101	50.0	51.5	103	2.0	16	75	139
Chlorobenzene	50.0	48.0	95.9	50.0	47.7	95.4	0.5	20	72	122
Toluene	50.0	49.4	98.9	50.0	48.2	96.4	2.5	21	71	118
Trichloroethene	50.0	49.1	98.2	50.0	50.2	100	2.3	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B

WorkOrder: 06080855
Lab Batch ID: R134898

Method Blank

RunID: IB_060828A-1945824 Units: ug/L
Analysis Date: 08/28/2006 12:23 Analyst: FJA

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080855-07A	MW-12

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	83.1	72-122
Surr: 4-Bromofluorobenzene	93.0	78-115
Surr: Toluene-d8	95.8	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: IB_060828A-1945822 Units: ug/L
Analysis Date: 08/28/2006 11:26 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	38.0	76.0	50.0	38.9	77.8	2.3	23	69	129
Benzene	50.0	48.6	97.3	50.0	48.9	97.7	0.5	16	75	139
Chlorobenzene	50.0	47.8	95.6	50.0	48.1	96.2	0.6	20	72	122
Toluene	50.0	47.1	94.2	50.0	48.3	96.5	2.5	21	71	118
Trichloroethene	50.0	48.1	96.2	50.0	48.2	96.3	0.2	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	06080855	Received By:	GAS
Date and Time Received:	8/23/2006 9:45:00 AM	Carriername:	FedEx-Std 1 Day PM
Temperature:	4°C	Chilled by:	Water Ice

		Yes	No		
1.	Shipping container/cooler in good condition?	☑	☐	Not Present	☐
2.	Custody seals intact on shippping container/cooler?	☐	☐	Not Present	☑
3.	Custody seals intact on sample bottles?	☐	☐	Not Present	☑
4.	Chain of custody present?	☑	☐		
5.	Chain of custody signed when relinquished and received?	☑	☐		
6.	Chain of custody agrees with sample labels?	☑	☐		
7.	Samples in proper container/bottle?	☑	☐		
8.	Sample containers intact?	☑	☐		
9.	Sufficient sample volume for indicated test?	☑	☐		
10.	All samples received within holding time?	☑	☐		
11.	Container/Temp Blank temperature in compliance?	☑	☐		
12.	Water - VOA vials have zero headspace?	☑	☐	VOA Vials Not Present	☐
13.	Water - Preservation checked upon receipt (except VOA*)?	☑	☐	Not Applicable	☐

*VOA Preservation Checked After Sample Analysis

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 187498

06080855

page ____ of ____

Client Name: ATC Associates
Address: 400 Northeast Dr West Columbia SC
Phone/Fax: (803)735-0003
Client Contact: Bob Bolton Email:
Project Name/No.: 14.25384.0012
Site Name: United Exxon
Site Location: Winnsboro SC
Invoice To: Ph:

matrix: W=water S=soil SL=sludge O=oil X=other
bottle: P=plastic G=glass A=amber glass V=vial X=other
size: 1=1 liter 4=4oz 8=8oz 16=16oz 40=vial X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	Benzene/Naphthalene	EDB	Lead						
MW1	8/22/06	1210		✓	W	P/V	40/16	1/2/X	06	✓	✓	✓						6
MW4R		1045																6
MW5		1235																6
MW6		1025																6
MW8		1140																6
MW9R		1005																6
MW12		1110																6
DMW1		0940																6

Client/Consultant Remarks:

Laboratory remarks: YC-99-(W-4) NO CS
RL-12-(8) (3W)<2

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.0C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 8/22/06	time 1430	2. Received by: FED-EX / 8576 4298 1560
3. Relinquished by: FED-EX	date 8/23/06	time 9:00	4. Received by:
5. Relinquished by:	date 8/23/06	time 9:45	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx Express US Airbill

FedEx Tracking Number 8576 4298 1550

Form ID No. 0215

Recipient's Copy

RECIPIENT: PEEL HERE

fedex.com 1800.GoFedEx 1.800.463.3339

1 From This portion can be removed for Recipient's records.

Date 8/12/06 FedEx Tracking Number 857642981550

Sender's Name JOHN MONKMAN Phone 803 735 0003

Company ATC ASSOCIATES

Address 400 NORTHCREST DR. UNIT Q

Dept./Floor/Suite/Room

City COLUMBIA State SC ZIP 29203

2 Your Internal Billing Reference 14 25 384 0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

LAFAYETTE City LA State 70508-5300 ZIP

0336575545

8576 4298 1550

4a Express Package Service *Packages up to 150 lbs.*

- ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation.

** To most locations.

5 Packaging

☐ FedEx Envelope* ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. ☐ FedEx Box ☐ FedEx Tube ☐ Other

* Declared value limit $500.

6 Special Handling — Include fees in shipping charges

- ☐ SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- ☐ HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.
- ☐ HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

- ☒ No
- ☐ Yes — As per attached Shipper's Declaration.
- ☐ Yes — Shipper's Declaration not required.
- ☐ Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg
- ☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender — Acct. No. in Section 1 will be billed. ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

[redacted]705

Total Packages	Total Weight	Total Charges
1	55.	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- ☐ No Signature Required — Package may be left without obtaining a signature for delivery.
- ☐ Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- ☐ Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

Rev. Date 11/05•Part #156279•©1994-2003 FedEx•PRINTED IN U.S.A.•SRF

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

06080778

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	8/29/2006	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC). Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry. The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples. The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between intial sample weights, the calculated RPD may have increased bias.

EXCEPTION:
Total Metals by Method 6010B: The LCS percent recovery for Lead, for Lab Batch Id 51919, is above the referenced acceptance limits and as such indicates potential positive bias for associated samples in the analytical batch. Analytes with ND values are reported since positive bias is not indicated for these analytes

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 34 PAGES

8/30/2006

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

06080778

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 8/29/2006

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-10	06080778-01	Water	8/21/2006 10:00:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-13	06080778-02	Water	8/21/2006 11:00:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-14	06080778-03	Water	8/21/2006 12:35:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-15	06080778-04	Water	8/21/2006 11:45:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-16	06080778-05	Water	8/21/2006 10:15:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-17	06080778-06	Water	8/21/2006 10:30:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-18	06080778-07	Water	8/21/2006 12:10:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-19	06080778-08	Water	8/21/2006 11:30:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-20	06080778-09	Water	8/21/2006 11:00:00 AM	8/22/2006 9:45:00 AM	187403,187402	☐
CK-1	06080778-10	Water	8/21/2006 3:15:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-21	06080778-11	Water	8/21/2006 1:10:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-22	06080778-12	Water	8/21/2006 2:15:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-23	06080778-13	Water	8/21/2006 1:45:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-24	06080778-14	Water	8/21/2006 2:25:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
MW-25	06080778-15	Water	8/21/2006 2:45:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐
DW-2	06080778-16	Water	8/21/2006 1:45:00 PM	8/22/2006 9:45:00 AM	187403,187402	☐

8/29/2006
Date

Alberto E. Granados
ProjectManager

Ron Benjamin
LaboratoryDirector

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-10 **Collected:** 08/21/2006 10:00 **SPL Sample ID:** 06080778-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/25/06 22:42	CCT	1943162
Surr: 1-Chloro-2-fluorobenzene	105		% 33-151	1	08/25/06 22:42	CCT	1943162

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 0:56	KEL	1940599

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5800		100	20	08/24/06 16:14	FJA	1942566
Ethylbenzene	1700		100	20	08/24/06 16:14	FJA	1942566
Methyl tert-butyl ether	ND		100	20	08/24/06 16:14	FJA	1942566
Naphthalene	410		100	20	08/24/06 16:14	FJA	1942566
Toluene	3700		100	20	08/24/06 16:14	FJA	1942566
m,p-Xylene	2800		100	20	08/24/06 16:14	FJA	1942566
o-Xylene	820		100	20	08/24/06 16:14	FJA	1942566
Xylenes, Total	3620		100	20	08/24/06 16:14	FJA	1942566
Surr: 1,2-Dichloroethane-d4	75.8		% 72-122	20	08/24/06 16:14	FJA	1942566
Surr: 4-Bromofluorobenzene	91.1		% 78-115	20	08/24/06 16:14	FJA	1942566
Surr: Toluene-d8	95.3		% 81-111	20	08/24/06 16:14	FJA	1942566

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-13 **Collected:** 08/21/2006 11:00 **SPL Sample ID:** 06080778-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.19		0.02	1	08/25/06 23:01	CCT	1943163
Surr: 1-Chloro-2-fluorobenzene	113		% 33-151	1	08/25/06 23:01	CCT	1943163

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 1:56	KEL	1940607

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	7300		100	20	08/24/06 16:43	FJA	1942567
Ethylbenzene	3400		100	20	08/24/06 16:43	FJA	1942567
Methyl tert-butyl ether	ND		100	20	08/24/06 16:43	FJA	1942567
Naphthalene	1200		100	20	08/24/06 16:43	FJA	1942567
Toluene	36000		1000	200	08/28/06 16:55	FJA	1944855
m,p-Xylene	14000		100	20	08/24/06 16:43	FJA	1942567
o-Xylene	6600		100	20	08/24/06 16:43	FJA	1942567
Xylenes, Total	20600		100	20	08/24/06 16:43	FJA	1942567
Surr: 1,2-Dichloroethane-d4	82.5		% 72-122	200	08/28/06 16:55	FJA	1944855
Surr: 1,2-Dichloroethane-d4	80.5		% 72-122	20	08/24/06 16:43	FJA	1942567
Surr: 4-Bromofluorobenzene	89.4		% 78-115	200	08/28/06 16:55	FJA	1944855
Surr: 4-Bromofluorobenzene	96.7		% 78-115	20	08/24/06 16:43	FJA	1942567
Surr: Toluene-d8	96.0		% 81-111	200	08/28/06 16:55	FJA	1944855
Surr: Toluene-d8	95.1		% 81-111	20	08/24/06 16:43	FJA	1942567

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-14 **Collected:** 08/21/2006 12:35 **SPL Sample ID:** 06080778-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	08/25/06 23:20	CCT	1943164
Surr: 1-Chloro-2-fluorobenzene	63.0		%	33-151	1	08/25/06 23:20	CCT	1943164

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	08/24/06 2:01	KEL	1940608

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN					**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	6100			100	20	08/28/06 17:24	FJA	1944856
Ethylbenzene	ND			100	20	08/28/06 17:24	FJA	1944856
Methyl tert-butyl ether	ND			100	20	08/28/06 17:24	FJA	1944856
Naphthalene	260			100	20	08/28/06 17:24	FJA	1944856
Toluene	ND			100	20	08/28/06 17:24	FJA	1944856
m,p-Xylene	ND			100	20	08/28/06 17:24	FJA	1944856
o-Xylene	ND			100	20	08/28/06 17:24	FJA	1944856
Xylenes, Total	ND			100	20	08/28/06 17:24	FJA	1944856
Surr: 1,2-Dichloroethane-d4	91.0		%	72-122	20	08/28/06 17:24	FJA	1944856
Surr: 4-Bromofluorobenzene	90.9		%	78-115	20	08/28/06 17:24	FJA	1944856
Surr: Toluene-d8	92.8		%	81-111	20	08/28/06 17:24	FJA	1944856

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-15 **Collected:** 08/21/2006 11:45 **SPL Sample ID:** 06080778-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/25/06 23:40	CCT	1943165
Surr: 1-Chloro-2-fluorobenzene	103		% 33-151	1	08/25/06 23:40	CCT	1943165

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 2:07	KEL	1940609

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	2400		100	20	08/28/06 17:53	FJA	1944857
Ethylbenzene	5.2		5	1	08/24/06 17:40	FJA	1942569
Methyl tert-butyl ether	ND		5	1	08/24/06 17:40	FJA	1942569
Naphthalene	120		5	1	08/24/06 17:40	FJA	1942569
Toluene	49		5	1	08/24/06 17:40	FJA	1942569
m,p-Xylene	46		5	1	08/24/06 17:40	FJA	1942569
o-Xylene	17		5	1	08/24/06 17:40	FJA	1942569
Xylenes, Total	63		5	1	08/24/06 17:40	FJA	1942569
Surr: 1,2-Dichloroethane-d4	82.9		% 72-122	20	08/28/06 17:53	FJA	1944857
Surr: 1,2-Dichloroethane-d4	76.5		% 72-122	1	08/24/06 17:40	FJA	1942569
Surr: 4-Bromofluorobenzene	87.5		% 78-115	20	08/28/06 17:53	FJA	1944857
Surr: 4-Bromofluorobenzene	94.0		% 78-115	1	08/24/06 17:40	FJA	1942569
Surr: Toluene-d8	95.8		% 81-111	20	08/28/06 17:53	FJA	1944857
Surr: Toluene-d8	96.1		% 81-111	1	08/24/06 17:40	FJA	1942569

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-16 **Collected:** 08/21/2006 10:15 **SPL Sample ID:** 06080778-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/25/06 23:59	CCT	1943166
Surr: 1-Chloro-2-fluorobenzene	140		% 33-151	1	08/25/06 23:59	CCT	1943166

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 2:13	KEL	1940610

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	6700		100	20	08/28/06 18:22	FJA	1944858
Ethylbenzene	ND		100	20	08/28/06 18:22	FJA	1944858
Methyl tert-butyl ether	ND		100	20	08/28/06 18:22	FJA	1944858
Naphthalene	230		100	20	08/28/06 18:22	FJA	1944858
Toluene	ND		100	20	08/28/06 18:22	FJA	1944858
m,p-Xylene	ND		100	20	08/28/06 18:22	FJA	1944858
o-Xylene	ND		100	20	08/28/06 18:22	FJA	1944858
Xylenes, Total	ND		100	20	08/28/06 18:22	FJA	1944858
Surr: 1,2-Dichloroethane-d4	90.1		% 72-122	20	08/28/06 18:22	FJA	1944858
Surr: 4-Bromofluorobenzene	91.3		% 78-115	20	08/28/06 18:22	FJA	1944858
Surr: Toluene-d8	96.9		% 81-111	20	08/28/06 18:22	FJA	1944858

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-17 **Collected:** 08/21/2006 10:30 **SPL Sample ID:** 06080778-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939703
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 0:18	CCT	1943167
Surr: 1-Chloro-2-fluorobenzene	88.0	%	33-151	1	08/26/06 0:18	CCT	1943167

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	2.14		0.05	5	08/22/06 13:00	BMO	1939305
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	08/25/06 12:00	PFB	1944274
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0129		0.01	1	08/25/06 17:07	KEL	1943541

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/28/06 16:27	FJA	1944854
Ethylbenzene	ND		5	1	08/28/06 16:27	FJA	1944854
Methyl tert-butyl ether	ND		5	1	08/28/06 16:27	FJA	1944854
Naphthalene	ND		5	1	08/28/06 16:27	FJA	1944854
Toluene	ND		5	1	08/28/06 16:27	FJA	1944854
m,p-Xylene	ND		5	1	08/28/06 16:27	FJA	1944854
o-Xylene	ND		5	1	08/28/06 16:27	FJA	1944854
Xylenes, Total	ND		5	1	08/28/06 16:27	FJA	1944854
Surr: 1,2-Dichloroethane-d4	84.0	%	72-122	1	08/28/06 16:27	FJA	1944854
Surr: 4-Bromofluorobenzene	90.7	%	78-115	1	08/28/06 16:27	FJA	1944854
Surr: Toluene-d8	96.1	%	81-111	1	08/28/06 16:27	FJA	1944854

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18 **Collected:** 08/21/2006 12:10 **SPL Sample ID:** 06080778-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939706
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.1		0.02	1	08/26/06 0:38	CCT	1943168
Surr: 1-Chloro-2-fluorobenzene	96.7		% 33-151	1	08/26/06 0:38	CCT	1943168

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.0251		0.01	1	08/22/06 13:00	BMO	1939308
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	24.8		5	1	08/25/06 12:00	PFB	1944277
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0806		0.01	1	08/25/06 17:14	KEL	1943542

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	550		50	10	08/28/06 18:50	FJA	1944859
Ethylbenzene	49		5	1	08/24/06 22:54	FJA	1942580
Methyl tert-butyl ether	1200		50	10	08/28/06 18:50	FJA	1944859
Naphthalene	66		5	1	08/24/06 22:54	FJA	1942580
Toluene	610		50	10	08/28/06 18:50	FJA	1944859
m,p-Xylene	350		5	1	08/24/06 22:54	FJA	1942580
o-Xylene	220		5	1	08/24/06 22:54	FJA	1942580
Xylenes, Total	570		5	1	08/24/06 22:54	FJA	1942580
Surr: 1,2-Dichloroethane-d4	85.6		% 72-122	10	08/28/06 18:50	FJA	1944859
Surr: 1,2-Dichloroethane-d4	87.3		% 72-122	1	08/24/06 22:54	FJA	1942580
Surr: 4-Bromofluorobenzene	90.2		% 78-115	10	08/28/06 18:50	FJA	1944859
Surr: 4-Bromofluorobenzene	96.4		% 78-115	1	08/24/06 22:54	FJA	1942580
Surr: Toluene-d8	95.8		% 81-111	10	08/28/06 18:50	FJA	1944859
Surr: Toluene-d8	97.1		% 81-111	1	08/24/06 22:54	FJA	1942580

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-19 **Collected:** 08/21/2006 11:30 **SPL Sample ID:** 06080778-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939707
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 1:16	CCT	1943170
Surr: 1-Chloro-2-fluorobenzene	97.8	%	33-151	1	08/26/06 1:16	CCT	1943170

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	6.52		0.25	25	08/22/06 13:00	BMO	1939309
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	08/25/06 12:00	PFB	1944278
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0114		0.01	1	08/25/06 17:21	KEL	1943543

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/24/06 19:06	FJA	1942572
Ethylbenzene	ND		5	1	08/24/06 19:06	FJA	1942572
Methyl tert-butyl ether	ND		5	1	08/24/06 19:06	FJA	1942572
Naphthalene	ND		5	1	08/24/06 19:06	FJA	1942572
Toluene	ND		5	1	08/24/06 19:06	FJA	1942572
m,p-Xylene	ND		5	1	08/24/06 19:06	FJA	1942572
o-Xylene	ND		5	1	08/24/06 19:06	FJA	1942572
Xylenes, Total	ND		5	1	08/24/06 19:06	FJA	1942572
Surr: 1,2-Dichloroethane-d4	79.1	%	72-122	1	08/24/06 19:06	FJA	1942572
Surr: 4-Bromofluorobenzene	92.5	%	78-115	1	08/24/06 19:06	FJA	1942572
Surr: Toluene-d8	93.7	%	81-111	1	08/24/06 19:06	FJA	1942572

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-20 **Collected:** 08/21/2006 11:00 **SPL Sample ID:** 06080778-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939708
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 1:36	CCT	1943171
Surr: 1-Chloro-2-fluorobenzene	100	%	33-151	1	08/26/06 1:36	CCT	1943171

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.424		0.01	1	08/22/06 13:00	BMO	1939310
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	08/25/06 12:00	PFB	1944279
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0521		0.01	1	08/25/06 17:29	KEL	1943544

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/24/06 19:35	FJA	1942573
Ethylbenzene	ND		5	1	08/24/06 19:35	FJA	1942573
Methyl tert-butyl ether	ND		5	1	08/24/06 19:35	FJA	1942573
Naphthalene	ND		5	1	08/24/06 19:35	FJA	1942573
Toluene	ND		5	1	08/24/06 19:35	FJA	1942573
m,p-Xylene	ND		5	1	08/24/06 19:35	FJA	1942573
o-Xylene	ND		5	1	08/24/06 19:35	FJA	1942573
Xylenes, Total	ND		5	1	08/24/06 19:35	FJA	1942573
Surr: 1,2-Dichloroethane-d4	81.0	%	72-122	1	08/24/06 19:35	FJA	1942573
Surr: 4-Bromofluorobenzene	91.7	%	78-115	1	08/24/06 19:35	FJA	1942573
Surr: Toluene-d8	95.5	%	81-111	1	08/24/06 19:35	FJA	1942573

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 08/21/2006 15:15 **SPL Sample ID:** 06080778-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 1:55	CCT	1943172
Surr: 1-Chloro-2-fluorobenzene	100		% 33-151	1	08/26/06 1:55	CCT	1943172

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 2:54	KEL	1940613

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	08/24/06 20:03	FJA	1942574
Ethylbenzene	ND		5	1	08/24/06 20:03	FJA	1942574
Methyl tert-butyl ether	ND		5	1	08/24/06 20:03	FJA	1942574
Naphthalene	ND		5	1	08/24/06 20:03	FJA	1942574
Toluene	ND		5	1	08/24/06 20:03	FJA	1942574
m,p-Xylene	ND		5	1	08/24/06 20:03	FJA	1942574
o-Xylene	ND		5	1	08/24/06 20:03	FJA	1942574
Xylenes, Total	ND		5	1	08/24/06 20:03	FJA	1942574
Surr: 1,2-Dichloroethane-d4	80.1		% 72-122	1	08/24/06 20:03	FJA	1942574
Surr: 4-Bromofluorobenzene	91.7		% 78-115	1	08/24/06 20:03	FJA	1942574
Surr: Toluene-d8	95.5		% 81-111	1	08/24/06 20:03	FJA	1942574

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 08/21/2006 13:10 **SPL Sample ID:** 06080778-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939709
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 2:14	CCT	1943173
Surr: 1-Chloro-2-fluorobenzene	94.4	%	33-151	1	08/26/06 2:14	CCT	1943173

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.16		0.01	1	08/22/06 13:00	BMO	1939311
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	08/25/06 12:00	PFB	1944280
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0123		0.01	1	08/25/06 17:37	KEL	1943545

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	240		5	1	08/24/06 20:32	FJA	1942575
Ethylbenzene	ND		5	1	08/24/06 20:32	FJA	1942575
Methyl tert-butyl ether	910		50	10	08/28/06 19:19	FJA	1944860
Naphthalene	110		5	1	08/24/06 20:32	FJA	1942575
Toluene	19		5	1	08/24/06 20:32	FJA	1942575
m,p-Xylene	18		5	1	08/24/06 20:32	FJA	1942575
o-Xylene	8.2		5	1	08/24/06 20:32	FJA	1942575
Xylenes, Total	26.2		5	1	08/24/06 20:32	FJA	1942575
Surr: 1,2-Dichloroethane-d4	79.8	%	72-122	10	08/28/06 19:19	FJA	1944860
Surr: 1,2-Dichloroethane-d4	83.6	%	72-122	1	08/24/06 20:32	FJA	1942575
Surr: 4-Bromofluorobenzene	85.5	%	78-115	10	08/28/06 19:19	FJA	1944860
Surr: 4-Bromofluorobenzene	95.5	%	78-115	1	08/24/06 20:32	FJA	1942575
Surr: Toluene-d8	95.2	%	81-111	10	08/28/06 19:19	FJA	1944860
Surr: Toluene-d8	97.2	%	81-111	1	08/24/06 20:32	FJA	1942575

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 08/21/2006 14:15 **SPL Sample ID:** 06080778-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939710
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 2:34	CCT	1943174
Surr: 1-Chloro-2-fluorobenzene	133		% 33-151	1	08/26/06 2:34	CCT	1943174

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.244		0.01	1	08/22/06 13:00	BMO	1939312
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	30.9		5	1	08/25/06 12:00	PFB	1944281
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 3:06	KEL	1940614

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5000		100	20	08/28/06 19:48	FJA	1944861
Ethylbenzene	ND		100	20	08/28/06 19:48	FJA	1944861
Methyl tert-butyl ether	ND		100	20	08/28/06 19:48	FJA	1944861
Naphthalene	180		100	20	08/28/06 19:48	FJA	1944861
Toluene	ND		100	20	08/28/06 19:48	FJA	1944861
m,p-Xylene	ND		100	20	08/28/06 19:48	FJA	1944861
o-Xylene	ND		100	20	08/28/06 19:48	FJA	1944861
Xylenes, Total	ND		100	20	08/28/06 19:48	FJA	1944861
Surr: 1,2-Dichloroethane-d4	86.2		% 72-122	20	08/28/06 19:48	FJA	1944861
Surr: 4-Bromofluorobenzene	89.8		% 78-115	20	08/28/06 19:48	FJA	1944861
Surr: Toluene-d8	96.1		% 81-111	20	08/28/06 19:48	FJA	1944861

Qualifiers:

ND/U - Not Detected at the Reporting Limit
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J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 08/21/2006 13:45 **SPL Sample ID:** 06080778-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939713
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 2:54	CCT	1943175
Surr: 1-Chloro-2-fluorobenzene	97.4	%	33-151	1	08/26/06 2:54	CCT	1943175

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.316		0.01	1	08/22/06 13:00	BMO	1939315
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	08/25/06 12:00	PFB	1944284
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 3:12	KEL	1940615

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	230		5	1	08/28/06 15:58	FJA	1944853
Ethylbenzene	ND		5	1	08/28/06 15:58	FJA	1944853
Methyl tert-butyl ether	ND		5	1	08/28/06 15:58	FJA	1944853
Naphthalene	ND		5	1	08/28/06 15:58	FJA	1944853
Toluene	ND		5	1	08/28/06 15:58	FJA	1944853
m,p-Xylene	ND		5	1	08/28/06 15:58	FJA	1944853
o-Xylene	ND		5	1	08/28/06 15:58	FJA	1944853
Xylenes, Total	ND		5	1	08/28/06 15:58	FJA	1944853
Surr: 1,2-Dichloroethane-d4	88.2	%	72-122	1	08/28/06 15:58	FJA	1944853
Surr: 4-Bromofluorobenzene	89.1	%	78-115	1	08/28/06 15:58	FJA	1944853
Surr: Toluene-d8	94.9	%	81-111	1	08/28/06 15:58	FJA	1944853

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 08/21/2006 14:25 **SPL Sample ID:** 06080778-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	1.31		0.05	1	08/22/06 16:50	AG	1939714
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 3:13	CCT	1943176
Surr: 1-Chloro-2-fluorobenzene	98.4		% 33-151	1	08/26/06 3:13	CCT	1943176

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	3.24		0.1	10	08/22/06 13:00	BMO	1939316
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	22.9		5	1	08/25/06 12:00	PFB	1944285
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0313		0.01	1	08/25/06 17:43	KEL	1943546

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/24/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	390		25	5	08/28/06 20:17	FJA	1944862
Ethylbenzene	ND		5	1	08/24/06 21:57	FJA	1942578
Methyl tert-butyl ether	ND		5	1	08/24/06 21:57	FJA	1942578
Naphthalene	26		5	1	08/24/06 21:57	FJA	1942578
Toluene	ND		5	1	08/24/06 21:57	FJA	1942578
m,p-Xylene	ND		5	1	08/24/06 21:57	FJA	1942578
o-Xylene	ND		5	1	08/24/06 21:57	FJA	1942578
Xylenes, Total	ND		5	1	08/24/06 21:57	FJA	1942578
Surr: 1,2-Dichloroethane-d4	77.8		% 72-122	5	08/28/06 20:17	FJA	1944862
Surr: 1,2-Dichloroethane-d4	78.8		% 72-122	1	08/24/06 21:57	FJA	1942578
Surr: 4-Bromofluorobenzene	86.7		% 78-115	5	08/28/06 20:17	FJA	1944862
Surr: 4-Bromofluorobenzene	94.0		% 78-115	1	08/24/06 21:57	FJA	1942578
Surr: Toluene-d8	96.9		% 81-111	5	08/28/06 20:17	FJA	1944862
Surr: Toluene-d8	96.5		% 81-111	1	08/24/06 21:57	FJA	1942578

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 08/21/2006 14:45 **SPL Sample ID:** 06080778-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939715
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 3:33	CCT	1943177
Surr: 1-Chloro-2-fluorobenzene	95.0	%	33-151	1	08/26/06 3:33	CCT	1943177

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	6.83		0.25	25	08/22/06 13:00	BMO	1939317
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	29.5		5	1	08/25/06 12:00	PFB	1944286
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 3:23	KEL	1940616

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	700		50	10	08/28/06 20:45	FJA	1944863
Ethylbenzene	ND		5	1	08/24/06 22:26	FJA	1942579
Methyl tert-butyl ether	ND		5	1	08/24/06 22:26	FJA	1942579
Naphthalene	35		5	1	08/24/06 22:26	FJA	1942579
Toluene	ND		5	1	08/24/06 22:26	FJA	1942579
m,p-Xylene	ND		5	1	08/24/06 22:26	FJA	1942579
o-Xylene	7.7		5	1	08/24/06 22:26	FJA	1942579
Xylenes, Total	7.7		5	1	08/24/06 22:26	FJA	1942579
Surr: 1,2-Dichloroethane-d4	85.3	%	72-122	10	08/28/06 20:45	FJA	1944863
Surr: 1,2-Dichloroethane-d4	80.6	%	72-122	1	08/24/06 22:26	FJA	1942579
Surr: 4-Bromofluorobenzene	87.6	%	78-115	10	08/28/06 20:45	FJA	1944863
Surr: 4-Bromofluorobenzene	93.9	%	78-115	1	08/24/06 22:26	FJA	1942579
Surr: Toluene-d8	96.4	%	81-111	10	08/28/06 20:45	FJA	1944863
Surr: Toluene-d8	95.4	%	81-111	1	08/24/06 22:26	FJA	1942579

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 08/21/2006 13:45 **SPL Sample ID:** 06080778-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	08/22/06 16:50	AG	1939716
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	08/26/06 3:52	CCT	1943178
Surr: 1-Chloro-2-fluorobenzene	92.5	%	33-151	1	08/26/06 3:52	CCT	1943178

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	08/23/2006 15:10	JNS	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen, Nitrate (As N)	0.032		0.01	1	08/22/06 13:00	BMO	1939318
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	10.4		5	1	08/25/06 12:00	PFB	1944287
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	08/24/06 3:29	KEL	1940617

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/22/2006 17:00	SA	1.00

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS: METHOD 8260B+MTBE+NAPHTHALEN				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	450		25	5	08/28/06 21:14	FJA	1944864
Ethylbenzene	ND		5	1	08/24/06 17:54	FJA	1942322
Methyl tert-butyl ether	5.9		5	1	08/24/06 17:54	FJA	1942322
Naphthalene	25		5	1	08/24/06 17:54	FJA	1942322
Toluene	ND		5	1	08/24/06 17:54	FJA	1942322
m,p-Xylene	ND		5	1	08/24/06 17:54	FJA	1942322
o-Xylene	ND		5	1	08/24/06 17:54	FJA	1942322
Xylenes, Total	ND		5	1	08/24/06 17:54	FJA	1942322
Surr: 1,2-Dichloroethane-d4	82.1	%	72-122	5	08/28/06 21:14	FJA	1944864
Surr: 1,2-Dichloroethane-d4	75.8	%	72-122	1	08/24/06 17:54	FJA	1942322
Surr: 4-Bromofluorobenzene	87.5	%	78-115	5	08/28/06 21:14	FJA	1944864
Surr: 4-Bromofluorobenzene	88.1	%	78-115	1	08/24/06 17:54	FJA	1942322
Surr: Toluene-d8	95.2	%	81-111	5	08/28/06 21:14	FJA	1944864
Surr: Toluene-d8	95.9	%	81-111	1	08/24/06 17:54	FJA	1942322

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1 **WorkOrder:** 06080778
Method: E504.1 **Lab Batch ID:** 51946

Method Blank

RunID: PCBB_060825A-1943159 Units: ug/L
Analysis Date: 08/25/2006 21:44 Analyst: CCT
PreparationDate: 08/23/2006 15:10 Prep By: JNS Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	102.4	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-01B	MW-10
06080778-02B	MW-13
06080778-03B	MW-14
06080778-04B	MW-15
06080778-05B	MW-16
06080778-06B	MW-17
06080778-07B	MW-18
06080778-08B	MW-19
06080778-09B	MW-20
06080778-10B	CK-1
06080778-11B	MW-21
06080778-12B	MW-22
06080778-13B	MW-23
06080778-14B	MW-24
06080778-15B	MW-25
06080778-16B	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_060825A-1943160 Units: ug/L
Analysis Date: 08/25/2006 22:03 Analyst: CCT
PreparationDate: 08/23/2006 15:10 Prep By: JNS Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.528	92.7	0.570	0.537	94.2	1.6	30	60	140

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B
WorkOrder: 06080778
Lab Batch ID: 51919

Method Blank

RunID: ICPDV_060823C-1940597 Units: mg/L
Analysis Date: 08/24/2006 0:44 Analyst: KEL
PreparationDate: 08/22/2006 17:00 Prep By: SA Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-01C	MW-10
06080778-02C	MW-13
06080778-03C	MW-14
06080778-04C	MW-15
06080778-05C	MW-16
06080778-10C	CK-1
06080778-12C	MW-22
06080778-13C	MW-23
06080778-15C	MW-25
06080778-16C	DW-2

Laboratory Control Sample (LCS)

RunID: ICPDV_060823C-1940598 Units: mg/L
Analysis Date: 08/24/2006 0:50 Analyst: KEL
PreparationDate: 08/22/2006 17:00 Prep By: SA Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	1.254	125.4 *	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

SampleSpiked: 06080778-01
RunID: ICPDV_060823C-1940601 Units: mg/L
Analysis Date: 08/24/2006 1:08 Analyst: KEL
PreparationDate: 08/22/2006 17:00 Prep By: SA Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	1.220	121.3	1	1.053	104.5	14.73	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B

WorkOrder: 06080778
Lab Batch ID: 51978

Method Blank

RunID: ICPDV_060825B-1943530 Units: mg/L
Analysis Date: 08/25/2006 15:48 Analyst: KEL
PreparationDate: 08/24/2006 17:00 Prep By: SA Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-06C	MW-17
06080778-07C	MW-18
06080778-08C	MW-19
06080778-09C	MW-20
06080778-11C	MW-21
06080778-14C	MW-24

Laboratory Control Sample (LCS)

RunID: ICPDV_060825B-1943531 Units: mg/L
Analysis Date: 08/25/2006 15:55 Analyst: KEL
PreparationDate: 08/24/2006 17:00 Prep By: SA Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	1.035	103.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

SampleSpiked: 06080767-01
RunID: ICPDV_060825B-1943534 Units: mg/L
Analysis Date: 08/25/2006 16:16 Analyst: KEL
PreparationDate: 08/24/2006 17:00 Prep By: SA Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	0.02196	1	1.009	98.70	1	0.9980	97.60	1.089	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 06080778
Lab Batch ID: R134669

Method Blank

RunID: I_060824A-1942312 Units: ug/L
Analysis Date: 08/24/2006 13:07 Analyst: FJA

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-16A	DW-2

Analyte	Result	Rep Limit
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	77.6	72-122
Surr: 4-Bromofluorobenzene	86.1	78-115
Surr: Toluene-d8	99.2	81-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_060824A-1942310 Units: ug/L
Analysis Date: 08/24/2006 12:10 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	46.0	92.1	50.0	46.4	92.8	0.8	23	69	129
Benzene	50.0	50.6	101	50.0	50.4	101	0.3	16	75	139
Chlorobenzene	50.0	47.5	95.0	50.0	48.4	96.9	1.9	20	72	122
Toluene	50.0	49.1	98.1	50.0	50.0	100	2.0	21	71	118
Trichloroethene	50.0	49.3	98.7	50.0	49.0	98.1	0.6	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
MI - Matrix Interference
B - Analyte detected in the associated Method Blank
D - Recovery Unreportable due to Dilution
J - Estimated value between MDL and PQL
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 06080778
Lab Batch ID: R134687

Method Blank

RunID: IB_060824A-1942560 Units: ug/L
Analysis Date: 08/24/2006 13:22 Analyst: FJA

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	83.7	72-122
Surr: 4-Bromofluorobenzene	92.2	78-115
Surr: Toluene-d8	97.9	81-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-01A	MW-10
06080778-02A	MW-13
06080778-04A	MW-15
06080778-07A	MW-18
06080778-08A	MW-19
06080778-09A	MW-20
06080778-10A	CK-1
06080778-11A	MW-21
06080778-14A	MW-24
06080778-15A	MW-25

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: IB_060824A-1942558 Units: ug/L
Analysis Date: 08/24/2006 12:24 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	38.6	77.3	50.0	38.6	77.2	0.1	23	69	129
Benzene	50.0	46.7	93.4	50.0	46.9	93.9	0.5	16	75	139
Chlorobenzene	50.0	47.2	94.4	50.0	46.7	93.4	1.1	20	72	122
Toluene	50.0	47.3	94.7	50.0	46.3	92.7	2.1	21	71	118
Trichloroethene	50.0	46.6	93.1	50.0	45.2	90.4	2.9	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 06080778
Lab Batch ID: R134847

Method Blank

RunID: I_060828A-1944845 Units: ug/L
Analysis Date: 08/28/2006 12:09 Analyst: FJA

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	80.7	72-122
Surr: 4-Bromofluorobenzene	85.6	78-115
Surr: Toluene-d8	96.3	81-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-02A	MW-13
06080778-03A	MW-14
06080778-04A	MW-15
06080778-05A	MW-16
06080778-06A	MW-17
06080778-07A	MW-18
06080778-11A	MW-21
06080778-12A	MW-22
06080778-13A	MW-23
06080778-14A	MW-24
06080778-15A	MW-25
06080778-16A	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: I_060828A-1944842 Units: ug/L
Analysis Date: 08/28/2006 11:11 Analyst: FJA

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	46.2	92.5	50.0	45.3	90.7	2.0	23	69	129
Benzene	50.0	50.4	101	50.0	51.5	103	2.0	16	75	139
Chlorobenzene	50.0	48.0	95.9	50.0	47.7	95.4	0.5	20	72	122
Toluene	50.0	49.4	98.9	50.0	48.2	96.4	2.5	21	71	118
Trichloroethene	50.0	49.1	98.2	50.0	50.2	100	2.3	20	78	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Nitrate Nitrogen (as N), Total
Method: E353.3
WorkOrder: 06080778
Lab Batch ID: R134481

Method Blank

RunID: WET_060822N-1939302 Units: mg/L
Analysis Date: 08/22/2006 13:00 Analyst: BMO

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-06D	MW-17
06080778-07D	MW-18
06080778-08D	MW-19
06080778-09D	MW-20
06080778-11D	MW-21
06080778-12D	MW-22
06080778-13D	MW-23
06080778-14D	MW-24
06080778-15D	MW-25
06080778-16D	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_060822N-1939303 Units: mg/L
Analysis Date: 08/22/2006 13:00 Analyst: BMO

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	0.1500	0.1531	102.1	0.1500	0.1462	97.47	4.6	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06080778-06
RunID: WET_060822N-1939306 Units: mg/L
Analysis Date: 08/22/2006 13:00 Analyst: BMO

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	2.142	0.75	2.816	89.87	0.75	2.830	91.73	0.4959	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Iron, Ferrous
Method: HACH 8146

WorkOrder: 06080778
Lab Batch ID: R134505

Method Blank

RunID: WET_060822Q-1939701 Units: mg/L
Analysis Date: 08/22/2006 16:50 Analyst: AG

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-06E	MW-17
06080778-07E	MW-18
06080778-08E	MW-19
06080778-09E	MW-20
06080778-11E	MW-21
06080778-12E	MW-22
06080778-13E	MW-23
06080778-14E	MW-24
06080778-15E	MW-25
06080778-16E	DW-2

Laboratory Control Sample (LCS)

RunID: WET_060822Q-1939702 Units: mg/L
Analysis Date: 08/22/2006 16:50 Analyst: AG

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	0.8190	81.90	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06080778-06
RunID: WET_060822Q-1939704 Units: mg/L
Analysis Date: 08/22/2006 16:50 Analyst: AG

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	0.8390	83.90	1	0.8810	88.10	4.884	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Sulfate, Total
Method: E375.4
WorkOrder: 06080778
Lab Batch ID: R134804

Method Blank

RunID: WET_060825N-1944272 Units: mg/L
Analysis Date: 08/25/2006 12:00 Analyst: PFB

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
06080778-06D	MW-17
06080778-07D	MW-18
06080778-08D	MW-19
06080778-09D	MW-20
06080778-11D	MW-21
06080778-12D	MW-22
06080778-13D	MW-23
06080778-14D	MW-24
06080778-15D	MW-25
06080778-16D	DW-2

Laboratory Control Sample (LCS)

RunID: WET_060825N-1944273 Units: mg/L
Analysis Date: 08/25/2006 12:00 Analyst: PFB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.689	96.89	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06080778-06
RunID: WET_060825N-1944275 Units: mg/L
Analysis Date: 08/25/2006 12:00 Analyst: PFB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	ND	10	8.602	86.02	10	8.435	84.35	1.960	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	06080778	Received By:	PKG
Date and Time Received:	8/22/2006 9:45:00 AM	Carrier name:	FedEx-Std 1 Day PM
Temperature:	3.5/4.5°C	Chilled by:	Water Ice

		Yes	No		
1.	Shipping container/cooler in good condition?	☑	☐	Not Present	☐
2.	Custody seals intact on shippping container/cooler?	☐	☐	Not Present	☑
3.	Custody seals intact on sample bottles?	☐	☐	Not Present	☑
4.	Chain of custody present?	☑	☐		
5.	Chain of custody signed when relinquished and received?	☑	☐		
6.	Chain of custody agrees with sample labels?	☑	☐		
7.	Samples in proper container/bottle?	☑	☐		
8.	Sample containers intact?	☑	☐		
9.	Sufficient sample volume for indicated test?	☑	☐		
10.	All samples received within holding time?	☑	☐		
11.	Container/Temp Blank temperature in compliance?	☑	☐		
12.	Water - VOA vials have zero headspace?	☐	☑	VOA Vials Not Present	☐
13.	Water - Preservation checked upon receipt (except VOA*)?	☑	☐	Not Applicable	☐

*VOA Preservation Checked After Sample Analysis

SPL Representative: _____ Contact Date & Time: _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 187403

06080778

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR. UNIT Q COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOYTON Email:
Project Name/No.: 14.253E4.0012
Site Name: UNITED EXXON
Site Location: WINNSBORO SC
Invoice To: Ph:

matrix: W=water S=soil SL=sludge O=oil X=other
bottle: P=plastic G=glass A=amber glass V=vial X=other
size: 1=1 liter 4=4oz 8=8oz 16=16oz 40=vial X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NAPH, MTBE	EDB	LEAD	NITRATE/SULFATE	Fe+				
7 MW10	8/21/06	1000		✓	W	P/V		1/2/X		✓	✓	✓						
7 MW13		1100								✓	✓	✓						
7 MW14		1235								✓	✓	✓						
7 MW15		1145								✓	✓	✓						
7 MW16		1015								✓	✓	✓						
7 MW17		1030								✓	✓	✓	✓	✓				
7 MW18		1210								✓	✓	✓	✓	✓				
7 MW19		1130								✓	✓	✓	✓	✓				
7 MW20		1100								✓	✓	✓	✓	✓				

UNPRESERVED VOA

Client/Consultant Remarks:

Laboratory remarks: Fed EX 8576 4297 9252 NO C.S. EDB VOA-6 (6) TH5, BTEX RWA-8 (8) FS5, (1), (SW), PHC
Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 3.5c, 4.5c

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 8/21/06	time 1600	2. Received by: Fed EX
3. Relinquished by: Fed EX	date 8-22-06	time 09:00	4. Received by:
5. Relinquished by:	date 8-22-06	time 09:45	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

Fed EX 8576 4297 9274

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 187402

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR. UNIT Q COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: UNITED EXXON
Site Location: WINNSBORO SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, MTBE, PH, MTBE	EDB	LEAD	NITRATE/SULFATE	Fe				
7 CK1	8/21/06	1515		✓	W	P/V		1/2/X		✓	✓	✓						
9 MW21		1310								✓	✓	✓	✓	✓				
9 MW22		1405																
9 MW23		1345																
9 MW24		1425																
9 MW25		1445																
9 DW2		1345																

UNPRESERVED VOA

Client/Consultant Remarks:

Laboratory remarks: Fed Ex 8576 4297 9252 NO C.S. PH2D
(1) (3 W) EDB YMA-6 (6) THS Bex RWAA-8 (6) FS5

Intact? ☒ Y ☐ N
Ice? ☒ Y ☐ N
Temp: 3.5C, 4.5C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 8/21/06	time 1600	2. Received by: Fed EX
3. Relinquished by: Fed EX	date 8-22-06	time 09:00	4. Received by:
5. Relinquished by:	date 8-22-06	time 09:45	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

Fed EX 8576 4297 9274

fedex.com 1.800.GoFedEx 1.800.463.3339

RECIPIENT: PEEL HERE

FedEx Express *US Airbill*

FedEx Tracking Number 8576 4297 9252

Form ID No. 0215 **Recipient's Copy**

1 From This portion can be removed for Recipient's records.

Date 8/21/06 FedEx Tracking Number 857642979252

Sender's Name JOHN MONAGHAN Phone 803 735-0003

Company AK ASSOCIATES

Address 400 NORTHCREST DR Dept./Floor/Suite/Room UNIT Q

City COLUMBIA State SC ZIP 29203

2 Your Internal Billing Reference 14 25384.0012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4[illegible]

Company SOUTHERN PETROLEUM LAB

Recipient's Address [illegible] AMBASSADOR CAFFERY HWY Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City [illegible] State LA ZIP 70393-5500

02 365 79645

8576 4297 9252

4a Express Package Service *Packages up to 150 lbs.*

- ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service *Packages over 150 lbs.*

- ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation: _____ ** To most locations.

5 Packaging

- ☐ FedEx Envelope*
- ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- ☐ FedEx Box
- ☐ FedEx Tube
- ☐ Other

* Declared value limit $500.

6 Special Handling

- ☐ **SATURDAY Delivery** — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- ☐ **HOLD Weekday at FedEx Location** — Not available for FedEx First Overnight.
- ☐ **HOLD Saturday at FedEx Location** — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods?

- ☒ No
- ☐ Yes — As per attached Shipper's Declaration.
- ☐ Yes — Shipper's Declaration not required.
- ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- ☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- ☐ Sender — Acct. No. in Section 1 will be billed.
- ☐ Recipient
- ☐ Third Party
- ☐ Credit Card
- ☐ Cash/Check

[redacted] 705-[redacted]

Total Packages ____ Total Weight ____ [redacted] Total Charges ____ Credit Card Auth. ____

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 *NEW* Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- ☐ No Signature Required — Package may be left without obtaining a signature for delivery.
- ☐ Direct Signature — Anyone at recipient's address may sign for delivery. *Fee applies.*
- ☐ Indirect Signature — If no one is available at recipient's address, anyone at a neighboring address may sign for delivery. *Fee applies.*

519

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453 3339

FedEx STANDARD OVERN

emp# 547166 21AUG06

TRK# 8576 4297 9274 FORM 0215

70583 -LA -US XH L

APPENDIX F

Disposal Manifests

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 02036

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
United Exxon
401 N. Congress St.
Winnsboro, SC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name:
8. US EPA ID Number: . . . . . .
B. Transporter's Phone:

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline Mixture, 3, UN1203, PG II	001	T	00199	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0171

Sheew

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0003-BG
~~2004-0774-BG~~
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS
Signature:
Month 02 Day 03 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS
Signature:
Month 02 Day 03 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name:
Signature:
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

1Mm01 1Mm03 2gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBC

Printed/Typed Name:
Signature:
Month 02 Day 03 Year 06

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 0.4.6.0.6

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address

ATTN: Ryan Stubbs

United Exxon
401 N. Congress St.
Winnsboro, SC

4. Generator's Phone (803) 422-6714

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name:

8. US EPA ID Number: . . . . . .

B. Transporter's Phone:

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.		X	Gasoline Mixture, 3, UN1203, PG II	0.0.1	T.T	0.0.1.98	G
b.				. .	.	. . . .	
c.				. .	.	. . . .	
d.				. .	.	. . . .	

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0428

Power Unit #: RT-7 Trailer #: NA

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063-BG

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Ryan Stubbs — Signature: Ryan Stubbs — Month 04 Day 06 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Ken Carpenter — Signature: [illegible] — Month 04 Day 06 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: — Signature: — Month . Day . Year .

FACILITY

19. Discrepancy Indication Space

1Mn01 1Mn03 4 gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SRC

Printed/Typed Name: [illegible] — Signature: [illegible] — Month 04 Day 07 Year 06

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .
Manifest Doc. No.: 0621.6
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
United Exxon
401 N. Congress St.
Winnsboro, SC
ATTN: Bob Bolton
4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name:
8. US EPA ID Number: . . . . . .
B. Transporter's Phone:

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.		X	Gasoline Mixture, 3, UN1203, PG II	001	TT	00099	G
b.							
c.							
d.							

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AFV-06-0737
shown
Power Unit #: VT7 Trailer #:
Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS
Signature:
Month 06 Day 21 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL JACOBS
Signature:
Month 06 Day 21 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space
1MO1 1MO3 1 gal go

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SGC
Printed/Typed Name:
Signature:
Month 06 Day 29 Year 06

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .
Manifest Doc. No.: 0718.6
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon (Residence)
401 N. Congress Street
Winnsboro, SC
ATTN: Bob Bolton
4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name:
8. US EPA ID Number: . . . . . .
B. Transporter's Phone:

9. Designated Facility Name and Site Address:
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: **336-375-1989**

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline Mixture, 3, UN1203, PG II	001	TT	0085.3	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0896

Power Unit #: VT7 Trailer #: _____ shared

Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG
11B.
11C.
11D.

TRANSPORTER

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: (Agent For ATC) PAUL JACOBS
Signature: [signature]
Month 07 Day 18 Year 06

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL JACOBS
Signature: [signature]
Month 07 Day 18 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month . Day . Year .

FACILITY

19. Discrepancy Indication Space
pH-7.0 FA-RT
1Mnol 1Mnol3 9 gal gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SRC
Printed/Typed Name: [illegible]
Signature: [signature]
Month 07 Day 21 Year 06

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 07196

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon 401 N. Congress Street Winnsboro NC

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number) HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	Gasoline mixture, 3, UN1203, PG II	001	TT	00249	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0896 shosw

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A.

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (Agent for ATC) Paul Jacobs | Signature | Month 07 Day 19 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Paul Jacobs | Signature | Month 07 Day 19 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

pH-7.0 FP-RT

1/mol 1/mB 3 gl gs

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBE

Printed/Typed Name | Signature | Month 07 Day 21 Year 06

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ORIGINAL - RETURN TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 26089

2. Page 1 of

3. Generator's Name and Mailing Address
Keenan Energy (United Exxon)
401 North Congress
Winnsboro, SC

4. Generator's Phone

ATC Columbia
Bob Bolton
803-735-0003

5. Transporter 1 Company Name
Nu-Way Industrial Services

6. US EPA ID Number
SCD987588331

A. Transporter's Phone
(803) 857-9175

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
Vopak
305 South Main Street
Mauldin, SC

10. US EPA ID Number

C. Facility's Phone
864-962-0953

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-REGULATED, NON-HAZARDOUS MATERIAL Soil Profile #3238	002 004	DM	Est. 500	GP
b. NON-REGULATED, NON-HAZARDOUS MATERIAL Water Profile # 3237	002	DM	110	G
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
EMERGENCY CONTACT: Open 24 Hrs— NUWAY INDUSTRIAL SERVICES 803-957-9175

NIS # 2006-238

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: BOB BOLTON - Auth agent for Keenan Energy
Signature: Bob Bolton ATC Assoc
Month 05 Day 13 Year 06

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: CHRIS DRINK
Signature:
Month 05 Day 16 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name
Signature
Month Day Year

GENERATOR

TRANSPORTER

FACILITY

TRANSPORTER #1

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-07301276

Page of

Job No. D-07301276

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: FTC

US EPA ID No.

Street Address: [illegible]

Mailing Address: [illegible]

Phone No.: (803) 705-0003

Contact: [illegible]

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Hazardous Liquid NOS				5	DM		11,920 lbs
b.		Non Hazardous Liquid NOS				20	DM		
c.								5.63	TONS

ADDITIONAL INFORMATION	ERG No.	JBR Profile Code	Facility Use
a. Water		[illegible]	[illegible]
b. [illegible]		[illegible]	
c.			

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Johnny Horn

Signature: [signature]

Mo./Day/Yr.: 07/20/06

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [signature] Shipment Date: 07/20/06

Transporter or EPA ID No.: SCR000004358 Unit No. 4

Phone: 864-583-2717

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [signature] Delivery Date: 07/20/06

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: [signature] Receipt Date: 7/20/06

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

	Discrepancies	Routing Codes	Handling Methods
a.		CG13217	
b.		CG13303	
c.			

Original - Facility Retain COPY 2 - Return to Generator COPY 3 - Transporter Retain COPY 4 - Generator Retain

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-0823 1448

Page of

Job No. D-0823 1448

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: ATC Associates

US EPA ID No.

Street Address: United Exxon, Winnsboro, SC

Mailing Address: 400 N. East Dr. Unit Q, Columbia, SC 29203

Phone No.: (803) 735-0003

Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Hazardous Liquid, NOS				1	DM		450 lbs
b.									
c.								.23	

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Water		AT-0405643	Approved for Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: JW Monaghan

Signature: [signature]

Mo./Day/Yr.: 8/23/06

TRANSPORTER INFORMATION

Transporter: ~~JBR Environmental Services~~

Address: ~~210 Alice Street~~ ATC Spartanburg, SC 29303

Transporter or EPA ID No.: SCR000004358

Unit No.:

Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [signature] Shipment Date: 8/23/06

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [signature] Delivery Date: 8/23/06

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: Tonya Newton Receipt Date: 8/23/06

Discrepancies	Routing Codes	Handling Methods
a.	WM3219	
b.		
c.		

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

APPENDIX G

Surveyed Site Map

SITE MAP

Prepared for:

ATC ASSOCIATES, INC.

March 10, 2005

Revised August 21, 2006

GRAPHIC SCALE

60 0 30 60

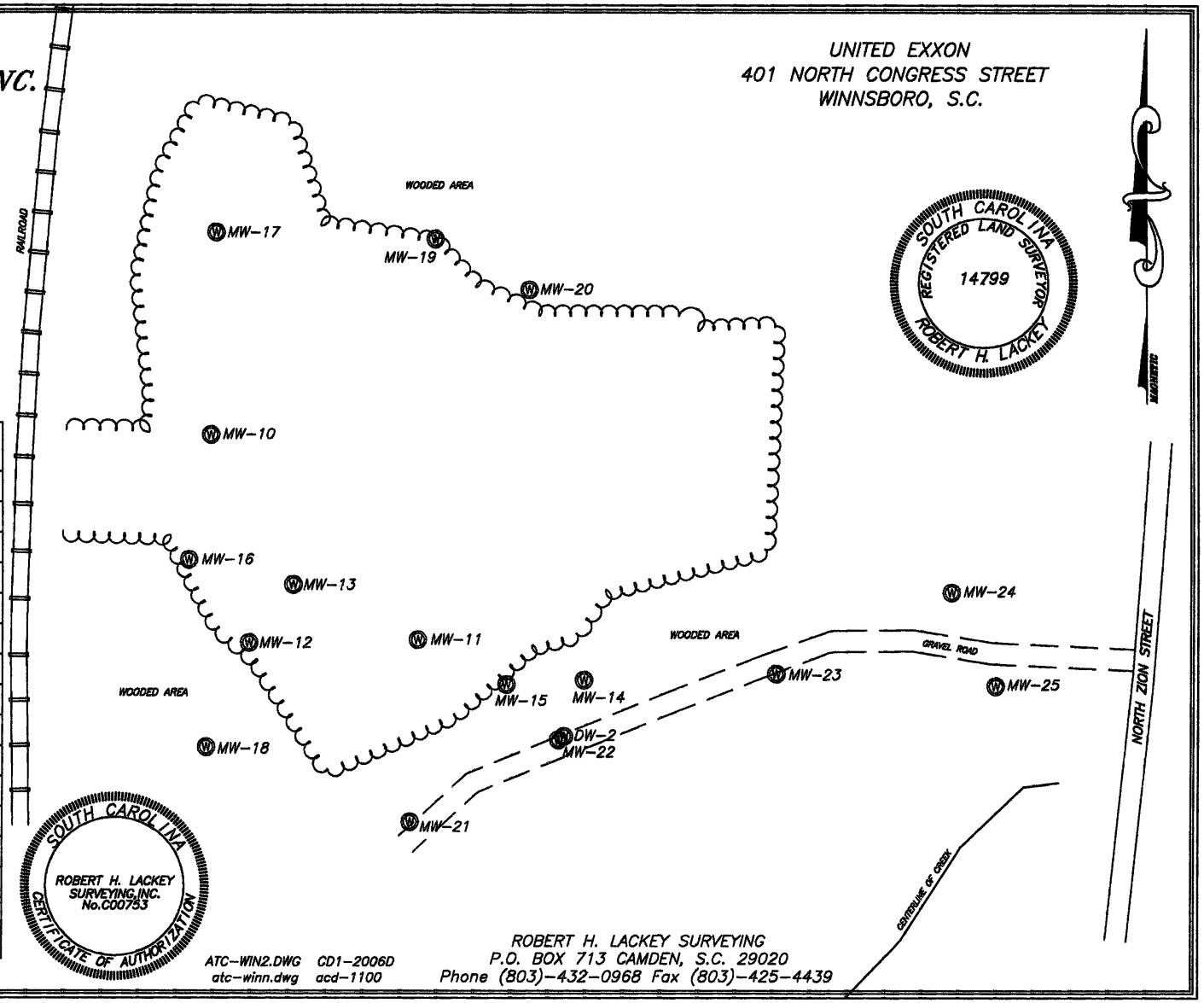
(IN FEET)

1 inch = 60 ft.

DW-1 MW-2

MONITOR WELL	RIM	TOP PVC CASING (2")
MW-2	98.60	98.17
MW-12	81.93	81.21
MW-13	81.56	81.02
MW-14	67.28(grd)	69.55
MW-15	68.91(grd)	72.06
MW-16	85.56	85.19
MW-17	85.95	85.66
MW-18	78.13(grd)	80.83
MW-19	79.53(grd)	82.27
MW-20	78.55(grd)	81.44
MW-21	64.93(grd)	67.40
MW-22	62.57(grd)	65.12
MW-23	60.65(grd)	62.15
MW-24	47.41(grd)	49.50
MW-25	39.17(grd)	41.63
DW-2	62.64(grd)	65.10

(grd) = Ground Elevation



ATC-WIN2.DWG CD1-2006D
atc-winn.dwg acd-1100

ROBERT H. LACKEY SURVEYING
P.O. BOX 713 CAMDEN, S.C. 29020
Phone (803)-432-0968 Fax (803)-425-4439

ATC ASSOCIATES INC.
Environmental, Geotechnical and Materials Engineers

400 Northeast Drive, Unit Q
Columbia, SC 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

May 31, 2006

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

RECEIVED
JUN 07 2006
UNDERGROUND STORAGE TANK PROGRAM

Re: SCDHEC Invoice
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Kershaw County
UST Permit #11760
Cost Agreement #26139

Dear Mr. Shrader:

Please find enclosed a copy of the SCDHEC invoice for the EFR event that was completed February 3, 2006, at the former United Exxon. The original invoice has been forwarded to Ms. Laura Jean Pace. On February 3, 2006, ATC Associates Inc. personnel oversaw the EFR event by Shamrock Environmental Corporation. Specifically, the EFR event was conducted for eight hours at Monitor Well MW-2, and approximately 197 gallons of liquid were removed from the well. A site map and the summary report for the EFR event is attached.

Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Bob Bolton
Environmental Division Manager

Fred Lyke, PG #1055
Branch Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

Attachments

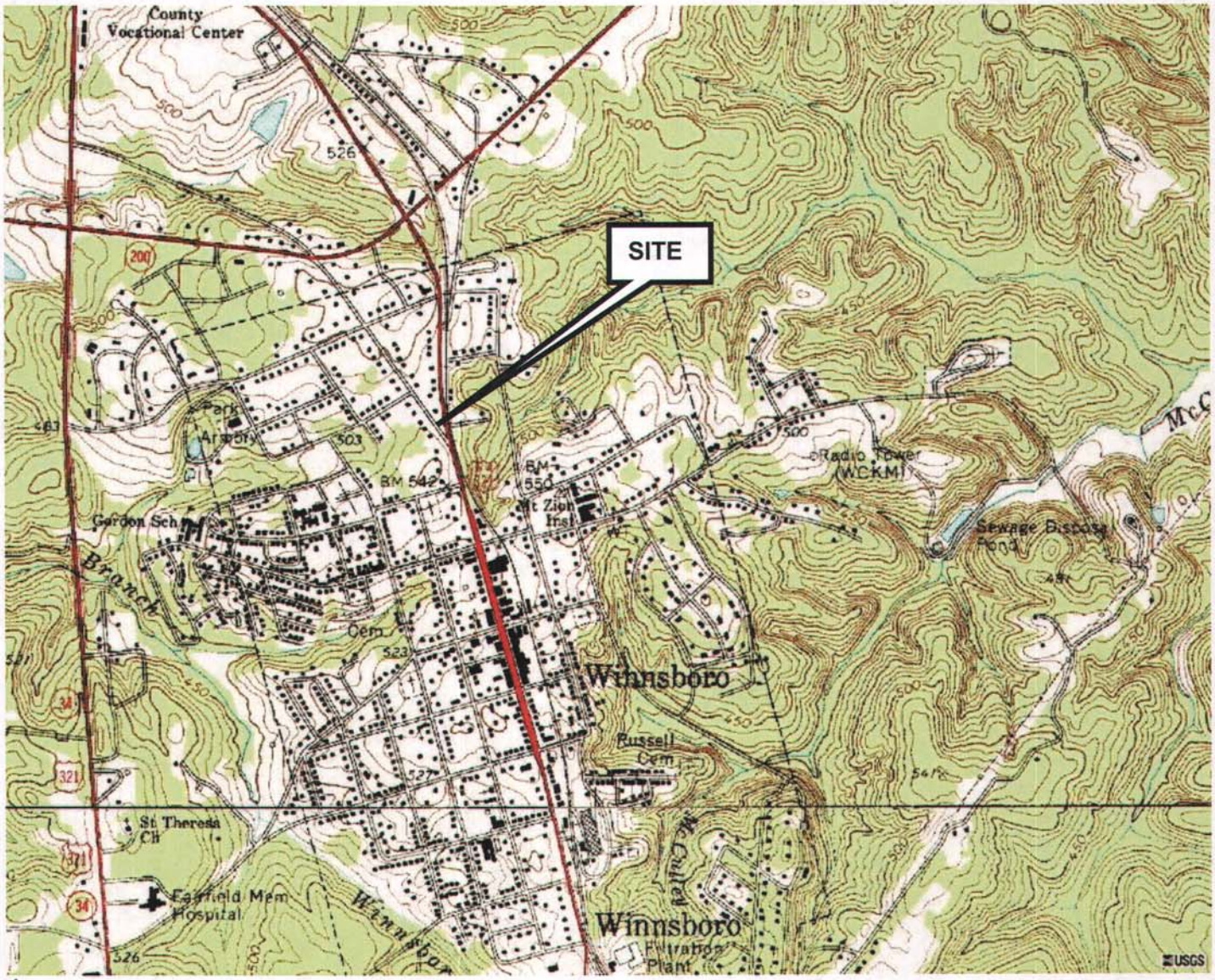
UST PROGRAM
DOCKETING # 33 Tech

FIGURES

RECEIVED

JUN 0 7 2006

UNDERGROUND STORAGE
TANK PROGRAM



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

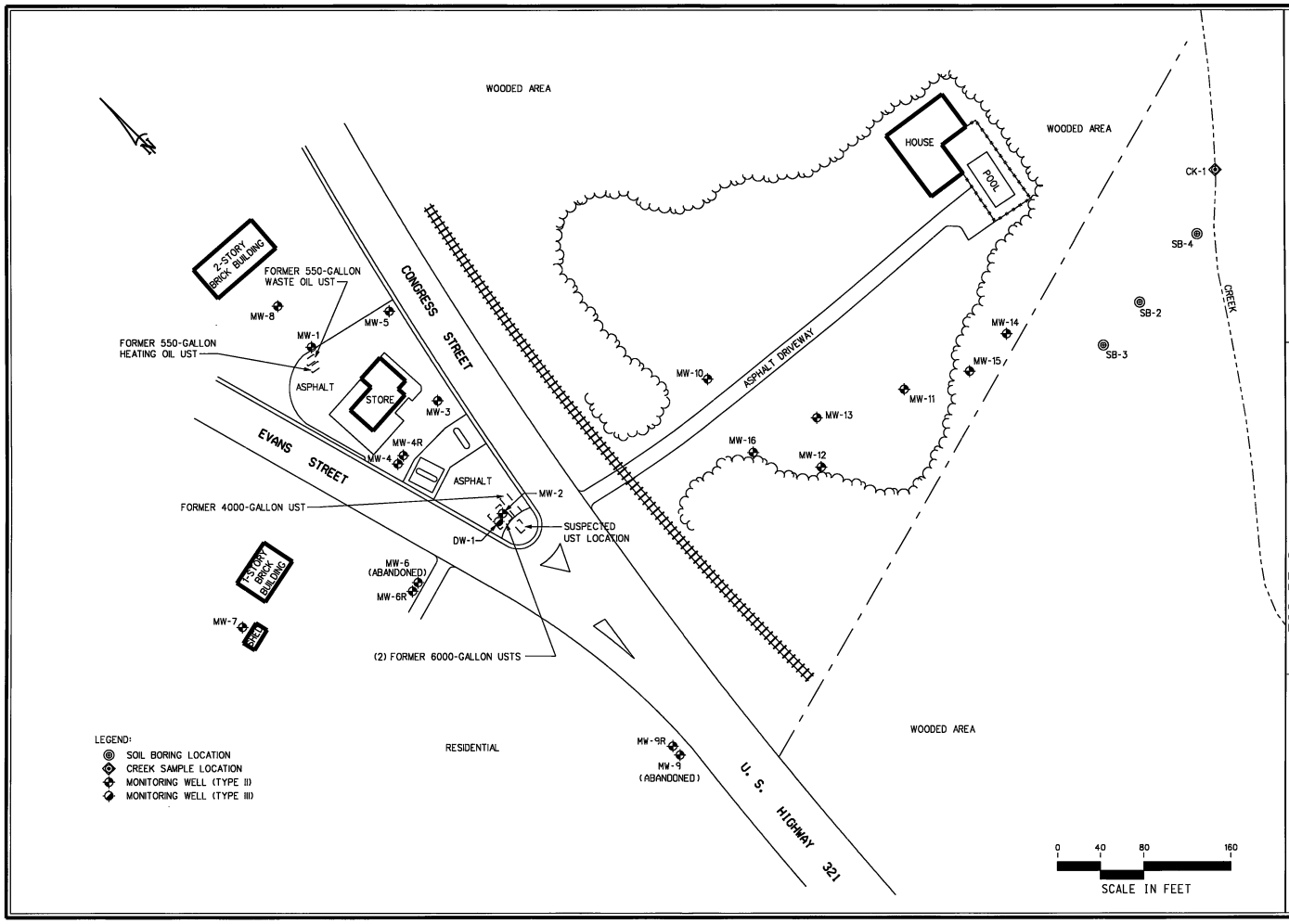
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 1,300'



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	08-03-2005	14.25384.0012

TITLE FIGURE 2
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

NOTES:

APPENDIX

Free Product Removal Report

SHAMROCK
ENVIRONMENTAL CORPORATION

March 16, 2006

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Event: February 3, 2006

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on February 3, 2006.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
February 3, 2006	197	2	2.360

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following table provides vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: February 3, 2006

Time	MW-3 (DTW)	MW-4R (DTW)
0700	44.09	48.30
0730	44.12	48.31
0800	44.14	48.32
0830	44.14	48.33
0900	44.14	48.33
0930	44.14	48.34
1000	44.14	48.34
1030	44.14	48.34
1100	44.14	48.34
1130	44.13	48.34
1200	44.12	48.33
1230	44.10	48.32
1300	44.09	48.30
1330	44.09	48.30
1400	44.09	48.30
1430	44.09	48.30
1500	44.09	48.30
DTW=Depth to Water in feet below well casing.		

The following table provide pre-recovery and post recovery depth to water and depth to product levels in various on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: February 3, 2006

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
DW-1	51.34	NFP	51.62	NFP
MW-1	42.85	NFP	42.85	NFP
MW-2	50.85	50.74	51.04	NFP
MW-3	44.09	NFP	44.09	NFP
MW-4R	48.30	NFP	48.30	NFP
MW-5	42.36	NFP	42.36	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: . . . . . .

Manifest Doc. No.: 02036

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: United Exxon, 401 N. Congress St., Winnsboro, SC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name:

8. US EPA ID Number: . . . . . .

B. Transporter's Phone:

9. Designated Facility Name and Site Address: **SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214**

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	Gasoline Mixture, 3, UN1203, PG II	X	001	TT	00197	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-06-0171

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Sheen

Profile Numbers

11A. 2005-0063-BG ~~2004-0774-BG~~

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS | Signature | Month 02 Day 03 Year 06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS | Signature | Month 02 Day 03 Year 06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

FACILITY

19. Discrepancy Indication Space

1AM01 1AM03 Zyl gs

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SBC

Printed/Typed Name | Signature | Month 02 Day 03 Year 06

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ORIGINAL - RETURN TO GENERATOR

Total Emissions

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 3, 2006

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	119.3	983	4	983	5227	0.00033	2.336	1.168
30	106.4	976	4	976	5190	0.00032	2.068	1.034
60	100.7	958	4	958	5094	0.00032	1.921	0.961
90	108.9	927	4	927	4930	0.00031	2.011	1.006
120	102.3	893	4	893	4749	0.00030	1.819	0.910
150	93.2	875	4	875	4653	0.00029	1.624	0.812
180	88.5	869	4	869	4621	0.00029	1.532	0.766
210	89.2	878	4	878	4669	0.00029	1.561	0.780
240	88.6	858	4	858	4563	0.00028	1.514	0.757
270	85.0	832	4	832	4424	0.00028	1.408	0.704
300	85.5	807	4	807	4291	0.00027	1.375	0.688
330	83.9	779	4	779	4143	0.00026	1.303	0.651
360	78.8	768	4	768	4084	0.00025	1.205	0.603
390	77.5	771	4	771	4100	0.00026	1.191	0.595
420	80.1	792	4	792	4212	0.00026	1.263	0.632
450	69.1	820	4	820	4361	0.00027	1.128	0.564
480	78.9	806	4	806	4286	0.00027	1.267	0.633
510					**Total emissions in pounds**			**13.263**
			Total Emissions Converted into Gallons:					**2.3598776**

Field Data Record

United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 3, 2006

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/3/2006	7:00	26.0	24.0	3090	6	160	23.1	0.769	119.3	MW-2
2/3/2006	7:30	26.0	24.0	2980	6	170	21.7	0.783	106.4	MW-2
2/3/2006	8:00	26.0	24.0	2810	6	185	22.3	0.777	100.7	MW-2
2/3/2006	8:30	26.0	24.0	3120	6	190	21.9	0.781	108.9	MW-2
2/3/2006	9:00	26.0	24.0	3160	6	190	20.3	0.797	102.3	MW-2
2/3/2006	9:30	26.0	24.0	3020	6	195	19.5	0.805	93.2	MW-2
2/3/2006	10:00	26.0	24.0	3080	6	200	18.3	0.817	88.5	MW-2
2/3/2006	10:30	26.0	24.0	2960	6	200	19.2	0.808	89.2	MW-2
2/3/2006	11:00	26.0	24.0	3050	6	200	18.5	0.815	88.6	MW-2
2/3/2006	11:30	26.0	24.0	2990	6	200	18.1	0.819	85.0	MW-2
2/3/2006	12:00	26.0	24.0	2830	6	205	19.4	0.806	85.5	MW-2
2/3/2006	12:30	26.0	24.0	2960	6	205	18.2	0.818	83.9	MW-2
2/3/2006	13:00	26.0	24.0	2840	6	205	17.8	0.822	78.8	MW-2
2/3/2006	13:30	26.0	24.0	2910	6	205	17.1	0.829	77.5	MW-2
2/3/2006	14:00	26.0	24.0	2860	6	210	18.1	0.819	80.1	MW-2
2/3/2006	14:30	26.0	24.0	2740	6	210	16.3	0.837	69.1	MW-2
2/3/2006	15:00	26.0	24.0	2850	6	210	17.9	0.821	78.9	MW-2

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED
AUG 0 9 2005
UNDERGROUND STORAGE
TANK PROGRAM

August 4, 2005

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Shrader:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

UST PROGRAM
DOCKETING # 34 Tech

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

GROUNDWATER ASSESSMENT REPORT

RECEIVED
AUG 0 9 2005
UNDERGROUND STORAGE TANK PROGRAM

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Environmental Division Manager

Frederick P. Lyke, P.G. #1055

August 4, 2005

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2.0 METHODOLOGY 1

3.0 GROUNDWATER ANALYTICAL RESULTS 4

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APPENDIX B	Free Product Recovery Summary Reports
APPENDIX C	Monitor Well Abandonment Forms
APPENDIX D	Soil Boring and Monitor Well Construction Logs
APPENDIX E	Groundwater Sampling Field Measurements
APPENDIX F	Laboratory Analytical Results and Chain-of-Custody
APPENDIX G	Disposal Manifests

1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated April 8, 2005. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Ground Penetrating Radar Activities

On April 21, 2005, ATC personnel oversaw the use of ground penetrating radar (GPR) by Reed Tech, Inc. personnel in the grassy area between Monitor Well MW-2 and the intersection of Evans Street and North Congress Street. GPR indicated the presence of a suspected underground storage tank approximately 4 feet wide and 8 feet long. By using a fiberglass utility probe, Reed Tech personnel determined that the object was buried approximately 21 inches below grade. Due to the close proximity of the facility's sign and a power pole, excavation of this object was not performed. Furthermore, when Keenan Energy Company, Inc. purchased the site in 1988 from Pope Oil Company, there was no disclosure of an underground storage tank in this location. Should SCDHEC determine that excavation to the top of this object is necessary, funding should be made available as this potential underground storage tank could be classified as an "orphaned" tank.

2.2 Free Product Recovery Events

On April 21, 2005, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. The free product removal event was conducted for eight hours, and approximately 227 gallons of liquid were removed from Monitor Well MW-2. On May 17, 2005, ATC personnel oversaw the free product removal activities

from Monitor Wells MW-10 and MW-16 by Shamrock Environmental Corporation. This free product removal event was conducted for eight hours, and approximately 321 gallons of liquid were removed from these wells. On May 24, 2005, ATC personnel oversaw the free product removal activities from Monitor Well MW-11 by Shamrock Environmental Corporation. This event was conducted for eight hours, and approximately 544 gallons of liquid were removed from this monitor well. A summary of the free product removal activities is presented in Appendix B.

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AUG 0 9 2005
UNDERGROUND STORAGE
TANK PROGRAM

2.3 Monitor Well Abandonments

On May 17, 2005, Mr. Mike McConahey of Geologic Explorations, Inc., a licensed South Carolina well driller, properly abandoned Monitor Wells MW-6 and MW-9. These wells had been dry for several years. The monitor well abandonment records are presented in Appendix C.

2.4 Monitor Well Installations

On May 17, 2005, ATC personnel oversaw the installation of one (1) Type II groundwater monitor well, identified as Monitor Well MW-4R, by Mr. Mark Gettys of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Gettys, using a truck mounted Foremost™ mobile rig, installed this well to an approximate depth of 60 feet. Specifically, Monitor Well MW-4R was installed adjacent to Monitor Well MW-4, which has been dry for several years.

On May 17-19, 2005, ATC personnel oversaw the installation of two (2) Type II groundwater monitor wells, identified as Monitor Wells MW-6R and MW-9R, and three soil borings, identified as SB-2, SB-3, and SB-4, by Mr. Mike McConahey of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Miller, using a track mounted Diedrich D-50 Turbo drill rig, installed each of these monitor wells to an approximate depth of 65 feet. Specifically, Monitor Well MW-6R was installed adjacent to the former location of Monitor Well MW-6, and Monitor Well MW-9R was installed adjacent to the former location of Monitor Well MW-9. Boring SB-2 was conducted to an approximate depth of 26 feet when refusal was encountered.

Borings SB-3 and SB-4 were conducted to approximate depths of 10 feet and 5 feet, respectively when refusal was encountered in each boring. After refusal was encountered in each boring without encountering groundwater, the boring was properly abandoned. Borings SB-2 and SB-3 were conducted southeast of Monitor Well MW-14 in the wooded parcel. Boring SB-4 was performed east-southeast of Monitor Well MW-14 in the wooded parcel and near the headwaters of McCulley Creek. Monitor well locations and soil boring locations are depicted in Figure 2.

The monitor wells are constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. Each Type II monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet above the top of the screen and followed by approximately 4 feet to 5 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. All monitor wells were completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. Following installations, each monitor well was developed with a clean, centrifugal pump to remove any fine materials that may impede the flow of groundwater into the well. Monitor well construction details and lithologic descriptions are presented in Appendix D.

2.5 Site Hydrogeology

During the June 27, 2005, gauging event, approximately 0.02 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Well MW-2. Groundwater flow direction is toward the south and east with a hydraulic gradient of 0.0272 feet per foot, as measured between Monitor Wells MW-1 and MW-14. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.6 Groundwater Sampling and Analysis

During the current assessment activities, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-3, MW-4R, MW-5, MW-6R, MW-7, MW-8, MW-9R, MW-10 through MW-15, and DW-1. Samples were not obtained from Monitor Well MW-2 due to the presence of LPH, and samples were not collected from Monitor Well MW-4 since this well was dry. A new, disposable, polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells MW-4R, MW-6R, MW-9R, and DW-1 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since the well screens properly bracketed the water table. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix E. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B and ethylene dibromide (EDB) by EPA method 504.1. All groundwater samples, except those from Monitor Well MW-7, were also analyzed for lead by EPA method 6010B. A lead sample was not collected from Monitor Well MW-7 due to the well going dry. Groundwater samples from Monitor Wells MW-1, MW-11, MW-13, MW-15, MW-16, and DW-1 were also analyzed for ferrous iron by EPA method HACH 8146, nitrates by EPA method 353.3, and sulfates by EPA method 375.4.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at Monitor Wells MW-3 and MW-10 through

MW-16. Toluene and xylenes concentrations were detected at Monitor Wells MW-10 through MW-13, MW-15, and MW-16. Ethylbenzene concentrations were detected at Monitor Wells MW-10 through MW-13 and MW-16. It should be noted that toluene, ethylbenzene, and xylenes concentrations may exist at Monitor Well MW-14; however, a high dilution factor caused results to be less than 100 μg/l for each constituent. MTBE concentrations were detected at Monitor Well MW-12. MTBE concentrations may exist at Monitor Wells MW-10, MW-11, MW-13, MW-14, and MW-16; however, high dilution factors at these wells caused results to be less than detection limits. Naphthalene concentrations were detected at Monitor Wells MW-11 through MW-16. It is likely that naphthalene concentrations exist at Monitor Well MW-10 due a high dilution factor that caused results to be less than detection limits. EDB concentrations were detected at Monitor Wells MW-11 and MW-14. Lead concentrations were detected at Monitor Wells MW-3, MW-4R, MW-5, MW-6R, MW-8, MW-9R, and MW-12 through MW-16. Ferrous iron concentrations were detected at Monitor Wells MW-1, MW-11, MW-133, MW-16, and DW-1. Nitrate concentrations were detected at Monitor Wells MW-1, MW-11, MW-15, and DW-1. Sulfate concentrations were detected at Monitor Well MW-1.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Monitor Wells MW-3 and MW-10 through MW-16. Toluene and ethylbenzene concentrations were detected greater than their respective RBSLs of 1000 μg/l at Monitor Wells MW-10, MW-11, MW-13, and MW-16. Xylenes concentrations were detected greater than its RBSL of 10000 μg/l at Monitor Wells MW-11, MW-13, and MW-16. MTBE concentrations were detected greater than its RBSL of 40 μg/l at Monitor Well MW-12. However, it is probable that MTBE concentrations may be greater than its RBSL at Monitor Wells MW-10, MW-11, MW-13, MW-14, and MW-16 due to high dilution factors at these locations which caused results to be less than detection limits. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Monitor Wells MW-11 through MW-16. It is probable that naphthalene concentrations exist greater than its RBSL at Monitor Well MW-10 due to a high dilution factor that caused results to be less than 1000 μg/l. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Wells MW-11 and MW-14. Lead concentrations were detected greater than its RBSL of 15 μg/l at Monitor Wells MW-3, MW-4R, MW-5, MW-6R, MW-8,

MW-9R, and MW-12 through MW-15. Groundwater laboratory analytical results are summarized in Table II and Figure 4. Laboratory analytical results and chain-of-custody are presented in Appendix F.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Free product recovery events were conducted April 21, 2005, at Monitor Well MW-2, May 17, 2005, at Monitor Wells MW-10 and MW-16, and May 24, 2005, at Monitor Well MW-11.
- Three soil borings were conducted during the current assessment activities while trying to install monitor wells in the wooded parcel between Monitor Well MW-14 and the headwaters of McCulley Creek. However, refusal was encountered at each boring location prior to encountering groundwater.
- Three Type II groundwater monitor wells, identified as MW-4R, MW-6R, and MW-9R, were installed during the current assessment activities as replacement wells for Monitor Wells MW-4, MW-6, and MW-9, respectively which have been dry for several years.
- Monitor Wells MW-6 and MW-9 were properly abandoned during the current assessment activities.
- Groundwater flow at the site is in a southern to eastern direction with a hydraulic gradient of 0.0272 feet per foot, as measured between Monitor Wells MW-1 and MW-14.
- Approximately 0.02 feet of liquid phase hydrocarbons were detected at Monitor Well MW-2 during the June 27, 2005, gauging event. This thickness is less than the 0.20 feet detected at this well in March 2005.
- Liquid phase hydrocarbons were non-detectable at Monitor Wells MW-10, MW-11, and MW-16 during the June 27, 2005, gauging event. Thicknesses in these wells were 0.42 feet, 0.15 feet, and 0.04 feet, respectively in March 2005.
- During the current assessment activities, a groundwater sample was not collected from the headwaters of McCulley Creek located hydraulically down-gradient from the site.
- Total BTEX concentrations have increased at Monitor Wells MW-3 and MW-13 since the previous sampling event of March 2005. Total BTEX concentrations have decreased

or remained below detection limits at the remaining sampled wells for the same period. MTBE concentrations have increased at Monitor Well MW-12 and MW-13 since the previous sampling event; however, MTBE concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. Naphthalene concentrations have increased at Monitor Well MW-12 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. EDB concentrations have increased at Monitor Well MW-14 since the previous sampling event; however, EDB concentrations have decreased or remained below detection limits at the remaining sampled monitor wells for the same period. It should be noted that comparisons can not be made regarding Monitor Wells MW-2, MW-10, MW-11, and MW-16 due to the current or past presence of liquid phase hydrocarbons at these wells. Comparisons can not be made regarding the newly installed wells, and comparisons can not be made regarding the wells that are dry.

Due to the presence of liquid phase hydrocarbon at Monitor Well MW-2 and a creek located in the hydraulically down-gradient direction from the site, ATC Associates Inc. recommends that the site undergo active corrective action.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., March 31, 2005, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	06/27/2005	96.54	41.56	0	48	15	54.98
MW-2	06/27/2005	98.17	50.12*	0.02	54	15	48.05
MW-3	06/27/2005	95.81	42.98	0	45	15	52.83
MW-4	06/27/2005	98.52	Dry	0	45	15	Not Applicable
MW-4R	06/27/2005	98.14	47.34	0	60	20	50.80
MW-5	06/27/2005	94.41	41.23	0	45	15	53.18
MW-6R	06/27/2005	103.91	55.67	0	65	20	48.24
MW-7	06/27/2005	102.34	50.68	0	52	15	51.66
MW-8	06/27/2005	97.63	41.43	0	45	15	56.20
MW-9R	06/27/2005	101.13	51.75	0	65	20	49.38
MW-10	06/27/2005	88.26	45.46	0	50	15	42.80
MW-11	06/27/2005	70.63	31.42	0	38	15	39.21
MW-12	06/27/2005	81.21	38.64	0	50	15	42.57
MW-13	06/27/2005	81.02	40.64	0	50	15	40.38
MW-14	06/27/2005	69.55	33.17	0	40	20	36.38
MW-15	06/27/2005	72.06	34.86	0	40	20	37.20
MW-16	06/27/2005	85.19	41.81	0	50	20	43.38
DW-1	06/27/2005	98.62	50.63	0	89	5	47.99

LPH = Liquid Phase Hydrocarbons
* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II
Groundwater Analytical Results (6/27/05)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)
Free Product Thickness	NA	None	0.02'	None	NA	None	None	None	None	None
Benzene	5	<5	NS	**110**	NS	<5	<5	<5	<5	<5
Toluene	1000	<5	NS	<5	NS	<5	<5	<5	<5	<5
Ethylbenzene	700	<5	NS	<5	NS	<5	<5	<5	<5	<5
Xylenes	10000	<5	NS	<5	NS	<5	<5	<5	<5	<5
Total BTEX	NA	<20	NA	<125	NA	<20	<20	<20	<20	<20
MTBE	40	<5	NS	<5	NS	<5	<5	<5	<5	<5
Naphthalene	25	<5	NS	<5	NS	<5	<5	<5	<5	<5
EDB	0.05	<0.019	NS	<0.019	NS	<0.019	<0.019	<0.019	<0.019	<0.019
Lead	15	<10	NS	**73.1**	NS	**733**	**22.4**	**116**	NS	**17**
Ferrous Iron	NA	0.12*	NS	NS	NS	NS	NS	NS	NS	NS
Nitrate	NA	1.35*	NS	NS	NS	NS	NS	NS	NS	NS
Sulfate	NA	18.2*	NS	NS	NS	NS	NS	NS	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l

TABLE II (continued)
Groundwater Analytical Results (6/27/05)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-9R (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	DW-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None
Benzene	5	<5	**6000**	**5900**	**8200**	**8600**	**4500**	**680**	**9400**	<5
Toluene	1000	<5	**2400**	**25000**	7.7	**61000**	<100	13	**28000**	<5
Ethylbenzene	700	<5	**1900**	**5100**	6.9	**2100**	<100	<5	**4800**	<5
Xylenes	10000	<5	3300	**31400**	52.2	**13000**	<100	9.4	**31700**	<5
Total BTEX	NA	<20	13600	67400	8266.8	84700	<4800	<707.4	73900	<20
MTBE	40	<5	**<1000**	**<2500**	**210**	**<250**	**<100**	<5	**<2500**	<5
Naphthalene	25	<5	**<1000**	**3000**	**410**	**620**	**170**	**63**	**3200**	<5
EDB	0.05	<0.019	<0.019	**0.34**	<0.019	<0.019	**0.11**	<0.019	<0.019	<0.019
Lead	15	**234**	<10	<10	**16.7**	**38.3**	**16.1**	**25.1**	11.9	<10
Ferrous Iron	NA	NS	NS	0.16*	NS	0.07*	NS	<0.05*	0.19*	0.07*
Nitrate	NA	NS	NS	0.0235*	NS	<0.01*	NS	0.0424*	<0.01*	3.71*
Sulfate	NA	NS	NS	<5*	NS	<5*	NS	<5*	<5*	<5*

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE III
Historical Groundwater Analytical Results, dated March 2005
Former United Exxon / Winnsboro, South Carolina

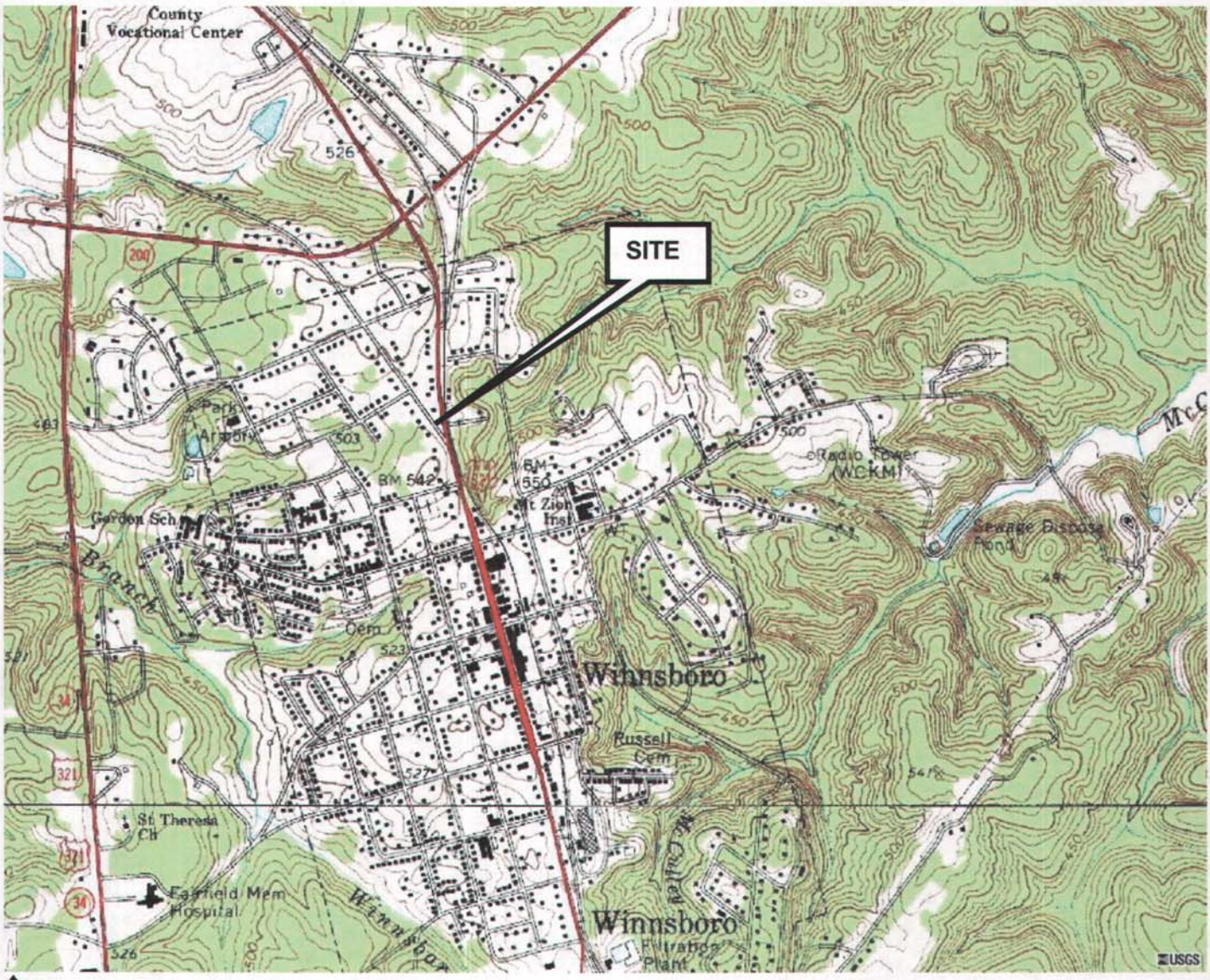
Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)
Free Product Thickness	NA	None	0.20'	None	NA	None	NA	None	None	NA
Benzene	5	<5	NS	**123**	NS	<5	NS	<5	<5	NS
Toluene	1000	<5	NS	10	NS	<5	NS	<5	<5	NS
Ethylbenzene	700	<5	NS	18	NS	<5	NS	<5	<5	NS
Xylenes	10000	15	NS	16	NS	<5	NS	<5	<5	NS
Total BTEX	NA	<30	NA	167	NA	<20	NA	<20	<20	NA
MTBE	40	<5	NS	<5	NS	<5	NS	<5	<5	NS
Naphthalene	25	**42**	NS	<5	NS	<5	NS	<5	<5	NS
EDB	0.05	<0.02	NS	<0.02	NS	<0.02	NS	<0.02	<0.02	NS

Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE III (continued) Historical Groundwater Analytical Results, dated March 2005 Former United Exxon / Winnsboro, South Carolina										
Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	0.42'	0.15'	None	None	None	None	0.04'	None	None
Benzene	5	NS	NS	**7680**	**13300**	**6390**	**11400**	NS	<5	<5
Toluene	1000	NS	NS	264	**33600**	<125	182	NS	8	<5
Ethylbenzene	700	NS	NS	52	**2880**	<125	<50	NS	<5	<5
Xylenes	10000	NS	NS	315	**16600**	<125	96	NS	<5	<5
Total BTEX	NA	NA	NA	8311	66380	<6765	<11728	NA	<23	<20
MTBE	40	NS	NS	**195**	**<100**	**<125**	**<50**	NS	<5	8
Naphthalene	25	NS	NS	**173**	**700**	**234**	**485**	NS	<5	<5
EDB	0.05	NS	NS	<0.02	**0.08**	<0.02	<0.02	NS	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

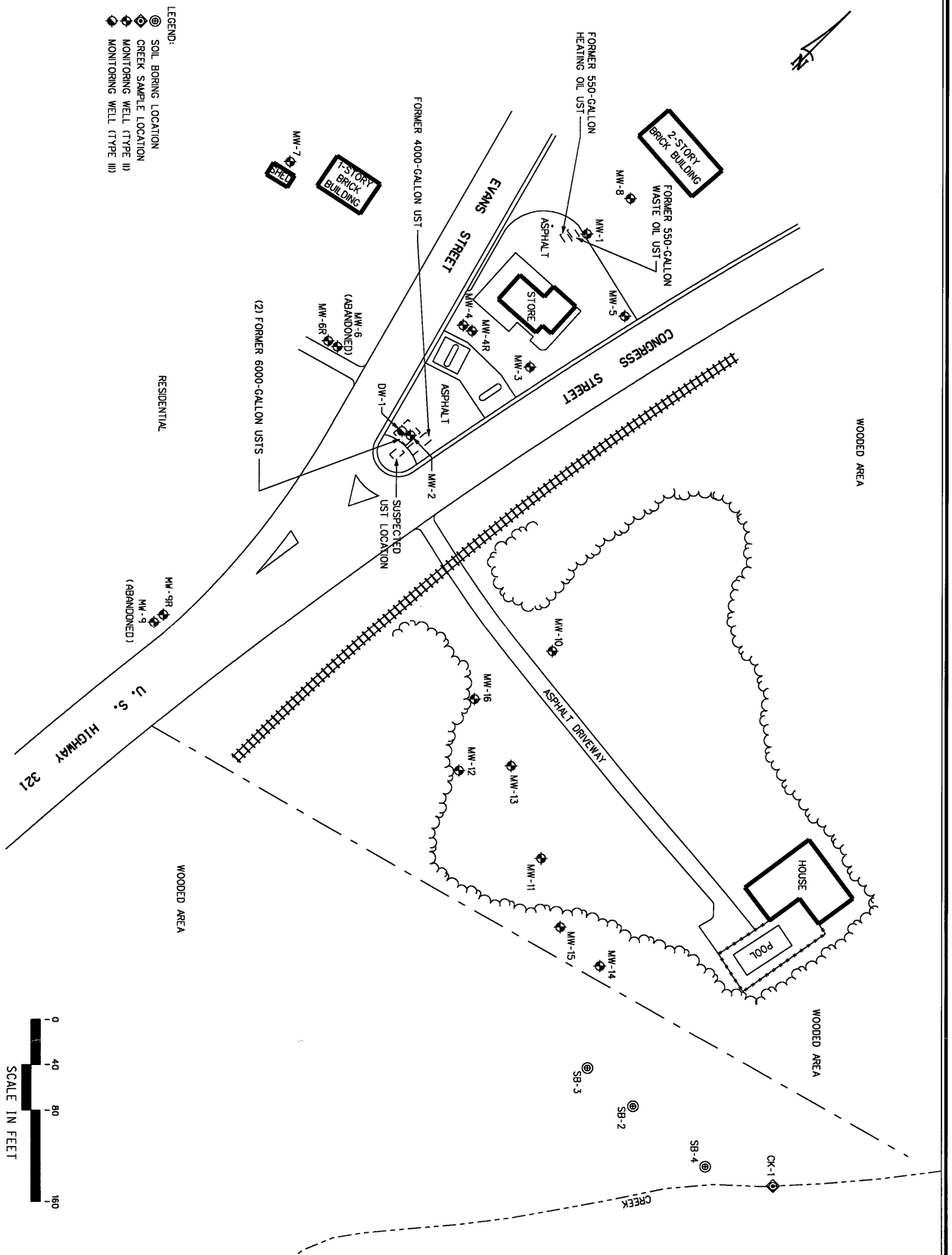
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 1,300'

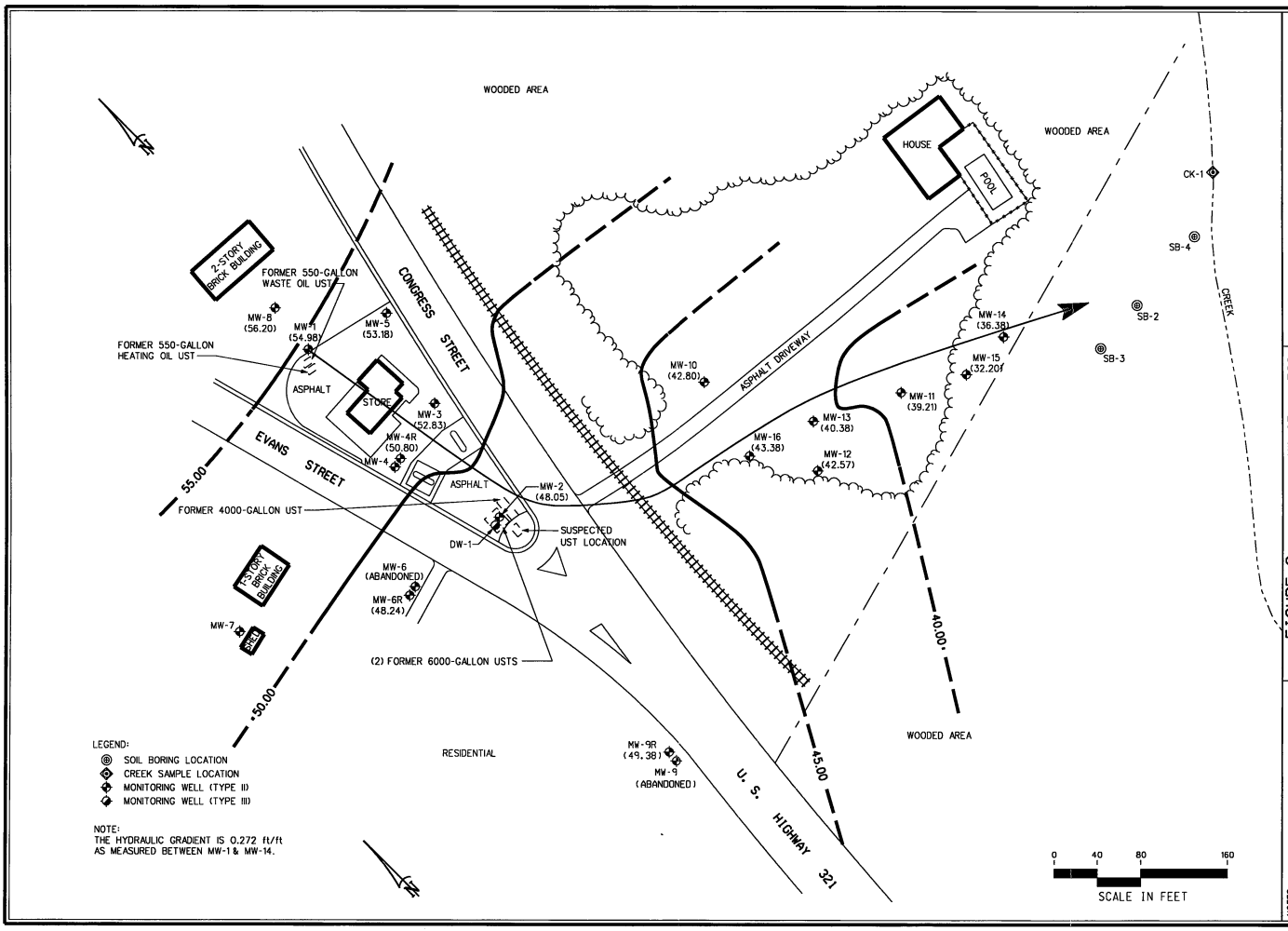


NOTES:

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	08-03-2005	14.25384.0012



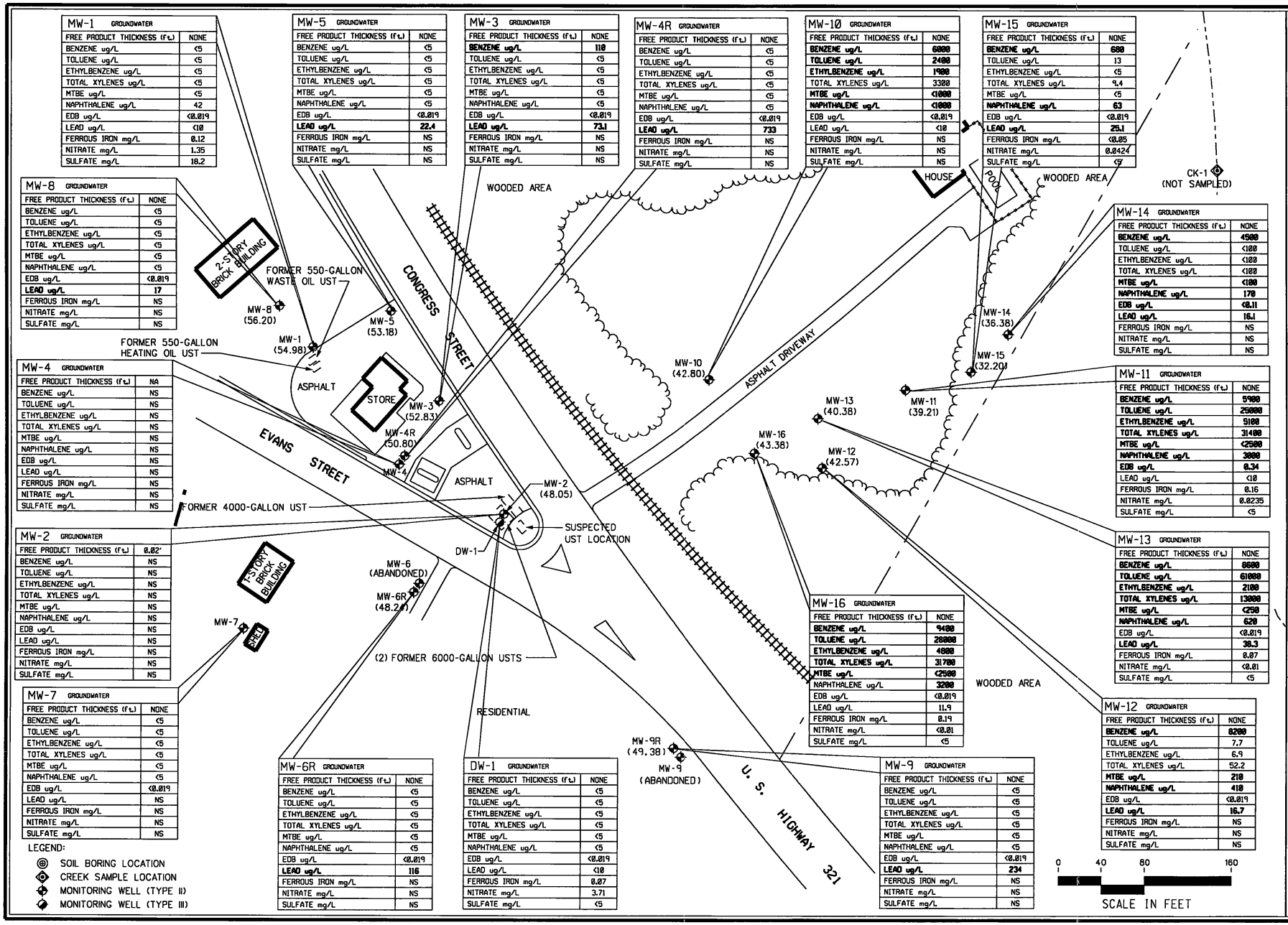
ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	08-03-2005	14.25384.0012

TITLE FIGURE 3
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA
UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

NOTES:



MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	42
EDB ug/L	<0.019
LEAD ug/L	<10
FERROUS IRON mg/L	0.12
NITRATE mg/L	1.35
SULFATE mg/L	18.2

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	22.4
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	110
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	73.1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-4R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	733
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	6000
TOLUENE ug/L	2400
ETHYLBENZENE ug/L	1900
TOTAL XYLENES ug/L	3300
MTBE ug/L	<1000
NAPHTHALENE ug/L	<1000
EDB ug/L	<0.019
LEAD ug/L	<10
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	680
TOLUENE ug/L	13
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	9.4
MTBE ug/L	<5
NAPHTHALENE ug/L	63
EDB ug/L	<0.019
LEAD ug/L	25.1
FERROUS IRON mg/L	<0.05
NITRATE mg/L	0.0424
SULFATE mg/L	<5

MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	17
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	4500
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<100
MTBE ug/L	<100
NAPHTHALENE ug/L	170
EDB ug/L	<0.11
LEAD ug/L	16.1
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-4 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	5900
TOLUENE ug/L	29000
ETHYLBENZENE ug/L	5100
TOTAL XYLENES ug/L	31400
MTBE ug/L	<2500
NAPHTHALENE ug/L	3000
EDB ug/L	0.34
LEAD ug/L	<10
FERROUS IRON mg/L	0.16
NITRATE mg/L	0.0235
SULFATE mg/L	<5

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.02'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	8600
TOLUENE ug/L	61000
ETHYLBENZENE ug/L	2100
TOTAL XYLENES ug/L	13000
MTBE ug/L	<250
NAPHTHALENE ug/L	620
EDB ug/L	<0.019
LEAD ug/L	38.3
FERROUS IRON mg/L	0.07
NITRATE mg/L	<0.01
SULFATE mg/L	<5

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	9400
TOLUENE ug/L	28000
ETHYLBENZENE ug/L	4800
TOTAL XYLENES ug/L	31700
MTBE ug/L	<2500
NAPHTHALENE ug/L	3200
EDB ug/L	<0.019
LEAD ug/L	11.9
FERROUS IRON mg/L	0.19
NITRATE mg/L	<0.01
SULFATE mg/L	<5

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	8200
TOLUENE ug/L	7.7
ETHYLBENZENE ug/L	6.9
TOTAL XYLENES ug/L	52.2
MTBE ug/L	210
NAPHTHALENE ug/L	410
EDB ug/L	<0.019
LEAD ug/L	16.7
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

MW-6R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	116
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	<10
FERROUS IRON mg/L	0.07
NITRATE mg/L	3.71
SULFATE mg/L	<5

MW-9 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.019
LEAD ug/L	234
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS

NOTES:

TITLE FIGURE 4 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	08-03-2005	14.25384.0012

APPENDIX A

SCDHEC Correspondence

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

APR 08 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #24340 and 24341; MWA #UMW-19129
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received April 4, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced plan submitted by ATC Associates, Inc.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Characterization of all exposure pathways should be completed using field screening points. Based on the field screening results, up to three monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for these new wells and for replacement of monitoring wells MW-4, MW-6 and MW-9 that were dry during the latest sampling event. A copy of the approval form is enclosed for your records. Please contact the Program prior to well installation for concurrence regarding the final well locations for the three new wells. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. Groundwater samples from monitoring wells MW-1, MW-2, MW-11, MW-13, MW-15, MW-16, DW-1 and the three new wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated June 1, 2004. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreement numbers 24340 and 24341 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work plus the use of ground penetrating radar in the vicinity of the intersection of Congress and Evans Streets to see if an additional UST is present. If an additional UST(s) is located, you will be responsible for registration and possible abandonment of this UST in accordance with UST Regulations. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air

gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Program grants pre-approval for transportation of up to 3,000 gallons of groundwater from the referenced site to a permitted treatment facility. The contaminated groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 24340 and 24341. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with original MWA and ACA)
Technical (with MWA)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Date of Issue: February 1, 2005 Approval No.: UMW-19129

Approval is hereby granted to:	ATC Associates, Incorporated
On behalf of:	Keenan Energy Incorporated
UST Permit #:	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to 120 feet of screening (six shallow and one deep) groundwater monitoring wells in accordance with the construction plans and technical specifications outlined in the South Carolina Well Standards R. 61-71. The wells are to be constructed within the surficial aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. **A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Arthur Shrader at (803) 896-6669 or shradeaa@dhec.sc.gov *and* Mike Radford (District Contact) at (803) 896-0620 or radforrm@dhec.sc.gov.**
5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) in the technical report.
6. Monitoring wells and temporary monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells and temporary monitoring wells will be abandoned by or under the direct supervision of a licensed well driller certified by the State of South Carolina. Temporary monitoring wells shall not remain in place for longer than 30 days from the date of installation. Monitoring wells may be abandoned only upon concurrence by this Division.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

APPENDIX B

Free Product Recovery Summary Reports

SHAMROCK
ENVIRONMENTAL CORPORATION

June 20, 2005

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Events
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Events: April 21, 2005; May 17, 2005; May 24, 2005

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents three EFR events recently performed at the above referenced site. The events were conducted on April 21, 2005, May 17, 2005 and May 24, 2005.

The following table provides the total volume of fluids recovered during the events, the amount of separated free product recovered during each event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
April 21, 2005	227	5	3.134
May 17, 2005	321	5	0.861
May 24, 2005	544	5	0.418

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following tables provide vacuum influence in terms of water level draw-down in specific on-site monitoring wells. The product/water levels were determined using an interface probe.

Influence Data Table
Date of Event: April 21, 2005

Time	MW-3 (DTW)
0700	43.29
0730	43.29
0800	43.30
0830	43.30
0900	43.30
0930	43.30
1000	43.30
1030	43.30
1100	43.30
1130	43.30
1200	43.30
1230	43.30
1300	43.30
1330	43.30
1400	43.30
1430	43.30
1500	43.30
DTW=Depth to Water in feet below well casing.	

Influence Data Table
Date of Event: May 17, 2005

Time	MW-12 (DTW)	MW-13 (DTW)
0830	38.83	40.68
0900	38.88	40.68
0930	38.88	40.70
1000	38.91	40.70
1030	38.92	40.70
1100	38.92	40.70
1130	38.92	40.71
1200	38.92	40.71
1230	38.92	40.71
1300	38.92	40.71
1330	38.92	40.71
1400	38.92	40.71
1430	38.92	40.71
1500	38.92	40.71
1530	38.92	40.71
1600	38.92	40.71
1630	38.92	40.71
DTW=Depth to Water in feet below well casing.		

Influence Data Table
Date of Event: May 24, 2005

Time	MW-13 (DTW)	MW-15 (DTW)
0830	40.64	34.83
0900	40.64	34.83
0930	40.65	34.83
1000	40.65	34.83
1030	40.65	34.85
1100	40.68	34.86
1130	40.68	34.86
1200	40.68	34.86
1230	40.69	34.87
1300	40.71	34.89
1330	40.71	34.89
1400	40.73	34.90
1430	40.73	34.90
1500	40.73	34.91
1530	40.74	34.91
1600	40.74	34.91
1630	40.74	34.92
DTW=Depth to Water in feet below well casing.		

The following tables provide pre-recovery and post recovery depth to water and depth to product levels in various on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: April 21, 2005

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	41.89	NFP	41.89	NFP
DW-1	51.33	NFP	51.49	NFP
MW-2	50.69	50.53	51.98	NFP
MW-3	43.29	NFP	43.30	NFP
MW-4	DRY	DRY	DRY	DRY
MW-5	41.49	NFP	41.49	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Pre/Post Recovery Product/Water Levels
Date of Event: May 17, 2005

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	46.09	45.72	46.90	NFP
MW-11	31.54	31.46	31.50	31.43
MW-12	38.85	NFP	38.92	NFP
MW-13	40.68	NFP	40.71	NFP
MW-14	33.13	NFP	33.10	NFP
MW-15	36.85	NFP	34.80	NFP
MW-16	42.29	42.28	44.78	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Pre/Post Recovery Product/Water Levels
Date of Event: May 24, 2005

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-10	45.52	45.72	45.50	NFP
MW-11	31.45	31.39	35.38	NFP
MW-12	38.82	NFP	38.82	NFP
MW-13	40.64	NFP	40.74	NFP
MW-14	33.09	NFP	33.09	NFP
MW-15	34.83	NFP	34.92	NFP
MW-16	42.23	NFP	42.23	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 04215

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: UNITED EXXON, 401 N. CONGRESS ST., WINNSBORO, NC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP., 6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	GASOLINE MIXTURE, 3, UN1203, PG II	001	TT	00227	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-05-2564

ERG # 128

5 Mson 5gal

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063.BG

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS — Signature — Month Day Year: 04 21 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS — Signature — Month Day Year: 04 21 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

1mo1 1mo3

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name — Signature — Month Day Year: 04 22 05

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 05175

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: UNITED EXXON, 401 N. CONGRESS ST, WINNSBORO, SC 29180

4. Generator's Phone: (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP., 6106 CORPORATE PARK DR., BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE MIXTURE, 3, UN1203, PG II	X	001	TT	0032	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-05-2700 EGR #128 SHEEN

Power Unit #: VT1 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0215-BG

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS — Signature — Month 05 Day 17 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS — Signature — Month 05 Day 17 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

Item 1 Item B

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SEC

Printed/Typed Name — Signature — Month 05 Day 17 Year 05

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 05245

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address: UNITED EXXON, 401 N. CONGRESS RD, WINNSBORO, SC 29180

4. Generator's Phone: (803) 735-0003

5. Transporter 1 Company Name: **SHAMROCK ENVIRONMENTAL CORP.**

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: **336-375-1989**

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: **SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214**

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE MIXTURE, 3, UN1203, PG II	X	001	TT	00544	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-05-2732 Sharon

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 2005-0063-BG

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS | Signature | Month 05 Day 24 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS | Signature | Month 05 Day 24 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

1 mol 1 mB 3 gl gs

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SEC

Printed/Typed Name: G. Glim | Signature | Month 05 Day 25 Year 05

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ORIGINAL - RETURN TO GENERATOR

Total Emissions
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: April 21, 2005

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	112.3	1,154	4	1154	6137	0.00038	2.582	1.291
30	112.7	1,336	4	1336	7105	0.00044	3.000	1.500
60	103.1	1,337	4	1337	7110	0.00044	2.746	1.373
90	104.7	1,298	4	1298	6903	0.00043	2.706	1.353
120	99.3	1,274	4	1274	6775	0.00042	2.519	1.260
150	87.5	1,214	4	1214	6456	0.00040	2.116	1.058
180	87.4	1,137	4	1137	6046	0.00038	1.980	0.990
210	80.1	1,122	4	1122	5967	0.00037	1.790	0.895
240	77.1	1,128	4	1128	5999	0.00037	1.732	0.866
270	72.4	1,095	4	1095	5823	0.00036	1.579	0.790
300	60.3	1,332	4	1332	7083	0.00044	1.599	0.799
330	75.0	1,194	4	1194	6349	0.00040	1.783	0.891
360	79.2	1,205	4	1205	6408	0.00040	1.902	0.951
390	78.0	1,183	4	1183	6291	0.00039	1.837	0.918
420	79.7	1,193	4	1193	6344	0.00040	1.895	0.947
450	80.1	1,146	4	1146	6094	0.00038	1.830	0.915
480	71.1	1,152	4	1152	6126	0.00038	1.632	0.816
510					**Total emissions in pounds**			**17.613**
			Total Emissions Converted into Gallons:					**3.1340511**

Field Data Record
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: April 21, 2005

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
4/21/2005	7:00	26.0	24.0	3380	6	145	19.4	0.806	112.3	MW-2
4/21/2005	7:30	26.0	24.0	3290	6	160	20.5	0.795	112.7	MW-2
4/21/2005	8:00	26.0	24.0	3150	6	170	19.9	0.801	103.1	MW-2
4/21/2005	8:30	25.0	24.0	3230	6	170	19.7	0.803	104.7	MW-2
4/21/2005	9:00	25.0	24.0	3120	6	175	19.5	0.805	99.3	MW-2
4/21/2005	9:30	25.0	24.0	2970	6	180	18.2	0.818	87.5	MW-2
4/21/2005	10:00	25.0	24.0	3220	6	185	16.9	0.831	87.4	MW-2
4/21/2005	10:30	25.0	24.0	3160	6	190	15.9	0.841	80.1	MW-2
4/21/2005	11:00	25.0	24.0	3270	6	195	14.9	0.851	77.1	MW-2
4/21/2005	11:30	25.0	24.0	3180	6	200	14.5	0.855	72.4	MW-2
4/21/2005	12:00	25.0	24.0	3120	6	200	12.3	0.877	60.3	MW-2
4/21/2005	12:30	25.0	24.0	3210	6	210	15.1	0.849	75.0	MW-2
4/21/2005	13:00	25.0	24.0	3050	6	210	16.8	0.832	79.2	MW-2
4/21/2005	13:30	25.0	24.0	3190	6	210	15.8	0.842	78.0	MW-2
4/21/2005	14:00	25.0	24.0	2980	6	210	17.3	0.827	79.7	MW-2
4/21/2005	14:30	25.0	24.0	3160	6	210	16.4	0.836	80.1	MW-2
4/21/2005	15:00	25.0	24.0	2910	6	210	15.8	0.842	71.1	MW-2

Total Emissions
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: May 17, 2005

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	116.4	560	4	560	2978	0.00019	1.298	0.649
30	89.9	420	4	420	2233	0.00014	0.752	0.376
60	89.4	403	4	403	2143	0.00013	0.718	0.359
90	89.6	378	4	378	2010	0.00013	0.675	0.338
120	79.5	370	4	370	1968	0.00012	0.586	0.293
150	77.9	305	4	305	1622	0.00010	0.473	0.237
180	76.9	318	4	318	1691	0.00011	0.487	0.244
210	78.4	299	4	299	1590	0.00010	0.467	0.233
240	72.4	283	4	283	1505	0.00009	0.408	0.204
270	78.0	268	4	268	1425	0.00009	0.416	0.208
300	83.1	298	4	298	1585	0.00010	0.493	0.247
330	87.5	289	4	289	1537	0.00010	0.504	0.252
360	84.7	287	4	287	1526	0.00010	0.484	0.242
390	80.5	302	4	302	1606	0.00010	0.484	0.242
420	82.8	299	4	299	1590	0.00010	0.493	0.247
450	85.2	283	4	283	1505	0.00009	0.480	0.240
480	85.9	264	4	264	1404	0.00009	0.452	0.226
510					**Total emissions in pounds**			**4.836**
			Total Emissions Converted into Gallons:					**0.860524**

Field Data Record
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: May 17, 2005

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-10 (inches of Hg)	Well-Head -Vacuum-MW-16 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
5/17/2005	8:30	26.0	25.0	23.0	3180	6	160	21.9	0.781	116.4	MW-10; MW-16
5/17/2005	9:00	26.0	25.0	23.0	3050	6	180	18.2	0.818	89.9	MW-10; MW-16
5/17/2005	9:30	26.0	25.0	23.0	3015	6	190	18.6	0.814	89.4	MW-10; MW-16
5/17/2005	10:00	26.0	25.0	23.0	3190	6	200	17.9	0.821	89.6	MW-10; MW-16
5/17/2005	10:30	26.0	24.0	22.0	2910	6	200	17.4	0.826	79.5	MW-10; MW-16
5/17/2005	11:00	25.0	24.0	22.0	3045	6	200	16.3	0.837	77.9	MW-10; MW-16
5/17/2005	11:30	26.0	24.0	22.0	3025	6	200	16.2	0.838	76.9	MW-10; MW-16
5/17/2005	12:00	26.0	24.0	22.0	3160	6	200	15.8	0.842	78.4	MW-10; MW-16
5/17/2005	12:30	26.0	24.0	22.0	2975	6	200	15.5	0.845	72.4	MW-10; MW-16
5/17/2005	13:00	25.0	24.0	22.0	2980	6	205	16.8	0.832	78.0	MW-10; MW-16
5/17/2005	13:30	25.0	24.0	22.0	2925	6	200	18.1	0.819	83.1	MW-10; MW-16
5/17/2005	14:00	25.0	24.0	22.0	3020	6	205	18.6	0.814	87.5	MW-10; MW-16
5/17/2005	14:30	25.0	24.0	22.0	3015	6	200	17.9	0.821	84.7	MW-10; MW-16
5/17/2005	15:00	25.0	24.0	22.0	2965	6	200	17.3	0.827	80.5	MW-10; MW-16
5/17/2005	15:30	25.0	24.0	22.0	2915	6	200	18.1	0.819	82.8	MW-10; MW-16
5/17/2005	16:00	25.0	24.0	22.0	3030	6	200	17.9	0.821	85.2	MW-10; MW-16
5/17/2005	16:30	25.0	22.0	22.0	2990	6	200	18.3	0.817	85.9	MW-10; MW-16

Total Emissions
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: May 24, 2005

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	123.0	55	4	55	292	0.00002	0.135	0.067
30	129.4	48	4	48	255	0.00002	0.124	0.062
60	131.2	111	4	111	590	0.00004	0.290	0.145
90	120.0	123	4	123	654	0.00004	0.294	0.147
120	117.9	145	4	145	771	0.00005	0.341	0.170
150	108.4	131	4	131	697	0.00004	0.283	0.141
180	104.0	135	4	135	718	0.00004	0.280	0.140
210	107.4	138	4	138	734	0.00005	0.295	0.148
240	104.3	141	4	141	750	0.00005	0.293	0.147
270	102.0	145	4	145	771	0.00005	0.295	0.147
300	99.5	148	4	148	787	0.00005	0.293	0.147
330	100.1	146	4	146	776	0.00005	0.291	0.146
360	103.3	142	4	142	755	0.00005	0.292	0.146
390	98.6	147	4	147	782	0.00005	0.289	0.144
420	101.8	152	4	152	808	0.00005	0.308	0.154
450	97.6	152	4	152	808	0.00005	0.296	0.148
480	102.0	147	4	147	782	0.00005	0.299	0.149
510					**Total emissions in pounds**			**2.348**
			Total Emissions Converted into Gallons:					**0.4178234**

Field Data Record
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: May 24, 2005

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
5/24/2005	8:30	27.0	24.0	3590	6	190	21.5	0.785	123.0	MW-11
5/24/2005	9:00	27.0	24.0	3870	6	200	21.3	0.787	129.4	MW-11
5/24/2005	9:30	26.0	24.0	3990	6	205	21.1	0.789	131.2	MW-11
5/24/2005	10:00	26.0	23.0	3950	6	205	19.5	0.805	120.0	MW-11
5/24/2005	10:30	26.0	23.0	3930	6	210	19.4	0.806	117.9	MW-11
5/24/2005	11:00	27.0	23.0	3990	6	215	17.7	0.823	108.4	MW-11
5/24/2005	11:30	27.0	23.0	3870	6	215	17.5	0.825	104.0	MW-11
5/24/2005	12:00	27.0	23.0	3910	6	215	17.9	0.821	107.4	MW-11
5/24/2005	12:30	27.0	23.0	3890	6	220	17.6	0.824	104.3	MW-11
5/24/2005	13:00	27.0	23.0	3915	6	220	17.1	0.829	102.0	MW-11
5/24/2005	13:30	27.0	23.0	3865	6	220	16.9	0.831	99.5	MW-11
5/24/2005	14:00	27.0	23.0	3980	6	220	16.5	0.835	100.1	MW-11
5/24/2005	14:30	27.0	23.0	3895	6	220	17.4	0.826	103.3	MW-11
5/24/2005	15:00	27.0	23.0	3970	6	220	16.3	0.837	98.6	MW-11
5/24/2005	15:30	27.0	23.0	3860	6	220	17.3	0.827	101.8	MW-11
5/24/2005	16:00	27.0	23.0	3790	6	220	16.9	0.831	97.6	MW-11
5/24/2005	16:30	27.0	23.0	3825	6	220	17.5	0.825	102.0	MW-11

APPENDIX C

Monitor Well Abandonment Forms

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:

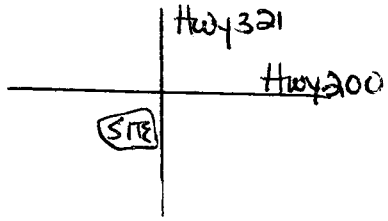
Latitude: Longitude:

Distance and direction from Rand Intersections:

401 N. CONGRESS STREET

Street Address & City of Well Location: WINNSBORO

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
WELL ABANDONED BY		
GEOLOGIC EXPLORATION, INC.		
ON 05/18/05 VIA TREMIE PIPE WITH		
PORTLAND BENTONITE SLURRY.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-6

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230
Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC 29230
Telephone No.: 866-735-0003

5. WELL DEPTH: (completed) 65.0 Ft. Date Started: 05/18/05 Date Completed: 05/18/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☐ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
2 In. to 65.0 Ft. depth
In. to Ft. depth
Height: Above/Below Surface: Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type Diam.:
Slot/Gauge: Length:
Set Ft. and Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☐ No

Static Water Level: Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☐ Yes ☐ No
Installed from Ft. to F
Effective size: Uniformity Coefficient

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 65.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 06/08/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Authorized Representative Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD System Name:

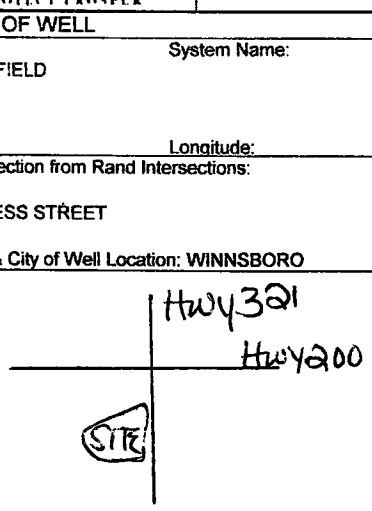
Latitude: Longitude:

Distance and direction from Rand Intersections:

401 N. CONGRESS STREET

Street Address & City of Well Location: WINNSBORO

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
WELL ABANDONED BY		
GEOLOGIC EXPLORATION, INC.		
ON 05/18/05 VIA TREMIE PIPE WITH		
PORTLAND BENTONITE SLURRY.		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-9

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC 29230

Telephone No.: 866-735-0003

5. WELL DEPTH: (completed) 60.0 Ft. Date Started: 05/18/05 Date Completed: 05/18/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☐ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
2 In. to 60.0 Ft. depth
In. to Ft. depth

Height: Above/Below Surface: Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type Diam.:
Slot/Gauge: Length:
Set Ft. and Ft.
Ft. and Ft.
Sieve Analysis ☐ Yes (please enclose ☐ No

NOTE: MULTIPLE SCREENS USE SECOND SHEET

Static Water Level: Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☐ Yes ☐ No
Installed from Ft. to F
Effective size: Uniformity Coefficient

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 60.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 06/08/05

Address: 176 Commerce Blvd. Statesville, NC 28625

Signed: Authorized Representative Cert. No.: A 01276

APPENDIX D

Soil Boring and Monitor Well Construction Logs

Borehole SB-2 **Sampling Date: 05/19/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	0.0	Dark brown, fine grained silt	Dry; no petroleum odor
10	0.0	Tan, very fine grained silt	Dry; no petroleum odor
15	0.0	Brown, fine grained silt	Dry; no petroleum odor
20	0.0	Dark brown, fine grained silt	Dry; no petroleum odor
25	0.0	Pinkish-gray granite rock pieces	Dry; no petroleum odor
26	Not Applicable	REFUSAL	Not Applicable

Borehole SB-3 **Sampling Date: 05/19/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	0.0	Tan, fine grained silt	Dry; no petroleum odor
10	Not Applicable	Pinkish-gray granite rock pieces REFUSAL	Not Applicable

Borehole SB-4 **Sampling Date: 05/19/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	Not Applicable	Pinkish-gray granite rock pieces REFUSAL	Not Applicable

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-4R
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	5/17/2005
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mark K. Gettys
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Bob Bolton	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			N/A		5.0	Red - brown, very stiff clay
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			N/A		10.0	Orange, medium soft to medium clayey silt with petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			N/A		15.0	Tan, medium soft silty loam
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-4R

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			N/A		20.0	Tan, medium soft silty loam
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			N/A		25.0	Tan, medium soft silty loam
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			N/A		30.0	Tan, medium stiff silty clay
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			N/A		35.0	Tan, medium stiff silty clay; damp
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			N/A		40.0	Tan, medium stiff silty clay, damp; petro odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-4R

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			N/A		45.0	Tan, medium stiff silty clay, damp; petro odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	Water Level at 47.34 feet on June 27, 2005
					48.0	
					48.5	
					49.0	
					49.5	
50			N/A		50.0	Tan, medium stiff silty clay, damp; petro odor
					50.5	
					51.0	
					51.5	
					52.0	
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			N/A		55.0	Brown, medium soft silty clay; moist; rock lense @ 54'; some petro odor
					55.5	
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
					60.0	Termination of Boring at 60 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

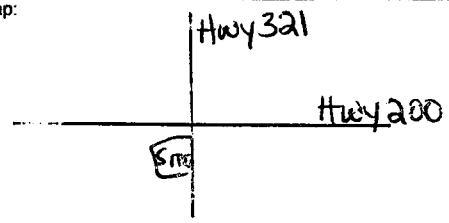
VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:
Latitude:
Longitude:
Distance and direction from Rand Intersections:
401 N. CONGRESS STREET
Street Address & City of Well Location: Winnsboro

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
ASPHALT/STONE	1.0	1.0
BROWN/RED SANDY CLAYEY SILT	3.0	4.0
TAN/ORANGE SANDY SILT	26.0	30.0
TAN/WHITE FINE SANDY SILT	30.0	60.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-4R BENTONITE SEAL FROM 34.0 TO 38.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230
Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC29203
Telephone No.: 866-735-0003

5. WELL DEPTH: (completed) 60.0 Ft. Date Started: 05/17/05 Date Completed: 05/17/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
2 In. to 40.0 Ft. depth
In. to Ft. depth
Height Above/Below Surface: 0.0 Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set 40.0 Ft. and 60.0 Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☒ No

Static Water Level: 50.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 38.0 Ft. to 60.0 F
Effective size: 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 34.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 06/08/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Mark K. Dettrey Cert. No.: A 01086
Authorized Representative

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-6R
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	5/17/2005- 5/18/2005
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahay
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			N/A		5.0	Dark red, fine silt; no petroleum odor.
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			N/A		10.0	Reddish brown, soft silt; no petroleum odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			N/A		15.0	Brown, soft silt; no petroleum odor.
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-6R

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			N/A		20.0	Brown, soft silt; no petroleum odor.
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			N/A		25.0	Brown, soft silt; no petroleum odor.
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			N/A		30.0	Brown, soft silt; no petroleum odor.
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			N/A		35.0	Brown, silty, soft clay; damp; no petroleum odor.
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			N/A		40.0	Brown, silty, soft clay; damp; no petroleum odor.

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-6R

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			N/A		45.0	Brown, silty, soft clay, damp, no petroleum odor
					45.5	
					46.0	
					46.5	
					47.0	
47.5			N/A		47.5	Tan, granite piece, from .75" to 1" in length.
					48.0	
					48.5	
					49.0	
					49.5	
50			N/A		50.0	Tan, tight silt; dry; no petroleum odor.
					50.5	
					51.0	
					51.5	
					52.0	
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			N/A		55.0	Tan granite rock mixed with tan, coarse grained sand.
					55.5	
					56.0	Water Level at 55.67 feet on June 27, 2005
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
					60.0	Tan granite rock mixed with tan, coarse grained sand.
					60.5	
					61.0	
					61.5	
					62.0	
					62.5	
					63.0	
					63.5	
					64.0	
					64.5	
					65.0	Termination of boring at 65 feet.

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:

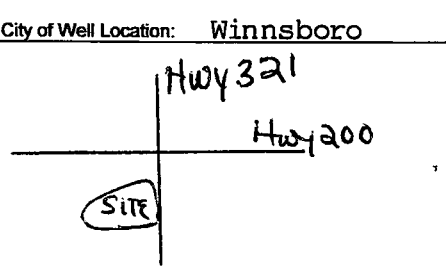
Latitude: Longitude:

Distance and direction from Rand Intersections:

401 N. CONGRESS STREET

Street Address & City of Well Location: Winnsboro

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
GRASS/TOPSOIL	1.0	1.0
BROWN/RED SANDY CLAYEY SILT	3.0	4.0
TAN/ORANGE SANDY SILT	26.0	30.0
TAN/WHITE FINE SANDY SILT	35.0	65.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-6R BENTONITE SEAL FROM 37.0 TO 42.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No..

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC29203

Telephone No.: 866-735-0003

5. WELL DEPTH: (completed) 65.0 Ft. Date Started: 05/17/05 Date Completed: 05/18/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
2 In. to 45.0 Ft. depth
In. to Ft. depth

Height: Above/Below Surface: 0.0 Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set 45.0 Ft. and 65.0 Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☒ No

Static Water Level: 57.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 42.0 Ft. to 65.0 F
Effective size. 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 37.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 06/08/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Authorized Representative Cert. No.: A 01276

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-9R
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	5/17/2005
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahay
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			N/A		5.0	Dark red, fine silt; no petroleum odor.
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			N/A		10.0	Dark red, fine silt; no petroleum odor.
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			N/A		15.0	Reddish brown, soft silt; no petroleum odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)				PROJECT NO.: 14.25384.0012		BORING I.D.: MW-9R
SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			N/A		20.0	Brown, soft silt; no petroleum odor.
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			N/A		25.0	Brown, soft silt; no petroleum odor.
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			N/A		30.0	Brown, soft silt; no petroleum odor.
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			N/A		35.0	Brown, clayey (soft), silt; no petroleum odor.
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			N/A		40.0	Brown, slightly silty, soft clay; no petroleum odor.

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-9R

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			N/A		45.0	Brown, soft clay, damp; no petroleum odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
50			N/A		50.0	Brown, soft clay, damp; no petroleum odor
					50.5	
					51.0	
					51.5	
					52.0	Water Level at 51.75 on June 27,2005.
					52.5	
					53.0	
					53.5	
					54.0	
					54.5	
55			N/A		55.0	Dark brown, soft clay, damp; no petroleum odor.
					55.5	
					56.0	
					56.5	
					57.0	
					57.5	
					58.0	
					58.5	
					59.0	
					59.5	
60			N/A		60.0	Dark brown, soft clay, wet; no petroleum odor.
					60.5	
					61.0	
					61.5	
					62.0	
					62.5	
					63.0	
					63.5	
					64.0	
					64.5	
65			N/A		65.0	Termination of Boring at 65 feet.

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:

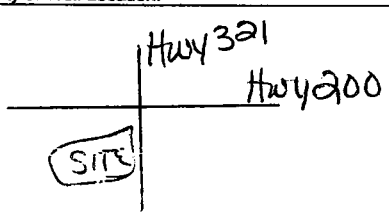
Latitude: Longitude:

Distance and direction from Rand Intersections:

401 N. CONGRESS STREET

Street Address & City of Well Location: Winnsboro

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
GRASS/TOPSOIL	1.0	1.0
BROWN/RED SANDY CLAYEY SILT	3.0	4.0
TAN/ORANGE SANDY SILT	26.0	30.0
TAN/WHITE FINE SANDY SILT	35.0	65.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-9R BENTONITE SEAL FROM 37.0 TO 42.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC29203

Telephone No.: 866-735-0003

5. WELL DEPTH: (completed) 65.0 Ft. Date Started: 05/17/05 Date Completed: 05/17/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
2 In. to 45.0 Ft. depth
In. to Ft. depth

Height: Above/Below Surface: 0.0 Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set 45.0 Ft. and 65.0 Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☒ No

Static Water Level: 52.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 42.0 Ft. to 65.0 F
Effective size: 1.43 Uniformity Coefficient 1.3

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 37.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 06/08/05

Address: 176 Commerce Blvd. Statesville, NC 28625

Signed: Mike McCarley Authorized Representative Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

APPENDIX E

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	4.56	feet
Total Well Depth (TWD)	~~4.56~~	feet
Length of the water column (LWC=TWD-DGW)	6.44	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1220	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)	50.12	feet
Depth to Ground Water (DGW)	50.14	feet
Total Well Depth (TWD)	54.0	feet
Length of the water column (LWC=TWD-DGW)	3.86	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW3
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 42.98 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 2.02 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1300	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	47.34	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)	12.66	feet
1 casing volume (CV=LWC X C)= ____ X ____ =	2.00	gals
3 casing volume (3 X CV)=	6.00	gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1315	
pH (s.u.)	5.48	5.31	5.22	5.13			4.82	
Specific Conductivity (µmhos/cm)	12	13	13	13			13	
Water Temperature (°C)	23.07	22.18	22.09	21.94			21.76	
Dissolved Oxygen	7.6	7.7	7.8	6.9			6.8	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW5
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 41.23 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 3.77 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1240	
pH (s.u.)							4.58	
Specific Conductivity (µmhos/cm)							21	
Water Temperature (°C)							21.98	
Dissolved Oxygen							6.3	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW6R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	55.67	feet
Total Well Depth (TWD)	65.0	feet
Length of the water column (LWC=TWD-DGW)	9.33	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 1.52 gals
3 casing volume (3 X CV)= 4.56 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1430	
pH (s.u.)	5.59	6.29					5.38	
Specific Conductivity (µmhos/cm)	23	22					1	
Water Temperature (°C)	20.69	20.05					19.60	
Dissolved Oxygen	4.7	10.5					10.7	
PID readings, if required								

Remarks: Bailed Dry during 2nd volume.

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW7
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 50.68 feet
Total Well Depth (TWD) 52.0 feet
Length of the water column (LWC=TWD-DGW) 1.32 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1320	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: UNABLE TO GET READING, SLOW/NO RECHARGE, VOA'S ONLY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW8
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 41.43 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 3.57 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1200	
pH (s.u.)							4.77	
Specific Conductivity (µmhos/cm)							.9	
Water Temperature (°C)							22.83	
Dissolved Oxygen							8.9	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW9R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	51.75	feet
Total Well Depth (TWD)	65.0	feet
Length of the water column (LWC=TWD-DGW)	13.25	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 2.16 gals
3 casing volume (3 X CV)= 6.48 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1515	
pH (s.u.)	5.82	5.38	5.35	5.29			5.26	
Specific Conductivity (µmhos/cm)	15	16	16	16			17	
Water Temperature (°C)	19.96	19.09	19.73	19.67			19.43	
Dissolved Oxygen	7.9	7.8	6.9	7.5			7.7	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW10
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 45.46 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 4.54 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1345	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Petro odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW11
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	31.42	feet
Total Well Depth (TWD)	38.0	feet
Length of the water column (LWC=TWD-DGW)	6.58	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1505	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: PERMO 0000

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW12
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 38.64 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 11.36 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1528	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: PETRO ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW/B
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	40.64	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	9.36	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1405	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Petro Odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW4
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 33.17 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 6.83 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1425	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW15
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	34.86	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	5.14	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1445	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW16
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	4.81	feet
Total Well Depth (TWD)	500	feet
Length of the water column (LWC=TWD-DGW)	8.19	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1545	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: PETRO ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 6/27/05
Field Personnel: RYAN STUBB, JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # DMW-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	50.63	feet
Total Well Depth (TWD)	89.0	feet
Length of the water column (LWC=TWD-DGW)	38.37	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 6.25 gals
3 casing volume (3 X CV)= 18.75 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1230	
pH (s.u.)	5.13	5.29	5.21	5.04			5.46	
Specific Conductivity (µmhos/cm)	14	14	14	14			14	
Water Temperature (°C)	21.70	21.72	20.89	20.95			22.86	
Dissolved Oxygen	6.5	7.6	7.8	7.8			7.9	
PID readings, if required								

Remarks: _____

APPENDIX F

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

05061220

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	7/12/2005	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC). Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry. The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples. The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between intial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 37 PAGES

7/12/2005

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

05061220

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 7/12/2005

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	05061220-01	Water	6/27/2005 12:20:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-3	05061220-02	Water	6/27/2005 1:00:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-4R	05061220-03	Water	6/27/2005 1:15:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-5	05061220-04	Water	6/27/2005 12:40:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-6R	05061220-05	Water	6/27/2005 2:30:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-7	05061220-06	Water	6/27/2005 1:20:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-8	05061220-07	Water	6/27/2005 12:00:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-9N	05061220-08	Water	6/27/2005 3:15:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-10	05061220-09	Water	6/27/2005 1:45:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-11	05061220-10	Water	6/27/2005 3:05:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-12	05061220-11	Water	6/27/2005 3:25:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-13	05061220-12	Water	6/27/2005 2:05:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-14	05061220-13	Water	6/27/2005 2:25:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-15	05061220-14	Water	6/27/2005 2:45:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
MW-16	05061220-15	Water	6/27/2005 3:45:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐
DMW-1	05061220-16	Water	6/27/2005 12:30:00 PM	6/28/2005 10:00:00 AM	247640,247641	☐

7/12/2005

Alberto E. Granados
Project Manager

Date

John D. Trahan
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-1 **Collected:** 06/27/2005 12:20 **SPL Sample ID:** 05061220-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.12		0.05	1	06/28/05 14:30	JMH	1500479
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 15:43	RAH	1501184
Surr: 1-Chloro-2-fluorobenzene	96.8		% 33-151	1	06/30/05 15:43	RAH	1501184

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.96

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	1.35		0.05	5	07/07/05 13:00	BMO	1505722
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	18.2		5	1	07/05/05 13:00	PFB	1502698
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	07/07/05 2:51	CAB	1505161

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/02/05 23:00	MHW	1504494
Ethylbenzene	ND		5	1	07/02/05 23:00	MHW	1504494
Methyl tert-butyl ether	ND		5	1	07/02/05 23:00	MHW	1504494
Naphthalene	ND		5	1	07/02/05 23:00	MHW	1504494
Toluene	ND		5	1	07/02/05 23:00	MHW	1504494
m,p-Xylene	ND		5	1	07/02/05 23:00	MHW	1504494
o-Xylene	ND		5	1	07/02/05 23:00	MHW	1504494
Xylenes,Total	ND		5	1	07/02/05 23:00	MHW	1504494
Surr: 1,2-Dichloroethane-d4	109	%	72.6-128	1	07/02/05 23:00	MHW	1504494
Surr: 4-Bromofluorobenzene	92.0	%	76.6-114	1	07/02/05 23:00	MHW	1504494
Surr: Toluene-d8	100	%	84.9-111	1	07/02/05 23:00	MHW	1504494

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-3 **Collected:** 06/27/2005 13:00 **SPL Sample ID:** 05061220-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 16:12	RAH	1501185
Surr: 1-Chloro-2-fluorobenzene	95.0		% 33-151	1	06/30/05 16:12	RAH	1501185

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.94

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0731		0.01	1	07/07/05 2:58	CAB	1505162

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	110		5	1	07/02/05 23:30	MHW	1504495
Ethylbenzene	ND		5	1	07/02/05 23:30	MHW	1504495
Methyl tert-butyl ether	ND		5	1	07/02/05 23:30	MHW	1504495
Naphthalene	ND		5	1	07/02/05 23:30	MHW	1504495
Toluene	ND		5	1	07/02/05 23:30	MHW	1504495
m,p-Xylene	ND		5	1	07/02/05 23:30	MHW	1504495
o-Xylene	ND		5	1	07/02/05 23:30	MHW	1504495
Xylenes,Total	ND		5	1	07/02/05 23:30	MHW	1504495
Surr: 1,2-Dichloroethane-d4	98.6	%	72.6-128	1	07/02/05 23:30	MHW	1504495
Surr: 4-Bromofluorobenzene	105	%	76.6-114	1	07/02/05 23:30	MHW	1504495
Surr: Toluene-d8	100	%	84.9-111	1	07/02/05 23:30	MHW	1504495

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-4R **Collected:** 06/27/2005 13:15 **SPL Sample ID:** 05061220-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 16:41	RAH	1501186
Surr: 1-Chloro-2-fluorobenzene	72.1		% 33-151	1	06/30/05 16:41	RAH	1501186

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.93

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.733		0.05	5	07/07/05 13:52	CAB	1505641

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/02/05 23:59	MHW	1504496
Ethylbenzene	ND		5	1	07/02/05 23:59	MHW	1504496
Methyl tert-butyl ether	ND		5	1	07/02/05 23:59	MHW	1504496
Naphthalene	ND		5	1	07/02/05 23:59	MHW	1504496
Toluene	ND		5	1	07/02/05 23:59	MHW	1504496
m,p-Xylene	ND		5	1	07/02/05 23:59	MHW	1504496
o-Xylene	ND		5	1	07/02/05 23:59	MHW	1504496
Xylenes,Total	ND		5	1	07/02/05 23:59	MHW	1504496
Surr: 1,2-Dichloroethane-d4	102		% 72.6-128	1	07/02/05 23:59	MHW	1504496
Surr: 4-Bromofluorobenzene	79.5		% 76.6-114	1	07/02/05 23:59	MHW	1504496
Surr: Toluene-d8	101		% 84.9-111	1	07/02/05 23:59	MHW	1504496

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-5 **Collected:** 06/27/2005 12:40 **SPL Sample ID:** 05061220-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 17:10	RAH	1501187
Surr: 1-Chloro-2-fluorobenzene	104		% 33-151	1	06/30/05 17:10	RAH	1501187

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.94

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0224		0.01	1	07/07/05 3:14	CAB	1505164

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/03/05 0:28	MHW	1504497
Ethylbenzene	ND		5	1	07/03/05 0:28	MHW	1504497
Methyl tert-butyl ether	ND		5	1	07/03/05 0:28	MHW	1504497
Naphthalene	ND		5	1	07/03/05 0:28	MHW	1504497
Toluene	ND		5	1	07/03/05 0:28	MHW	1504497
m,p-Xylene	ND		5	1	07/03/05 0:28	MHW	1504497
o-Xylene	ND		5	1	07/03/05 0:28	MHW	1504497
Xylenes,Total	ND		5	1	07/03/05 0:28	MHW	1504497
Surr: 1,2-Dichloroethane-d4	98.0		% 72.6-128	1	07/03/05 0:28	MHW	1504497
Surr: 4-Bromofluorobenzene	80.4		% 76.6-114	1	07/03/05 0:28	MHW	1504497
Surr: Toluene-d8	101		% 84.9-111	1	07/03/05 0:28	MHW	1504497

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-6R **Collected:** 06/27/2005 14:30 **SPL Sample ID:** 05061220-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 17:39	RAH	1501188
Surr: 1-Chloro-2-fluorobenzene	99.4		% 33-151	1	06/30/05 17:39	RAH	1501188

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.96

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.116		0.01	1	07/07/05 3:21	CAB	1505165

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/03/05 0:57	MHW	1504498
Ethylbenzene	ND		5	1	07/03/05 0:57	MHW	1504498
Methyl tert-butyl ether	ND		5	1	07/03/05 0:57	MHW	1504498
Naphthalene	ND		5	1	07/03/05 0:57	MHW	1504498
Toluene	ND		5	1	07/03/05 0:57	MHW	1504498
m,p-Xylene	ND		5	1	07/03/05 0:57	MHW	1504498
o-Xylene	ND		5	1	07/03/05 0:57	MHW	1504498
Xylenes,Total	ND		5	1	07/03/05 0:57	MHW	1504498
Surr: 1,2-Dichloroethane-d4	100		% 72.6-128	1	07/03/05 0:57	MHW	1504498
Surr: 4-Bromofluorobenzene	89.2		% 76.6-114	1	07/03/05 0:57	MHW	1504498
Surr: Toluene-d8	101		% 84.9-111	1	07/03/05 0:57	MHW	1504498

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-7 **Collected:** 06/27/2005 13:20 **SPL Sample ID:** 05061220-06

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 18:08	RAH	1501189
Surr: 1-Chloro-2-fluorobenzene	113		% 33-151	1	06/30/05 18:08	RAH	1501189

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.94

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				MCL	SW8260B	Units: ug/L	
Benzene	ND		5	1	07/03/05 1:27	MHW	1504499
Ethylbenzene	ND		5	1	07/03/05 1:27	MHW	1504499
Methyl tert-butyl ether	ND		5	1	07/03/05 1:27	MHW	1504499
Naphthalene	ND		5	1	07/03/05 1:27	MHW	1504499
Toluene	ND		5	1	07/03/05 1:27	MHW	1504499
m,p-Xylene	ND		5	1	07/03/05 1:27	MHW	1504499
o-Xylene	ND		5	1	07/03/05 1:27	MHW	1504499
Xylenes,Total	ND		5	1	07/03/05 1:27	MHW	1504499
Surr: 1,2-Dichloroethane-d4	104		% 72.6-128	1	07/03/05 1:27	MHW	1504499
Surr: 4-Bromofluorobenzene	81.3		% 76.6-114	1	07/03/05 1:27	MHW	1504499
Surr: Toluene-d8	102		% 84.9-111	1	07/03/05 1:27	MHW	1504499

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-8 **Collected:** 06/27/2005 12:00 **SPL Sample ID:** 05061220-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 18:38	RAH	1501190
Surr: 1-Chloro-2-fluorobenzene	102		% 33-151	1	06/30/05 18:38	RAH	1501190

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.94

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.017		0.01	1	07/07/05 3:30	CAB	1505166

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/03/05 1:56	MHW	1504500
Ethylbenzene	ND		5	1	07/03/05 1:56	MHW	1504500
Methyl tert-butyl ether	ND		5	1	07/03/05 1:56	MHW	1504500
Naphthalene	ND		5	1	07/03/05 1:56	MHW	1504500
Toluene	ND		5	1	07/03/05 1:56	MHW	1504500
m,p-Xylene	ND		5	1	07/03/05 1:56	MHW	1504500
o-Xylene	ND		5	1	07/03/05 1:56	MHW	1504500
Xylenes,Total	ND		5	1	07/03/05 1:56	MHW	1504500
Surr: 1,2-Dichloroethane-d4	97.8	%	72.6-128	1	07/03/05 1:56	MHW	1504500
Surr: 4-Bromofluorobenzene	89.5	%	76.6-114	1	07/03/05 1:56	MHW	1504500
Surr: Toluene-d8	98.7	%	84.9-111	1	07/03/05 1:56	MHW	1504500

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-9N **Collected:** 06/27/2005 15:15 **SPL Sample ID:** 05061220-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 19:36	RAH	1501192
Surr: 1-Chloro-2-fluorobenzene	94.4		% 33-151	1	06/30/05 19:36	RAH	1501192

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.95

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.234		0.01	1	07/07/05 3:37	CAB	1505167

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/03/05 2:25	MHW	1504501
Ethylbenzene	ND		5	1	07/03/05 2:25	MHW	1504501
Methyl tert-butyl ether	ND		5	1	07/03/05 2:25	MHW	1504501
Naphthalene	ND		5	1	07/03/05 2:25	MHW	1504501
Toluene	ND		5	1	07/03/05 2:25	MHW	1504501
m,p-Xylene	ND		5	1	07/03/05 2:25	MHW	1504501
o-Xylene	ND		5	1	07/03/05 2:25	MHW	1504501
Xylenes,Total	ND		5	1	07/03/05 2:25	MHW	1504501
Surr: 1,2-Dichloroethane-d4	98.3		% 72.6-128	1	07/03/05 2:25	MHW	1504501
Surr: 4-Bromofluorobenzene	96.1		% 76.6-114	1	07/03/05 2:25	MHW	1504501
Surr: Toluene-d8	99.9		% 84.9-111	1	07/03/05 2:25	MHW	1504501

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID MW-10 **Collected:** 06/27/2005 13:45 **SPL Sample ID:** 05061220-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 20:05	RAH	1501193
Surr: 1-Chloro-2-fluorobenzene	106		% 33-151	1	06/30/05 20:05	RAH	1501193

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.95

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	07/07/05 3:45	CAB	1505168

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	6000		1000	200	07/03/05 2:54	MHW	1504502
Ethylbenzene	1900		1000	200	07/03/05 2:54	MHW	1504502
Methyl tert-butyl ether	ND		1000	200	07/03/05 2:54	MHW	1504502
Naphthalene	ND		1000	200	07/03/05 2:54	MHW	1504502
Toluene	2400		1000	200	07/03/05 2:54	MHW	1504502
m,p-Xylene	3300		1000	200	07/03/05 2:54	MHW	1504502
o-Xylene	ND		1000	200	07/03/05 2:54	MHW	1504502
Xylenes,Total	3300		1000	200	07/03/05 2:54	MHW	1504502
Surr: 1,2-Dichloroethane-d4	94.6	%	72.6-128	200	07/03/05 2:54	MHW	1504502
Surr: 4-Bromofluorobenzene	91.6	%	76.6-114	200	07/03/05 2:54	MHW	1504502
Surr: Toluene-d8	98.3	%	84.9-111	200	07/03/05 2:54	MHW	1504502

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-11 **Collected:** 06/27/2005 15:05 **SPL Sample ID:** 05061220-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.16		0.05	1	06/28/05 14:30	JMH	1500482
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.34		0.019	1	06/30/05 20:35	RAH	1501194
Surr: 1-Chloro-2-fluorobenzene	67.4	%	33-151	1	06/30/05 20:35	RAH	1501194

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.93

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	0.0235		0.01	1	07/07/05 13:00	BMO	1505723
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	07/05/05 13:00	PFB	1502701
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	07/07/05 4:07	CAB	1505171

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 11:20	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	5900		2500	500	07/03/05 3:23	MHW	1504503
Ethylbenzene	5100		2500	500	07/03/05 3:23	MHW	1504503
Methyl tert-butyl ether	ND		2500	500	07/03/05 3:23	MHW	1504503
Naphthalene	3000		2500	500	07/03/05 3:23	MHW	1504503
Toluene	25000		2500	500	07/03/05 3:23	MHW	1504503
m,p-Xylene	23000		2500	500	07/03/05 3:23	MHW	1504503
o-Xylene	8400		2500	500	07/03/05 3:23	MHW	1504503
Xylenes,Total	31400		2500	500	07/03/05 3:23	MHW	1504503
Surr: 1,2-Dichloroethane-d4	102	%	72.6-128	500	07/03/05 3:23	MHW	1504503
Surr: 4-Bromofluorobenzene	96.9	%	76.6-114	500	07/03/05 3:23	MHW	1504503
Surr: Toluene-d8	98.4	%	84.9-111	500	07/03/05 3:23	MHW	1504503

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-12 **Collected:** 06/27/2005 15:25 **SPL Sample ID:** 05061220-11

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 21:05	RAH	1501195
Surr: 1-Chloro-2-fluorobenzene	139		% 33-151	1	06/30/05 21:05	RAH	1501195

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.96

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0167		0.01	1	07/07/05 21:58	CAB	1506079

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	8200		250	50	07/08/05 4:34	MHW	1508079
Ethylbenzene	6.9		5	1	07/03/05 3:52	MHW	1504504
Methyl tert-butyl ether	210		5	1	07/03/05 3:52	MHW	1504504
Naphthalene	410		5	1	07/03/05 3:52	MHW	1504504
Toluene	7.7		5	1	07/03/05 3:52	MHW	1504504
m,p-Xylene	46		5	1	07/03/05 3:52	MHW	1504504
o-Xylene	6.2		5	1	07/03/05 3:52	MHW	1504504
Xylenes,Total	52.2		5	1	07/03/05 3:52	MHW	1504504
Surr: 1,2-Dichloroethane-d4	97.0	%	72.6-128	50	07/08/05 4:34	MHW	1508079
Surr: 1,2-Dichloroethane-d4	95.7	%	72.6-128	1	07/03/05 3:52	MHW	1504504
Surr: 4-Bromofluorobenzene	110	%	76.6-114	50	07/08/05 4:34	MHW	1508079
Surr: 4-Bromofluorobenzene	111	%	76.6-114	1	07/03/05 3:52	MHW	1504504
Surr: Toluene-d8	101	%	84.9-111	50	07/08/05 4:34	MHW	1508079
Surr: Toluene-d8	103	%	84.9-111	1	07/03/05 3:52	MHW	1504504

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-13 **Collected:** 06/27/2005 14:05 **SPL Sample ID:** 05061220-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.07		0.05	1	06/28/05 14:30	JMH	1500483
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 21:34	RAH	1501196
Surr: 1-Chloro-2-fluorobenzene	108		% 33-151	1	06/30/05 21:34	RAH	1501196

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.95

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	ND		0.01	1	07/07/05 13:00	BMO	1505719
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	07/05/05 13:00	PFB	1502702
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0383		0.01	1	07/07/05 22:05	CAB	1506080

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	8600		250	50	07/03/05 4:22	MHW	1504505
Ethylbenzene	2100		250	50	07/03/05 4:22	MHW	1504505
Methyl tert-butyl ether	ND		250	50	07/03/05 4:22	MHW	1504505
Naphthalene	620		250	50	07/03/05 4:22	MHW	1504505
Toluene	61000		2500	500	07/08/05 5:02	MHW	1508080
m,p-Xylene	9000		250	50	07/03/05 4:22	MHW	1504505
o-Xylene	4000		250	50	07/03/05 4:22	MHW	1504505
Xylenes,Total	13000		250	50	07/03/05 4:22	MHW	1504505
Surr: 1,2-Dichloroethane-d4	88.6		% 72.6-128	500	07/08/05 5:02	MHW	1508080
Surr: 1,2-Dichloroethane-d4	97.9		% 72.6-128	50	07/03/05 4:22	MHW	1504505
Surr: 4-Bromofluorobenzene	107		% 76.6-114	500	07/08/05 5:02	MHW	1508080
Surr: 4-Bromofluorobenzene	99.1		% 76.6-114	50	07/03/05 4:22	MHW	1504505
Surr: Toluene-d8	102		% 84.9-111	500	07/08/05 5:02	MHW	1508080
Surr: Toluene-d8	101		% 84.9-111	50	07/03/05 4:22	MHW	1504505

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-14 **Collected:** 06/27/2005 14:25 **SPL Sample ID:** 05061220-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.11		0.018	1	06/30/05 22:04	RAH	1501197
Surr: 1-Chloro-2-fluorobenzene	73.0		% 33-151	1	06/30/05 22:04	RAH	1501197

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.92

TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0161		0.01	1	07/07/05 22:12	CAB	1506081

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	4500		100	20	07/03/05 4:51	MHW	1504506
Ethylbenzene	ND		100	20	07/03/05 4:51	MHW	1504506
Methyl tert-butyl ether	ND		100	20	07/03/05 4:51	MHW	1504506
Naphthalene	170		100	20	07/03/05 4:51	MHW	1504506
Toluene	ND		100	20	07/03/05 4:51	MHW	1504506
m,p-Xylene	ND		100	20	07/03/05 4:51	MHW	1504506
o-Xylene	ND		100	20	07/03/05 4:51	MHW	1504506
Xylenes,Total	ND		100	20	07/03/05 4:51	MHW	1504506
Surr: 1,2-Dichloroethane-d4	97.7		% 72.6-128	20	07/03/05 4:51	MHW	1504506
Surr: 4-Bromofluorobenzene	94.9		% 76.6-114	20	07/03/05 4:51	MHW	1504506
Surr: Toluene-d8	100		% 84.9-111	20	07/03/05 4:51	MHW	1504506

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-15 **Collected:** 06/27/2005 14:45 **SPL Sample ID:** 05061220-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	06/28/05 14:30	JMH	1500484
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 22:33	RAH	1501198
Surr: 1-Chloro-2-fluorobenzene	91.6	%	33-151	1	06/30/05 22:33	RAH	1501198

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.95

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	0.0424		0.01	1	07/07/05 13:00	BMO	1505724
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	07/05/05 13:00	PFB	1502703
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0251		0.01	1	07/07/05 22:20	CAB	1506082

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	680		50	10	07/08/05 8:40	MHW	1508081
Ethylbenzene	ND		5	1	07/03/05 5:20	MHW	1504507
Methyl tert-butyl ether	ND		5	1	07/03/05 5:20	MHW	1504507
Naphthalene	63		5	1	07/03/05 5:20	MHW	1504507
Toluene	13		5	1	07/03/05 5:20	MHW	1504507
m,p-Xylene	9.4		5	1	07/03/05 5:20	MHW	1504507
o-Xylene	ND		5	1	07/03/05 5:20	MHW	1504507
Xylenes,Total	9.4		5	1	07/03/05 5:20	MHW	1504507
Surr: 1,2-Dichloroethane-d4	94.1	%	72.6-128	10	07/08/05 8:40	MHW	1508081
Surr: 1,2-Dichloroethane-d4	99.3	%	72.6-128	1	07/03/05 5:20	MHW	1504507
Surr: 4-Bromofluorobenzene	109	%	76.6-114	10	07/08/05 8:40	MHW	1508081
Surr: 4-Bromofluorobenzene	104	%	76.6-114	1	07/03/05 5:20	MHW	1504507
Surr: Toluene-d8	102	%	84.9-111	10	07/08/05 8:40	MHW	1508081
Surr: Toluene-d8	97.3	%	84.9-111	1	07/03/05 5:20	MHW	1504507

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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(337) 237-4775

Client Sample ID MW-16 **Collected:** 06/27/2005 15:45 **SPL Sample ID:** 05061220-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.19		0.05	1	06/28/05 14:30	JMH	1500485
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 23:02	RAH	1501199
Surr: 1-Chloro-2-fluorobenzene	81.6		% 33-151	1	06/30/05 23:02	RAH	1501199

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.95

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	ND		0.01	1	07/07/05 13:00	BMO	1505725
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	07/05/05 13:00	PFB	1502704
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0119		0.01	1	07/07/05 22:27	CAB	1506083

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	9400		2500	500	07/03/05 5:49	MHW	1504508
Ethylbenzene	4800		2500	500	07/03/05 5:49	MHW	1504508
Methyl tert-butyl ether	ND		2500	500	07/03/05 5:49	MHW	1504508
Naphthalene	3200		2500	500	07/03/05 5:49	MHW	1504508
Toluene	28000		2500	500	07/03/05 5:49	MHW	1504508
m,p-Xylene	23000		2500	500	07/03/05 5:49	MHW	1504508
o-Xylene	8700		2500	500	07/03/05 5:49	MHW	1504508
Xylenes,Total	31700		2500	500	07/03/05 5:49	MHW	1504508
Surr: 1,2-Dichloroethane-d4	99.5	%	72.6-128	500	07/03/05 5:49	MHW	1504508
Surr: 4-Bromofluorobenzene	102	%	76.6-114	500	07/03/05 5:49	MHW	1504508
Surr: Toluene-d8	101	%	84.9-111	500	07/03/05 5:49	MHW	1504508

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID DMW-1 **Collected:** 06/27/2005 12:30 **SPL Sample ID:** 05061220-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.07		0.05	1	06/28/05 14:30	JMH	1500486
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.019	1	06/30/05 23:32	RAH	1501200
Surr: 1-Chloro-2-fluorobenzene	81.3		% 33-151	1	06/30/05 23:32	RAH	1501200

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	06/29/2005 12:17	CAM	0.94

NITRATE NITROGEN (AS N), TOTAL				**MCL**	**E353.3**	**Units: mg/L**	
Nitrogen,Nitrate (As N)	3.71		0.1	10	07/07/05 13:00	BMO	1505726
SULFATE, TOTAL				**MCL**	**E375.4**	**Units: mg/L**	
Sulfate	ND		5	1	07/05/05 13:00	PFB	1502705
TOTAL METALS BY METHOD 6010B				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	07/07/05 21:04	CAB	1506071

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	06/28/2005 15:55	GTS	1.00

VOLATILE ORGANICS:METHOD 8260B+MTBE+NAPHTHALE				**MCL**	**SW8260B**	**Units: ug/L**	
Benzene	ND		5	1	07/02/05 19:33	MHW	1502444
Ethylbenzene	ND		5	1	07/02/05 19:33	MHW	1502444
Methyl tert-butyl ether	ND		5	1	07/02/05 19:33	MHW	1502444
Naphthalene	ND		5	1	07/02/05 19:33	MHW	1502444
Toluene	ND		5	1	07/02/05 19:33	MHW	1502444
m,p-Xylene	ND		5	1	07/02/05 19:33	MHW	1502444
o-Xylene	ND		5	1	07/02/05 19:33	MHW	1502444
Xylenes,Total	ND		5	1	07/02/05 19:33	MHW	1502444
Surr: 1,2-Dichloroethane-d4	109		% 72.6-128	1	07/02/05 19:33	MHW	1502444
Surr: 4-Bromofluorobenzene	90.5		% 76.6-114	1	07/02/05 19:33	MHW	1502444
Surr: Toluene-d8	98.5		% 84.9-111	1	07/02/05 19:33	MHW	1502444

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1 **WorkOrder:** 05061220
Method: E504.1 **Lab Batch ID:** 39816

Method Blank

RunID: PCBB_050629C-1501181 Units: ug/L
Analysis Date: 06/30/2005 14:16 Analyst: RAH
Preparation Date: 06/29/2005 12:17 Prep By: CAM Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	86.7	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01B	MW-1
05061220-02B	MW-3
05061220-03B	MW-4R
05061220-04B	MW-5
05061220-05B	MW-6R
05061220-06B	MW-7
05061220-07B	MW-8
05061220-08B	MW-9N
05061220-09B	MW-10
05061220-10B	MW-11
05061220-11B	MW-12
05061220-12B	MW-13
05061220-13B	MW-14
05061220-14B	MW-15
05061220-15B	MW-16
05061220-16B	DMW-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_050629C-1501182 Units: ug/L
Analysis Date: 06/30/2005 14:45 Analyst: RAH
Preparation Date: 06/29/2005 12:17 Prep By: CAM Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.532	93.3	0.570	0.426	74.8	22.0	30	60	140

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B
Method: SW6010B
WorkOrder: 05061220
Lab Batch ID: 39777

Method Blank

RunID: ICPDV_050707D-1505151 Units: mg/L
Analysis Date: 07/07/2005 1:39 Analyst: CAB
Preparation Date: 06/28/2005 11:20 Prep By: GTS Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01C	MW-1
05061220-02C	MW-3
05061220-03C	MW-4R
05061220-04C	MW-5
05061220-05C	MW-6R
05061220-07C	MW-8
05061220-08C	MW-9N
05061220-09C	MW-10
05061220-10C	MW-11

Laboratory Control Sample (LCS)

RunID: ICPDV_050707D-1505152 Units: mg/L
Analysis Date: 07/07/2005 1:46 Analyst: CAB
Preparation Date: 06/28/2005 11:20 Prep By: GTS Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	1.045	104.5	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05061196-01
RunID: ICPDV_050707D-1505155 Units: mg/L
Analysis Date: 07/07/2005 2:07 Analyst: CAB
Preparation Date: 06/28/2005 11:20 Prep By: GTS Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	1.033	102.8	1	1.043	103.8	0.9762	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B
Method: SW6010B
WorkOrder: 05061220
Lab Batch ID: 39799

Method Blank

RunID: ICPDV_050707H-1506069 Units: mg/L
Analysis Date: 07/07/2005 20:50 Analyst: CAB
Preparation Date: 06/28/2005 15:55 Prep By: GTS Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-11C	MW-12
05061220-12C	MW-13
05061220-13C	MW-14
05061220-14C	MW-15
05061220-15C	MW-16
05061220-16C	DMW-1

Laboratory Control Sample (LCS)

RunID: ICPDV_050707H-1506070 Units: mg/L
Analysis Date: 07/07/2005 20:57 Analyst: CAB
Preparation Date: 06/28/2005 15:55 Prep By: GTS Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	1.020	102.0	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05061220-16
RunID: ICPDV_050707H-1506073 Units: mg/L
Analysis Date: 07/07/2005 21:21 Analyst: CAB
Preparation Date: 06/28/2005 15:55 Prep By: GTS Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	1.023	102.0	1	1.029	102.6	0.6086	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 05061220
Lab Batch ID: R105069

Method Blank

RunID: G_050702A-1502425 Units: ug/L
Analysis Date: 07/02/2005 11:05 Analyst: MHW

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-16A	DMW-1

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	107.8	72.6-128
Surr: 4-Bromofluorobenzene	89.0	76.6-114
Surr: Toluene-d8	99.0	84.9-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: G_050702A-1502423 Units: ug/L
Analysis Date: 07/02/2005 10:11 Analyst: MHW

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	54.6	109	50.0	55.6	111	1.8	22.1	70.1	139
Benzene	50.0	55.6	111	50.0	55.2	110	0.7	12	83.4	125
Chlorobenzene	50.0	50.4	101	50.0	51.4	103	1.9	10.1	83.2	117
Toluene	50.0	53.6	107	50.0	53.6	107	0.1	11.6	79.7	120
Trichloroethene	50.0	50.3	101	50.0	49.2	98.4	2.2	13.9	78.3	124

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

7/12/2005 8:29:58 AM

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 05061220
Lab Batch ID: R105223

Method Blank

RunID: Q_050702B-1504488 Units: ug/L
Analysis Date: 07/02/2005 20:05 Analyst: MHW

Analyte	Result	Rep Limit
Benzene	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	5.0
Toluene	ND	5.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	99.6	72.6-128
Surr: 4-Bromofluorobenzene	105.4	76.6-114
Surr: Toluene-d8	100.9	84.9-111

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01A	MW-1
05061220-02A	MW-3
05061220-03A	MW-4R
05061220-04A	MW-5
05061220-05A	MW-6R
05061220-06A	MW-7
05061220-07A	MW-8
05061220-08A	MW-9N
05061220-09A	MW-10
05061220-10A	MW-11
05061220-11A	MW-12
05061220-12A	MW-13
05061220-13A	MW-14
05061220-14A	MW-15
05061220-15A	MW-16

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: Q_050702B-1504486 Units: ug/L
Analysis Date: 07/02/2005 19:07 Analyst: MHW

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	46.5	93.0	50.0	46.4	92.7	0.3	22.1	70.1	139
Benzene	50.0	48.1	96.1	50.0	48.3	96.6	0.5	12	83.4	125
Chlorobenzene	50.0	45.6	91.2	50.0	46.2	92.4	1.3	10.1	83.2	117
Toluene	50.0	46.6	93.2	50.0	47.5	94.9	1.8	11.6	79.7	120
Trichloroethene	50.0	47.4	94.7	50.0	47.5	95.0	0.3	13.9	78.3	124

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B+MTBE+Naphthalene
Method: SW8260B
WorkOrder: 05061220
Lab Batch ID: R105447

Method Blank

RunID: Q_050708C-1508076 Units: ug/L
Analysis Date: 07/08/2005 3:06 Analyst: MHW

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-11A	MW-12
05061220-12A	MW-13
05061220-14A	MW-15

Analyte	Result	Rep Limit
Benzene	ND	5.0
Toluene	ND	5.0
Surr: 1,2-Dichloroethane-d4	105.1	72.6-128
Surr: 4-Bromofluorobenzene	91.6	76.6-114
Surr: Toluene-d8	101.3	84.9-111

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: Q_050708C-1508074 Units: ug/L
Analysis Date: 07/08/2005 2:08 Analyst: MHW

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,1-Dichloroethene	50.0	48.5	96.9	50.0	47.8	95.6	1.4	22.1	70.1	139
Benzene	50.0	50.2	100	50.0	49.6	99.2	1.3	12	83.4	125
Chlorobenzene	50.0	48.3	96.6	50.0	48.4	96.9	0.3	10.1	83.2	117
Toluene	50.0	50.7	101	50.0	49.0	98.0	3.5	11.6	79.7	120
Trichloroethene	50.0	49.6	99.3	50.0	49.4	98.9	0.4	13.9	78.3	124

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Iron, Ferrous
Method: HACH 8146
WorkOrder: 05061220
Lab Batch ID: R104948

Method Blank

RunID: WET_050628ZF-1500477 Units: mg/L
Analysis Date: 06/28/2005 14:30 Analyst: JMH

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01D	MW-1
05061220-10D	MW-11
05061220-12D	MW-13
05061220-14D	MW-15
05061220-15D	MW-16
05061220-16D	DMW-1

Laboratory Control Sample (LCS)

RunID: WET_050628ZF-1500478 Units: mg/L
Analysis Date: 06/28/2005 14:30 Analyst: JMH

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	0.9200	92.00	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05061220-01
RunID: WET_050628ZF-1500480 Units: mg/L
Analysis Date: 06/28/2005 14:30 Analyst: JMH

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	0.1200	1	0.9700	85.00	1	0.9800	86.00	1.026	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

7/12/2005 8:29:59 AM

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(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Sulfate, Total
Method: E375.4
WorkOrder: 05061220
Lab Batch ID: R105084

Method Blank

RunID: WET_050705L-1502696 Units: mg/L
Analysis Date: 07/05/2005 13:00 Analyst: PFB

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01D	MW-1
05061220-10D	MW-11
05061220-12D	MW-13
05061220-14D	MW-15
05061220-15D	MW-16
05061220-16D	DMW-1

Laboratory Control Sample (LCS)

RunID: WET_050705L-1502697 Units: mg/L
Analysis Date: 07/05/2005 13:00 Analyst: PFB

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	10.52	105.2	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05061220-01
RunID: WET_050705L-1502699 Units: mg/L
Analysis Date: 07/05/2005 13:00 Analyst: PFB

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	18.18	10	27.59	94.10	10	28.23	100.5	2.293	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Nitrate Nitrogen (as N), Total
Method: E353.3
WorkOrder: 05061220
Lab Batch ID: R105310

Method Blank

RunID: WET_050707M-1505716 Units: mg/L
Analysis Date: 07/07/2005 13:00 Analyst: BMO

Analyte	Result	Rep Limit
Nitrogen,Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
05061220-01D	MW-1
05061220-10D	MW-11
05061220-12D	MW-13
05061220-14D	MW-15
05061220-15D	MW-16
05061220-16D	DMW-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_050707M-1505717 Units: mg/L
Analysis Date: 07/07/2005 13:00 Analyst: BMO

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrogen,Nitrate (As N)	0.1500	0.1423	94.87	0.1500	0.1389	92.60	2.4	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 05061220-12
RunID: WET_050707M-1505720 Units: mg/L
Analysis Date: 07/07/2005 13:00 Analyst: BMO

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrogen,Nitrate (As N)	ND	0.15	0.1734	115.6	0.15	0.1734	115.6	0	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

Sample Receipt Checklist
And
Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	05061220	Received By:	JM
Date and Time Received:	6/28/2005 10:00:00 AM	Carrier name:	FedEx-Std 1 Day PM
Temperature:	4.3°C	Chilled by:	Water Ice

		Yes	No	Not Present / Not Applicable
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☑	☐	☐
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☑	☐	Not Applicable ☐
13.	Water - pH acceptable upon receipt?	▨	▨	Not Applicable ▨

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	05061220	Received By:	JM
Date and Time Received:	6/28/2005 10:00:00 AM	Carrier name:	FedEx-Std 1 Day PM
Temperature:	4.3°C	Chilled by:	Water Ice

		Yes	No	Not Present / Not Applicable
1.	Shipping container/cooler in good condition?	☑	☐	☐
2.	Custody seals intact on shippping container/cooler?	☑	☐	☐
3.	Custody seals intact on sample bottles?	☐	☐	☑
4.	Chain of custody present?	☑	☐	
5.	Chain of custody signed when relinquished and received?	☑	☐	
6.	Chain of custody agrees with sample labels?	☑	☐	
7.	Samples in proper container/bottle?	☑	☐	
8.	Sample containers intact?	☑	☐	
9.	Sufficient sample volume for indicated test?	☑	☐	
10.	All samples received within holding time?	☑	☐	
11.	Container/Temp Blank temperature in compliance?	☑	☐	
12.	Water - VOA vials have zero headspace?	☑	☐	Not Applicable ☐
13.	Water - pH acceptable upon receipt?	☐	☐	Not Applicable ☐

SPL Representative:

Contact Date & Time:

Client Name Contacted:

Non Conformance Issues:

Client Instructions:

FedEx Express **US Airbill** FedEx Tracking Number 8520 7476 1609

Form ID No. 0215 **Recipient's Copy**

1 From This portion can be removed for recipient's records.

Date 6/28/05 FedEx Tracking Number 852074761609

Sender's Name Ryan Stubbs Phone 803 735-0002

Company ATC

Address 405 Northeast Dr., Suite Q Dept./Floor/Suite/Room

City Columbia State SC ZIP 29203

2 Your Internal Billing Reference 14.25394.012

3 To

Recipient's Name SHIPPING AND RECEIVING Phone

Company SOUTHERN PETROLEUM LMS

Recipient's Address 500 AMBASSADOR CAFFERY PKWY Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP [illegible]

NO POUCH ... See back for peel and stick ...

8520 7476 1609

4a Express Package Service *Packages up to 150 lbs.*

- [ ] FedEx Priority Overnight — Next business morning*
- [x] FedEx Standard Overnight — Next business afternoon*
- [ ] FedEx First Overnight — Earliest next business morning delivery to select locations*
- [ ] FedEx 2Day — Second business day*
- [ ] FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.*

- [ ] FedEx 1Day Freight* — Next business day**
- [ ] FedEx 2Day Freight — Second business day**
- [ ] FedEx 3Day Freight — Third business day**

* Call for Confirmation:

* Declared value limit $500

5 Packaging

- [ ] FedEx Envelope*
- [ ] FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [ ] Other

6 Special Handling

- [ ] SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- [ ] HOLD Weekday at FedEx Location — Not available for FedEx First Overnight
- [ ] HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

- [x] No
- [ ] Yes — As per attached Shipper's Declaration
- [ ] Yes — Shipper's Declaration not required
- [ ] Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- [ ] Cargo Aircraft Only

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- [ ] Sender — Acct. No. in Section 1 will be billed.
- [x] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

[redacted] 0705 [redacted]

Total Packages	Total Weight		Total Charges
1	47.40	[redacted]	Credit Card Auth.

[1]Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at fedex.com or call 1.800.GoFedEx 1.800.463.3339.

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466

500 **Fed Express** *US Airbill* FedEx Tracking Number 8520 7476 1594

Form ID No. 0215 **Recipient's Copy**

1 From

Date 6/27/05 FedEx Tracking Number 852074761594

Sender's Name John Marsh Phone [illegible]

Company ATC Associates

Address [illegible] Dept./Floor/Suite/Room

City Columbia State [illegible] ZIP [illegible]

2 Your Internal Billing Reference 14.25384.002

3 To

Recipient's Name SHIPPING AND RECEIVING Phone [illegible]

Company SOUTHERN PETROLEUM LLC

Recipient's Address 500 AMBASSADOR CAUSEWAY [illegible] Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State [illegible] ZIP 70583-[illegible]

NO POUCH NEEDED. See back for peel and stick application instructions.

8520 7476 1594

4a Express Package Service *Packages up to 150 lbs.*

- ☐ FedEx Priority Overnight — Next business morning*
- ☒ FedEx Standard Overnight — Next business afternoon*
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations*
- ☐ FedEx 2Day — Second business day*
- ☐ FedEx Express Saver — Third business day*

FedEx Envelope rate not available. Minimum charge: One-pound rate

4b Express Freight Service *Packages over 150 lbs.*

- ☐ FedEx 1Day Freight* — Next business day**
- ☐ FedEx 2Day Freight — Second business day**
- ☐ FedEx 3Day Freight — Third business day**

* Call for Confirmation:

5 Packaging * Declared value limit $500

- ☐ FedEx Envelope*
- ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak
- ☐ FedEx Box
- ☐ FedEx Tube
- ☐ Other

6 Special Handling

- ☐ SATURDAY Delivery — Available ONLY for FedEx Priority Overnight, FedEx 2Day, FedEx 1Day Freight, and FedEx 2Day Freight to select ZIP codes
- ☐ HOLD Weekday at FedEx Location — Not available for FedEx First Overnight
- ☐ HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

- ☐ No
- ☐ Yes — As per attached Shipper's Declaration
- ☐ Yes — Shipper's Declaration not required
- ☐ Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg

Dangerous goods (including Dry Ice) cannot be shipped in FedEx packaging.

☐ Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

- ☐ Sender — Acct. No. in Section 1 will be billed.
- ☒ Recipient
- ☐ Third Party
- ☐ Credit Card
- ☐ Cash/Check

0705

Total Packages	Total Weight	Total Charges
1	47.50	Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the *FedEx Service Guide* for details.

8 Sign to Authorize Delivery Without a Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Questions? Visit our Web site at fedex.com or call 1.800. GoFedEx 1.800.463.3339.

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SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 247640

0506 1220

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q
Phone/Fax: 803 755-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: UNITED EXPRESS
Site Location: WINNSBORO SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, MTBE, EDB	EDB	LEAD	FE	NITRATE/SULFATE				
MW1	6/27/05	1220		✓						↓	↓	↓	✓	✓				
MW3		1300																
MW4R		1315																
MW5		1240																
MW6R		1430																
X MW7		1320																
MW8		1200																
MW9N		1515																
MW10		1345									↓							
MW11		1505								↓		↓	✓	✓	BM27 MMS		BM20 8	

Client/Consultant Remarks:

Laboratory remarks: 3W/4, ~~8260, WS9550, WS19~~
Fed X Del 852074761609

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 4.3 C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 6/27/05	time 1700	2. Received by: Fed-Ex
3. Relinquished by: Fed. Ex	date 6-28-05	time 9:30	4. Received by: Joseph D. Sunagal
5. Relinquished by: Joseph D. Sunagal	date 6-28-05	time 10:00	6. Received by Laboratory: Jennifer Maller

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 247641

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q
Phone/Fax: 803 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: UNITED EXXON
Site Location: W[illegible] I[illegible]RONO SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, Naph, MTBE	EDB	LEAD	Fe+	Dissolved Sulfate				
~~MW11~~	~~6/27/05~~	—	—	✓														
MW12		1525																7
MW13		1405											✓	✓				8
MW14		1425																7
MW15		1445											✓	✓				8
MW16		1545											✓	✓				8
DMW1		1230											✓	✓				8

Client/Consultant Remarks:

Laboratory remarks: BM40-8 ~~YL-121-(W-0) RL-134(40)~~ (40)(3W) BM27-MMS 8520 7476 1594

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 4.5C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 6/27/05	time 1700	2. Received by: Fed. Ex
3. Relinquished by: Fed. Ex	date 6-28-05	time 9:30	4. Received by: Joseph D. Sunegal
5. Relinquished by: Joseph D. Sunegal	date 6/28/05	time 10:00	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

APPENDIX G

Disposal Manifests

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.
Manifest Doc. No. 04215
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
UNITED EXXON
401 N. CONGRESS ST.
WINNSBORO, NC 29180

4. Generator's Phone (803) 735-0083

5. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number
N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone
336-375-1989

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number
N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone
336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE MIXTURE, 3, UN1203, PG II	X	001	TT	00227	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AFV-05-2564
ER 71128
5 hour
5 gal
Power Unit #: VT7 Trailer #:
Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063.BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS
Signature:
Month 04 Day 21 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL JACOBS
Signature:
Month 04 Day 21 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name:
Signature:
Month Day Year

FACILITY

19. Discrepancy Indication Space
1mo1 1mo3

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
Printed/Typed Name:
Signature:
Month 04 Day 22 Year 05

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.
Manifest Doc. No. 051.75
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address UNITED EXXON 401 N. CONGRESS ST WINNSBORO, SC 29180

4. Generator's Phone (803735-0003

5. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone **336-375-1989**

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214
10. US EPA ID Number N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone **336-375-1989**

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE MIXTURE, 3, UN1203, PG II	X	001	TT	0032	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AFV-05-2700 EGR #128 SHEEN
Power Unit #: VT1 Trailer #:
Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0215BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name (AGENT FOR ATC) PAUL JACOBS Signature Month 05 Day 17 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name PAUL JACOBS Signature Month 05 Day 17 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name Signature Month Day Year

FACILITY

19. Discrepancy Indication Space
Item 1 Item 13

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SEC
Printed/Typed Name Gary Grimm Signature Month 05 Day 18 Year 05

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ORIGINAL - RETURN TO GENERATOR

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.
Manifest Doc. No. 05245
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address UNITED EXXON 401 N. CONGRESS RD. WINNSBORO, SC 29180
4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.
6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214
10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4
C. Facility's Phone: 336-375-1989

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM		12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	X	GASOLINE MIXTURE, 3, UN1203, PG II	001	TT	00544	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AFV-05-2732 Sharon
Power Unit #: VT7 Trailer #:
Emergency Phone #: 800-881-1098

Profile Numbers
11A. 2005-0063-BG
11B.
11C.
11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.
Printed/Typed Name: (AGENT FOR ATC) PAUL JACOBS
Signature
Month 05 Day 24 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: PAUL JACOBS
Signature
Month 05 Day 24 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space
1 mol 1 mB 3 gl gas

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SEC
Printed/Typed Name: Gy Grim
Signature
Month 05 Day 25 Year 05

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ORIGINAL - RETURN TO GENERATOR

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-0520536
Page 1 of 1
Job No. D-0520536

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: United Exploration Inc
US EPA ID No.

Street Address: United Exploration Inc, 401 N. Congress St., Winnsboro, SC
Mailing Address: ATC Assoc, 400 NE Dr. Suite Q, Columbia, SC 29203
Phone No.: (803) 735-0003
Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non-Hazardous Solid, nos				16	DM		
b.		Non-hazardous liquid, nos				1	DM		
c.									

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Soil 16			
b.	Purge Water 1			
c.				

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name | Signature | Mo./Day/Yr.

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services
Address: 210 Alice Street, Spartanburg, SC 29303
Transporter or EPA ID No.: SCR000004358
Unit No.
Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [illegible] Shipment Date: [illegible]

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [illegible] Delivery Date: [illegible]

FACILITY INFORMATION

Facility: JBR Environmental Services
Address: 210 Alice Street, Spartanburg, SC 29303
Facility or EPA ID No.: SCR000004358
Phone: 864-583-2717
Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: Receipt Date:

	Discrepancies	Routing Codes	Handling Methods
a.			
b.			
c.			

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D- 0629718

Page of

Job No. D-0629718

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: United Exxon

US EPA ID No.

Street Address: Winnsboro, SC

Mailing Address: ATC, 400 Northeast Drive, Unit Q, Columbia, SC 29203

Phone No. 803-735-0003

Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		Non Haz Liquid NOS				1	DM	450	lbs.
b.									
c.								.23	TON

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	Ground water		AT-104453	Approved for Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Terri Monegahan

Signature: [signature]

Mo./Day/Yr. 6/29/05

TRANSPORTER INFORMATION

Transporter: ATC Associates

Address: 400 Northeast Dr, Unit Q, Columbia

Transporter or EPA ID No.

Unit No.

Phone: 803-735-0003

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [signature] Shipment Date 6/29/05

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [signature] Delivery Date 6/29/05

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No. SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: Kristy Campbell Receipt Date 6/29/05

	Discrepancies	Routing Codes	Handling Methods.
a.		REPUBLIC	
b.			
c.			

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800-377-2826
803-788-2535
Fax 803-788-2399

Need SSTL data
- ACA to protect creek.

January 24, 2001

Ms. Kristen Hein, Hydrogeologist
SCDHEC
Bureau of UST Management
2600 Bull Street
Columbia, South Carolina 29201

RECEIVED
JAN 2 9 2001
Underground
Storage Tank Management

RE: Groundwater Assessment Report
Former United Exxon
UST Permit #11760
Fairfield County

Dear Ms. Hein:

Please find enclosed the Groundwater Assessment Report and invoice for the above referenced site. If you have any questions or require additional information, please contact me at 788-2535.

Sincerely,
SEI Environmental, Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST PROGRAM
DOCKETING # 35 Tech

SEI Environmental, Inc.

GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

SEI Environmental, Inc.
3021 McNaughton Drive, Suite 9
Columbia, South Carolina 29223
(803) 788-2535

Robert G. Bolton, Jr.
Project Manager

Frederick P. Lyke, P.G. #1055

January 24, 2001

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1.0 INTRODUCTION

Mr. Billy Keenan of Keenan Energy Company, Inc. contracted SEI Environmental, Inc. (SEI) to conduct groundwater assessment activities at the former United Exxon located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated September 25, 2000. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Soil Boring Activities

On January 10-11, 2001, Environmental Construction Services conducted four soil borings, identified as TW-1 through TW-4, utilizing a truck mounted CME-45 drill rig. Boring TW-1 was terminated at 40 feet below ground surface (bgs), but Borings TW-2 through TW-4 were terminated at 50 feet bgs. Specifically, Boring TW-1 was conducted southwest of Monitor Well MW-11, and Boring TW-3 was conducted northeast of Monitor Well MW-10. Borings TW-2 and TW-4 were conducted east of Monitor Well MW-10. The purpose of these borings was to better delineate the groundwater contaminant plume. The boring locations were pre-approved by Ms. Kristen Hein, SCDHEC project manager. In addition, monitor well installation was attempted adjacent to McCulley Creek; however, due to the presence of rock, this installation was not possible. Three soil borings, identified as SB-1 through SB-3, were performed with a decontaminated hand auger adjacent to the creek, but rock was encountered at each boring location. Rock was encountered at 6 feet, 5 feet, and 3 feet at Borings SB-1, SB-2, and SB-3, respectively. Soil samples were collected at five foot intervals during the drilling of Borings TW-1 through TW-4. Each sample was placed in a new, resealable, plastic bag and allowed to volatilize for a minimum of fifteen minutes. The OVA-FID probe was then inserted into the headspace of the bag, and the highest organic vapor reading observed was recorded for the sample. Organic vapor concentrations greater than 1000 parts per million were detected at

Boring TW-2. Per a phone conversation with Mr. Scott McInnis, SCDHEC project manager, SEI personnel properly abandoned this soil boring location and moved farther away from Monitor Well MW-10 for Boring TW-4. The soil boring logs are presented in Appendix B, and the soil boring locations are presented in Figure 2.

2.2 Site Geology

Visual analysis of subsurface soil collected from soil boring activities conducted as part of this assessment indicated soil type consisting of stiff silt to medium clay. The maximum depth of the current investigation was approximately 50 feet bgs.

2.3 Site Hydrogeology

Liquid phase hydrocarbons were not detected in any monitor wells during the January 18, 2001, gauging event. Groundwater flow direction is toward the southeast with a hydraulic gradient of 0.0305 feet per foot as measured between Monitor Wells MW-1 and MW-11. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.4 Soil Sampling and Analysis

On January 10-11, 2000, SEI personnel obtained saturated soil samples from Borings TW-1, TW-3, and TW-4 as directed by Ms. Kristen Hein, SCDHEC project manager. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The soil samples were placed in laboratory supplied containers, placed on ice, and delivered to TestAmerica Inc. in Columbia, South Carolina for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The soil samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), and naphthalene by EPA method 8260B; and polynuclear aromatic hydrocarbons (PAH) by EPA method 8270C.

2.5 Groundwater Sampling and Analysis

During the current assessment activities, SEI personnel obtained groundwater samples from the monitor wells associated with the subject property with the exception of Monitor Wells MW-4 and MW-9, which were dry. Groundwater samples were also collected from Borings TW-1, TW-3, and TW-4. In addition, SEI personnel obtained a surface water sample (identified as CK-1) from the headwaters of McCulley Creek. A new, disposable, polyethylene bailer was used for the collection of each groundwater sample. Each monitor well was sampled after temperature and pH values had equilibrated. If a strong petroleum odor was observed in any monitor well, three well volumes were removed before the groundwater sample was collected. The purge water was containerized and placed in drums for proper disposal. Dissolved oxygen and specific conductance values were also obtained during the sampling process. Field measurements obtained during the sampling process are presented in Appendix C. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. Groundwater samples were placed in laboratory supplied containers, placed on ice, and delivered to TestAmerica, Inc. in Columbia, South Carolina for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. All groundwater samples and the surface water sample were analyzed for BTEX, methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B; PAH by EPA method 8270C; and 8 RCRA metals by EPA methods 6010B and 7470. In addition, the samples were analyzed for ferrous iron by EPA method 3500D, nitrate by EPA method 353.2, and sulfate by EPA method 9038.

3.0 LABORATORY RESULTS

3.1 Soil Results

Soil analytical results for the samples collected January 10-11, 2001, detected the presence of benzene concentrations greater than its risk based screening level (RBSL) of 0.005 mg/kg at Boring TW-1; however, other petroleum constituents were not detected at this boring. Petroleum

constituents were not detected at Borings TW-3 and TW-4. Laboratory analytical results are summarized in Table II and in Figures 4 through 13. Laboratory analytical results and chain-of-custody are presented in Appendix D.

3.2 Groundwater Results

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene and xylenes concentrations at all sample locations except MW-1, MW-5, CK-1, and TW-3. Toluene concentrations were detected at all sample locations except MW-1, MW-5, CK-1, TW-1, and TW-3. Ethylbenzene concentrations were detected at all sample locations with the exception of MW-1, MW-5, DW-1, CK-1, and TW-3. MTBE concentrations were detected at MW-2, MW-3, MW-10, MW-11, CK-1, and TW-1. Naphthalene concentrations were detected at MW-2, MW-3, MW-10, MW-11, TW-1, and TW-4. EDB concentrations were detected at Monitor Well MW-2; however, these concentrations may exist at MW-10 and MW-11 due to high dilution factors. Ferrous iron concentrations were detected at MW-3, MW-11, TW-1, and TW-4. Nitrate concentrations were detected at all sample locations except MW-2, MW-3, MW-10, MW-11, TW-1, and TW-4. Sulfate concentrations were detected at CK-1, TW-1, TW-3, and TW-4. Arsenic, cadmium, and silver concentrations were not detected at any sample locations; however, barium concentrations were detected at all sample locations. Chromium and mercury concentrations were detected at Monitor Well MW-1. Lead concentrations were detected at Monitor Wells MW-2, MW-3, and MW-7. Selenium concentrations were detected at MW-2, MW-3, MW-10, and TW-4.

Benzene and naphthalene concentrations were detected greater than their respective RBSLs of 5 μg/l and 10 μg/l at MW-2, MW-3, MW-10, MW-11, TW-1, and TW-4. Toluene and xylenes concentrations were detected greater than their respective RBSLs of 1000 μg/l and 10000 μg/l at MW-2, MW-10, and MW-11. Ethylbenzene concentrations were detected greater than its RBSL of 700 μg/l at MW-2, MW-10, MW-11, and TW-4. MTBE concentrations were detected greater than its RBSL of 40 μg/l at MW-2, MW-3, and TW-1. EDB concentrations were detected greater than its RBSL of 5 μg/l at Monitor Well MW-2; however, these concentrations may exist

greater than its RBSL at Monitor Wells MW-10 and MW-11 due to high dilution factors. Lead concentrations were detected greater than its RBSL of 0.015 mg/l at Monitor Well MW-3. Groundwater analytical results are presented in Table III , and groundwater concentrations are depicted in Figures 14 through 36. Laboratory analyses and chain-of-custody are presented in Appendix E.

4.0 CONCLUSIONS

- Groundwater flow at the site is in a southeastern direction with a hydraulic gradient of 0.0305 feet per foot as measured between Monitor Wells MW-1 and MW-11.
- Liquid phase hydrocarbons were not detected at any monitor wells during the current sampling activities.
- Total BTEX concentrations have increased at Monitor Wells MW-6, MW-7, MW-8, MW-10, and MW-11 since these wells were last sampled in 1998. However, total BTEX concentrations have decreased or remained constant at the remaining sample locations for the same period. MTBE concentrations have increased at Samples MW-3 and CK-1 since these wells were last sampled; however, these concentrations have decreased or remained constant at the remaining monitor wells for the same period. Naphthalene concentrations have increased at Monitor Wells MW-10 and MW-11 since the previous sampling event; however, these concentrations have decreased or remained constant at the remaining sample locations for the same period. EDB concentrations have increased at Monitor Well MW-2 since the previous sampling event; however, these concentrations have decreased or remained constant at the remaining sample locations for the same period.
- A monitor well adjacent to McCulley Creek was not able to be installed due to the presence of rock.
- The groundwater contaminant plume has been delineated, as well as possible, based on site topography. Sample TW-3 did not contain groundwater petroleum hydrocarbons greater than their respective detection limits. Sample TW-1 contained benzene, MTBE, and naphthalene concentrations greater than their respective RBSLs; and Sample TW-4

contained benzene, ethylbenzene, and naphthalene concentrations greater than their respective RBSLs. Further delineation of Samples TW-1 and TW-4 is not possible due to wooded areas near these two sample locations.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

Fetter, C. W., 1994, *Applied Hydrogeology*, Macmillan College Publishing Company, New York, New York.

SCDHEC, January 5, 1998, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

SEI Environmental, Inc., March 25, 1999, *Rapid Assessment Report – United Exxon,* Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-1	01/11/01	96.54	42.58	0	48	53.96
MW-2	01/11/01	98.17	50.30	0	54	47.87
MW-3	01/11/01	95.81	43.85	0	45	51.96
MW-4	01/11/01	98.52	Dry	0	45	Not Applicable
MW-5	01/11/01	94.41	43.08	0	45	51.33
MW-6	01/11/01	103.40	Dry	0	55	Not Applicable
MW-7	01/11/01	102.34	50.65	0	52	51.69
MW-8	01/11/01	97.63	43.30	0	45	54.33
MW-9	01/11/01	100.62	Dry	0	50	Not Applicable
MW-10	01/11/01	88.26	46.47	0	50	41.79
MW-11	01/11/01	70.63	32.33	0	38	38.30
DW-1	01/11/01	98.62	50.92	0	89	47.70

LPH=Liquid Phase Hydrocarbons

Table II
Saturated Soil Analytical Results
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (mg/kg)	TW-1 (mg/kg)	TW-2 (mg/kg)	TW-3 (mg/kg)	TW-4 (mg/kg)
Benzene	0.005	**1.603**	NS	<0.0013	<0.0011
Toluene	1.622	<0.0641	NS	<0.0013	<0.0011
Ethylbenzene	1.260	<0.0641	NS	<0.0013	<0.0011
Xylenes	42.471	<0.0641	NS	<0.0013	<0.0011
Total BTEX	NA	1.7953	NA	<0.0052	<0.0044
Naphthalene	0.210	<0.3205	NS	<0.0064	<0.0056
Benzo(a)anthracene	73.084	<0.085	NS	<0.085	<0.074
Benzo(b)fluoranthene	29.097	<0.085	NS	<0.085	<0.074
Benzo(k)fluoranthene	231.109	<0.085	NS	<0.085	<0.074
Chrysene	12.998	<0.085	NS	<0.085	<0.074
Dibenzo(a,h)anthracene	87.866	<0.085	NS	<0.085	<0.074

RBSLs are based on sandy soil where the depth to groundwater is less than 5 feet below the worst case soil sample.
Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable

Table III
Groundwater Analytical Results (1/11/01)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)
Free Product Thickness	None	None	None	None	NA	None	None	None	None	None
Benzene	5	<1.0	**15900**	**434**	NS	<1.0	2.4	1.4	1.0	NS
Toluene	1000	<1.0	**90700**	288	NS	<1.0	19.3	13.0	9.2	NS
Ethylbenzene	700	<1.0	**4800**	182	NS	<1.0	2.6	3.1	1.9	NS
Xylenes	10000	<1.0	**26700**	146	NS	<1.0	8.3	5.0	3.5	NS
Total BTEX	NA	<4.0	138100	1050	NA	<4.0	32.6	22.5	15.6	NA
MTBE	40	<5.0	**82000**	**89.9**	NS	<5.0	<5.0	<5.0	<5.0	NS
Naphthalene	10	<5.0	**840**	**12.9**	NS	<5.0	<5.0	<5.0	<5.0	NS
EDB	5	<1.0	**127**	<1.0	NS	<1.0	<1.0	<1.0	<1.0	NS
Benzo(a)anthracene	10	<5.0	<188000	<5.0	NS	<5.0	NS	<7.14	<5.0	NS
Benzo(b)fluoranthene	10	<5.0	<188000	<5.0	NS	<5.0	NS	<7.14	<5.0	NS
Benzo(k)fluoranthene	10	<5.0	<188000	<5.0	NS	<5.0	NS	<7.14	<5.0	NS
Chrysene	10	<5.0	<188000	<5.0	NS	<5.0	NS	<7.14	<5.0	NS
Dibenzo(a,h)anthracene	10	<5.0	<188000	<5.0	NS	<5.0	NS	<7.14	<5.0	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled due to the well being dry.

Table III (continued)
Groundwater Analytical Results (1/11/01)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (mg/l)	MW-1 (mg/l)	MW-2 (mg/l)	MW-3 (mg/l)	MW-4 (mg/l)	MW-5 (mg/l)	MW-6 (mg/l)	MW-7 (mg/l)	MW-8 (mg/l)	MW-9 (mg/l)
Ferrous Iron	NA	<0.100	<0.100	60.5	NS	<0.100	NS	<0.100	<0.100	NS
Nitrate	NA	0.67	<0.10	<0.10	NS	0.86	NS	5.49	0.90	NS
Sulfate	NA	<1.00	<1.00	<1.00	NS	<1.00	NS	<1.00	<1.00	NS
Arsenic	NA	<0.0050	<0.0050	<0.0050	NS	<0.0050	NS	<0.0050	<0.0050	NS
Barium	NA	0.2830	0.3700	0.2730	NS	0.1360	NS	0.2050	0.3900	NS
Cadmium	NA	<0.0010	<0.0010	<0.0010	NS	<0.0010	NS	<0.0010	<0.0010	NS
Chromium	NA	0.0070	<0.0050	<0.0050	NS	<0.0050	NS	<0.0050	<0.0050	NS
Lead	0.015	<0.0030	0.0050	**0.2210**	NS	<0.0030	NS	0.0050	<0.0030	NS
Mercury	NA	<0.00020	<0.00020	<0.00020	NS	<0.00020	NS	<0.00020	<0.00020	NS
Selenium	NA	<0.0050	0.0090	0.0050	NS	<0.0050	NS	<0.0050	<0.0050	NS
Silver	NA	<0.00500	<0.00500	<0.00500	NS	<0.00500	NS	<0.00500	<0.00500	NS

Bold concentrations represent those greater than the respective RBSL.
N/A = Not Applicable; NS = Not Sampled due to the well being dry.

Table III (continued)
Groundwater Analytical Results (1/11/01)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)	TW-1 (µg/l)	TW-2 (µg/l)	TW-3 (µg/l)	TW-4 (µg/l)
Free Product Thickness	None	None	None	None	None	None	None	None	None
Benzene	5	**8950**	**8000**	1.0	<1.0	**5150**	NS	<2.0	**8850**
Toluene	1000	**49000**	**11800**	9.9	<1.0	<2.0	NS	<2.0	300
Ethylbenzene	700	**8550**	**3470**	<1.0	<1.0	2.5	NS	<2.0	**750**
Xylenes	10000	**49000**	**16400**	3.1	<1.0	131	NS	<2.0	385
Total BTEX	NA	115500	39670	<15.0	<4.0	<5285.5	NA	<8.0	10285
MTBE	40	22.0	31.0	<5.0	1.2	**43.8**	NS	<2.0	<2.0
Naphthalene	10	**3300**	**1440**	<5.0	<5.0	**134**	NS	<5.0	**540**
EDB	5	<500	<100	<1.0	<1.0	<2.0	NS	<2.0	<2.0
Benzo(a)anthracene	10	<500	<5.0	<5.0	<5.0	<5.0	NS	<5.56	<5.00
Benzo(b)fluoranthene	10	<500	<5.0	<5.0	<5.0	<5.0	NS	<5.56	<5.00
Benzo(k)fluoranthene	10	<500	<5.0	<5.0	<5.0	<5.0	NS	<5.56	<5.00
Chrysene	10	<500	<5.0	<5.0	<5.0	<5.0	NS	<5.56	<5.00
Dibenzo(a,h)anthracene	10	<500	<5.0	<5.0	<5.0	<5.0	NS	<5.56	<5.00

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

Table III (continued)
Groundwater Analytical Results (1/11/01)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (mg/l)	MW-10 (mg/l)	MW-11 (mg/l)	DW-1 (mg/l)	CK-1 (mg/l)	TW-1 (mg/l)	TW-2 (mg/l)	TW-3 (mg/l)	TW-4 (mg/l)
Ferrous Iron	NA	<0.100	3.48	<0.100	<0.100	0.462	NS	<0.100	3.46
Nitrate	NA	<0.10	<0.10	2.54	3.35	<0.10	NS	2.34	<0.10
Sulfate	NA	<1.00	<1.00	<1.00	6.20	1.90	NS	2.80	10.4
Arsenic	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NS	<0.0050	<0.0050
Barium	NA	0.3250	0.1550	0.0300	0.0500	0.0910	NS	0.1020	0.2910
Cadmium	NA	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NS	<0.0010	<0.0010
Chromium	NA	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	NS	<0.0050	<0.0050
Lead	0.015	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	NS	<0.0030	<0.0030
Mercury	NA	0.00030	<0.00020	<0.00020	<0.00020	<0.00020	NS	<0.00020	<0.00020
Selenium	NA	0.0080	<0.0050	<0.0050	<0.0050	<0.0050	NS	<0.0050	0.0050
Silver	NA	<0.00500	<0.00500	<0.00500	<0.00500	<0.0050	NS	<0.0050	<0.0050

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

Table IV
Historical Groundwater Analytical Results, dated May – November 1998
United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)
Free Product Thickness	None	None	None	None	None	None	None	None	None	None
Benzene	5	<1.0	**23100**	**2260**	**1781**	<5	<1	<1	<1	<1.0
Toluene	1000	<1.0	**89000**	52.7	610	<5	<1	<1	<1	2.1
Ethylbenzene	700	<1.0	**5380**	215	311	<5	<1	<1	<1	<1.0
Xylenes	10000	7.77	**27380**	889	1921	<15	<1	<1	<1	<1.0
Total BTEX	NA	<10.77	144860	3416.7	4623	<30	<4	<4	<4	<5.1
MTBE	40	<5.0	**227000**	**<50**	<10	<1.0	<1	<1	<1	<1.0
Naphthalene	10	23.8	**2140**	**<50**	**40**	<5.0	<5	<5	<5	<5.0
EDB	5	<0.05	**78.65**	<0.05	<10	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Benzo(b)fluoranthene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Benzo(k)fluoranthene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Chrysene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Dibenzo(a,h)anthracene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable

Table IV (continued)
Historical Groundwater Analytical Results, dated May – November 1998
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (mg/l)	MW-1 (mg/l)	MW-2 (mg/l)	MW-3 (mg/l)	MW-4 (mg/l)	MW-5 (mg/l)	MW-6 (mg/l)	MW-7 (mg/l)	MW-8 (mg/l)	MW-9 (mg/l)
Arsenic	NA	<0.003	<0.003	<0.003	0.009	<0.005	0.018	<0.005	0.007	<0.009
Barium	NA	0.590	0.280	0.500	0.567	0.256	2.04	0.740	0.729	0.36
Cadmium	NA	<0.001	0.001	<0.001	0.0006	0.0003	0.0026	0.0002	0.0004	<0.006
Chromium	NA	<0.005	<0.005	0.012	0.050	0.011	0.532	<0.01	0.057	0.026
Lead	0.015	<0.010	<0.010	**0.020**	**0.029**	0.015	**0.070**	0.009	**0.047**	0.014
Mercury	NA	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.50
Selenium	NA	<0.003	<0.003	<0.003	<0.005	<0.005	0.005	<0.005	<0.005	<0.008
Silver	NA	<0.001	<0.001	<0.002	<0.01	<0.01	0.046	<0.01	<0.01	<0.039

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable

Table IV (continued) Historical Groundwater Analytical Results, dated May – November 1998 United Exxon / Winnsboro, South Carolina					
Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	None	None	None	None	None
Benzene	5	**11200**	**6280**	<5.0	<1.0
Toluene	1000	**30800**	**15600**	<5.0	<1.0
Ethylbenzene	700	**3360**	**2390**	<5.0	<1.0
Xylenes	10000	**15500**	**10800**	<15	<1.0
Total BTEX	NA	60860	35070	<30.0	<4.0
MTBE	40	**<100**	**<100**	<5.0	<1.0
Naphthalene	10	**766**	**617**	<5.0	<5.0
EDB	5	**<100**	**<50**	<5.0	<0.02
Benzo(a)anthracene	10	<10	<10	<10	<5.0
Benzo(b)fluoranthene	10	<10	<10	<10	<5.0
Benzo(k)fluoranthene	10	<10	<10	<10	<5.0
Chrysene	10	<10	<10	<10	<5.0
Dibenzo(a,h)anthracene	10	<10	<10	<10	<5.0

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable

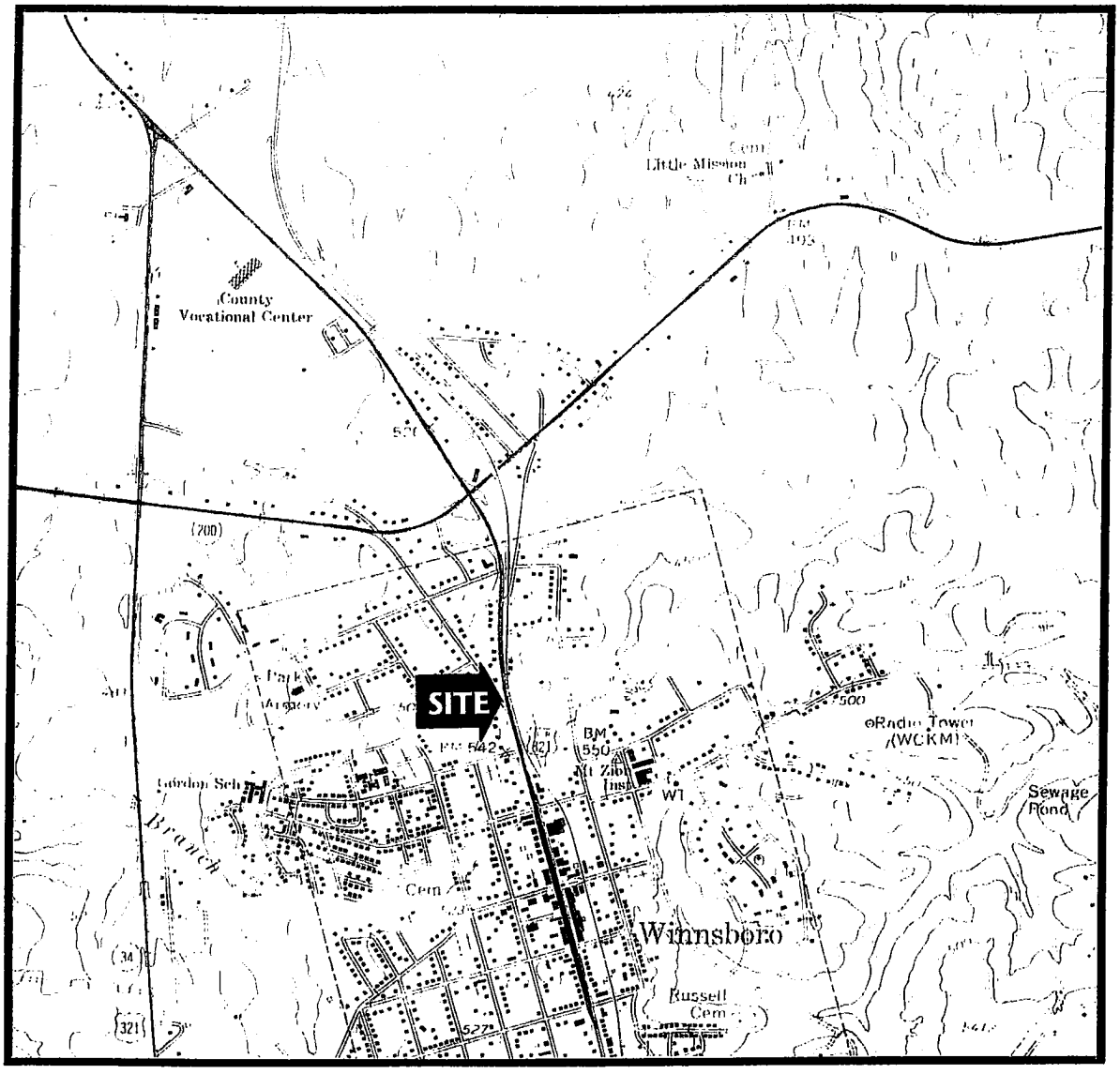
Table IV (continued) Historical Groundwater Analytical Results, dated May – November 1998 Former United Exxon / Winnsboro, South Carolina					
Chemical of Concern	RBSL (mg/l)	MW-10 (mg/l)	MW-11 (mg/l)	DW-1 (mg/l)	CK-1 (mg/l)
Arsenic	NA	<0.009	<0.009	<0.005	<0.009
Barium	NA	0.30	<0.006	0.030	0.070
Cadmiun	NA	<0.006	<0.006	<0.003	<0.006
Chromium	NA	0.006	<0.006	<0.003	<0.006
Lead	0.015	0.015	<0.006	<0.003	<0.006
Mercury	NA	<0.50*	<0.50*	<0.50*	<0.50*
Selenium	NA	<0.008	<0.008	<0.004	<0.008
Silver	NA	<0.039	<0.039	<0.020	<0.036

Bold Concentrations represent those greater than the respective RBSL.
NA = Not Applicable
*Results in µg/l

FIGURES

USGS TOPOGRAPHICAL MAP

WINNSBORO QUADRANGLE



SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

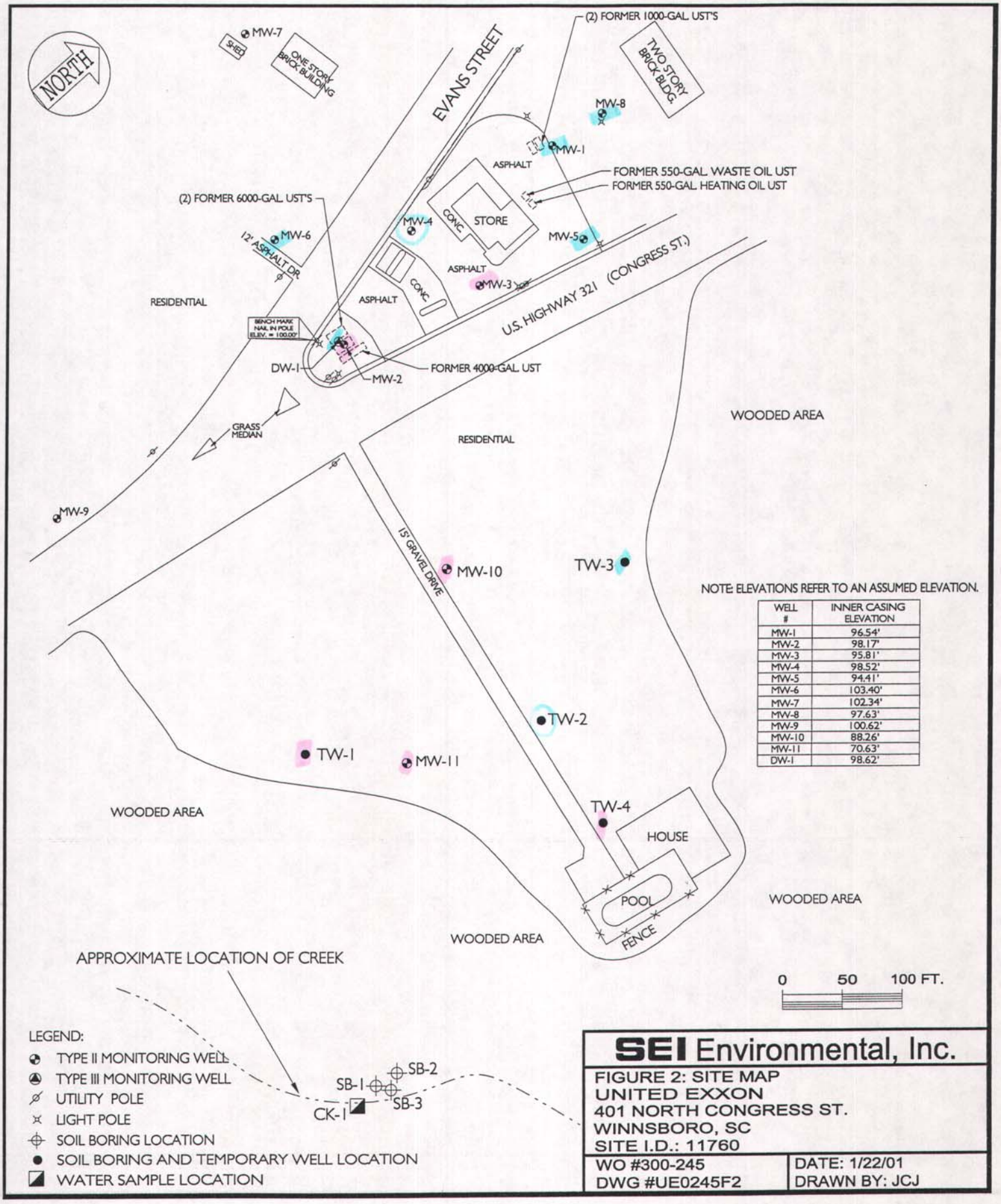
1 .5 0 1 KILOMETER

NORTH

SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC

WO #197-343	DATE: 1/16/98
DWG #	DRAWN BY: JCJ



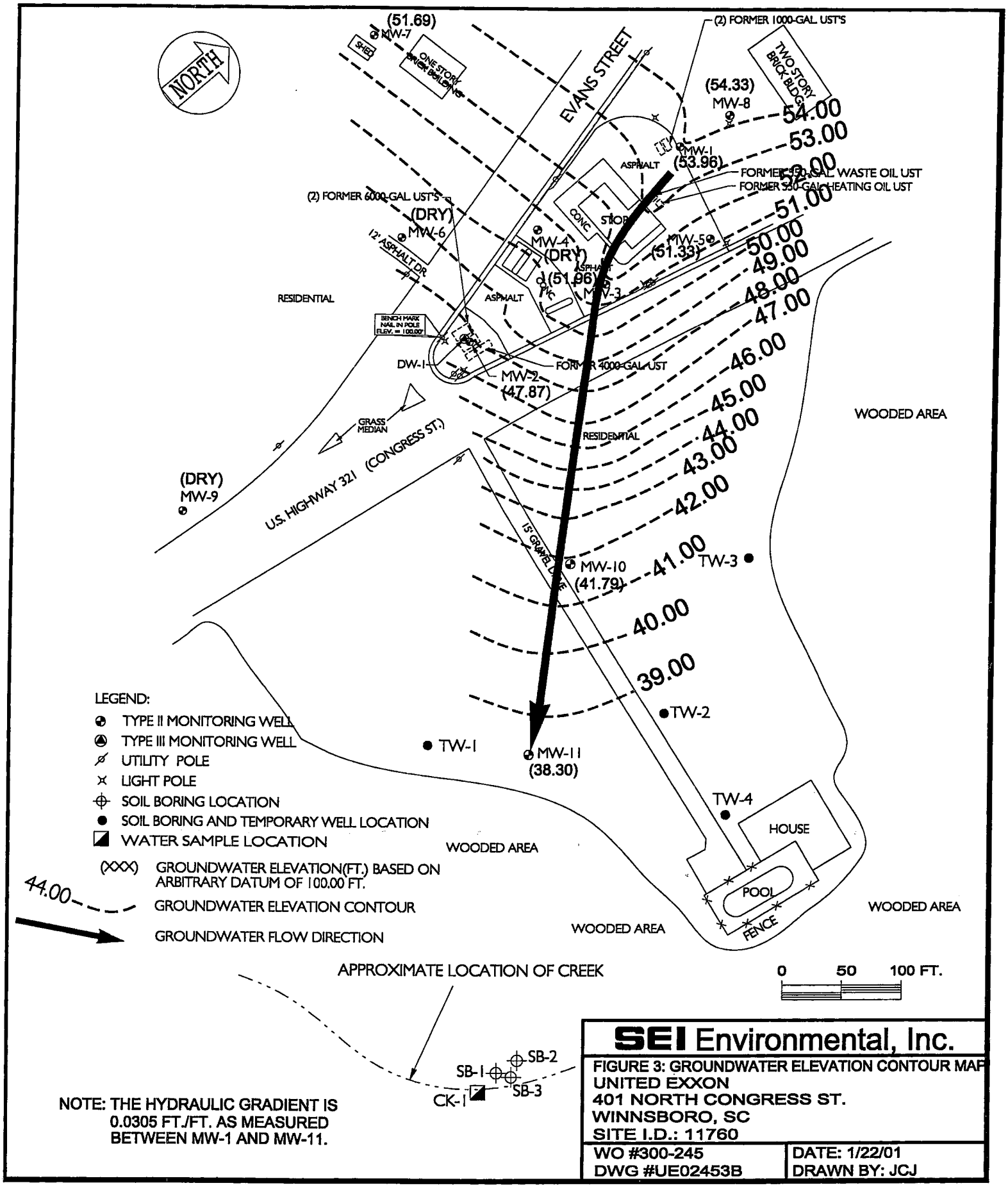
NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #300-245	DATE: 1/22/01
DWG #UE0245F2	DRAWN BY: JCJ

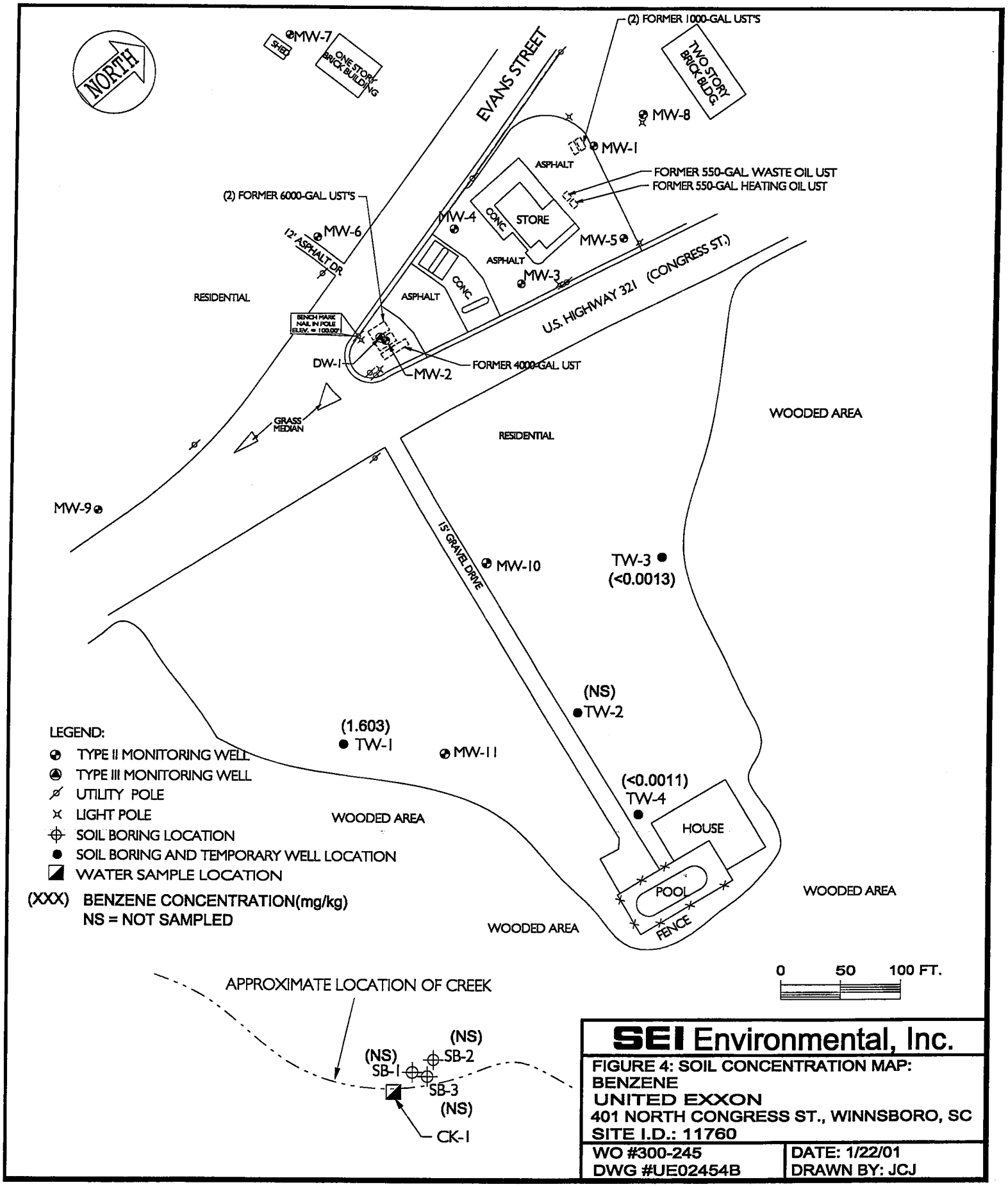


NOTE: THE HYDRAULIC GRADIENT IS 0.0305 FT./FT. AS MEASURED BETWEEN MW-1 AND MW-11.

SEI Environmental, Inc.

FIGURE 3: GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

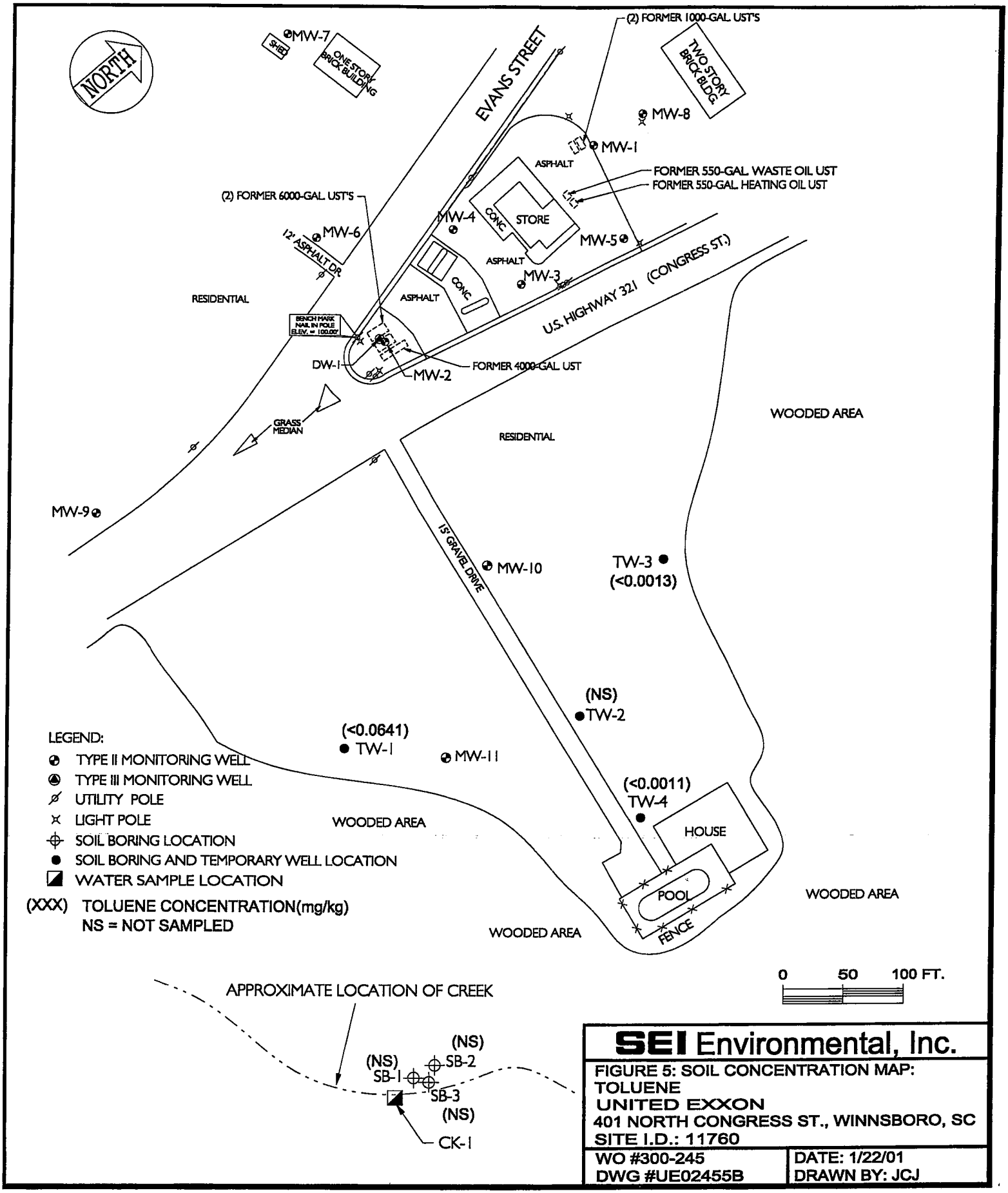
WO #300-245	DATE: 1/22/01
DWG #UE02453B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 4: SOIL CONCENTRATION MAP: BENZENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

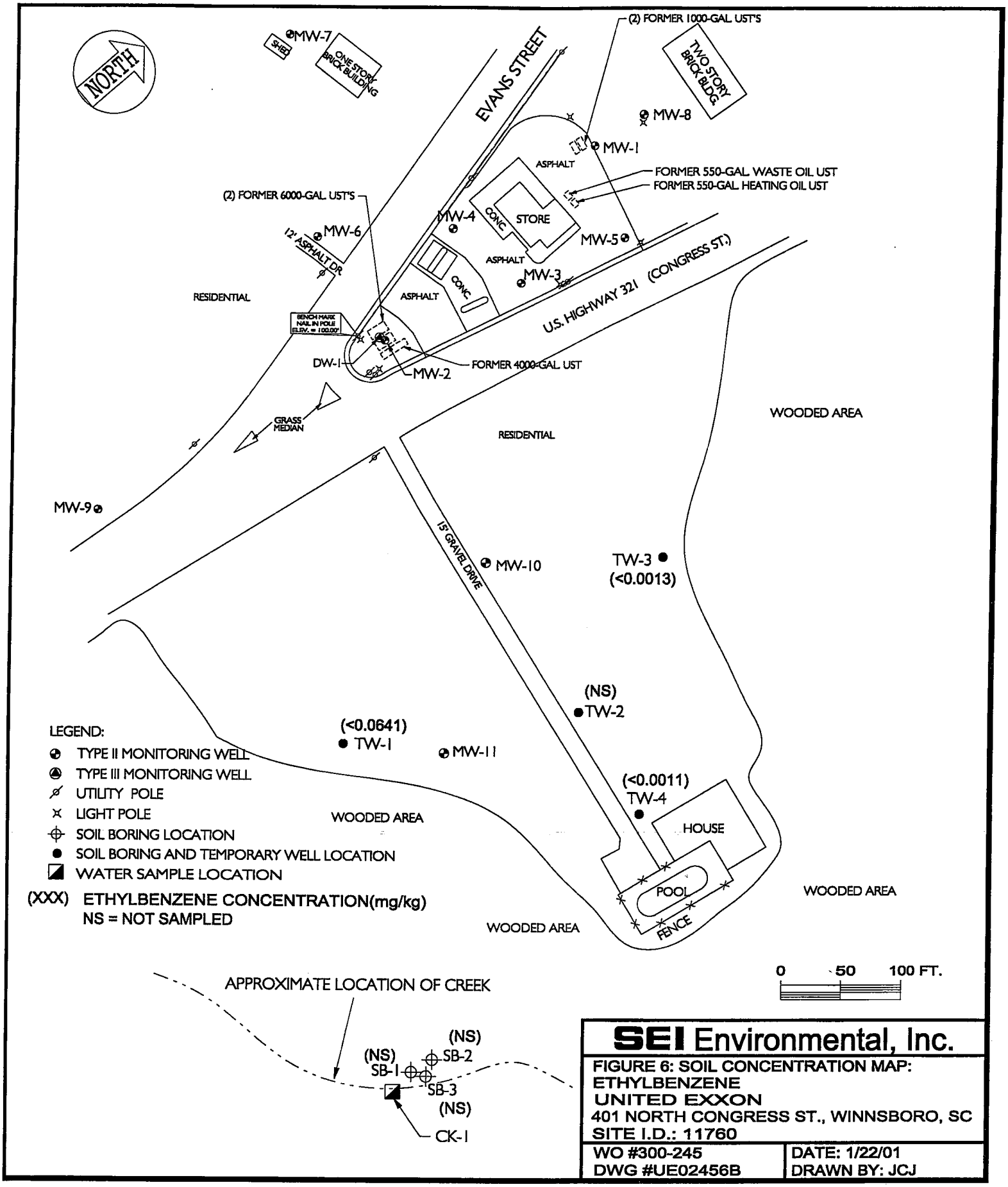
WO #300-245	DATE: 1/22/01
DWG #UE02454B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 5: SOIL CONCENTRATION MAP: TOLUENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

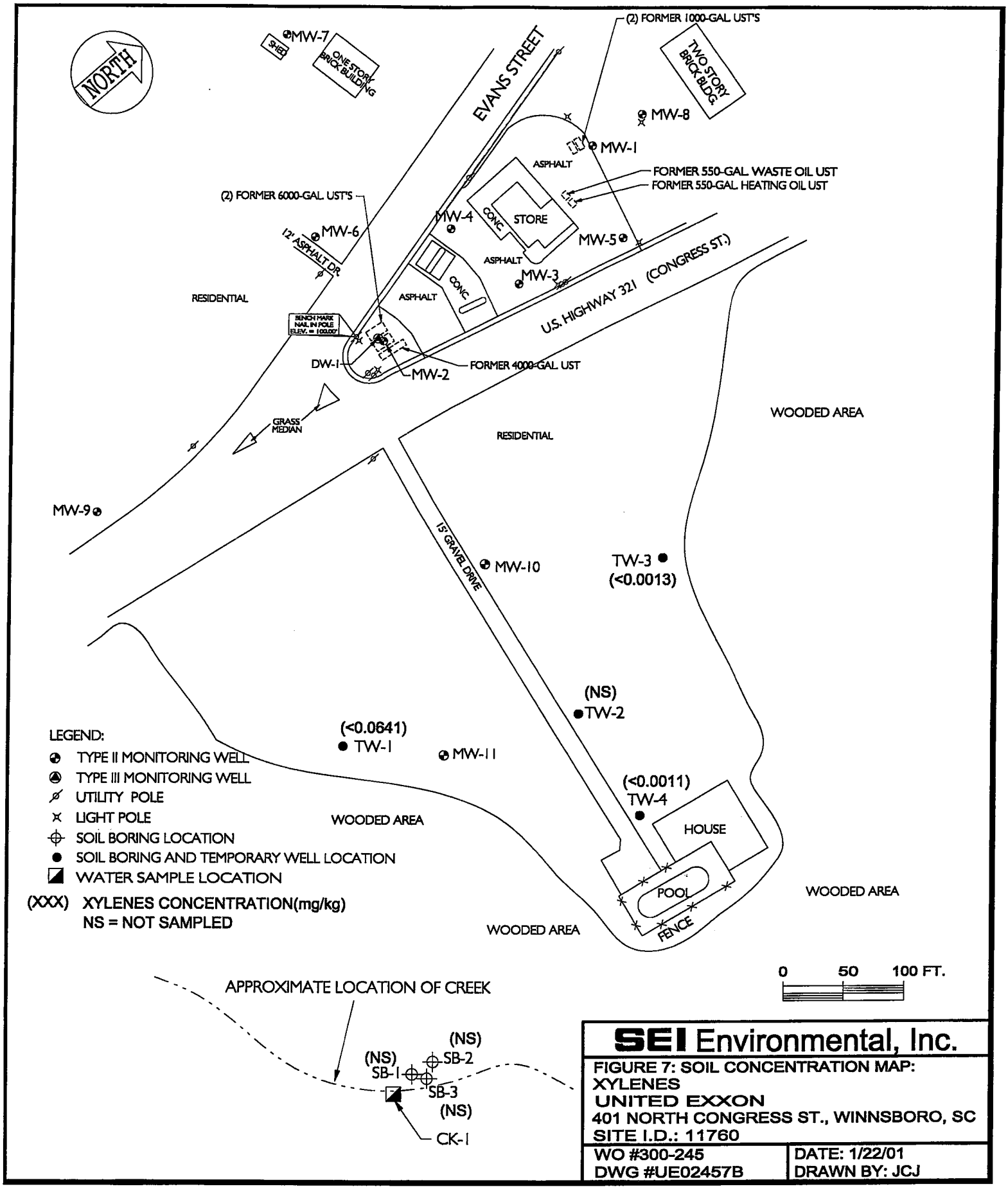
WO #300-245	DATE: 1/22/01
DWG #UE02455B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 6: SOIL CONCENTRATION MAP: ETHYLBENZENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

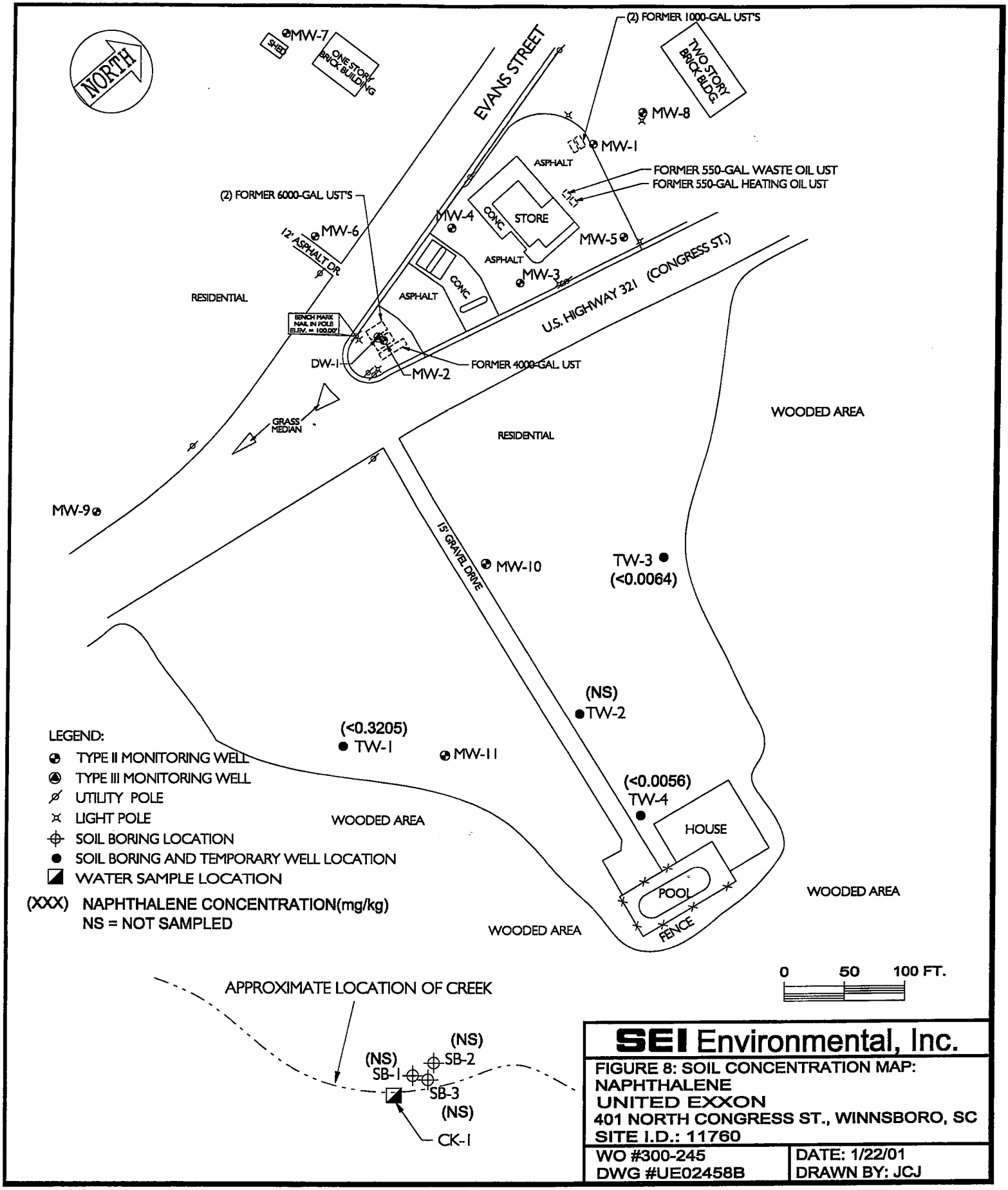
WO #300-245	DATE: 1/22/01
DWG #UE02456B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 7: SOIL CONCENTRATION MAP: XYLENES
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

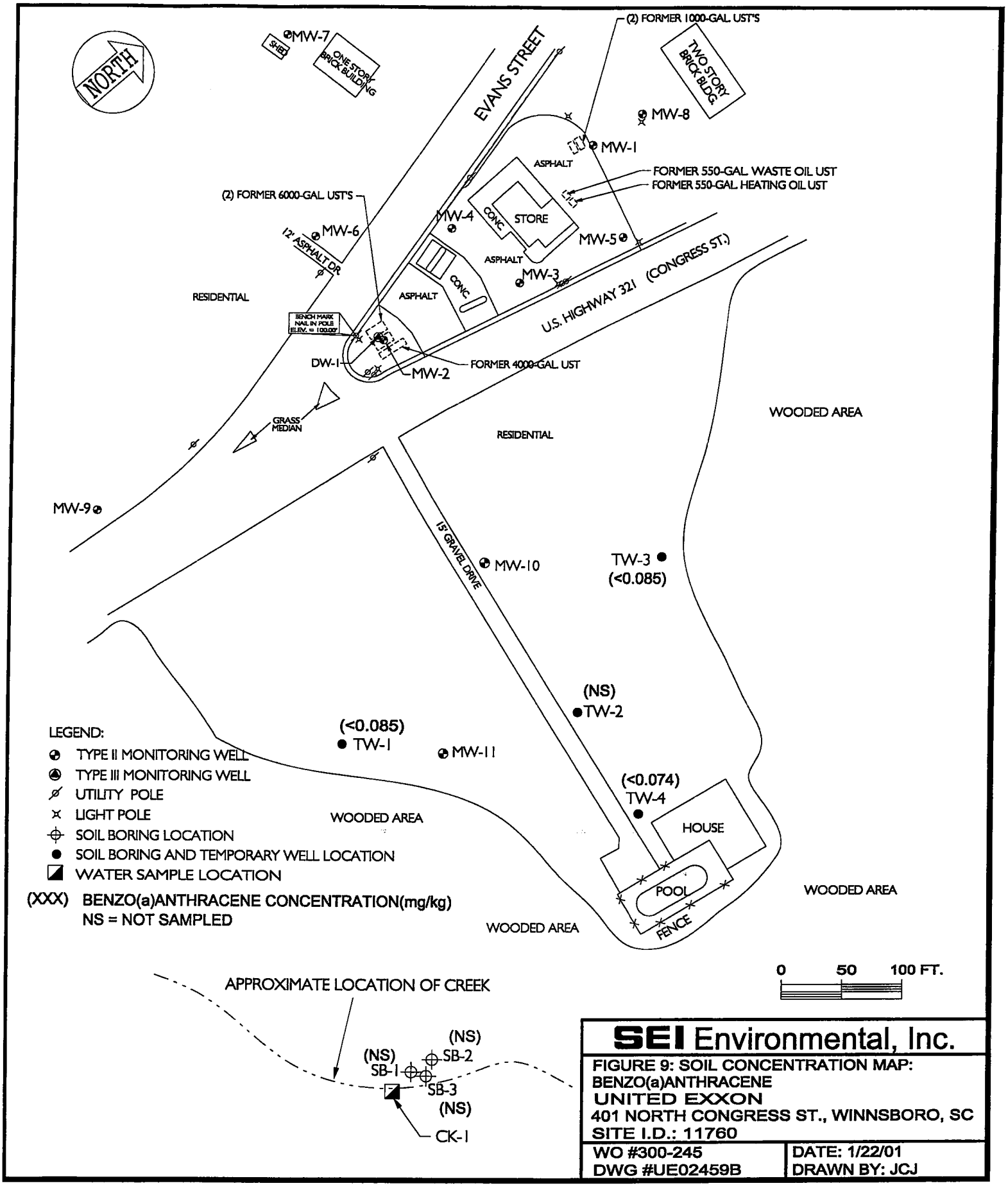
WO #300-245	DATE: 1/22/01
DWG #UE02457B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 8: SOIL CONCENTRATION MAP: NAPHTHALENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

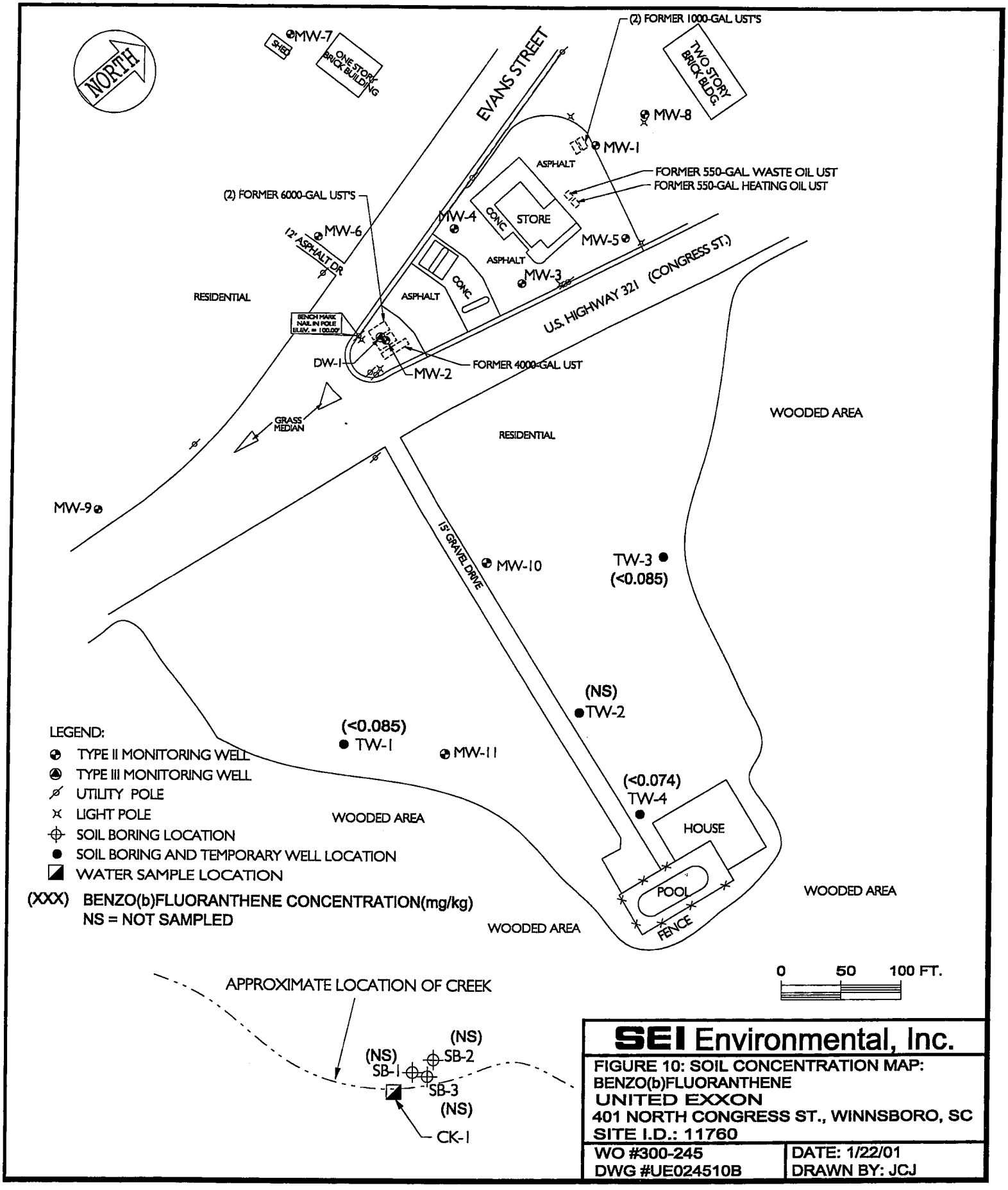
WO #300-245	DATE: 1/22/01
DWG #UE02458B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 9: SOIL CONCENTRATION MAP: BENZO(a)ANTHRACENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

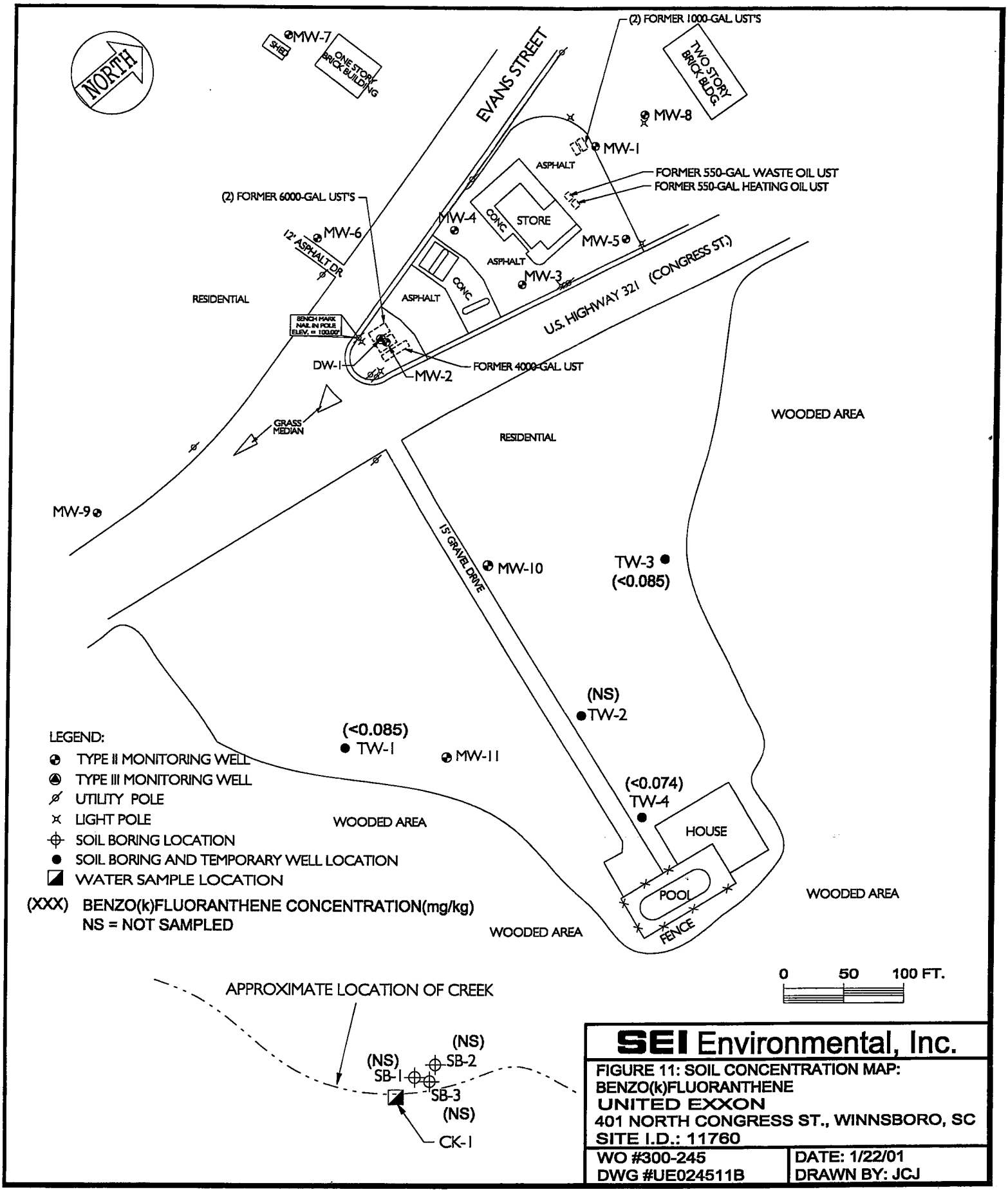
WO #300-245	DATE: 1/22/01
DWG #UE02459B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 10: SOIL CONCENTRATION MAP: BENZO(b)FLUORANTHENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

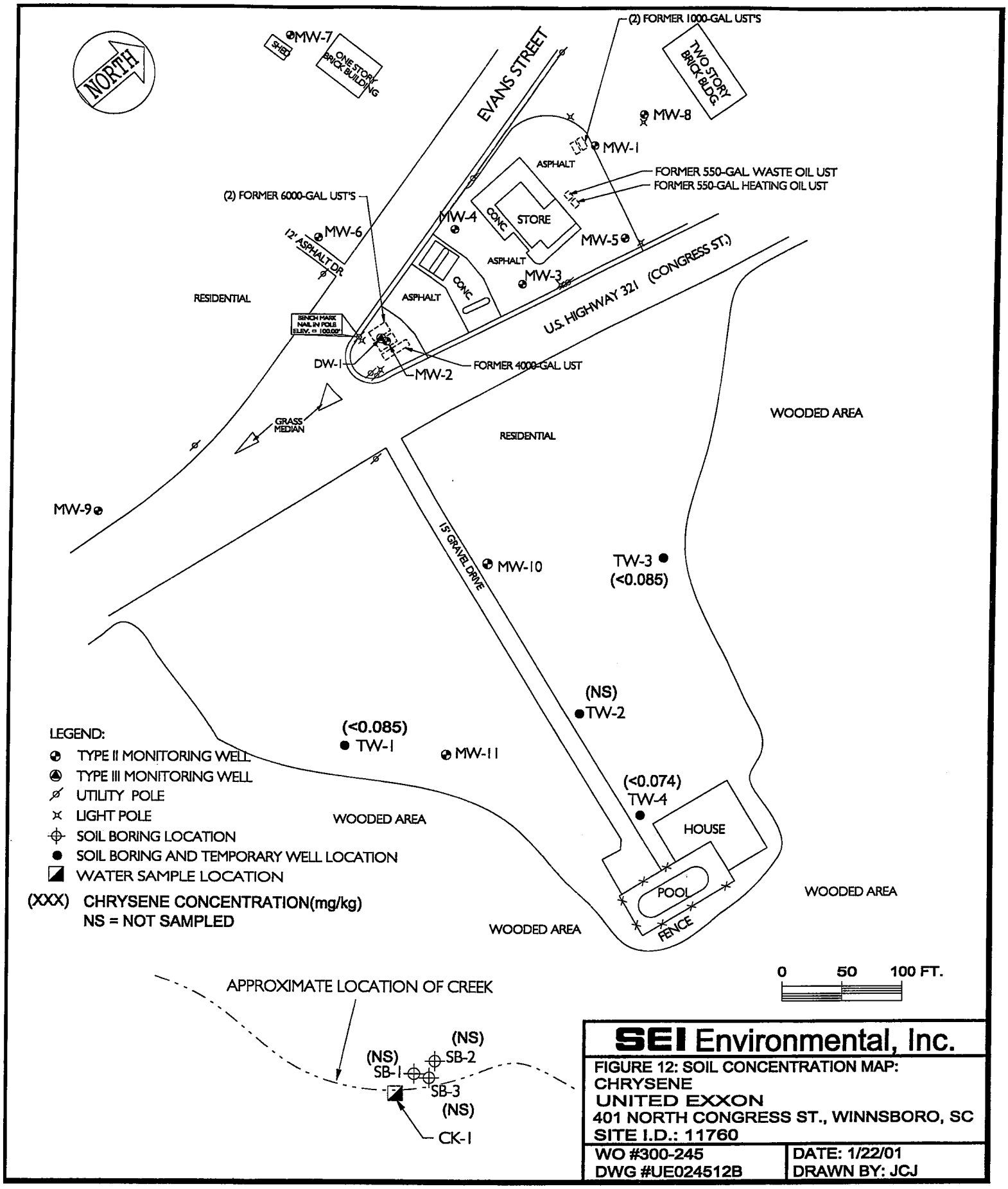
WO #300-245	DATE: 1/22/01
DWG #UE024510B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 11: SOIL CONCENTRATION MAP:
BENZO(k)FLUORANTHENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

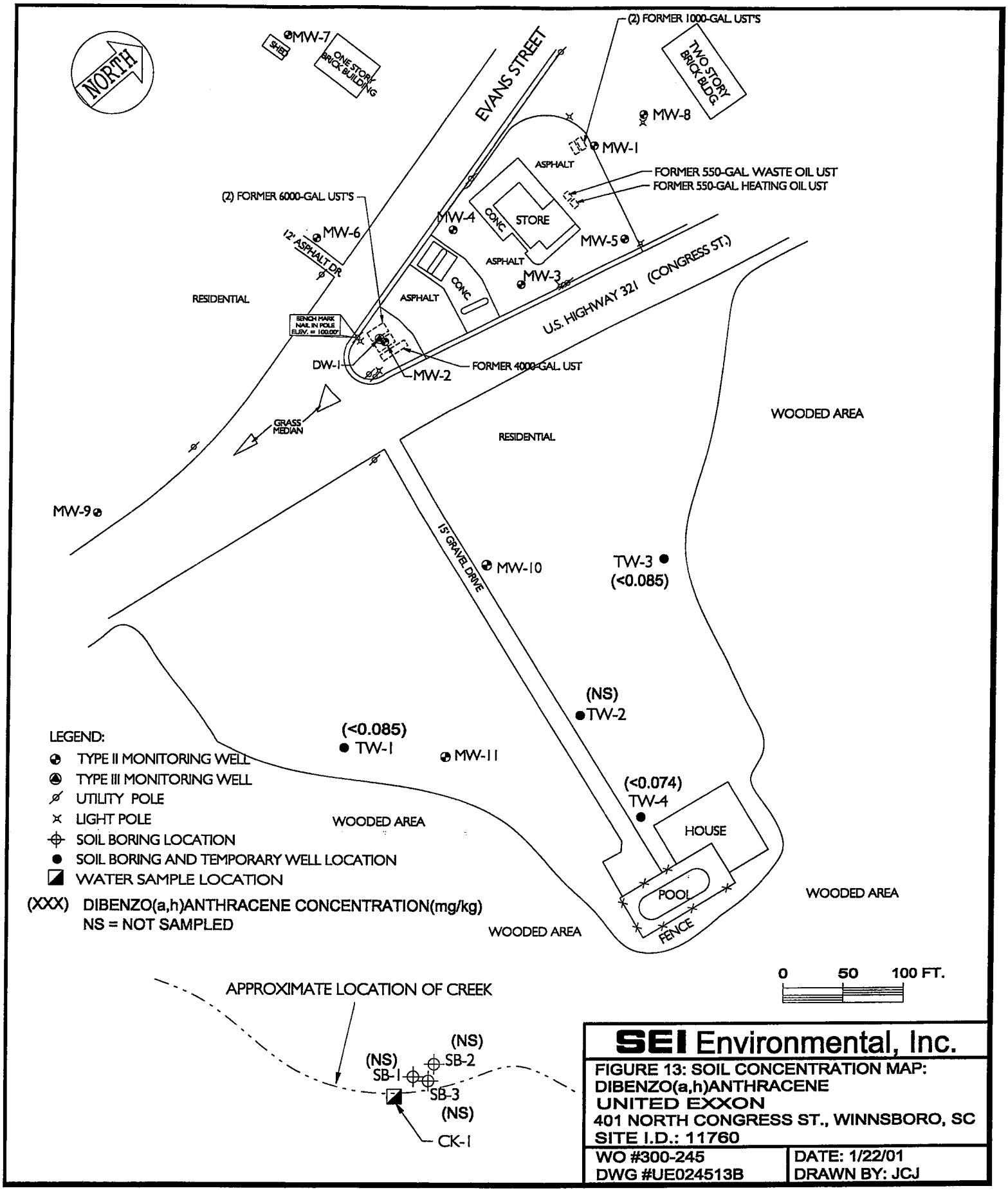
WO #300-245	DATE: 1/22/01
DWG #UE024511B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 12: SOIL CONCENTRATION MAP: CHRYSENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

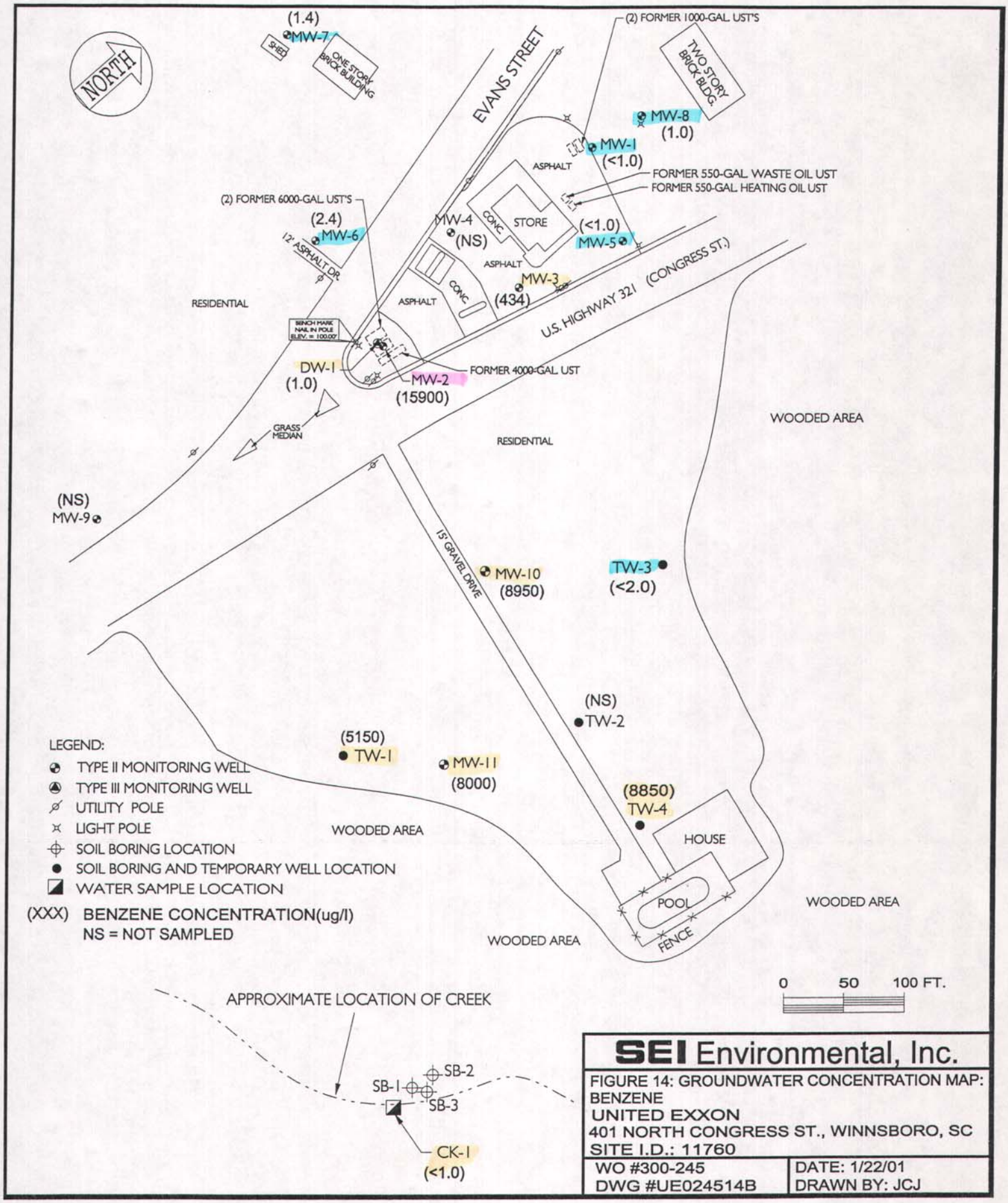
WO #300-245	DATE: 1/22/01
DWG #UE024512B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 13: SOIL CONCENTRATION MAP:
DIBENZO(a,h)ANTHRACENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

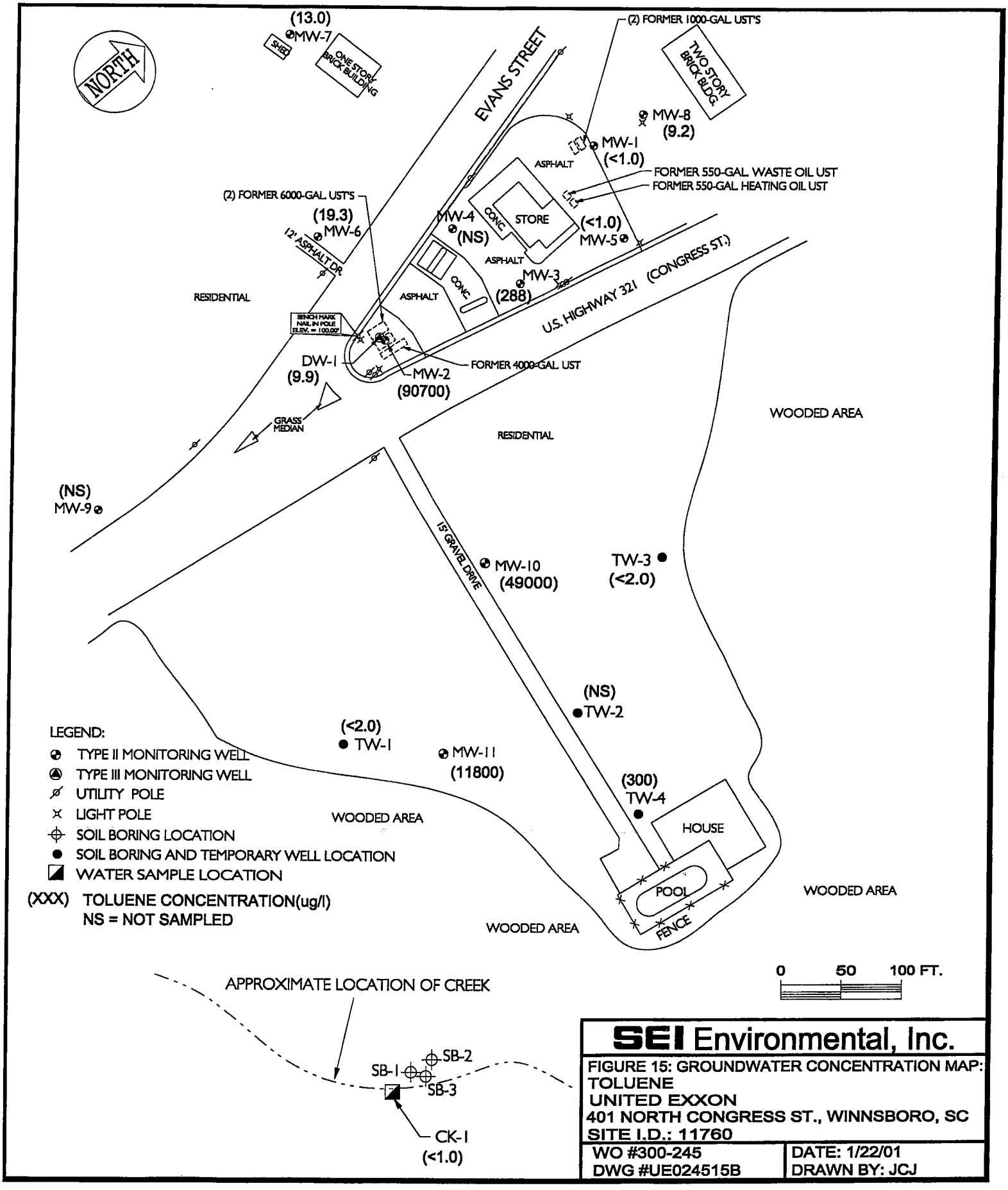
WO #300-245	DATE: 1/22/01
DWG #UE024513B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 14: GROUNDWATER CONCENTRATION MAP: BENZENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

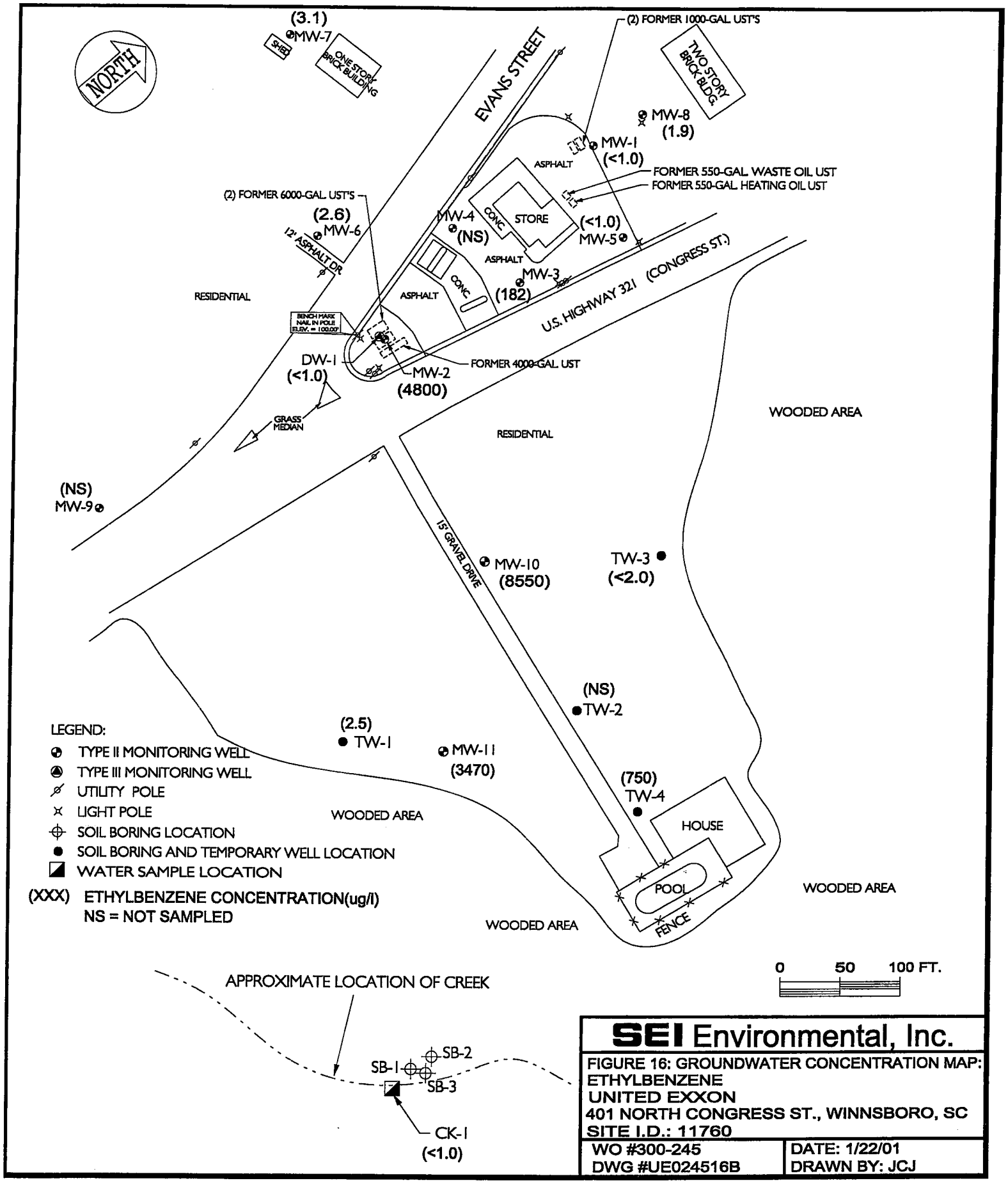
WO #300-245	DATE: 1/22/01
DWG #UE024514B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 15: GROUNDWATER CONCENTRATION MAP: TOLUENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

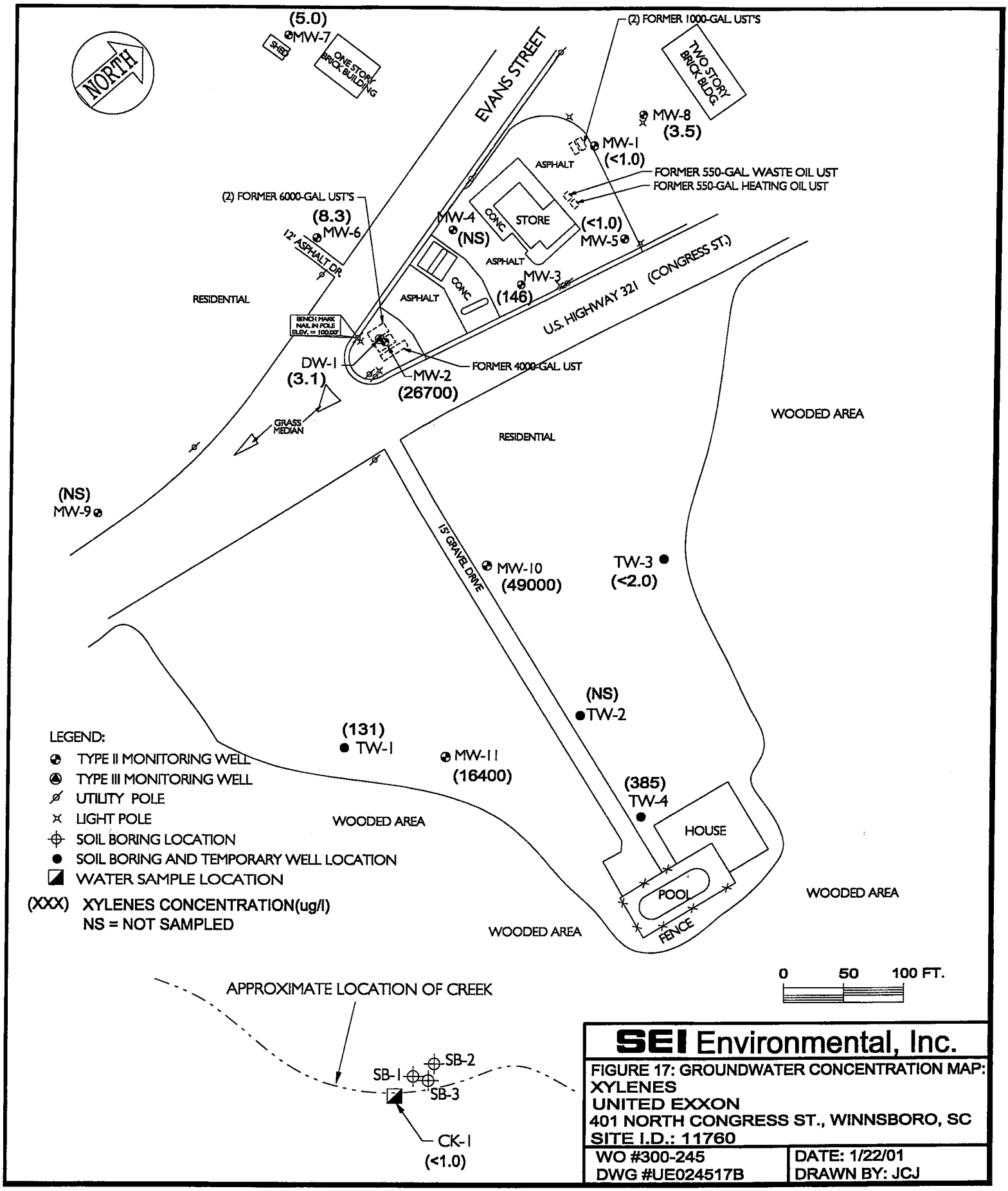
WO #300-245	DATE: 1/22/01
DWG #UE024515B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 16: GROUNDWATER CONCENTRATION MAP: ETHYLBENZENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

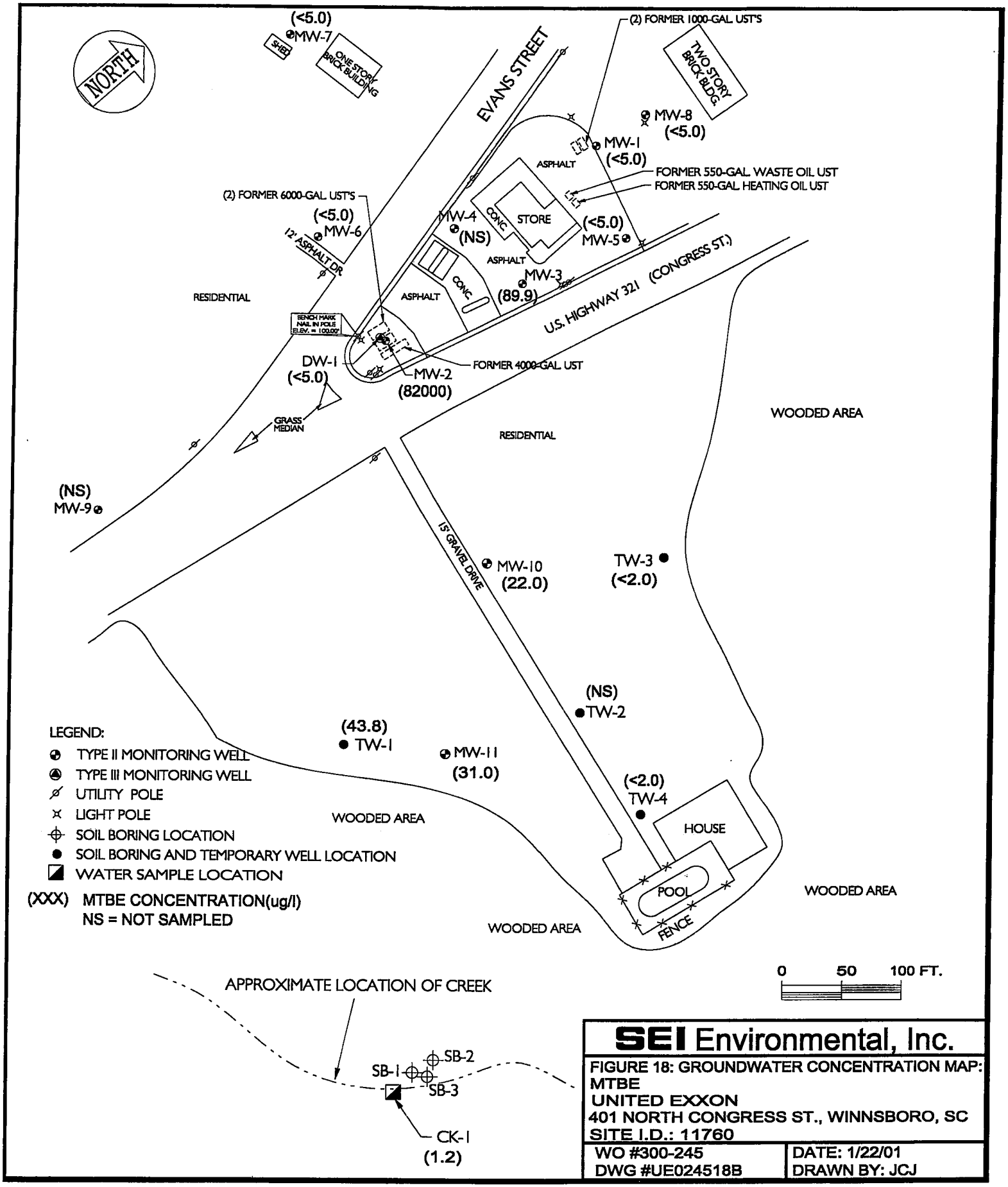
WO #300-245	DATE: 1/22/01
DWG #UE024516B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 17: GROUNDWATER CONCENTRATION MAP: XYLENES
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

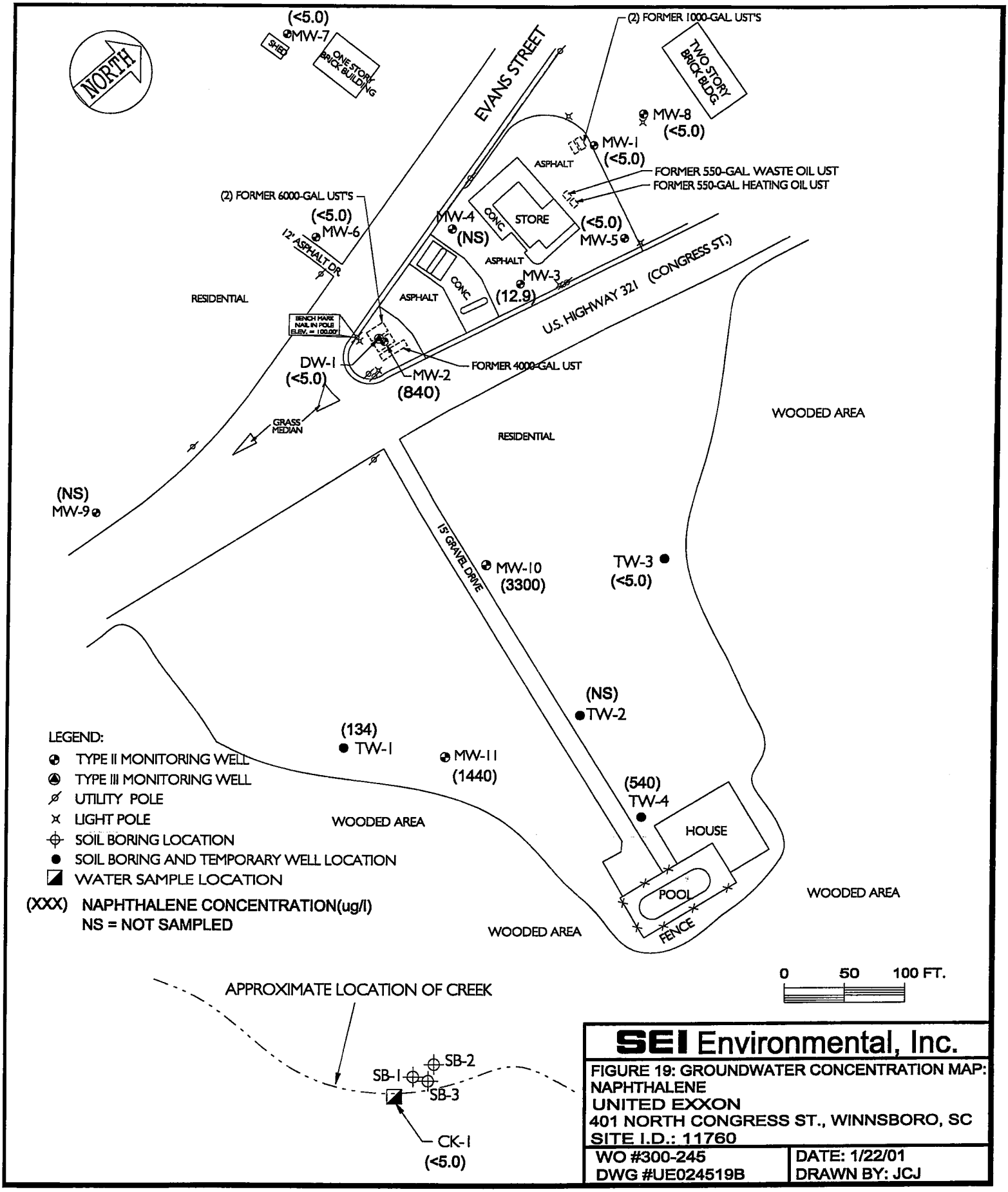
WO #300-245	DATE: 1/22/01
DWG #UE024517B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 18: GROUNDWATER CONCENTRATION MAP: MTBE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

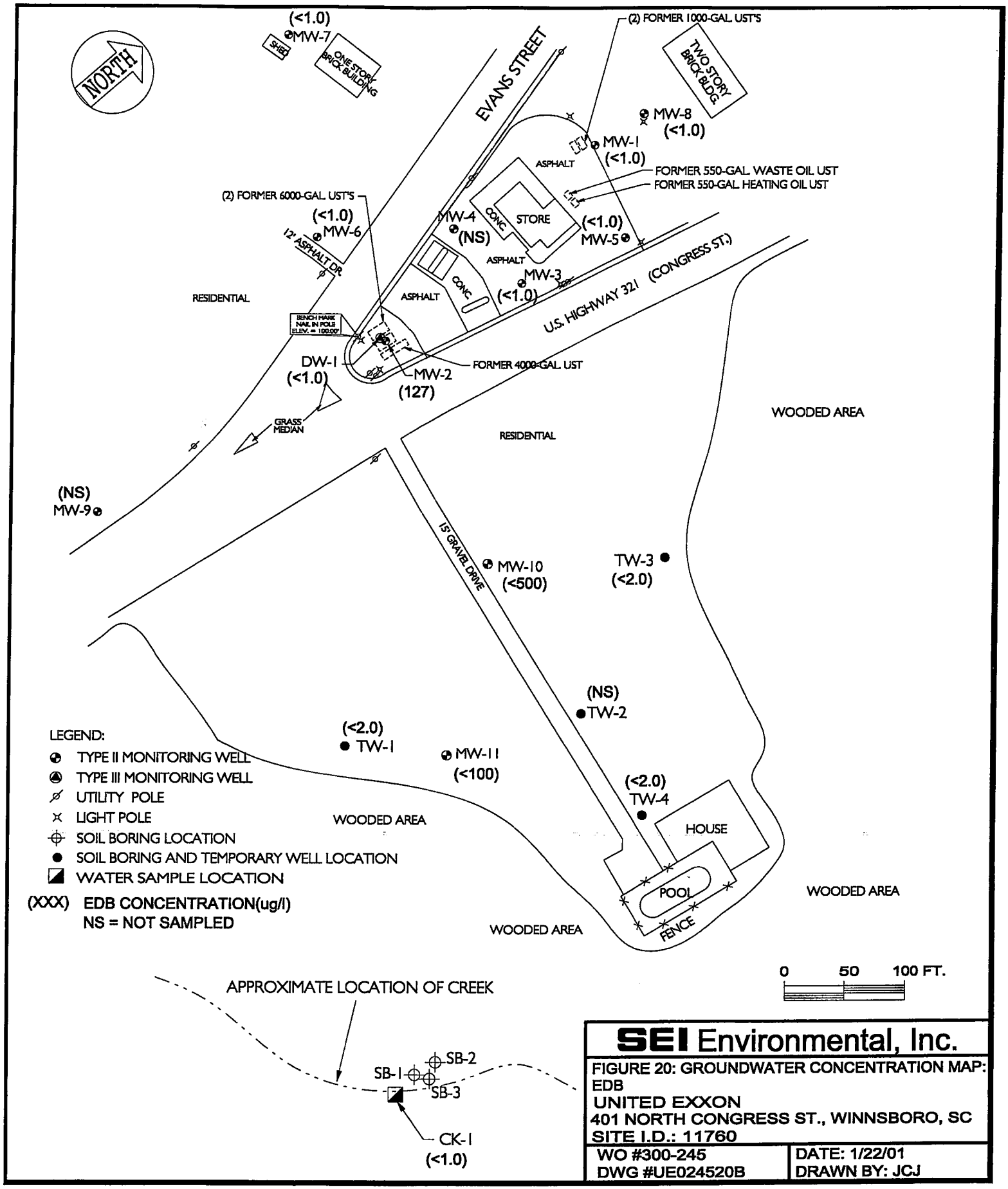
WO #300-245	DATE: 1/22/01
DWG #UE024518B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 19: GROUNDWATER CONCENTRATION MAP: NAPHTHALENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

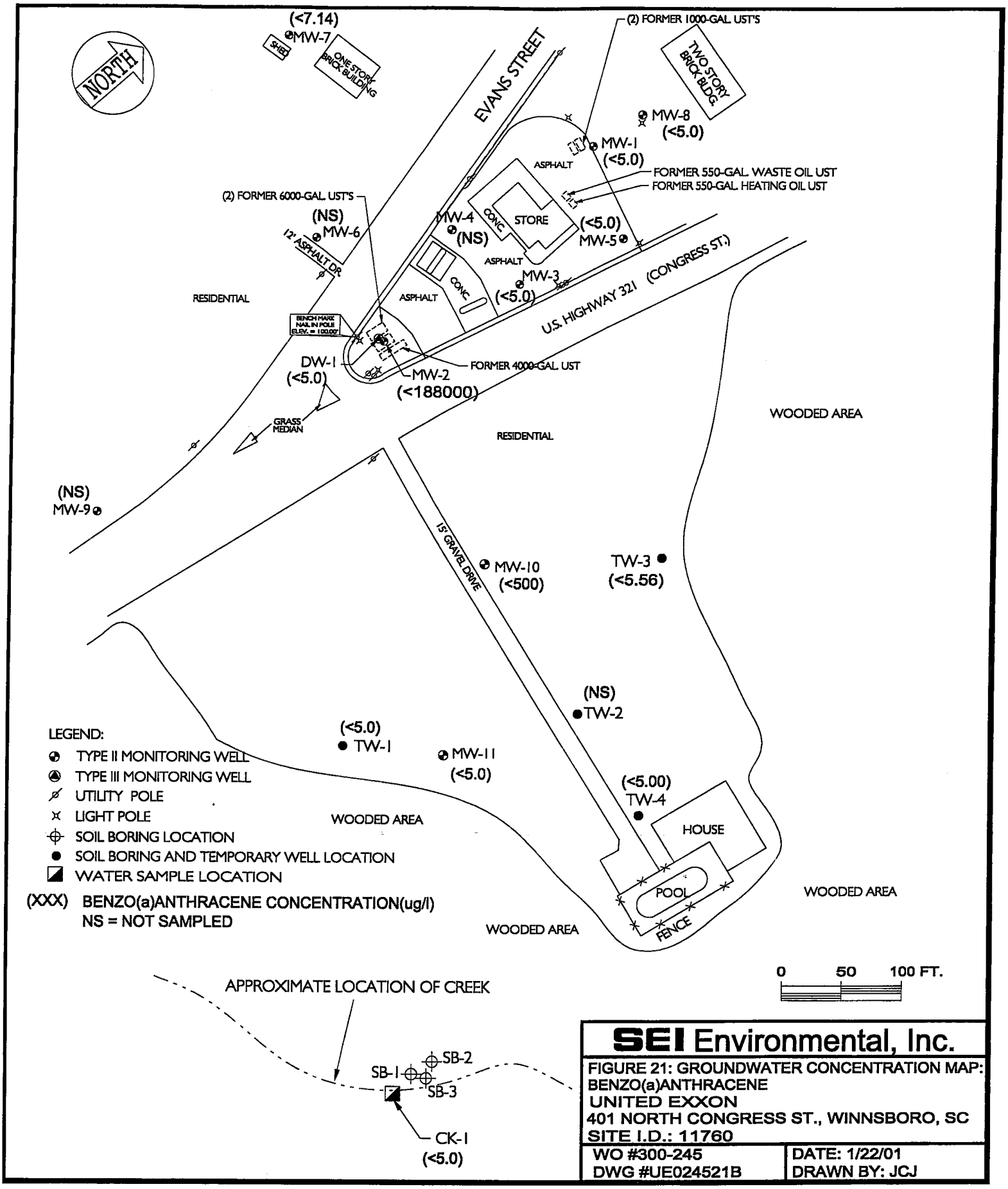
WO #300-245	DATE: 1/22/01
DWG #UE024519B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 20: GROUNDWATER CONCENTRATION MAP: EDB
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

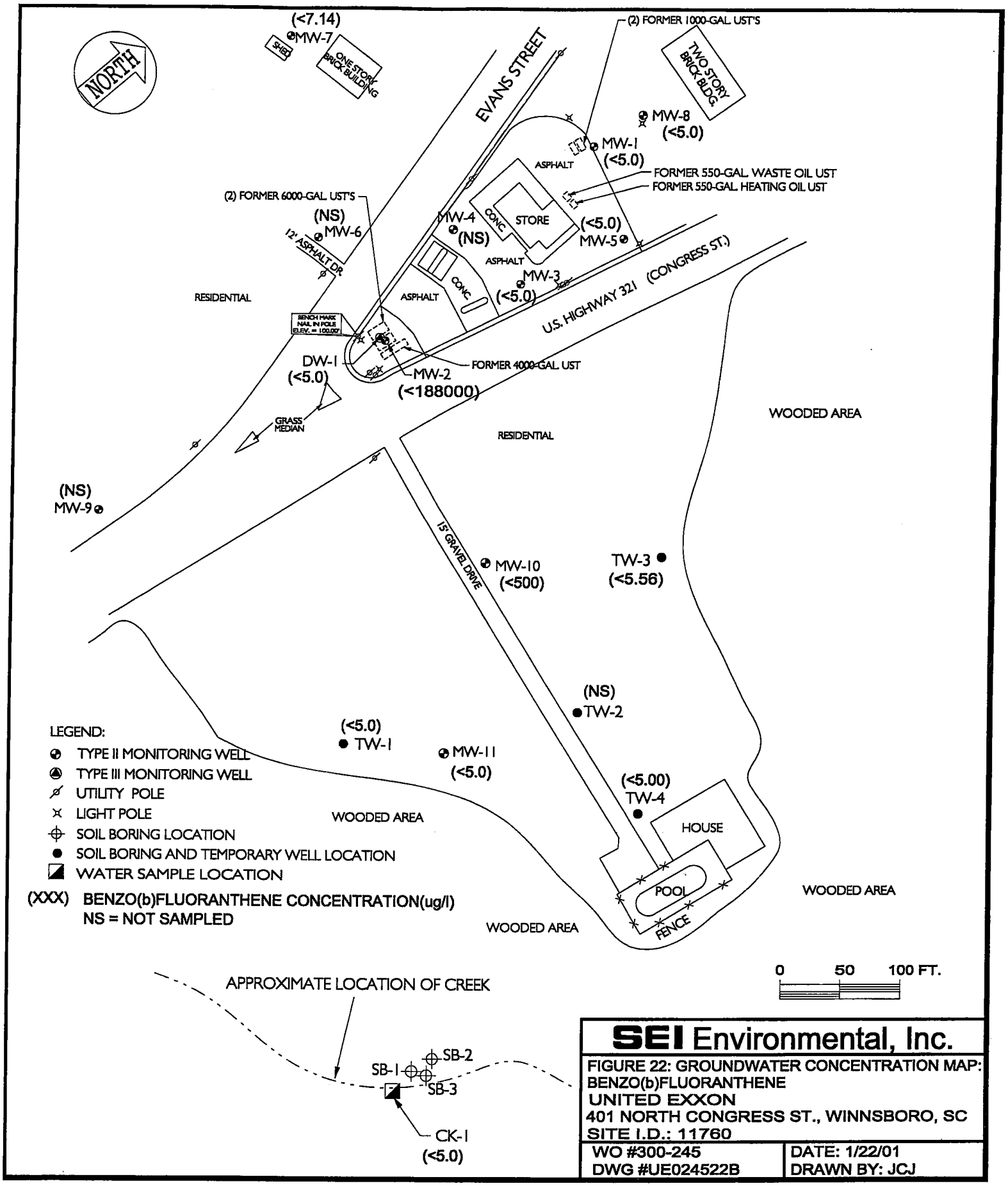
WO #300-245	DATE: 1/22/01
DWG #UE024520B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 21: GROUNDWATER CONCENTRATION MAP: BENZO(a)ANTHRACENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

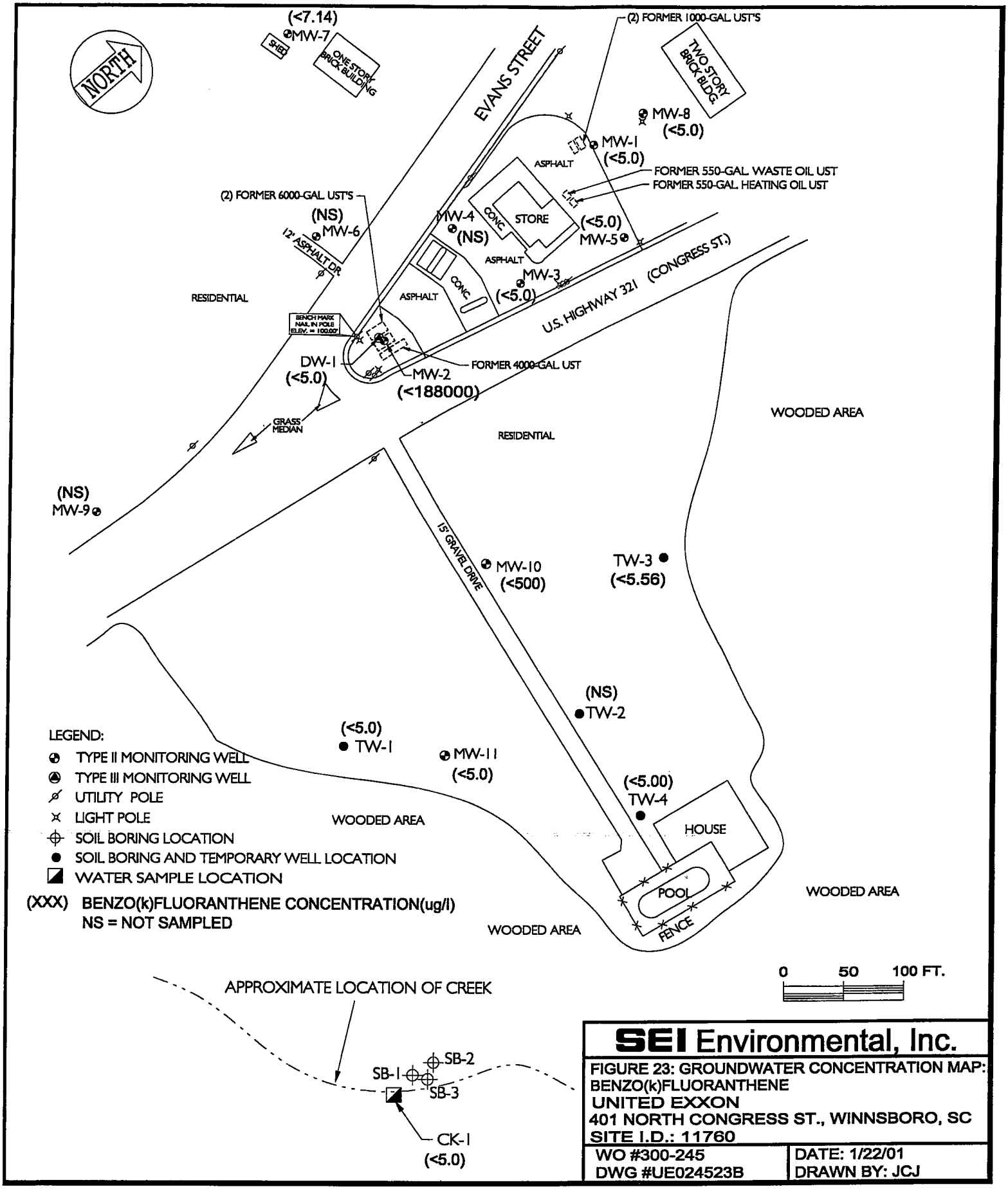
WO #300-245	DATE: 1/22/01
DWG #UE024521B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 22: GROUNDWATER CONCENTRATION MAP: BENZO(b)FLUORANTHENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

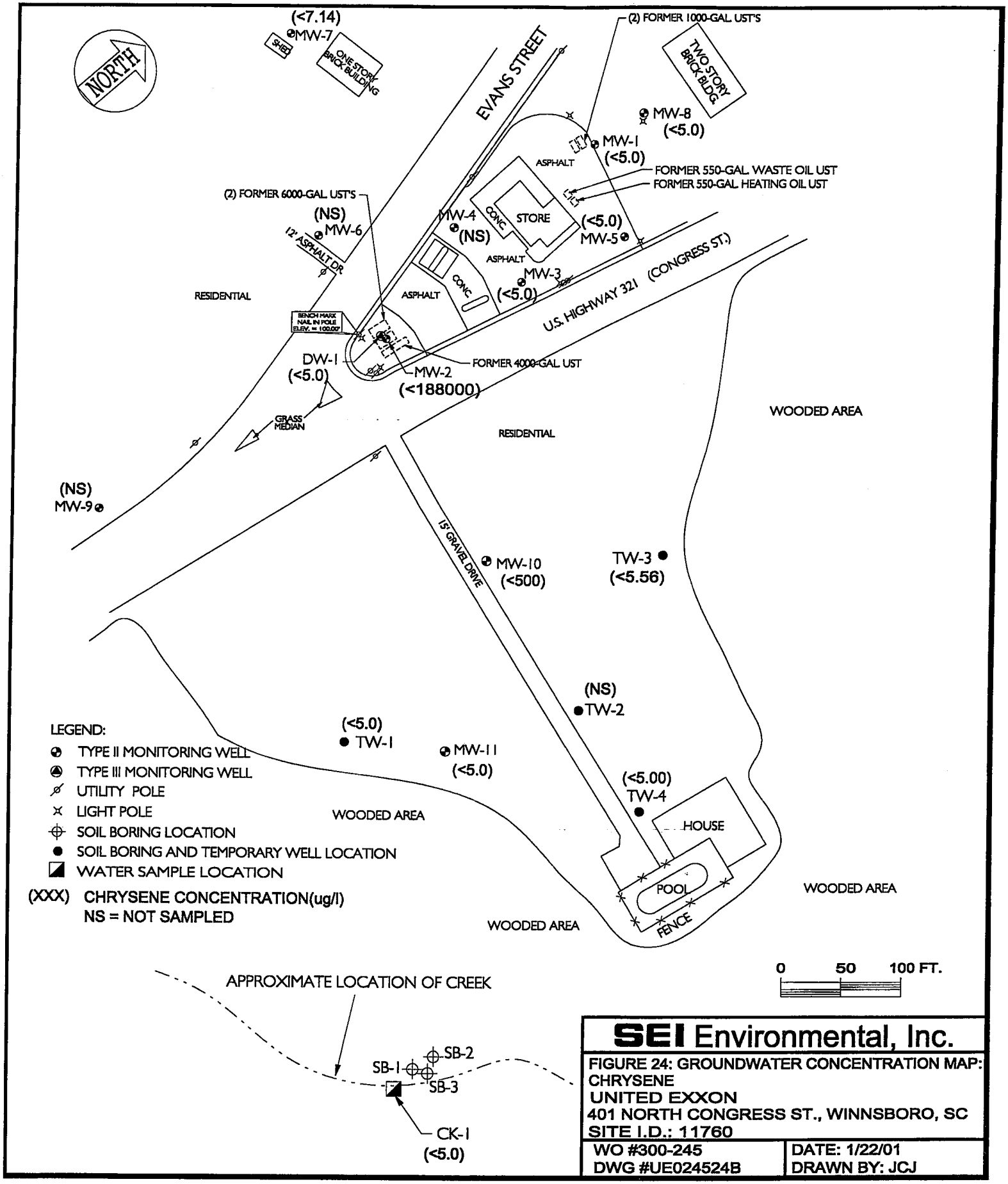
WO #300-245	DATE: 1/22/01
DWG #UE024522B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 23: GROUNDWATER CONCENTRATION MAP: BENZO(k)FLUORANTHENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

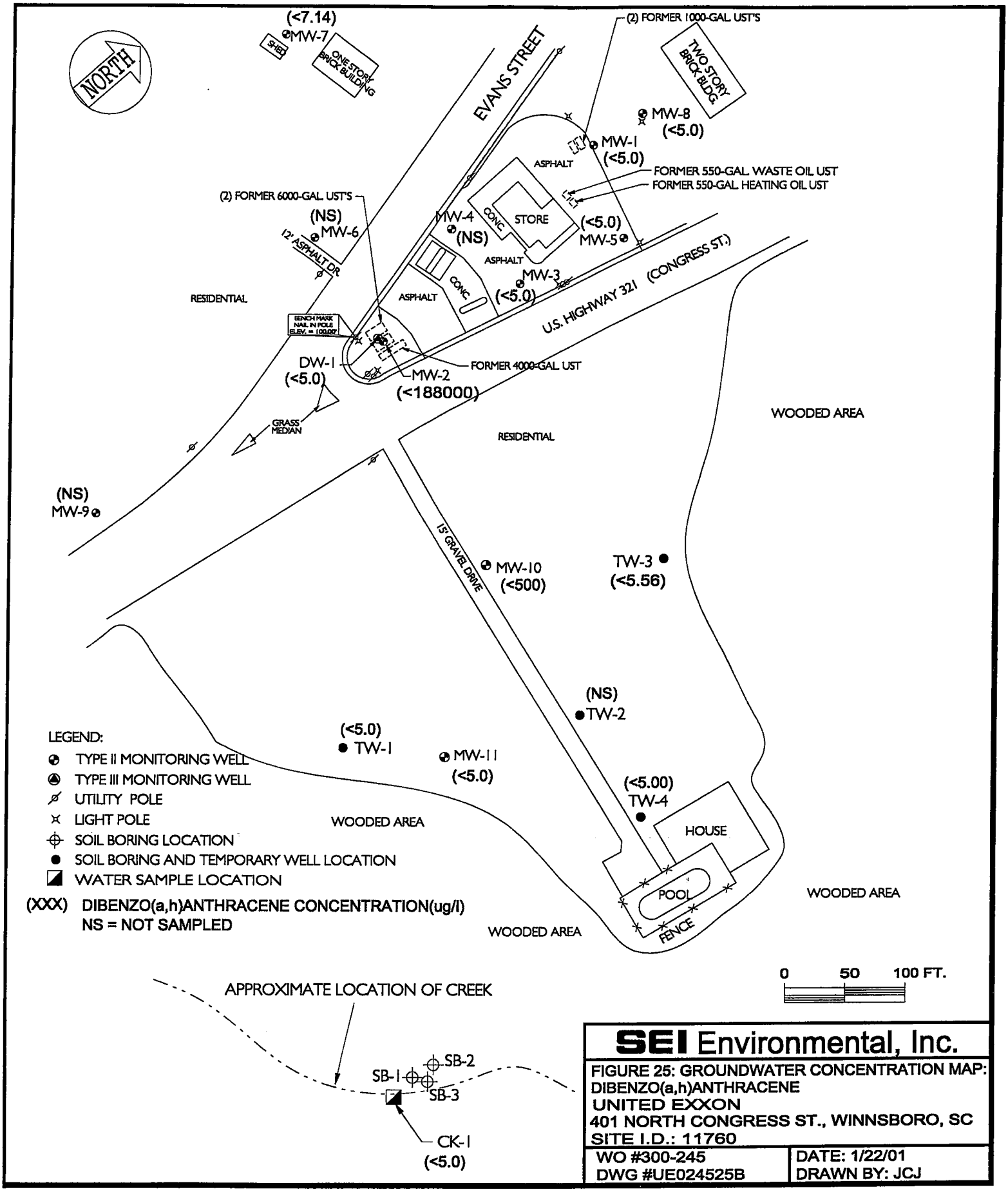
WO #300-245	DATE: 1/22/01
DWG #UE024523B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 24: GROUNDWATER CONCENTRATION MAP: CHRYSENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

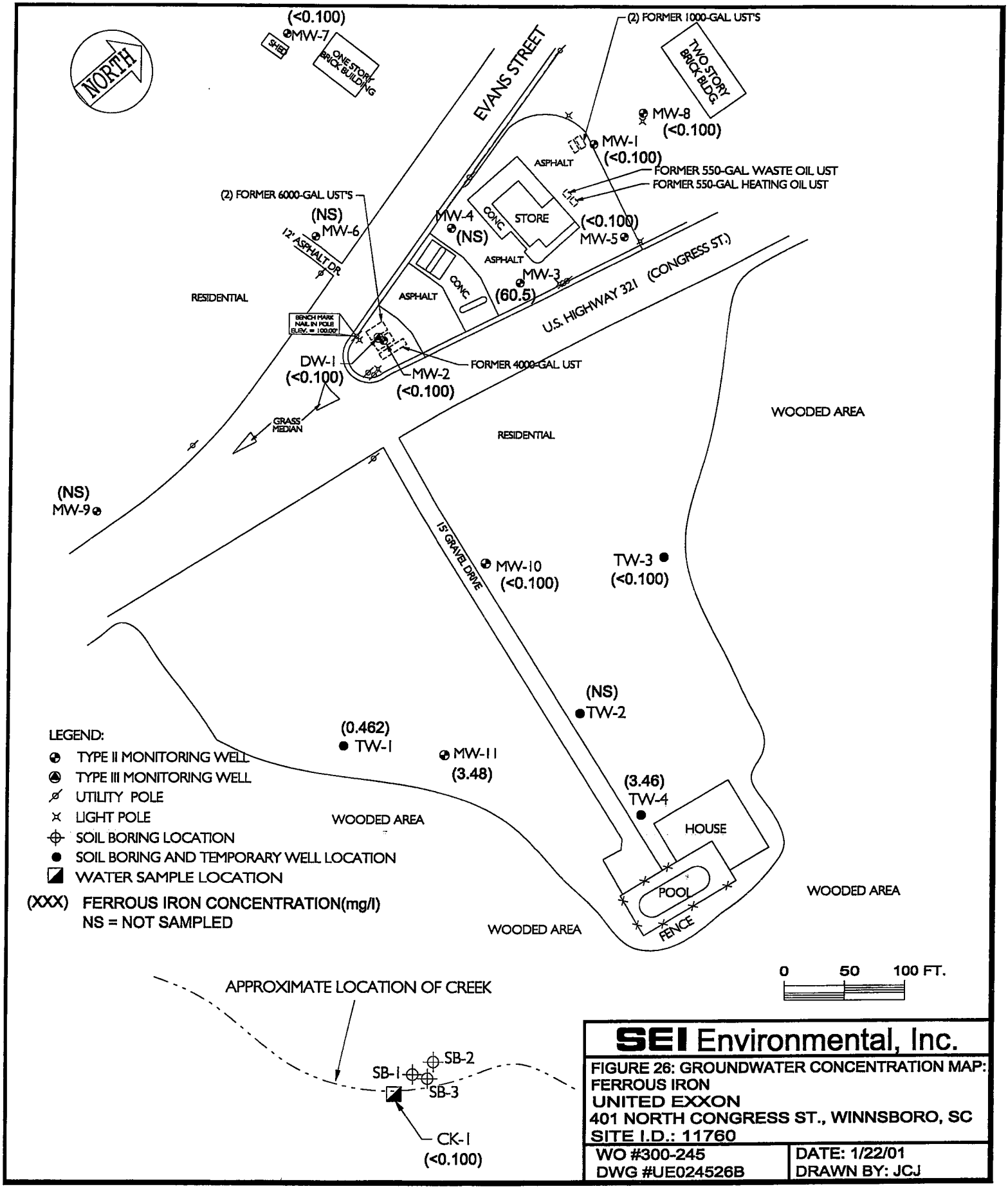
WO #300-245	DATE: 1/22/01
DWG #UE024524B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 25: GROUNDWATER CONCENTRATION MAP: DIBENZO(a,h)ANTHRACENE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

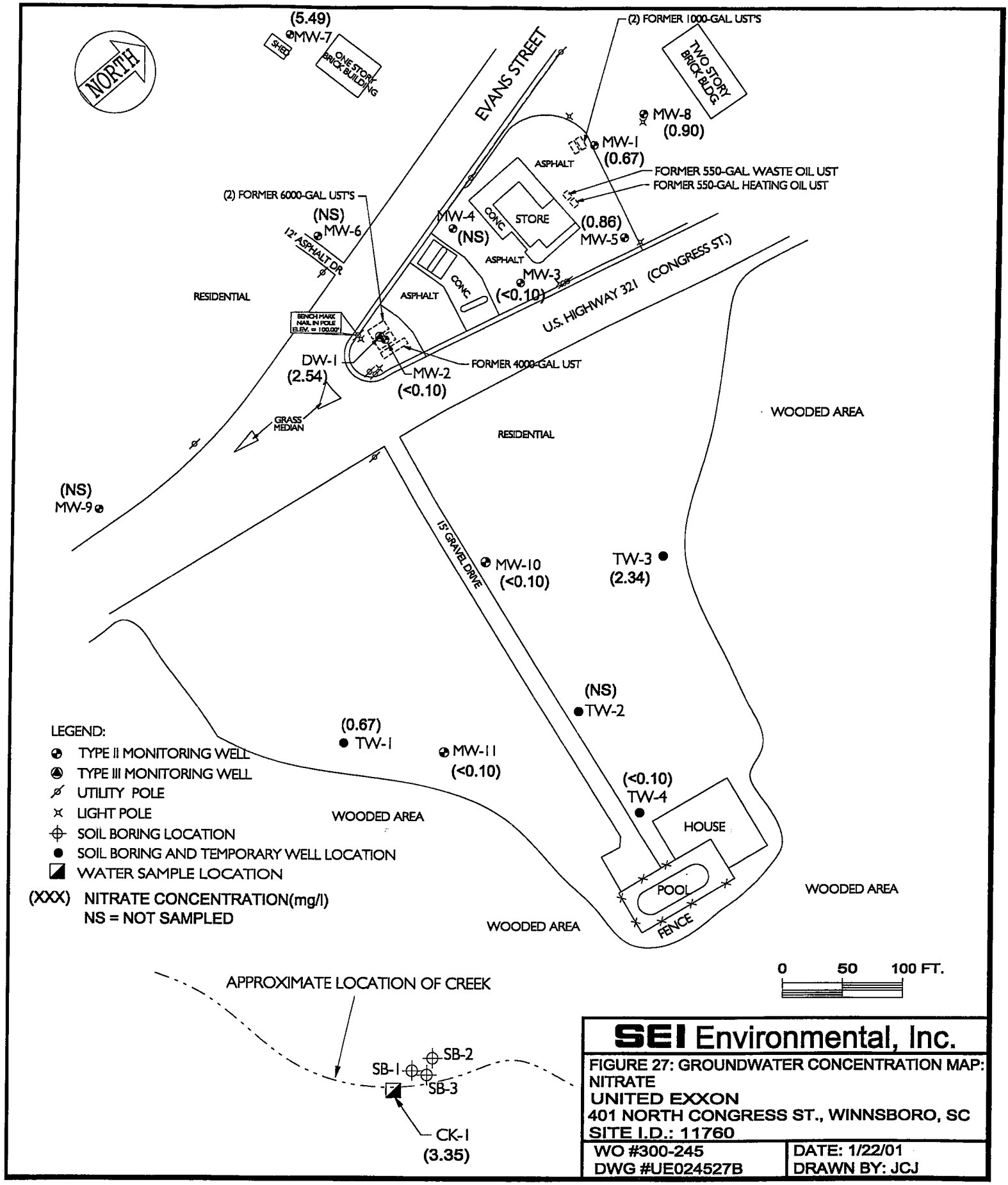
WO #300-245	DATE: 1/22/01
DWG #UE024525B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 26: GROUNDWATER CONCENTRATION MAP: FERROUS IRON
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

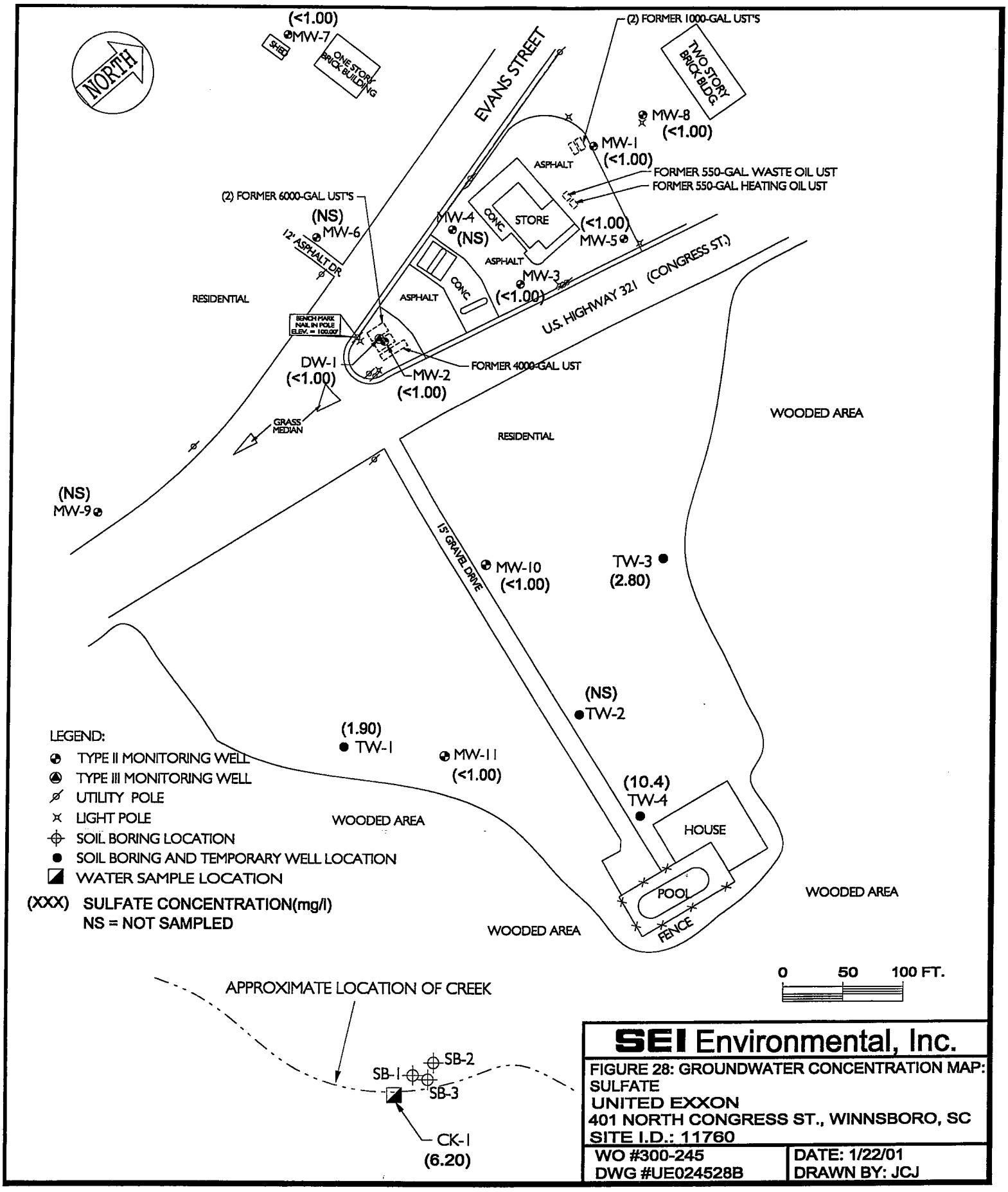
WO #300-245	DATE: 1/22/01
DWG #UE024526B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 27: GROUNDWATER CONCENTRATION MAP: NITRATE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

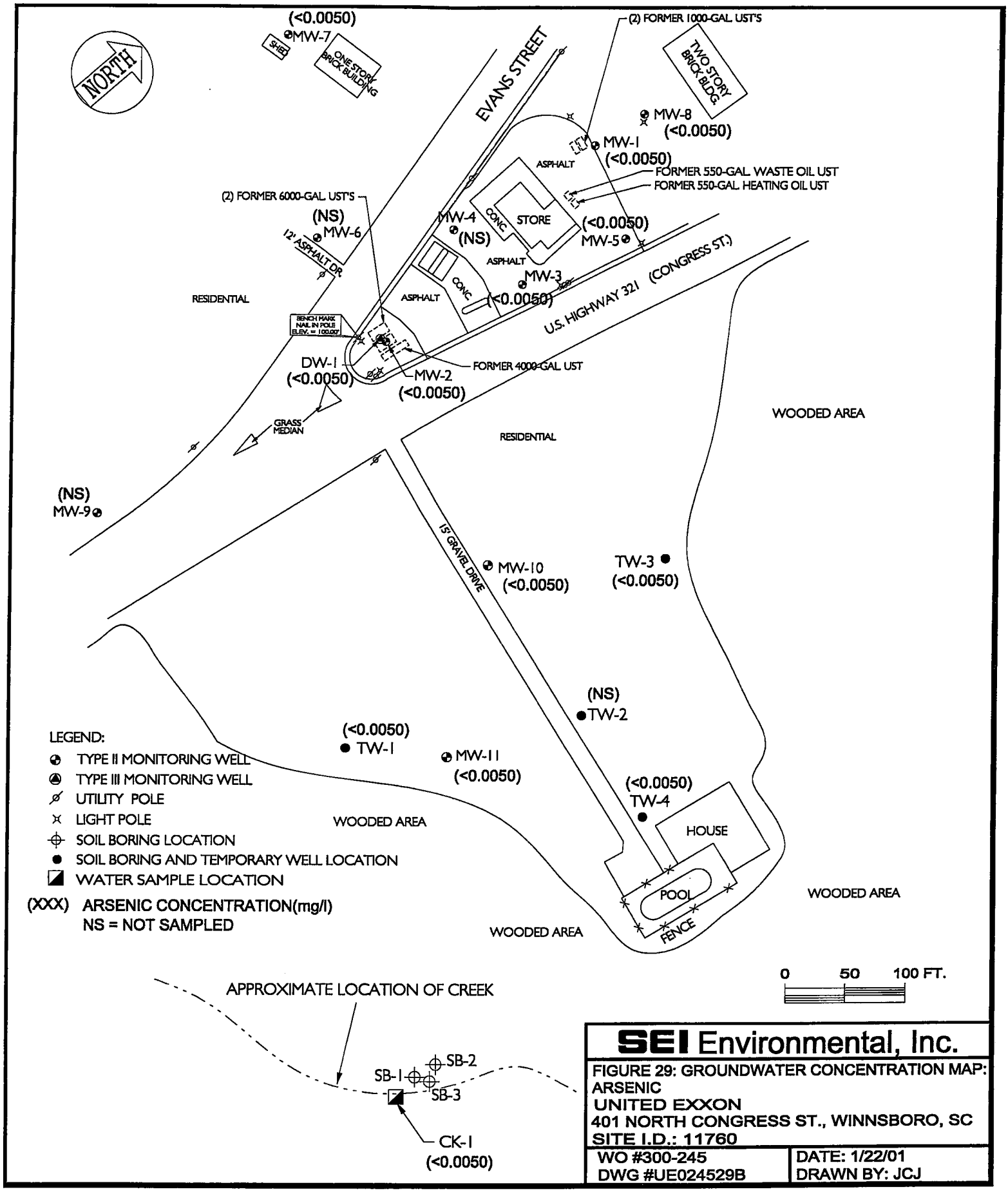
WO #300-245	DATE: 1/22/01
DWG #UE024527B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 28: GROUNDWATER CONCENTRATION MAP: SULFATE
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

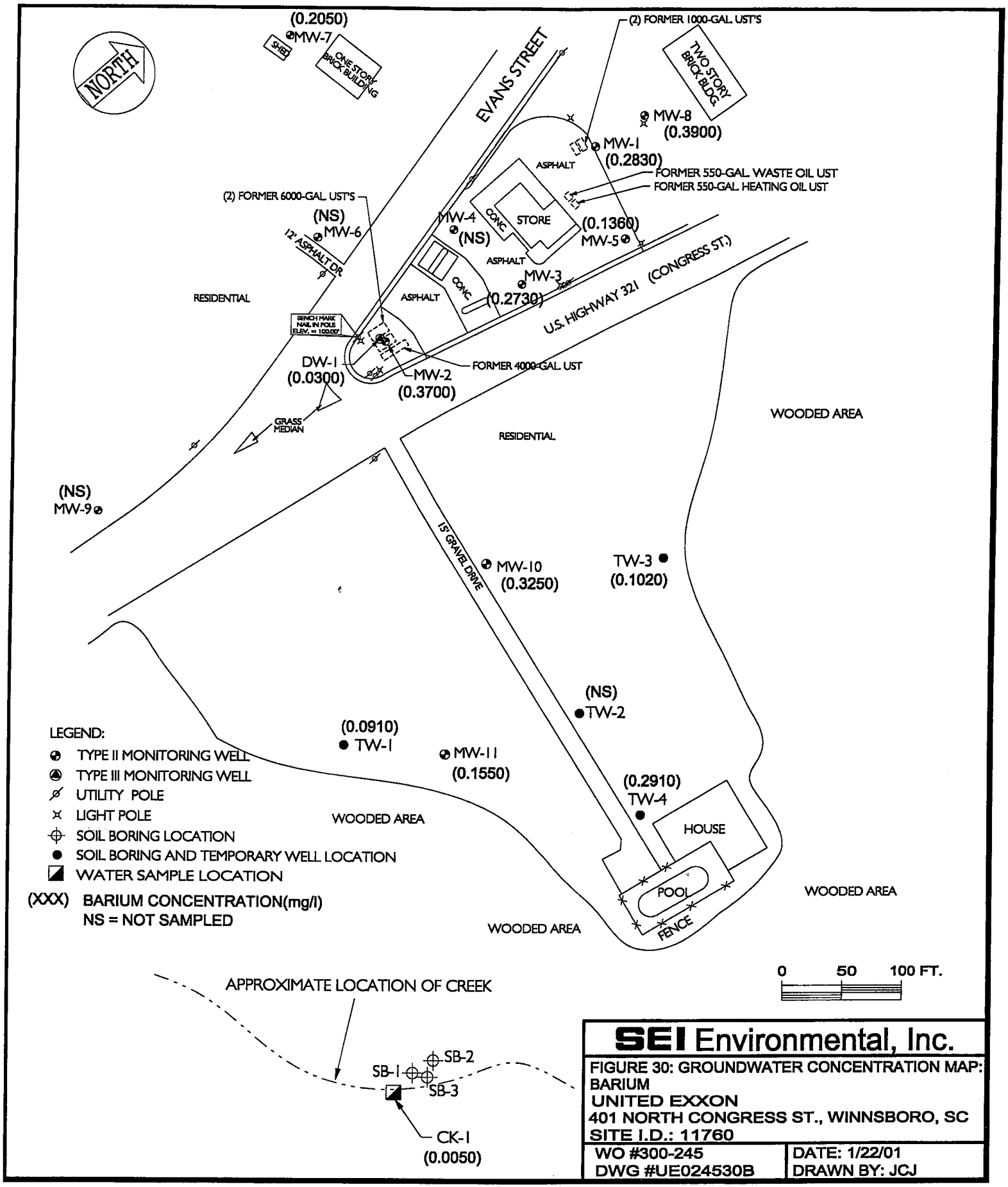
WO #300-245	DATE: 1/22/01
DWG #UE024528B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 29: GROUNDWATER CONCENTRATION MAP: ARSENIC
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

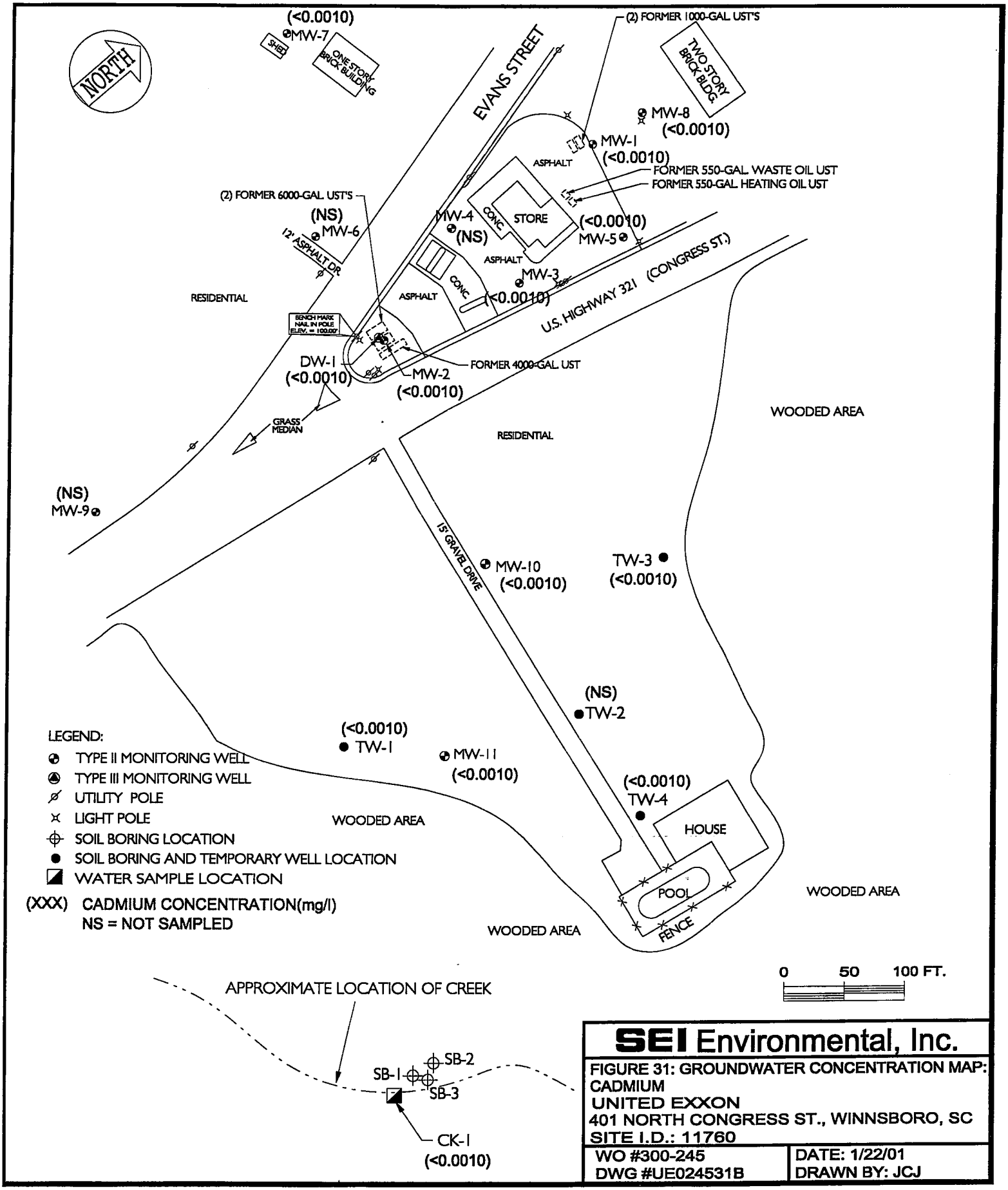
WO #300-245	DATE: 1/22/01
DWG #UE024529B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 30: GROUNDWATER CONCENTRATION MAP: BARIUM
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

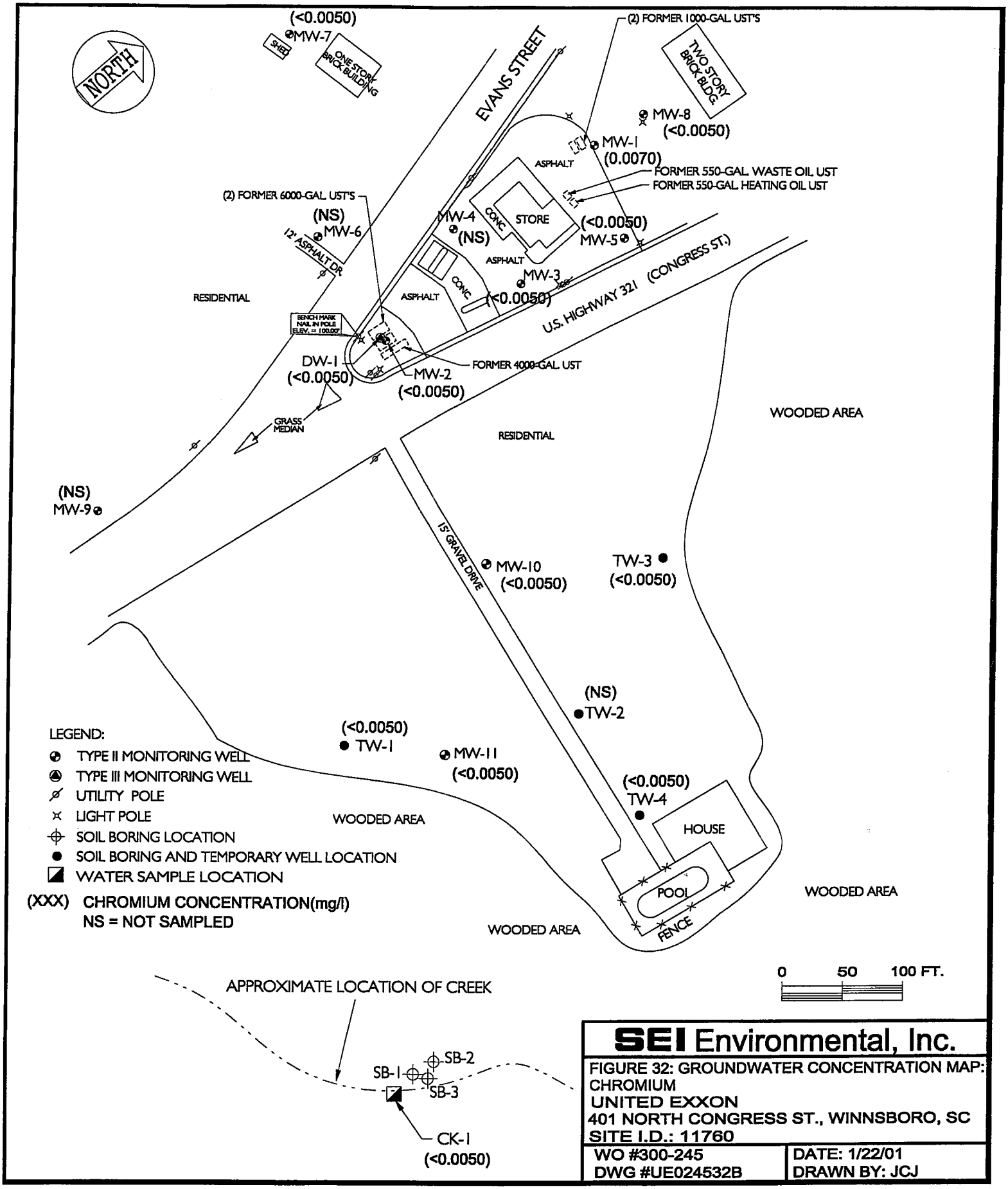
WO #300-245	DATE: 1/22/01
DWG #UE024530B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 31: GROUNDWATER CONCENTRATION MAP: CADMIUM
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

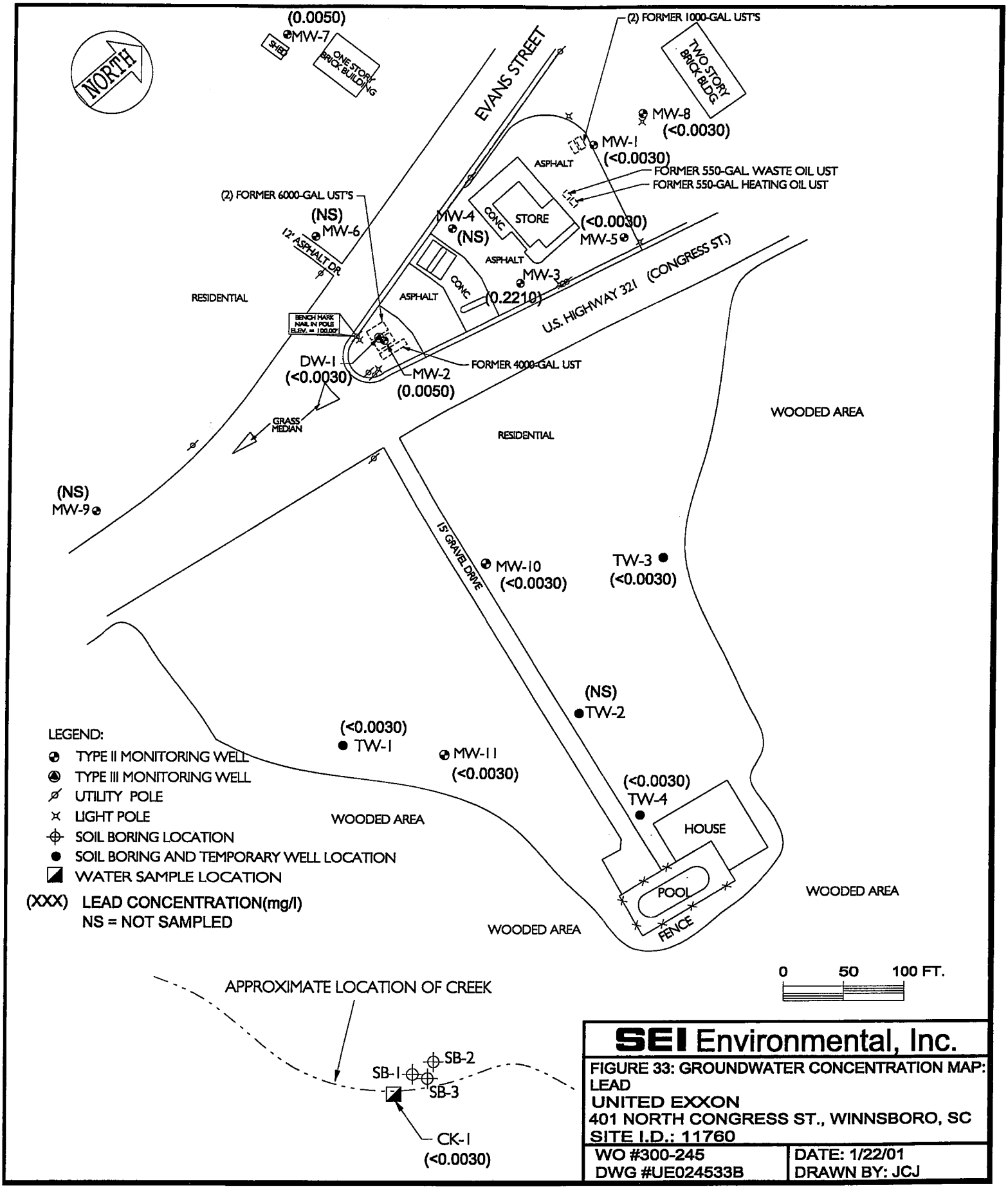
WO #300-245	DATE: 1/22/01
DWG #UE024531B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 32: GROUNDWATER CONCENTRATION MAP: CHROMIUM
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

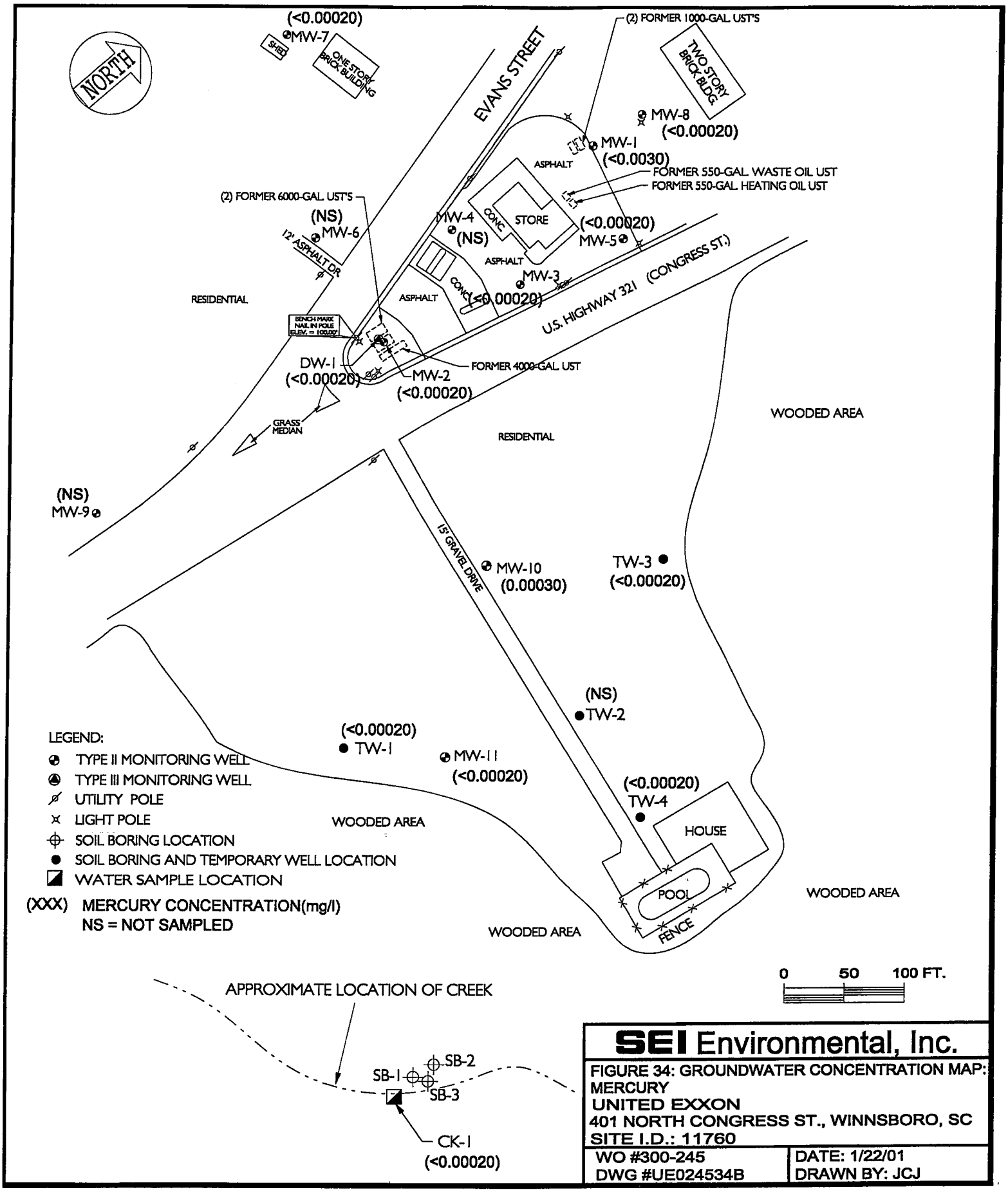
WO #300-245	DATE: 1/22/01
DWG #UE024532B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 33: GROUNDWATER CONCENTRATION MAP: LEAD
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

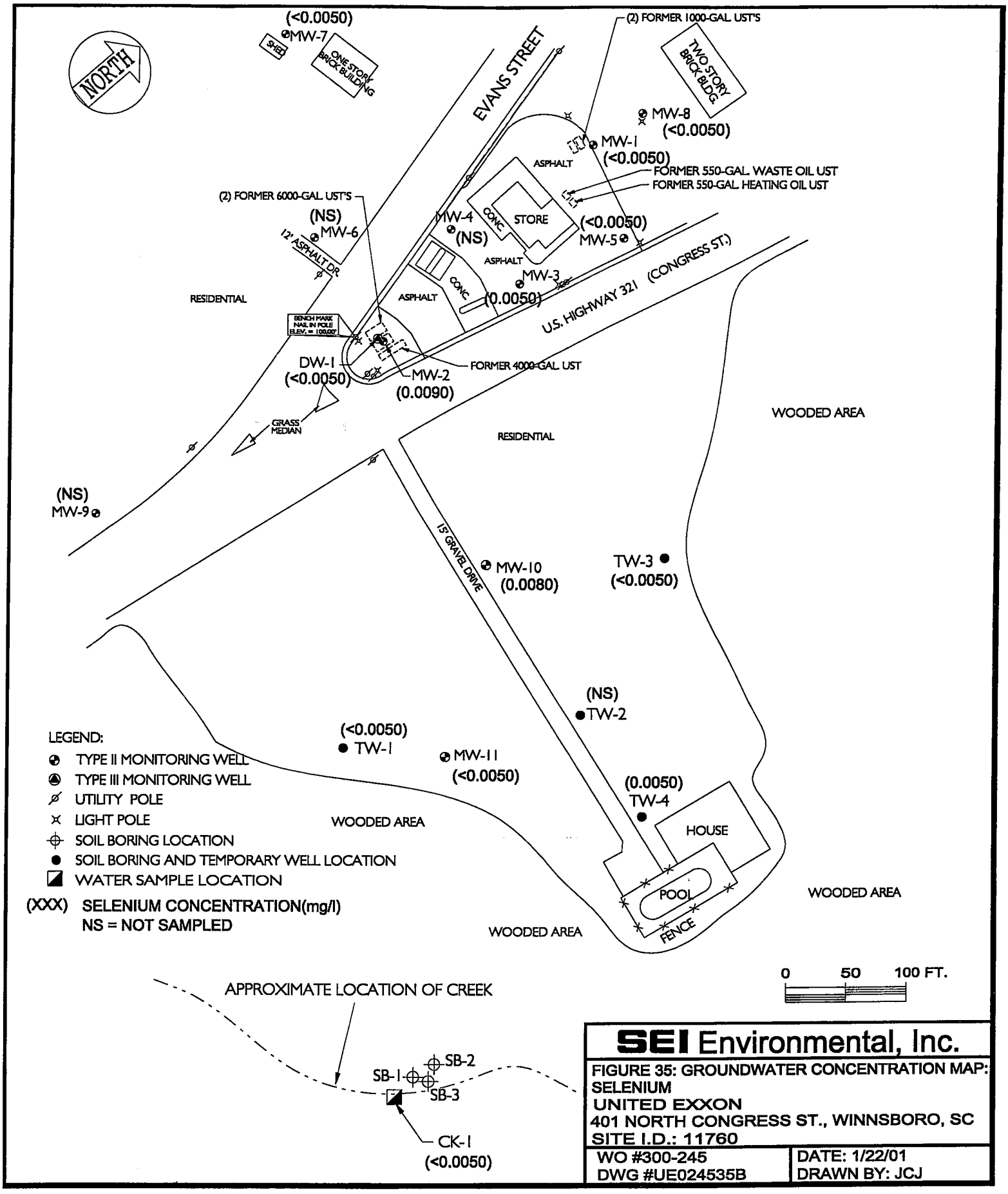
WO #300-245	DATE: 1/22/01
DWG #UE024533B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 34: GROUNDWATER CONCENTRATION MAP: MERCURY
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

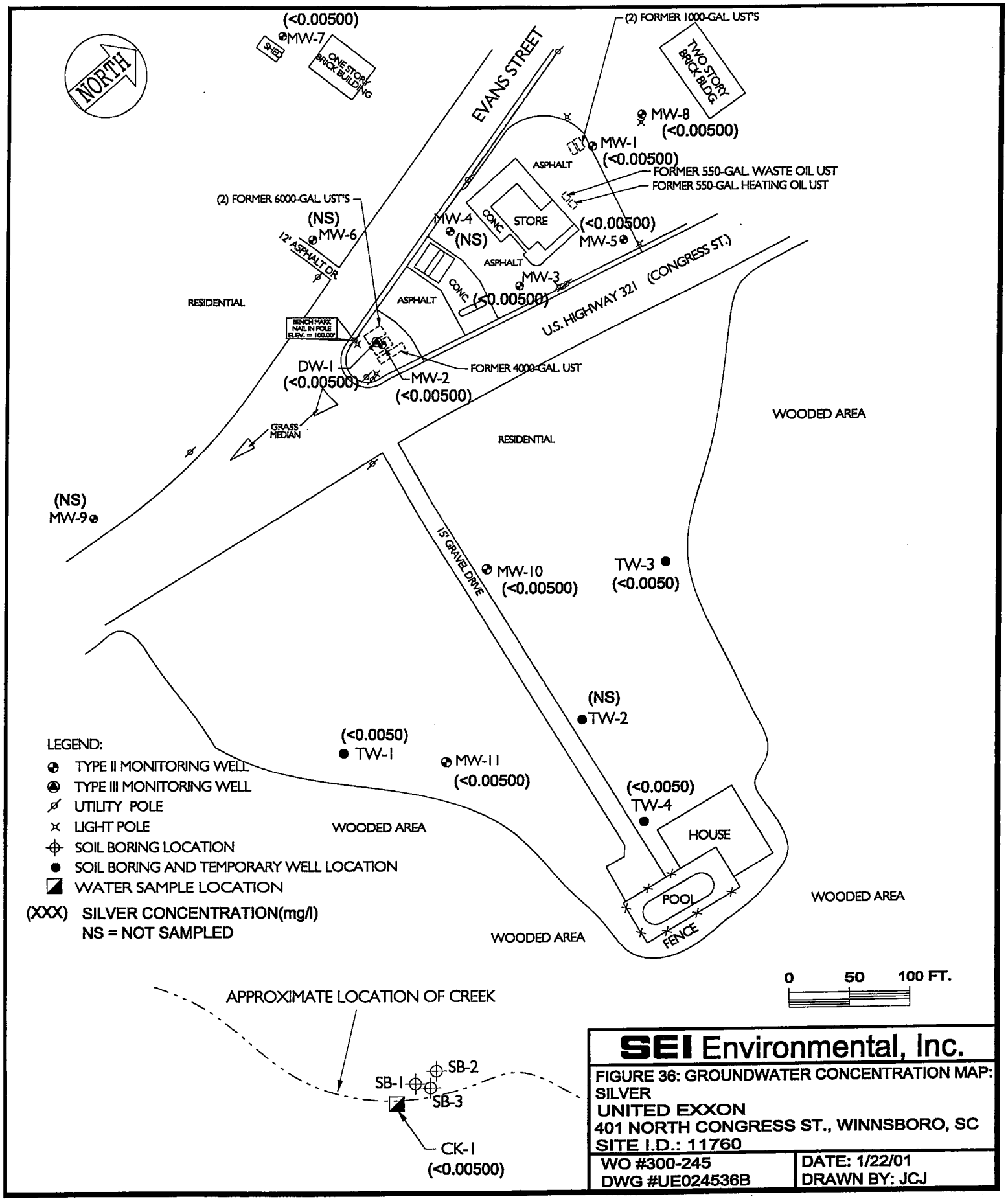
WO #300-245	DATE: 1/22/01
DWG #UE024534B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 35: GROUNDWATER CONCENTRATION MAP: SELENIUM
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #300-245	DATE: 1/22/01
DWG #UE024535B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 36: GROUNDWATER CONCENTRATION MAP: SILVER
UNITED EXXON
401 NORTH CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #300-245	DATE: 1/22/01
DWG #UE024536B	DRAWN BY: JCJ

APPENDIX A

SCDHEC Correspondence

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

SEP 22 2000

RECEIVED SEP 27 2000

Mr. Billy Keenan
Keenan Energy Company, Inc.
P.O. Box 3218
Columbia, South Carolina 29230

Re: United Exxon
UST Permit #11760, CP #08012 (release #2), CP #08013 (release #3), MWA # 11374
Release Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Division of Underground Storage Tank Management recognizes your commitment to continue work at this site utilizing your own contractor. The Division has reviewed the technical file of the referenced facility. The results of the previous ground-water quality analysis indicate the concentrations of Chemicals of Concern are above the Risk Based Screening Levels established for groundwater.

All releases from regulated underground storage tanks that have been reported to this Department have been prioritized using a ranking system that evaluates the risk to human health and the environment. Based on the available data, your site's priority classification is 3A. Therefore, SUPERB funds are available for additional site investigative activities at this time. The next scope of work to be implemented at this facility includes plume definition, and a complete ground-water sampling event.

Cost Proposal #08012 and #08013 have been approved to complete plume definition and sample all monitoring wells associated with the release. Please have your contractor complete the assessment report and submit an assessment component invoice within sixty days of the date of this letter. All documents involving geologic interpretation or engineering must be prepared by a qualified professional registered in the State of South Carolina. Approval for up to 150 feet for field screening (if technically necessary) and the installation of one shallow monitoring well has been provided to your environmental consultant; a copy is enclosed for your records.

SEI Environmental can submit an invoice for direct billing from the SUPERB account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice are due within 60 days from the date of this letter. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of work.

The Division grants preapproval for transportation of virgin petroleum contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or ground water must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or ground water on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water.

On all correspondence concerning this site, please reference **UST Permit #11760** and **Cost Proposal #08012 and #08013.** If there are any questions concerning this project, please contact Kristen Hein at (803) 898-4343 or (800) 826-5435 (within South Carolina only).

Sincerely,

Owner/Operator Assistance Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

Kristen A. Hein, Hydrogeologist

Lee A. Monts, Manager

enc: Approved Cost Proposals
Copy of MWA

cc: Technical File (w/copy of MWA.)
Financial File (w/copy of ACCP)
Mr. Bob Bolton, SEI Environmental, 3021 McNaughton Dr., Ste. 9, Columbia, SC 29223 (w/original MWA, copy of ACCP)

SCDHEC/UST/050499

APPENDIX B

Soil Boring Logs

Borehole SB-1 **Sampling Date: 01/10/01** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
4	Not Determined	Tan, soft, medium grained sandy silt	Dry; no petroleum odor
5	Not Determined	Tan, soft, medium grained sand	Dry; no petroleum odor
6	Not Determined	Quartz fragments…REFUSAL	Dry; no petroleum odor

Borehole SB-2 **Sampling Date: 01/10/01** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
2	Not Determined	Brown, soft, medium grained clayey sand	Dry; no petroleum odor
4	Not Determined	Gray, soft, fine grained sandy silt	Dry; no petroleum odor
5	Not Determined	Rock…REFUSAL	Dry; no petroleum odor

Borehole SB-3 **Sampling Date: 01/10/01** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
2	Not Determined	Brown, soft, medium grained clayey sand	Dry; no petroleum odor
3	Not Determined	Rock…REFUSAL	Dry; no petroleum odor

Borehole TW-1 **Sampling Date: 01/10/01** **Sample Depth: 40'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	1.4	Reddish-orange, medium, medium grained sandy clay	Dry; no petroleum odor
10	1.4	Reddish-orange, medium, medium grained clay loam	Dry; no petroleum odor
15	0.3	Red, medium, medium grained stiff clay	Dry; no petroleum odor
20	1.8	Red, medium, medium grained stiff clay	Moist; no petroleum odor
25	2.2	Red, medium, medium grained stiff clay	Moist; no petroleum odor
30	5.4	Red, medium, medium grained stiff clay	Moist; no petroleum odor
35	6.6	Red, medium, medium grained stiff clay	Moist; no petroleum odor
40	180	Red, medium, medium grained stiff clay	Wet; no petroleum odor

Borehole TW-2 **Sampling Date: 01/10/01** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	0.0	Reddish-brown, soft, medium grained clay loam	Dry; no petroleum odor
10	0.0	Reddish-orange, medium, medium grained clay	Dry; no petroleum odor
15	0.9	Reddish-orange, medium, medium grained clay	Dry; no petroleum odor
20	1.5	Reddish-orange, medium, medium grained clay	Dry; no petroleum odor
25	5.8	Brown, medium, medium grained clay	Dry; no petroleum odor
30	16	Brown, soft, fine grained silty clay	Dry; no petroleum odor
35	22	Brown, soft, fine grained silty clay	Dry; no petroleum odor
40	24	Brown, soft, fine grained silty clay	Moist; no petroleum odor
45	1000+	Brown, soft, fine grained silty clay	Moist; strong petroleum odor
50	1000+	Brown, soft, fine grained silty clay	Wet; strong petroleum odor

Borehole TW-3 **Sampling Date: 01/11/01** **Sample Depth: 50'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	1.8	Brown, medium, fine grained clay loam	Dry; no petroleum odor
10	8.7	Brownish-red, medium, fine grained silty clay	Dry; no petroleum odor
15	2.5	Reddish-brown, medium, fine grained silty clay with mica	Dry; no petroleum odor
20	9.1	Brown, soft, fine grained silt with mica	Dry; no petroleum odor
25	18	Brown, soft, fine grained silt with mica	Dry; no petroleum odor
30	22	Brown, soft, fine grained silt with mica	Dry; no petroleum odor
35	10	Brown, stiff, fine grained silt with mica	Moist; no petroleum odor
40	2.1	Brown, stiff, fine grained silt with mica	Moist; no petroleum odor
45	14	Brown, stiff, fine grained silt with mica	Moist; no petroleum odor
50	Not Determined	Brown, stiff, fine grained silt with mica	Wet; no petroleum odor

Borehole TW-4 **Sampling Date: 01/11/01** **Sample Depth: 50'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	0.3	Grayish-green, stiff, medium grained clay loam	Dry; no petroleum odor
10	0.2	Brown- medium stiff, medium clay loam	Dry; no petroleum odor
15	0.5	Brown- medium stiff, medium clay loam	Dry; no petroleum odor
20	2.0	Brown- medium stiff, medium clay loam	Dry; no petroleum odor
25	1.8	Brown- medium stiff, medium clay loam	Dry; no petroleum odor
30	0.8	Brown- medium stiff, medium clay loam	Dry; no petroleum odor
35	5.2	Brown, medium, fine grained silt	Dry; no petroleum odor
40	4.0	Brown, medium, fine grained silt	Dry; no petroleum odor
45	2.0	Brown, medium, fine grained silt	Moist; no petroleum odor
50	0.0	Brown, medium, fine grained silt	Moist; no petroleum odor

APPENDIX C

Groundwater Sampling Field Measurements

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Cox, M. McFarland
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245 **Monitoring Well #** MW-1

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 42.07 feet
Total Well Depth (TWD) 48.0 feet
Length of the water column (LWC = TWD- DGW) 5.93 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .97 gals
3 casing volume 3 X CV = 2.90 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								1110
pH (s.u.)	5.2	5.4	5.4	5.4			5.4	
Specific Cond. (µmhos/cm)	.397	.341	.323	.300			.289	
Water Temperature (°C)	19.4	19.0	18.9	19.0			19.1	
Turbidity (subjective : clear, slightly cloudy, cloudy)	clear	Cloudy	cloudy	cloudy			Cloudy	
Dissolved Oxygen	2.1	2.2	2.2	2.3			2.7	
PID readings, if required								

Remarks : _____

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane, M. McFarland
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300241 **Monitoring Well #** MW-2

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 49.65 feet
Total Well Depth (TWD) 54.0 feet
Length of the water column (LWC = TWD- DGW) 4.35 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .71 gals
3 casing volume 3 X CV = 2.13 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling
Cumulative Volume Purged (gallons)							
Time (military)							950
pH (s.u.)							
Specific Cond. (µmhos/cm)							
Water Temperature (°C)							
Turbidity (subjective : clear, slightly cloudy, cloudy)							
Dissolved Oxygen							
PID readings, if required							

Remarks : Free Product Detected in Bailer ½ of Bailer

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane, M. McFarland
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245 **Monitoring Well #** MW-3

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 43.44 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC = TWD- DGW) 1.56 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .25 gals
3 casing volume 3 X CV = .76 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								1010
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : GDOR - Not metered

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/17/00
Field Personnel: E. Cary, M. McFurland
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 360245 **Monitoring Well #** MW-4

Well Diameter (D): _____ feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) Dry feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC = TWD- DGW) _____ feet

1 casing volume (CV = LWC X C) = _____ X _____ = _____ gals
3 casing volume 3 X CV = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : DRY

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lunc, M. McFarland
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300243 **Monitoring Well #** MW-5

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 41.70 feet
Total Well Depth (TWD) 45.00 feet
Length of the water column (LWC = TWD- DGW) 3.3 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .54 gals
3 casing volume 3 X CV = 1.61 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								1030
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : Only enough H_2O to sample

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane
General Weather Conditions: Sunny/Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245 **Monitoring Well #** MW-6

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 59.81 feet
Total Well Depth (TWD) 55.00 feet
Length of the water column (LWC = TWD- DGW) .19 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .03 gals
3 casing volume 3 X CV = .09 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)							10:10	
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : Well was not metered due to limited water vol.

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane, M. McFarland
General Weather Conditions: _____

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245 **Monitoring Well #** MW-7

Well Diameter (D): 2 " ~~feet~~

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 50.02 feet
Total Well Depth (TWD) 52.00 feet
Length of the water column (LWC = TWD- DGW) 1.98 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .32 gals
3 casing volume 3 X CV = .97 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)							10:30	
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : Well was not metered due to limited water vol.

Bureau of Underground Storage Tank Management

7 of 13

Date (mm/dd/yy): 1/11/2001
Field Personnel: H. Charles, B. Bolton & ECS
General Weather Conditions: Clear & cold

Ambient Air Temperature: 40 °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245
Monitoring Well # MW-7

Well Diameter (D): 2 11 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 56.65 feet
Total Well Depth (TWD) 52 feet
Length of the water column (LWC = TWD- DGW) 1.35 feet

1 casing volume (CV = LWC X C) = _____ X _____ = 0.22 gals
3 casing volume 3 X CV = 0.66 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Time (military)								
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : No able to get 1 liter the 1st attempt, wait for 1H.

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lano, M. McFarland
General Weather Conditions: Sunny/ Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 360245 **Monitoring Well #** MW-8

Well Diameter (D): 2 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 41.76 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC = TWD- DGW) 3.24 feet

1 casing volume (CV = LWC X C) = _____ X _____ = .52 gals
3 casing volume 3 X CV = 1.58 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)	5.02						10:45	
Specific Cond. (µmhos/cm)	.489							
Water Temperature (°C)	18.4							
Turbidity (subjective : clear, slightly cloudy, cloudy)	Clear							
Dissolved Oxygen	4.66							
PID readings, if required								

Remarks : Well began going dry after initial reading was taken

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane
General Weather Conditions: Sunny/Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 360245 **Monitoring Well #** MW-9

Well Diameter (D): 02 1/ feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) ~~51~~ 50.14 feet
Total Well Depth (TWD) ≈51 feet
Length of the water column (LWC = TWD- DGW) .86 feet

1 casing volume (CV = LWC X C) = _____ X _____ = .14 gals
3 casing volume 3 X CV = .42 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : Well Considered Dry

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane
General Weather Conditions: Sunny / Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 360245 **Monitoring Well #** MW-10

Well Diameter (D): 2 1/ feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: Sheen feet
Depth to Ground Water (DGW) 46.13 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC = TWD- DGW) 3.87 feet

1 casing volume (CV = LWC X C) = _____ X _____ = .63 gals
3 casing volume 3 X CV = 1.89 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)							11:15	
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : P.U. Well not met cut;

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/19/00
Field Personnel: E. Lane
General Weather Conditions: Sunny/ Cool

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300243 **Monitoring Well #** MW-1

Well Diameter (D): 2 " ~~feet~~

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 32.05 feet
Total Well Depth (TWD) 38.0 feet
Length of the water column (LWC = TWD- DGW) 5.95 feet

1 casing volume (CV = LWC X C) = ____ X ____ = .97 gals
3 casing volume 3 X CV = 2.90 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)							11:35	
pH (s.u.)	6.13	6.15						
Specific Cond. (µmhos/cm)	.476	.481						
Water Temperature (°C)	17.3	17.4						
Turbidity (subjective : clear, slightly cloudy, cloudy)	Clear	Cloudy						
Dissolved Oxygen	1.37	1.41						
PID readings, if required								

Remarks : Well began going dry after 1st Vol. was extracted.

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 10/20/00
Field Personnel: E. Lane, M. McFarland
General Weather Conditions: _____

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 300245 **Monitoring Well #** ~~MW~~ DW-1

Well Diameter (D): 2 4 feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 50.47 feet
Total Well Depth (TWD) 89 feet
Length of the water column (LWC = TWD- DGW) 38.53 feet

1 casing volume (CV = LWC X C) = _____ X _____ = 6.28 gals
3 casing volume 3 X CV = 18.84 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								
pH (s.u.)	6.44	6.50	6.20	6.21			6.21	
Specific Cond. (µmhos/cm)	.127	.126	.124	.120			.116	
Water Temperature (°C)	21.1	20.5	20.6	20.8			20.9	
Turbidity (subjective : clear, slightly cloudy, cloudy)	Clear	Clear	Clear	Clear			Clear	
Dissolved Oxygen	3.18	5.09	5.10	6.15			8.01	
PID readings, if required								

Remarks : _____

APPENDIX F

Disposal Manifests

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tons 1 Drum
United Exxon

Contaminant NonHazardous Petroleum
Contaminanted Water

This is to cerify the above ~~soil~~ has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by S. Gollwey

Date 10/24/00

Please print or type
(Form designed for use on elite (12 pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. GK3554

2. Page 1 of 01-12-01

3. Generator's Name and Mailing Address
SEI ENVIRONMENTAL, INC
3021 MCNAUGHTON DRIVE STE 9
COLOMBIA, SC 29223

4. Generator's Phone ( )

5. Transporter 1 Company Name
SEI ENVRIONMENTAL, INC

6. US EPA ID Number

A. Transporter's Phone 803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
G & K TANK SERVICES
PO BOX 1384
SUMTER, SC 29151

10. US EPA ID Number

C. Facility's Phone 800-800-6840

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON HAZARDOUS PETROLEUM CONTAMINANTED SOIL UNITED EXXON	01DR			
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name | Signature | Month | Day | Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Henry D. Surles | Signature: Henry D. Surles | Month 01 | Day 12 | Year 2001

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: S. Collett | Signature: S. Collett | Month 01 | Day 12 | Year 01

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

12-BEC-M5

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tons 1 Drum
United Exxon

Contaminant NonHazardous Petroleum
Contaminanted Soil

This is to cerify the above soil has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by S. Solley

Date 01/12/01

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

RECEIVED
MAR 1 6 1998
Bureau of Underground
Storage Tank Management

March 12, 1998

Mr. Charles J. Williams, III
Bureau of UST Management
SCDHEC
2600 Bull Street
Columbia, South Carolina 29201

RE: Initial Ground-Water Assessments
United Exxon
SCDHEC Site ID #11760
Fairfield County

Dear Mr. Williams:

Please find enclosed the two (2) Initial Ground-Water Assessments for the above referenced facility. Should you have any questions or need additional information, please contact SEI Environmental, Inc. at 803-788-2535.

Sincerely,
SEI Environmental, Inc.

Fred Lyke

Fred Lyke
Senior Associate

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company

UST PROGRAM
DOCKETING # 36Tech

RLS #3

INITIAL GROUND-WATER ASSESSMENT REPORT

Facility Name: United Exxon

Site ID Number: 11760

Owner's Name: Keenan Energy Company

Address: P. O. Box 3218 / Columbia, South Carolina 29230

Phone Number: (803) 256-0667

Contractor: SEI Environmental, Inc. Cert. # 41

Address: 3021 McNaughton Drive / Suite 9 / Columbia, South Carolina 29223

Phone Number: (803) 788-2535

Well Driller: Environmental Construction Services Cert.# 1333

Receptor and Site Data

Please place a "X" in the appropriate answer block for each question:

Receptor Survey Questions	No	Yes *
Is there a drinking water supply well (public or private, please indicate) or surface water supply intake within 1000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1000 feet of the UST?	X	
Are there other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?	X	

If "yes" provide additional information:

Were any water wells within 250-ft radius sampled? __Yes _X_No
See Appendix F for Chain of Custody Form and Laboratory Data.

Is the current use of the site and surrounding properties commercial, residential, agricultural or industrial?

Site: Commercial

Adjacent Properties: Residential/ Commercial

Soil and Monitoring Well Data

Primary Soil Type: Silt and Rock Flour
* Based on field observations

Well Installation Method and Date: 2 1/4" Hollow Stem Auger / February 27, 1998

Development Method: Polyethylene Bailer

Soil Sample obtained at 5 to 7 feet below ground surface

SOIL ANALYTICAL DATA

Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)
311.0	1399	4930	20160	51340

Benzo(a) anthracene (mg/kg)	Benzo(b) fluoranthene (mg/kg)	Benzo(k) fluoranthene (mg/kg)	Chrysene (mg/kg)	DiBenz(a,h) anthracene (mg/kg)
<333	<330	<330	<330	<330

Ground-Water Data

Depth to ground water: 38.37 feet below ground surface

Well Purging/Sampling Method: Sample collected after pH and temperature values had equilibrated.

Date Sampled: March 2, 1998

Free Product Thickness: N/A

Soil / Water disposal Method: Soil and water were transported to G&K Tank Services for proper disposal.

GROUND-WATER ANALYTICAL DATA

Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	MTBE (ug/l)	Naphthalene (ug/l)
<1.0	4.4	10.2	64.0	<1.0	99.7

Benzo(a) anthracene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(k) fluoranthene (ug/l)	Chrysene (ug/l)	DiBenz(a,h) anthracene (ug/l)
<5.0	<5.0	<5.0	<5.0	<5.0

Appendices:

Appendix A. Well Construction Log

Appendix B. Laboratory Data

Appendix C. Topographic Map

Appendix D. Site Base Map

Appendix E. Disposal Manifest

Appendix F. Additional Data (Sampling Results of Existing Ground-Water Wells)

Appendix G. Invoice Form

Report Completed by: Frederick Pilgrim PG #1055 Cert. # 41
(Signature)

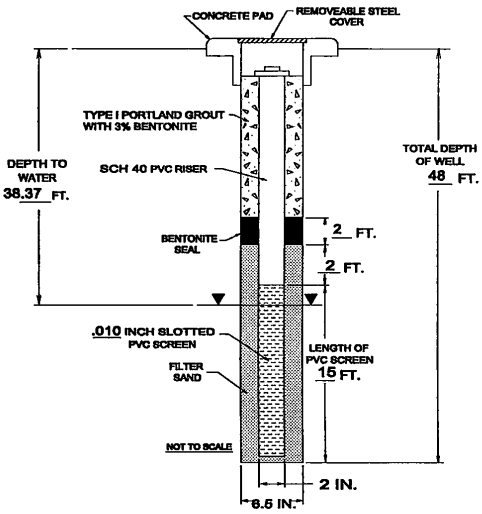
Date: 3/12/98

Appendix A

Well Construction Log

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-1 DATE DRILLED: 2/27/98
STATE PERMIT #: 9115 WORK ORDER #: 197-811
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 4001 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: N/D LAND SURFACE ELEV.: N/D



DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: 1A
SLOT SIZE: 0.010 INCH
COMMENTS:

N/D = NOT DETERMINED

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
5-7	MW1A	2,4,6,9	18/24	1,000+	ML	RED, MEDIUM-STIFF CLAY WITH STRONG PETRO ODOR
10-12	MW1B	3,3,5,6	24/24	990	ML	RED-ORANGE MEDIUM SILT LOAM WITH MEDIUM PETRO ODOR
15-17	MW1C	3,6,7,8	24/24	620	ML	RED-TAN MEDIUM-SOFT SILT WITH PETRO ODOR
20-22	MW1D	2,4,5,6	24/24	18	ML	TOP 12" TAN FINE SOFT SILT WITH PETRO ODOR
					ML	MID 6" WHITISH MEDIUM-SOFT ROCK FLOUR WITH PETRO ODOR
					ML	BOTTOM 6" TAN FINE SOFT SILT W/PETRO ODOR
25-27	MW1E	4,5,6,6	24/24	11	ML	WHITE-TAN SOFT MEDIUM-COARSE ROCK FLOUR WITH PETRO ODOR AND MEDIUM QUARTZ
30-32	MW1F	3,5,9,10	24/24	5.6	ML	TOP 12" TAN-ORANGE MEDIUM-SOFT SILT
					ML	BOTTOM 12" WHITE MEDIUM-COARSE, SOFT ROCK FLOUR WITH SLIGHT PETRO ODOR
35-37	MW1G	5,7,8,9	24/24	2.4	ML	BROWN FINE SOFT SILT WITH MICA
40-42	MW1H	5,7,10,12	24/24	1.2	ML	BLUE-GRAY SOFT FINE DAMP SILT
45-47	MW1I	4,8,10,11	24/24	1.5	ML	BLUE-GRAY FINE SOFT SILT; WET

Appendix B

Laboratory Data

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MCNAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22088

Sample ID: MW-1

Date Collected: 2/27/98

Project: 197-811

Time Collected: 14:20

Project Name: UNITED EXXON

Date Received: 3/3/98

Sampler: BOB BOLTON

Time Received: 9:00

State Certification: 84009

Sample Type: Soil

Site I.D.:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Benzene	0.3110	mg/kg	0.2500	0.0010	250	3/7/98	19:53	Holingwrth	8021B	9980
Toluene	1.399	mg/kg	0.2500	0.0010	250	3/7/98	19:53	Holingwrth	8021B	9980
Ethylbenzene	4.930	mg/kg	0.2500	0.0010	250	3/7/98	19:53	Holingwrth	8021B	9980
Xylenes, total	20.16	mg/kg	0.5000	0.0010	250	3/7/98	19:53	Holingwrth	8021B	9980
Napthalene	15.6	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Naphthalene	51.34	mg/kg	1.250	0.0050	250	3/7/98	19:53	Holingwrth	8021B	9980
Acenapthene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Anthracene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Fluoranthene	ND	mg/kg	0.333	0.067	5	3/6/98	10:24	M.Goodrich	8100	9447
Fluorene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Pyrene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Benzo (a) anthracene	ND	mg/kg	0.333	0.067	5	3/6/98	10:24	M.Goodrich	8100	9447
Benzo (a) pyrene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Benzo (b) fluoranthene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Benzo (k) fluoranthene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Chrysene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Dibenzo (a,h) anthracene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Indeno (1,2,3-cd) pyrene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Acenapthylene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Benzo (g,h,i) perylene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447
Phenanthrene	ND	mg/kg	0.33	0.07	5	3/6/98	10:24	M.Goodrich	8100	9447

ND = Not detected at the report limit.

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MCNAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22088

Sample ID: MW-1

Date Collected: 2/27/98

Project: 197-811

Time Collected: 14:20

Project Name: UNITED EXXON

Date Received: 3/3/98

Sampler: BOB BOLTON

Time Received: 9:00

State Certification: 84009

Sample Type: Soil

Site I.D.:

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	30.0 gm	1.00 ml	3/5/98	C.Gerenser	3550

Surrogate	% Recovery	Target Range
surr-a,a,a-Trifluorotoluene	106.	50. - 150.
PAH Surrogate	35.	20. - 110.

Report Approved By: _____ Report Date: 3/9/98

Theodore J. Duello, Ph.D., Q.A. Officer
Michael H. Dunn, M.S., Technical Director
Danny B. Hale, M.S., Laboratory Director

Laboratory Certification Number: 84009

ENVIRONMENTAL

7A- 021530

2960 Foster Creighton Drive
Nashville, TN 37204
615-726-0177
FAX 615/726-3404

Specialized Assays: (800) 765-0980

REFERRING CLIENT

Account: 6489
SEI Environmental, Inc.
Fred Lyke
3021 McNaughton Drive Suite 9
Columbia, SC 29223
Ph: 803-788-2535 Fax: 803-735-8663

LLING CONTROL NUMBER (FOR LAB USE ONLY): 93319

PROJECT #: 197-811

P.O. #:

MPLERS (Signature-Please Print): Bob Bolton BOB BOLTON

PROJECT NAME: United Exxon

FOR LAB USE ONLY ACC#	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT	ANALYSIS REQUESTED
98-A22087	SB-1	2/27/98	1247		✓	2	BTEX + Naphthalene 8020 PAH 8100
98-A22088	MW-1	2/27/98	1420		✓	2	BTEX + Naphthalene 8020 PAH 8100

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Received for Laboratory by:	Date / Time
Bob Bolton	3/2/98 800	Albert McNab	Pat Rhyne	3/3/98 9:00
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Remarks	
Albert McNab	3/2/98 3:00			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		

For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MCNAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22086

Sample ID: MW-1

Date Collected: 3/ 2/98

Project: 197-811

Time Collected: 12:42

Project Name: UNITED EXXON

Date Received: 3/ 3/98

Sampler: ALBERT MCNAB

Time Received: 9:00

State Certification: 84009

Sample Type: Water

Site I.D.:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Benzene	ND	ug/l	1.0	1.0	1	3/10/98	17:50	Duncan, J.	602	1401
Toluene	4.4	ug/l	1.0	1.0	1	3/10/98	17:50	Duncan, J.	602	1401
Ethylbenzene	10.2	ug/l	1.0	1.0	1	3/10/98	17:50	Duncan, J.	602	1401
Xylenes, total	64.0	ug/l	1.0	1.0	1	3/10/98	17:50	Duncan, J.	602	1401
Methyl-t-butylether	ND	ug/l	1.0	1.0	1	3/10/98	17:50	Duncan, J.	602	1401
Naphthalene	99.7	ug/l	5.0	5.0	1	3/10/98	17:50	Duncan, J.	602	1401
Naphthalene	36.0	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Acenapthene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Anthracene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Fluoranthene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Fluorene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Pyrene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Benzo (a) anthracene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Benzo (a) pyrene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Benzo (b) fluoranthene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Benzo (k) fluoranthene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Chrysene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Dibenzo (a,h) anthracene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Indeno (1,2,3-cd) pyrene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Acenapthylene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Benzo (g,h,i) perylene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552
Phenanthrene	ND	ug/l	5.0	5.0	1	3/7/98	15:19	M.Goodrich	610	8552

ND = Not detected at the report limit.

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MONAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22086

Sample ID: MW-1

Date Collected: 3/2/98

Project: 197-811

Time Collected: 12:42

Project Name: UNITED EXXON

Date Received: 3/3/98

Sampler: ALBERT MONAB

Time Received: 9:00

State Certification: 84009

Sample Type: Water

Site I.D.:

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	990. ml	1.00 ml	3/4/98	A.Bufalino	3510

Surrogate	% Recovery	Target Range
BTEX/GRO Surr., a,a,a-trifluorotoluene	99.	50. - 150.
PAH Surrogate	83.	22. - 116.

Report Approved By: _____ Report Date: 3/11/98

Theodore J. Duello, Ph.D., Q.A. Officer
Michael H. Dunn, M.S., Technical Director
Danny B. Hale, M.S., Laboratory Director

Laboratory Certification Number: 84009

ENVIRONMENTAL

IA- U20111

REFERRING CLIENT

Account: 6489
SEI Environmental, Inc.
Fred Lyke
3021 McNaughton Drive Suite 9
Columbia, SC 29223
Ph: 803-788-2535 Fax: 803-735-8663

2960 Foster Creighton Drive
Nashville, TN 37204
615-726-0177, 800-765-0980
FAX 615/726-3404

Specialized Assays: (800) 765-0980

LING CONTROL NUMBER (FOR LAB USE ONLY): 93318

PROJECT #: 197-811

P.O. #:

MPLERS (Signature-Please Print): Albert McNab ALBERT McNAB

PROJECT NAME: UNITED EXXON

FOR LAB USE ONLY ACC#	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT	ANALYSIS REQUESTED
8-A22086	MW-1	03-02	12:42		X	3	BTEX + NAPTA + MTBE 602 PAH 610

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Received for Laboratory by:	Date / Time
Albert McNab	03/02 3:00		PJ RRyh	3/3/98 9:00
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Remarks: Bob Bolton Project Manager	
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	SAI Project #:	

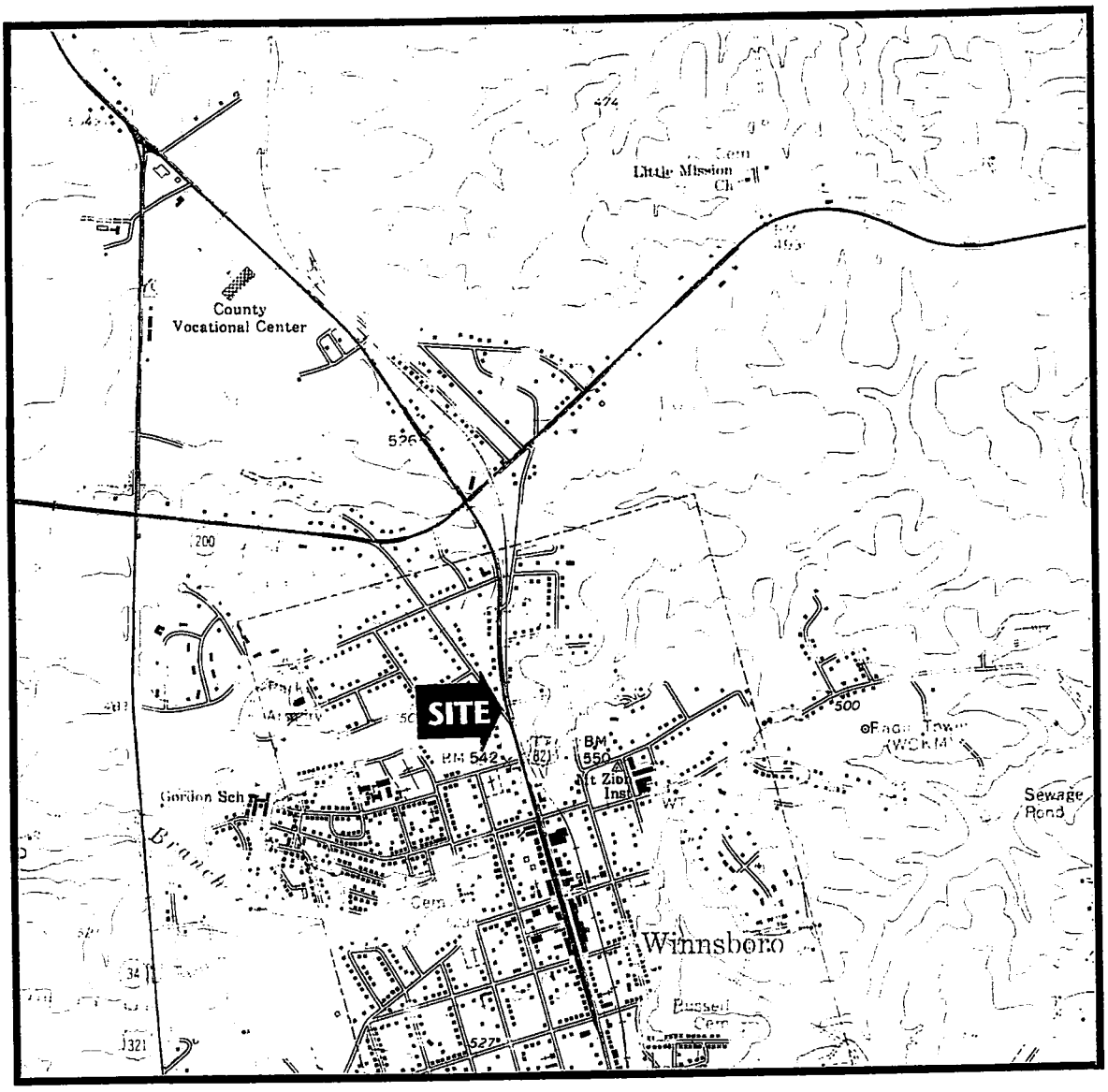
For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

Appendix C

Topographic Map

USGS TOPOGRAPHICAL MAP

WINNSBORO QUADRANGLE



SCALE 1:24000

1 MILE: 1 ½ 0

7000 FEET: 1000 0 1000 2000 3000 4000 5000 6000 7000

1 KILOMETER: 1 .5 0

NORTH

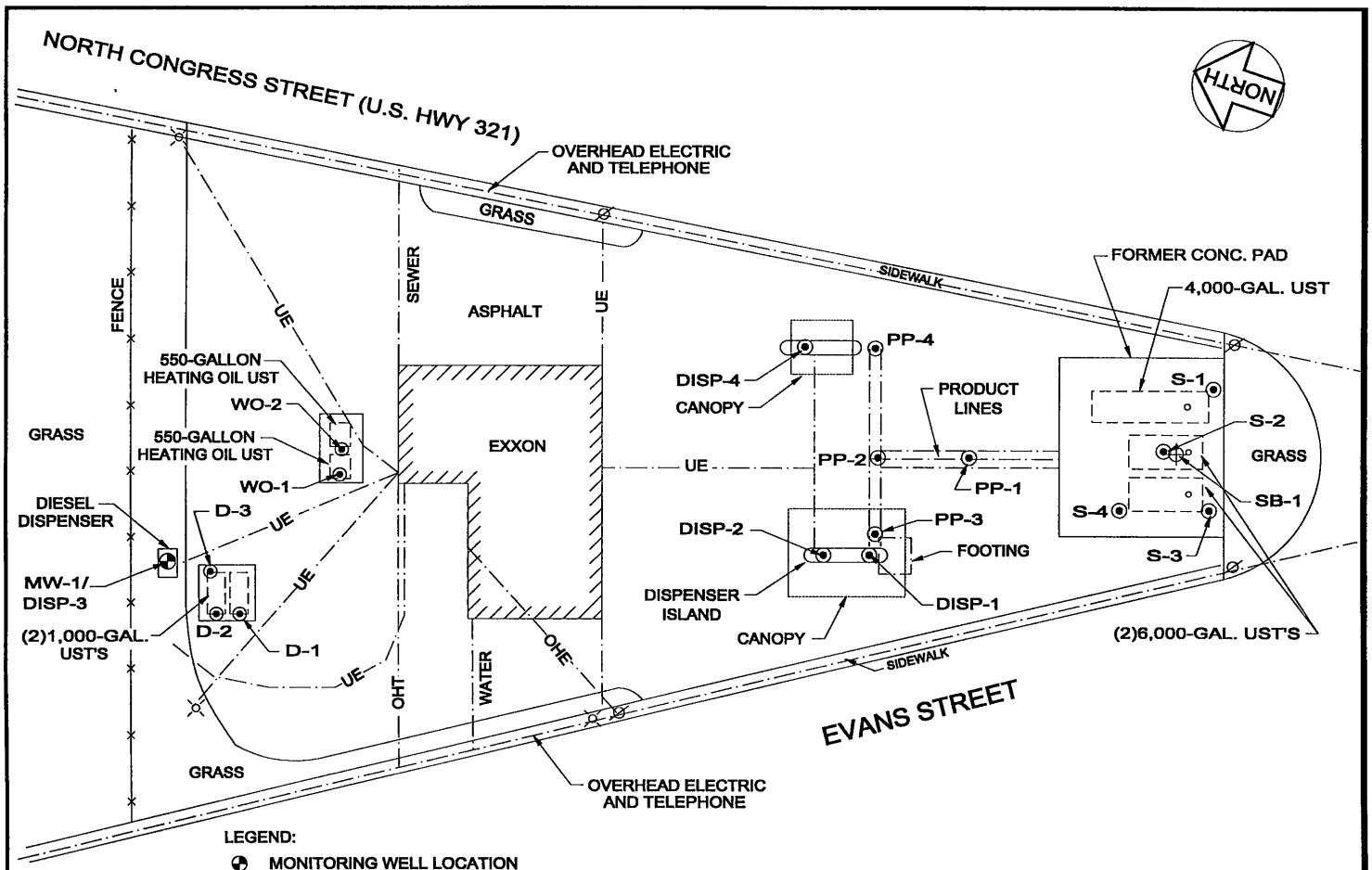
SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC

WO #197-343	DATE: 1/16/98
DWG #	DRAWN BY: JCJ

Appendix D

Site Base Map



LEGEND:

- MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- SOIL BORING LOCATION
- UTILITY POLE
- LIGHT POLE
- UE — UNDERGROUND ELECTRIC LINE
- OHE – OVERHEAD ELECTRIC LINE
- OHT – OVERHEAD TELEPHONE LINE

0 15 30 FT.

APPROXIMATE SCALE

SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-343	DATE: 3/11/98
DWG #UE0343F1	DRAWN BY: JCJ

Appendix E

Disposal Manifest

Please print or type.
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 03/06/98
Manifest Document No. GR1015
2. Page 1 of

3. Generator's Name and Mailing Address SPATCO ENVIRONMENTAL
UNITED EXXON WINNSBORO(1 DRUM)
PANTRY #340 GREENWOOD (2 DRUMS

4. Generator's Phone (803) 788-2535

5. Transporter 1 Company Name SEI
6. US EPA ID Number
A. Transporter's Phone 803-788-2535

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address G&R TANK SERVICES, INC.
PO BOX 1384
SUMTER, SC
10. US EPA ID Number SCD 987573557
C. Facility's Phone 803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON HAZARDOUS LIQUID				
b.	3	DR		
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: OLIVER D. JONES
Signature: [signature]
Month 03 Day 06 Year 98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: OLIVER D. JONES
Signature: [signature]
Month 03 Day 06 Year 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JOAN GARN
Signature: Joan Garn
Month 3 Day 6 Year 98

ORIGINAL - RETURN TO GENERATOR

G&K TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # 3) Three Drums
1) United Exxon
Winnsboro, SC
2) Pantry 340
Greenwood, SC

Size 55 Gallon

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas D. Kelly Jr.

Date March 6, 1998

Manifest

G&K Tank Services, Inc.
Non-Hazardous Soils

▼ Manifest # ▼

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by G&K:	Load #:
3/02/98	SEI	GK1015		1015	

Generator and/or Consultant

Generator's Name & Billing Address: SEI 3201 MCNAUGHTON DR SUITE 9 COLUMBIA, SC	Generator's Phone #:	Generator's US EPA ID #:
		Person to Contact:
	FAX #:	
Consultant's Name & Billing Address:	Consultant's Phone #:	
	Person to Contact:	
	FAX #:	
Generation Site (Transport from: (name & address) UNITED/EXXON WAYNESBORO, SC	Site Phone #:	BETX Levels
	Person to Contact:	TPH Levels
	FAX #:	AVG. Levels
Designated Facility (Transport to): (name & address) G AND K TANK SERVICES INC PO BOX 1384 SUMTER, SC 29151	Facility Phone #:	Facility Permit #'s:
	Person to Contact: TOMMY KEELS	
	FAX #:	
Transporter Name & Mailing Address: SEI 3021 MCNAUGHTON DR COLUMBIA, SC	Transporter's Phone #:	Transporter's US EPA ID #:
	Person to Contact:	Transporter's DOT No.:
	FAX #:	

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty.:	Description of Delivery	Gross Wt.	Tare Wt.	Net Wt.
Sand ☐ Organic ☐ Clay ☐ Other ☐	0-10% ☐ 10-20% ☐ 20%-over ☐	Gas ☐ Diesel ☐ Other ☐		CONTAMINATED SOIL	2-55 9A		DRUMS
Sand ☐ Organic ☐ Clay ☐ Other ☐	0-10% ☐ 10-20% ☐ 20%-over ☐	Gas ☐ Diesel ☐ Other ☐					
Sand ☐ Organic ☐ Clay ☐ Other ☐	0-10% ☐ 10-20% ☐ 20%-over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet Completed and certified by me/us for the Generation Site shown above.

Print or Type Name: OLIVER D. JONES — Generator ☐ Consultant ☐ — Signature & Date: Oliver D. Jones — Month 03 Day 02 Year 98

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received.

Print or Type Name: OLIVER D. JONES — Signature & Date: Oliver D. Jones — Month 03 Day 02 Year 98

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name: Joan Garn — Signature & Date: Joan Garn 3-2-98

Please print or type. Facility Copy: White • Numerical Copy: Canary • Transporter's Copy: Pink • Generator's/Consultant's Copy: Goldenrod

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1 (800) 922-7835 • FAX: (803) 494-8598

Certificate of Disposal

Tons 2) TWO DRUMS
United Exxon
Waynesboro, SC

Contaminant GASOLINE

This is to certify the above soil has been processed and disposed of by G & K Tank Services, Inc., in accordance with and exceeding EPA regulations on petroleum contaminated soils.

Certified by Thomas D. Keels Jr

Date March 2, 1998

Appendix F

Additional Data

(Sampling Results of Existing Ground-Water Wells)

Appendix G

Invoice Form

RLS #2

INITIAL GROUND-WATER ASSESSMENT REPORT

Facility Name: United Exxon

Site ID Number: 11760

Owner's Name: Keenan Energy Company

Address: P. O. Box 3218 / Columbia, South Carolina 29230

Phone Number: (803) 256-0667

Contractor: SEI Environmental, Inc. Cert. # 41

Address: 3021 McNaughton Drive / Suite 9 / Columbia, South Carolina 29223

Phone Number: (803) 788-2535

Well Driller: Environmental Construction Services Cert.# 1333

Receptor and Site Data

Please place a "X" in the appropriate answer block for each question:

Receptor Survey Questions	No	Yes *
Is there a drinking water supply well (public or private, please indicate) or surface water supply intake within 1000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1000 feet of the UST?	X	
Are there other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?	X	

If "yes" provide additional information:

Were any water wells within 250-ft radius sampled? ___Yes _X_No
See Appendix F for Chain of Custody Form and Laboratory Data.

Is the current use of the site and surrounding properties commercial, residential, agricultural or industrial?

Site: Commercial

Adjacent Properties: Residential / Commercial

Soil and Monitoring Well Data

Primary Soil Type: Silt Loam
* Based on field observations

Well Installation Method and Date: 2 1/4" Hollow Stem Auger / February 27, 1998

Development Method: N/A

Soil Sample obtained at 48-50 feet below ground surface

SOIL ANALYTICAL DATA

Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)
264.1	2890	779.3	4547	986.9

Benzo(a) anthracene (mg/kg)	Benzo(b) Fluoranthene (mg/kg)	Benzo(k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	DiBenz(a,h) Anthracene (mg/kg)
<2070	<2070	<2070	<2070	<2070

Ground-Water Data

Depth to ground water: Not Encountered

Well Purging/Sampling Method: N/A

Date Sampled: N/A

Free Product Thickness: N/A

Soil / Water disposal Method: N/A The soil was backfilled into the boring.

GROUND-WATER ANALYTICAL DATA

Benzene (ug/l)	Toluene (ug/l)	Ethylbenzene (ug/l)	Xylenes (ug/l)	Naphthalene (ug/l)
N/A	N/A	N/A	N/A	N/A

Benzo(a) anthracene (ug/l)	Benzo(b) fluoranthene (ug/l)	Benzo(k) fluoranthene (ug/l)	Chrysene (ug/l)	DiBenz(a,h) Anthracene (ug/l)
N/A	N/A	N/A	N/A	N/A

Appendices:

Appendix A. Well Construction Log

Appendix B. Laboratory Data

Appendix C. Topographic Map

Appendix D. Site Base Map

Appendix E. Disposal Manifest

Appendix F. Additional Data (Sampling Results of Existing Ground-Water Wells)

Appendix G. Invoice Form

Report Completed by: Frederick Pilgrim PG #1055 Cert. # 41
(Signature)

Date: 3/12/98

Appendix A

Well Construction Log

Boring Log and Type II Well Construction Details

SOIL BORING I.D.: SB-1 DATE DRILLED: 2/27/98
STATE PERMIT #: 9114 WORK ORDER #: 197-811
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 4001 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: N/D LAND SURFACE ELEV.: N/D

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOV-ERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
10-12	SB1A	1,1,1,2	18/24	3.4	SC	GRAY MEDIUM-SOFT SAND WITH PETRO ODOR
15-17	SB1B	2,3,5,5	20/24	260	ML	RED-ORANGE FINE SILT LOAM WITH STRONG PETRO ODOR
20-22	SB1C	2,2,3,4	16/24	860	ML	RED-BROWN FINE SOFT SILT TO SILT LOAM WITH BLACK DEPOSITS; STRONG PETRO ODOR
25-27	SB1D	2,4,5,8	18/24	1,000+	ML	RED-BROWN FINE SOFT SILT LOAM; DAMP; STRONG PETRO ODOR
30-32	SB1E	4,6,8,12	24/24	1,000+	ML	YELLOW-ORANGE MEDIUM-SOFT SILT TO SILT LOAM; STRONG PETRO ODOR; DAMP
35-37	SB1F	4,6,10,12	24/24	1,000+	ML	TAN MEDIUM-SOFT SILT TO SILT LOAM WITH BLACK DEPOSITS; STRONG PETRO ODOR; DAMP
40-42	SB1G	11,11,16,19	24/24	1,000+	ML	TAN-BROWN MEDIUM FINE SILT LOAM WITH STRONG PETRO ODOR
45-47	SB1H	4,8,20,27	24/24	1,000+	ML	TAN MEDIUM-STIFF SILT TO SILT LOAM WITH BLACK DEPOSITS; STRONG PETRO ODOR
48-50	SB1I	10,19,22,24	24/24	1,000+	ML	TAN MEDIUM-STIFF SILT WITH BLACK DEPOSITS; STRONG PETRO ODOR; DRY

DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: NOT APPLICABLE
SLOT SIZE: NOT APPLICABLE
COMMENTS: TERMINATION OF BORING AT 50' B.G.S.

N/D = NOT DETERMINED

Appendix B

Laboratory Data

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MCNAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22087

Sample ID: SB-1

Date Collected: 2/27/98

Project: 197-811

Time Collected: 12:47

Project Name: UNITED EXXON

Date Received: 3/ 3/98

Sampler: BOB BOLTON

Time Received: 9:00

State Certification: 84009

Sample Type: Soil

Site I.D.:

Analyte	Result	Units	Report Limit	Quan Limit	Dil Factor	Date	Time	Analyst	Method	Batch
ORGANIC PARAMETERS										
Benzene	0.2641	mg/kg	0.1000	0.0010	100	3/7/98	19:19	Holingwrth	8021B	9980
Toluene	2.890	mg/kg	0.1000	0.0010	100	3/7/98	19:19	Holingwrth	8021B	9980
Ethylbenzene	0.7793	mg/kg	0.1000	0.0010	100	3/7/98	19:19	Holingwrth	8021B	9980
Xylenes, total	4.547	mg/kg	0.2000	0.0010	100	3/7/98	19:19	Holingwrth	8021B	9980
Napthalene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Naphthalene	0.9869	mg/kg	0.5000	0.0050	100	3/7/98	19:19	Holingwrth	8021B	9980
Acenapthene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Anthracene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Fluoranthene	ND	mg/kg	2.07	0.330	1	3/6/98	9:47	M.Goodrich	8100	9447
Fluorene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Pyrene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Benzo (a) anthracene	ND	mg/kg	2.07	0.330	1	3/6/98	9:47	M.Goodrich	8100	9447
Benzo (a) pyrene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Benzo (b) fluoranthene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Benzo (k) fluoranthene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Chrysene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Dibenzo (a,h) anthracene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Indeno (1,2,3-cd) pyrene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Acenapthylene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Benzo (g,h,i) perylene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447
Phenanthrene	ND	mg/kg	2.07	0.33	1	3/6/98	9:47	M.Goodrich	8100	9447

ND = Not detected at the report limit.

SPECIALIZED ASSAYS ENVIRONMENTAL
2960 Foster Creighton Drive
Nashville, Tennessee 37204

ANALYTICAL REPORT

** Original report and a copy of the chain of custody will follow by mail.

SEI ENVIRONMENTAL, INC. 6489
FRED LYKE
3021 MCNAUGHTON DR STE 9
COLUMBIA, SC 29223

Lab Number: 98-A22087

Sample ID: SB-1

Date Collected: 2/27/98

Project: 197-811

Time Collected: 12:47

Project Name: UNITED EXXON

Date Received: 3/3/98

Sampler: BOB BOLTON

Time Received: 9:00

State Certification: 84009

Sample Type: Soil

Site I.D.:

Sample Extraction Data

Parameter	Wt/Vol Extracted	Extract Vol	Date	Analyst	Method
PAH's	30.0 gm	31.0 ml	3/5/98	C.Gerenser	3550

Surrogate	% Recovery	Target Range
surr-a,a,a-Trifluorotoluene	103.	50. - 150.
PAH Surrogate	60.	20. - 110.

Report Approved By: _____ Report Date: 3/9/98

Theodore J. Duello, Ph.D., Q.A. Officer
Michael H. Dunn, M.S., Technical Director
Danny B. Hale, M.S., Laboratory Director

Laboratory Certification Number: 84009

ENVIRONMENTAL

7A- 021530

2960 Foster Creighton Drive
Nashville, TN 37204
615-726-0177
FAX 615/726-3404

Specialized Assays: (800) 765-0980

REFERRING CLIENT

Account: 6489
SEI Environmental, Inc.
Fred Lyke
3021 McNaughton Drive Suite 9
Columbia, SC 29223
Ph: 803-788-2535 Fax: 803-735-8663

LLING CONTROL NUMBER (FOR LAB USE ONLY): 93319

PROJECT: 197-811

P.O. #:

MPLERS (Signature-Please Print): Bob Bolton BOB BOLTON

PROJECT NAME: United Exxon

FOR LAB USE ONLY ACC#	SAMPLE DESCRIPTION	DATE	TIME	COMP	GRAB	# OF CONT	ANALYSIS REQUESTED
98-A22087	SB-1	2/27/98	1247		✓	2	BTEX + Naphthalene 8020 PAH 8100
98-A22088	MW-1	2/27/98	1420		✓	2	BTEX + Naphthalene 8020 PAH 8100

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Received for Laboratory by:	Date / Time
Bob Bolton	3/2/98 800	Albert McNab	Pd R Chafin 2	3/3/98 9:00
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Remarks	
Albert McNab	3/2/98 3:00			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		
Relinquished by: (Signature)	Date / Time	Received by: (Signature)		

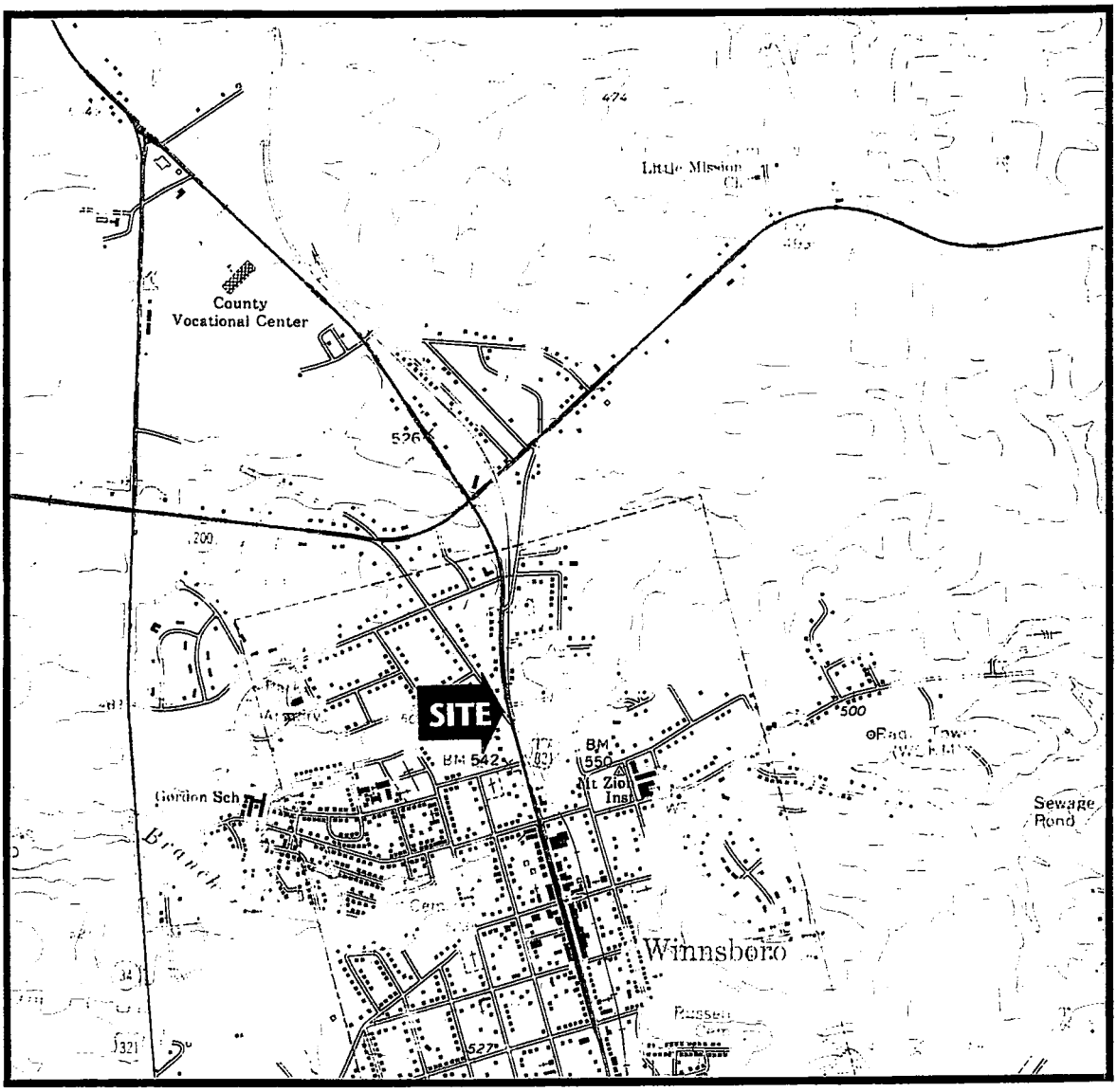
For further assistance in completing the chain of custody form please refer to the instructions found on the opposite side

Appendix C

Topographic Map

USGS TOPOGRAPHICAL MAP

WINNSBORO QUADRANGLE



SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

NORTH

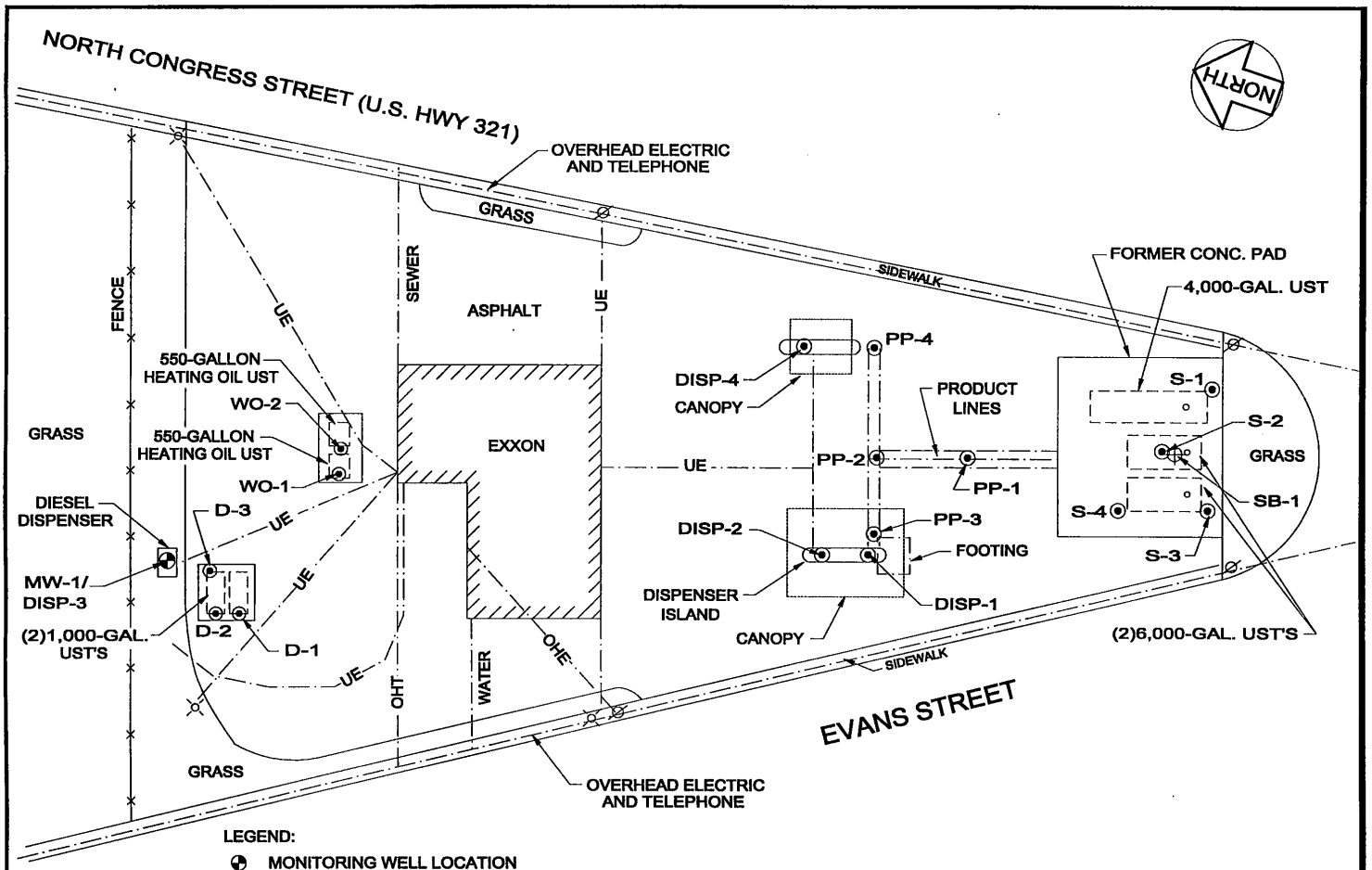
SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC

WO #197-343	DATE: 1/16/98
DWG #	DRAWN BY: JCJ

Appendix D

Site Base Map



LEGEND:

- MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION
- SOIL BORING LOCATION
- UTILITY POLE
- LIGHT POLE
- UE — UNDERGROUND ELECTRIC LINE
- OHE – OVERHEAD ELECTRIC LINE
- OHT – OVERHEAD TELEPHONE LINE

0 15 30 FT.

APPROXIMATE SCALE

SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-343	DATE: 3/11/98
DWG #UE0343F1	DRAWN BY: JCJ

Appendix E

Disposal Manifest

Appendix F

Additional Data

(Sampling Results of Existing Ground-Water Wells)

Appendix G

Invoice Form

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

March 31, 2005

RECEIVED
APR 0 1 2005
UNDERGROUND STORAGE TANK PROGRAM

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Shrader:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

UST PROGRAM
DOCKETING # 37 Tech

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

RECEIVED
APR 0 1 2005
UNDERGROUND STORAGE
TANK PROGRAM

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Project Manager

Frederick P. Lyke, P.G. #1055

March 31, 2005

LIST OF APPENDICES

APPENDIX A	SCDHEC Correspondence
APPENDIX B	Free Product Recovery Summary Reports
APPENDIX C	Soil Boring and Monitor Well Construction Logs
APPENDIX D	Groundwater Sampling Field Measurements
APPENDIX E	Laboratory Analytical Results and Chain-of-Custody
APPENDIX F	Disposal Manifests

RECEIVED

APR 0 1 2005

UNDERGROUND STORAGE
TANK PROGRAM

1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated February 6, 2004. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Free Product Recovery Events

On April 1, 2004, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Nu-Way Industrial Services, Inc. (Nu-Way). Originally, free product was to be removed from Monitor Well MW-11; however, Nu-Way's vac truck was unable to remove any liquid from MW-11 due to the distance between the vac truck and the monitor well. The free product removal event was conducted for eight hours, and approximately 800 gallons of liquid were removed from Monitor Well MW-2.

On February 9, 2005, ATC personnel oversaw the free product removal activities from Monitor Well MW-11 by Shamrock Environmental Corporation. This free product removal event was conducted for six hours, and approximately 289 gallons of liquid were removed from Monitor Well MW-11. On February 15, 2005, ATC personnel oversaw the free product removal activities from Monitor Well MW-2 by Shamrock Environmental Corporation. This event was conducted for eight hours, and approximately 258 gallons of liquid were removed from Monitor Well MW-2. A summary of the free product removal activities is presented in Appendix B.

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APR 0 1 2005
UNDERGROUND STORAGE
TANK PROGRAM

2.2 Field Screening Activities

On February 9-10, 2005, ATC personnel oversaw the completion of four soil borings, identified as GP-1 through GP-4 for field screening purposes with a Geoprobe™ by Geologic Explorations, Inc. personnel. Borings GP-1 and GP-2 were performed to approximate depths of 44 feet below ground surface (bgs) and 29 feet bgs, respectively when refusal was encountered without entering the water table. Borings GP-3 and GP-4 were performed to approximate depths of 44 feet bgs and 35 feet bgs, respectively, and groundwater was encountered in these two borings. A temporary monitor well was installed at each of these borings for the collection of groundwater samples and to determine if liquid phase hydrocarbons exist at these locations. Specifically, Boring GP-1 was conducted northwest of Monitor Well MW-11, and Boring GP-2 was conducted west of Monitor Well MW-11. Boring GP-3 was conducted southwest of Monitor Well MW-11, and Boring GP-4 was conducted south-southeast of Monitor Well MW-11.

On February 14-15, 2005, ATC personnel oversaw the completion of five soil borings, identified as GP-5 and GP-7 through GP-10 for field screening purposes with a Geoprobe™ by Geologic Explorations, Inc. personnel. Boring GP-5 was performed to an approximate depth of 34 feet bgs when refusal was encountered without entering the water table. Borings GP-7, GP-8, GP-9, and GP-10 were performed to approximate depths of 48 feet bgs, 48 feet bgs, 50 feet bgs, and 47 feet bgs, respectively, and groundwater was encountered in these four borings. A temporary monitor well was installed at each of these borings for the collection of groundwater samples and to determine if liquid phase hydrocarbons exist at these locations. Specifically, Boring GP-5 was conducted northeast of Monitor Well MW-11, and Boring GP-7 was conducted north of Monitor Well MW-11. Boring GP-8 was conducted northwest of Monitor Well MW-11. Borings GP-9 and GP-10 were conducted north-northwest of Monitor Well MW-11.

On February 16, 2005, ATC personnel oversaw the completion of four soil borings, identified as GP-6, GP-11, GP-12, and GP-13 for field screening purposes with a Geoprobe™ by SAEDACCO, Inc. personnel. Borings GP-6 and GP-11 were performed to approximate depths

of 43 feet bgs and 46 feet bgs, respectively, and groundwater was encountered in these two borings. Borings GP-12 and GP-13 were performed to approximate depths of 30 feet bgs and 12 feet bgs, respectively when refusal was encountered without entering the water table. A temporary monitor well was installed at Borings GP-6 and GP-11 for the collection of groundwater samples and to determine if liquid phase hydrocarbons exist at these locations. Specifically, Boring GP-6 was conducted north-northeast of Monitor Well MW-11, and Boring GP-11 was conducted northwest of Monitor Well MW-11. Boring GP-12 was conducted north-northwest of Monitor Well MW-11, and Boring GP-13 was conducted northeast of Monitor Well MW-11. After the temporary monitor wells were removed, these borings were properly abandoned along with the soil borings that did not encounter groundwater. All field screening locations are depicted in Figure 2, and soil boring logs are presented in Appendix C.

2.3 Monitor Well Installations

On June 1, 2004, ATC personnel mobilized to the site for the installation of one (1) Type II groundwater monitor well by Mr. Richy Lemire of SAEDACCO, a licensed South Carolina well driller. Mr. Lemire attempted to install the monitor well with a track mounted Diedrich D-50 drill rig in the wooded area between the current location of Monitor Well MW-14 and McCulley Creek. However, the monitor well could not be installed as rock was encountered at an approximate depth of 17 feet bgs. Subsequently, this boring location was identified as SB-1.

On February 15, 2005, ATC personnel oversaw the installation of two (2) Type II groundwater monitor wells, identified as Monitor Wells MW-12 and MW-13, by Mr. Mike McConahey of Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Miller, using a track mounted Diedrich D-50 Turbo drill rig, installed each of these monitor wells to an approximate depth of 50 feet. Specifically, Monitor Well MW-12 was installed near Boring GP-2, and Monitor Well MW-13 was installed northwest of Monitor Well MW-11.

On February 18, 2005, ATC personnel oversaw the installation of two (2) Type II groundwater monitor wells, identified as Monitor Wells MW-14 and MW-15, by Mr. Mike McConahey of

Geologic Explorations, Inc., a licensed South Carolina well driller. Mr. Miller, using a track mounted Diedrich D-50 Turbo drill rig, installed each of these monitor wells to an approximate depth of 40 feet. Specifically, Monitor Well MW-14 was installed east of Monitor Well MW-11 and serves as the most hydraulically down-gradient placed well before McCulley Creek. Monitor Well MW-15 was installed southeast of Monitor Well MW-11.

On March 7, 2005, ATC personnel oversaw the installation of one (1) Type II groundwater monitor well, identified as Monitor Well MW-16, by Mr. George Flinton, a licensed South Carolina well driller. Mr. Flinton, using a truck mounted CME-45 drill rig, installed this well to an approximate depth of 50 feet. Specifically, Monitor Well MW-16 was installed near Boring GP-1. Soil samples were only collected for lithologic descriptions during the installation of the monitor wells. Monitor well locations and the soil boring locations are depicted in Figure 2.

The monitor wells are constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. Each Type II monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet above the top of the screen and followed by approximately 2 feet to 3 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. Monitor Wells MW-12, MW-13, and MW-16 were completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. Monitor Wells MW-14 and MW-15 were completed with a water tight, locking PVC cap, protected by an above grade stand. Following installations, each monitor well was developed with a clean, centrifugal pump to remove any fine materials that may impede the flow of groundwater into the well. Monitor well construction details and lithologic descriptions are presented in Appendix C.

2.4 Site Hydrogeology

During the March 8, 2005, gauging event, approximately 0.20 feet, 0.42 feet, 0.15 feet, and 0.04 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2, MW-10, MW-11, and MW-16, respectively. Groundwater flow direction is toward the south and east with a hydraulic gradient of 0.0264 feet per foot, as measured between Monitor Wells MW-1 and MW-15. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.5 Soil Sampling and Analysis

During the field screening activities, ATC personnel obtained a soil sample from the refusal point of Boring SB-1. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The soil sample was placed in laboratory supplied containers, placed on ice, and shipped via FedEx to Hygeia Laboratories, Inc. in Marietta, Georgia for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The soil sample was analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), and naphthalene by EPA method 8260B, and polynuclear aromatic hydrocarbons (PAH) by EPA method 8270C.

2.6 Groundwater Sampling and Analysis

During the current assessment activities, ATC personnel obtained groundwater samples from Borings GP-3, GP-4, GP-6, GP-7, GP-9, GP-10, and GP-11 and Monitor Wells MW-1, MW-3, MW-5, MW-7, MW-8, MW-12 through MW-15, and DW-1. Samples were not obtained from Monitor Wells MW-2, MW-10, MW-11, and MW-16 due to the presence of LPH, and samples were not collected from Monitor Wells MW-4, MW-6, and MW-9 since these wells were dry. In addition, a surface water sample (identified as CK-1) was collected from the headwaters of McCulley Creek. A new, disposable, polyethylene bailer was used for the collection of the water samples from the monitor wells. Each sample was obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were

observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix D. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The groundwater samples from the borings were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to Severn Trent Laborotories in Miami, Florida for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples collected from the borings were analyzed for BTEX, methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B. The groundwater samples collected from the monitor wells and creek were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to Hygeia Laboratories, Inc. in Marietta, Georgia for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. These groundwater samples were analyzed for BTEX, MTBE, and naphthalene by EPA method 8260B, and ethylene dibromide (EDB) by EPA method 504.1.

3.0 LABORATORY ANALYTICAL RESULTS

3.1 Soil Results

Soil analytical results for the sample collected from Boring SB-1 did not detect the presence of BTEX, naphthalene, or PAH constituents. Laboratory analytical results are summarized in Table II and Figure 4. Laboratory analytical results and chain-of-custody are presented in Appendix E.

3.2 Groundwater Results

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at Samples GP-3, GP-4, GP-6, GP-7, GP-9, GP-10, GP-11, MW-3, and MW-12 through MW-15. Toluene concentrations were detected at Samples GP-6, GP-7, GP-9, GP-10, GP-11, MW-3, MW-12, MW-13, MW-15, and DW-1.

Ethylbenzene concentrations were detected at Samples GP-6, GP-7, GP-9, GP-11, MW-3, and MW-13. Xylenes concentrations were detected at Samples GP-6, GP-7, GP-9, GP-10, GP-11, MW-1, MW-3, MW-12, MW-13, and MW-15. MTBE concentrations were detected at Samples GP-4, MW-12, and CK-1. It is likely that MTBE concentrations exist at Samples GP-3, GP-6, GP-7, GP-9, GP-10, GP-11, MW-13, MW-14, and MW-15 due to high dilution factors at these locations that caused results to be less than detection limits. Naphthalene concentrations were detected at Samples GP-10, GP-11, MW-1, and MW-12 through MW-15. It is likely that naphthalene concentrations exist at Samples GP-3, GP-4, GP-6, GP-7, and GP-9 due to high dilution factors at these locations that caused results to be less than detection limits. EDB concentrations were detected at Monitor Well MW-13.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Samples GP-3, GP-4, GP-6, GP-7, GP-9, GP-10, GP-11, MW-3, and MW-12 through MW-15. Toluene concentrations were detected greater than its RBSL of 1000 μg/l at Samples GP-6, GP-7, GP-9, GP-10, GP-11, and MW-13. Ethylbenzene concentrations were detected greater than its RBSL of 700 μg/l at Samples GP-6, GP-7, GP-9, GP-11, and MW-13. Xylenes concentrations were detected greater than its RBSL of 10000 μg/l at Samples GP-7 and MW-13. MTBE concentrations were detected greater than its RBSL of 40 μg/l at Samples GP-4 and MW-12. However, it is probable that MTBE concentrations may be greater than its RBSL at Samples GP-3, GP-6, GP-7, GP-9, GP-10, GP-11, MW-13, MW-14, and MW-15 due to a high dilution factors at these locations which caused results to be less than detection limits. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Samples GP-10, GP-11, MW-1, and MW-12 through MW-15. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Well MW-13. Field screening laboratory analytical results are summarized in Table III and Figure 5. Groundwater laboratory analytical results are summarized in Table IV and Figure 6. Laboratory analytical results and chain-of-custody are presented in Appendix E.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Free product recovery events were conducted April 1, 2004, February 9, 2005, and February 15, 2005, at Monitor Wells MW-2, MW-11, and MW-2, respectively.
- Fourteen soil borings were conducted for field screening activities during the current assessment activities.
- Five Type II groundwater monitor wells, identified as MW-12 through MW-16, were installed during the current assessment activities to further assess the site in the hydraulically down-gradient direction.
- Groundwater flow at the site is in a southern to eastern direction with a hydraulic gradient of 0.0264 feet per foot, as measured between Monitor Wells MW-1 and MW-15.
- Approximately 0.20 feet, 0.42 feet, 0.15 feet, and 0.04 feet of liquid phase hydrocarbons were detected at Monitor Wells MW-2, MW-10, MW-11, and MW-16, respectively during the March 8, 2005, gauging event. It should be noted that liquid phase hydrocarbons were not detected at Monitor Well MW-10 during the previous gauging event conducted in August 2003. In addition, approximately 1.00 feet of liquid phase hydrocarbons were detected at Boring GP-8 during the field screening activities.
- Monitor Wells MW-4, MW-6, and MW-9 were dry during the March 8, 2005, gauging event.
- MTBE concentrations of 8 μg/l were detected in Sample CK-1, which was collected from the creek located hydraulically down-gradient from the site.
- Total BTEX concentrations have increased at Monitor Well DW-1 since the previous sampling event of August 2003. Total BTEX concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. MTBE and EDB concentrations have decreased or remained below detection limits at all sampled monitor wells since the previous sampling event. Naphthalene concentrations have increased at Monitor Well MW-1 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. It should be noted that comparisons can not be made regarding Monitor Wells MW-2, MW-10, and MW-11 due to the presence

of liquid phase hydrocarbons at these wells. Comparisons can not be made regarding the newly installed wells, and comparisons can not be made regarding the wells that are dry.

Due to the presence of liquid phase hydrocarbons at Monitor Wells MW-2, MW-10, MW-11, and MW-16 and a creek located in the hydraulically down-gradient direction from the site, ATC Associates Inc. recommends that the site undergo active corrective action.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., September 11, 2003, *Groundwater Sampling Report – Former United Exxon*, Charlotte, North Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-1	03/08/2005	96.54	42.33	0	48	54.21
MW-2	03/08/2005	98.17	50.87*	0.20	54	47.30
MW-3	03/08/2005	95.81	43.74	0	45	52.07
MW-4	03/08/2005	98.52	Dry	0	45	Not Applicable
MW-5	03/08/2005	94.41	41.91	0	45	52.50
MW-6	03/08/2005	103.40	Dry	0	55	Not Applicable
MW-7	03/08/2005	102.34	51.54	0	52	50.80
MW-8	03/08/2005	97.63	42.22	0	45	55.41
MW-9	03/08/2005	100.62	Dry	0	50	Not Applicable
MW-10	03/08/2005	88.26	46.33*	0.42	50	41.93
MW-11	03/08/2005	70.63	32.02*	0.15	38	38.61
MW-12	03/08/2005	81.21	39.28	0	50	41.93
MW-13	03/08/2005	81.02	41.26	0	50	39.76
MW-14	03/08/2005	69.55	33.53	0	40	36.02
MW-15	03/08/2005	72.06	35.31	0	40	36.75
MW-16	03/08/2005	85.19	42.77*	0.04	50	42.42
DW-1	03/08/2005	98.62	51.31	0	89	47.31

LPH = Liquid Phase Hydrocarbons
* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II Soil Analytical Results Former United Exxon / Winnsboro, South Carolina		
Chemical of Concern	RBSL (mg/kg)	SB-1 (mg/kg)
Benzene	0.007	<0.005
Toluene	1.450	<0.005
Ethylbenzene	1.150	<0.005
Xylenes	14.500	<0.005
Total BTEX	NA	<0.020
Naphthalene	0.036	<0.005
Benzo(a)anthracene	0.066	<0.33
Benzo(b)fluoranthene	0.066	<0.33
Benzo(k)fluoranthene	0.066	<0.33
Chrysene	0.066	<0.33
Dibenz(a,h)anthracene	0.066	<0.33

RBSLs are those for sandy soil.
NA = Not Applicable

TABLE III
Field Screening Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	GP-1 (µg/l)	GP-2 (µg/l)	GP-3 (µg/l)	GP-4 (µg/l)	GP-5 (µg/l)	GP-6 (µg/l)	GP-7 (µg/l)	GP-8 (µg/l)	GP-9 (µg/l)
Free Product Thickness	NA	NA	NA	None	None	NA	None	None	1.00'	None
Benzene	5	NS	NS	**5500**	**3860**	NS	**5450**	**6950**	NS	**5540**
Toluene	1000	NS	NS	<100	<100	NS	**2770**	**20350**	NS	**7140**
Ethylbenzene	700	NS	NS	<100	<100	NS	**1170**	**2920**	NS	**1000**
Xylenes	10000	NS	NS	<300	<300	NS	1990	**14100**	NS	3590
Total BTEX	NA	NA	NA	<6000	<4360	NA	11380	44320	NA	17270
MTBE	40	NS	NS	**<100**	**330**	NS	**<500**	**<500**	NS	**<200**
Naphthalene	25	NS	NS	**<200**	**<200**	NS	**<1000**	**<1000**	NS	**<400**

Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE III (continued) Field Screening Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina					
Chemical of Concern	RBSL (µg/l)	GP-10 (µg/l)	GP-11 (µg/l)	GP-12 (µg/l)	GP-13 (µg/l)
Free Product Thickness	NA	None	None	NA	NA
Benzene	5	**4020**	**11000**	NS	NS
Toluene	1000	**1830**	**25800**	NS	NS
Ethylbenzene	700	<200	**1840**	NS	NS
Xylenes	10000	1920	9980	NS	NS
Total BTEX	NA	<7970	48620	NA	NA
MTBE	40	**<200**	**<400**	NS	NS
Naphthalene	25	**270**	**1420**	NS	NS

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

TABLE IV
Groundwater Analytical Results (3/8/05)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)
Free Product Thickness	NA	None	0.20'	None	NA	None	NA	None	None	NA
Benzene	5	<5	NS	**123**	NS	<5	NS	<5	<5	NS
Toluene	1000	<5	NS	10	NS	<5	NS	<5	<5	NS
Ethylbenzene	700	<5	NS	18	NS	<5	NS	<5	<5	NS
Xylenes	10000	15	NS	16	NS	<5	NS	<5	<5	NS
Total BTEX	NA	<30	NA	167	NA	<20	NA	<20	<20	NA
MTBE	40	<5	NS	<5	NS	<5	NS	<5	<5	NS
Naphthalene	25	**42**	NS	<5	NS	<5	NS	<5	<5	NS
EDB	0.05	<0.02	NS	<0.02	NS	<0.02	NS	<0.02	<0.02	NS

Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE IV (continued)
Groundwater Analytical Results (3/8/05)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	0.42'	0.15'	None	None	None	None	0.04'	None	None
Benzene	5	NS	NS	**7680**	**13300**	**6390**	**11400**	NS	<5	<5
Toluene	1000	NS	NS	264	**33600**	<125	182	NS	8	<5
Ethylbenzene	700	NS	NS	52	**2880**	<125	<50	NS	<5	<5
Xylenes	10000	NS	NS	315	**16600**	<125	96	NS	<5	<5
Total BTEX	NA	NA	NA	8311	66380	<6765	<11728	NA	<23	<20
MTBE	40	NS	NS	**195**	**<100**	**<125**	**<50**	NS	<5	8
Naphthalene	25	NS	NS	**173**	**700**	**234**	**485**	NS	<5	<5
EDB	0.05	NS	NS	<0.02	**0.08**	<0.02	<0.02	NS	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

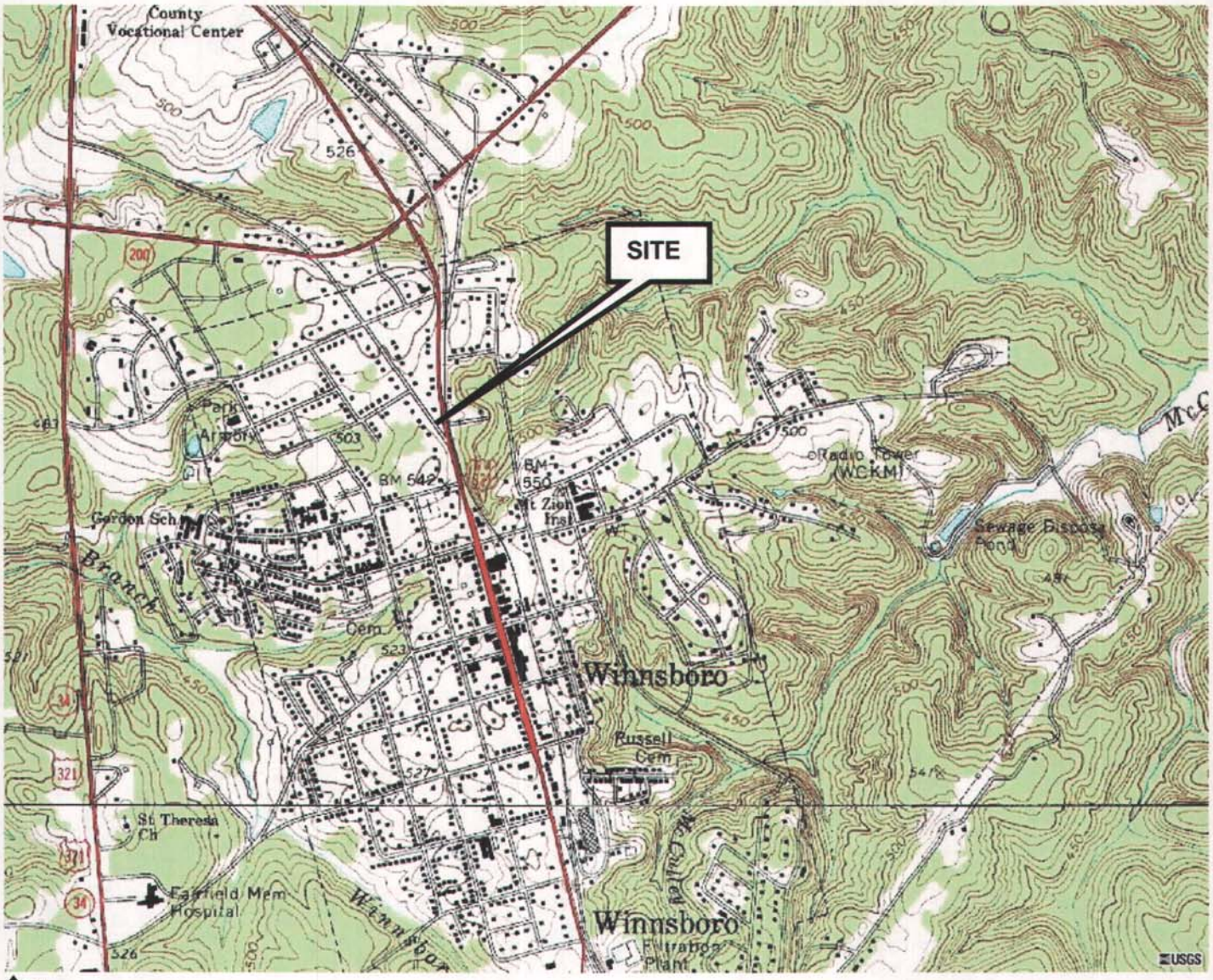
TABLE V Historical Groundwater Analytical Results, dated August 2003 Former United Exxon / Winnsboro, South Carolina									
Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)
Free Product Thickness	NA	None	0.33'	None	NA	None	None	None	None
Benzene	5	<5	NS	**385**	NS	<5	<5	<5	<5
Toluene	1000	<5	NS	<25	NS	<5	<5	<5	<5
Ethylbenzene	700	<5	NS	<25	NS	<5	<5	<5	<5
Xylenes	10000	<5	NS	<25	NS	<5	<5	<5	<5
Total BTEX	NA	<20	NA	<460	NA	<20	<20	<20	<20
MTBE	40	<5	NS	<25	NS	<5	<5	<5	<5
Naphthalene	25	<5	NS	<25	NS	<5	<5	<5	<5
EDB	0.05	<0.02	NS	<0.02	NS	<0.02	<0.02	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE V (continued) Historical Groundwater Analytical Results, dated August 2003 Former United Exxon / Winnsboro, South Carolina						
Chemical of Concern	RBSL (µg/l)	MW-9 (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	NA	None	1.95'	None	None
Benzene	5	NS	**8010**	NS	<5	**15**
Toluene	1000	NS	**8770**	NS	<5	<5
Ethylbenzene	700	NS	**2310**	NS	<5	<5
Xylenes	10000	NS	7200	NS	<5	<5
Total BTEX	NA	NA	26290	NA	<20	<30
MTBE	40	NS	**<250**	NS	<5	**295**
Naphthalene	25	NS	**774**	NS	<5	<5
EDB	0.05	NS	<0.02	NS	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

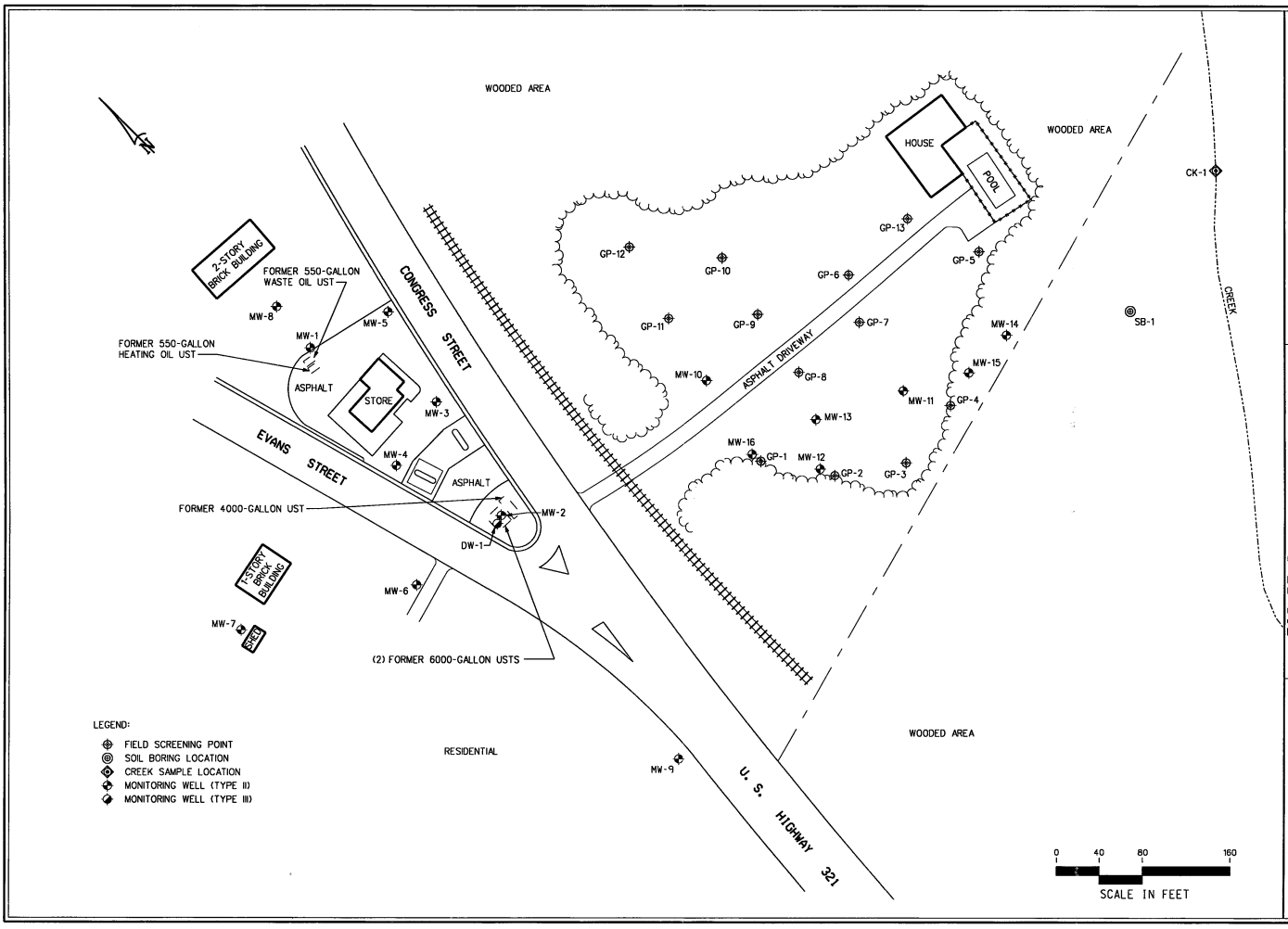
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 1,300'



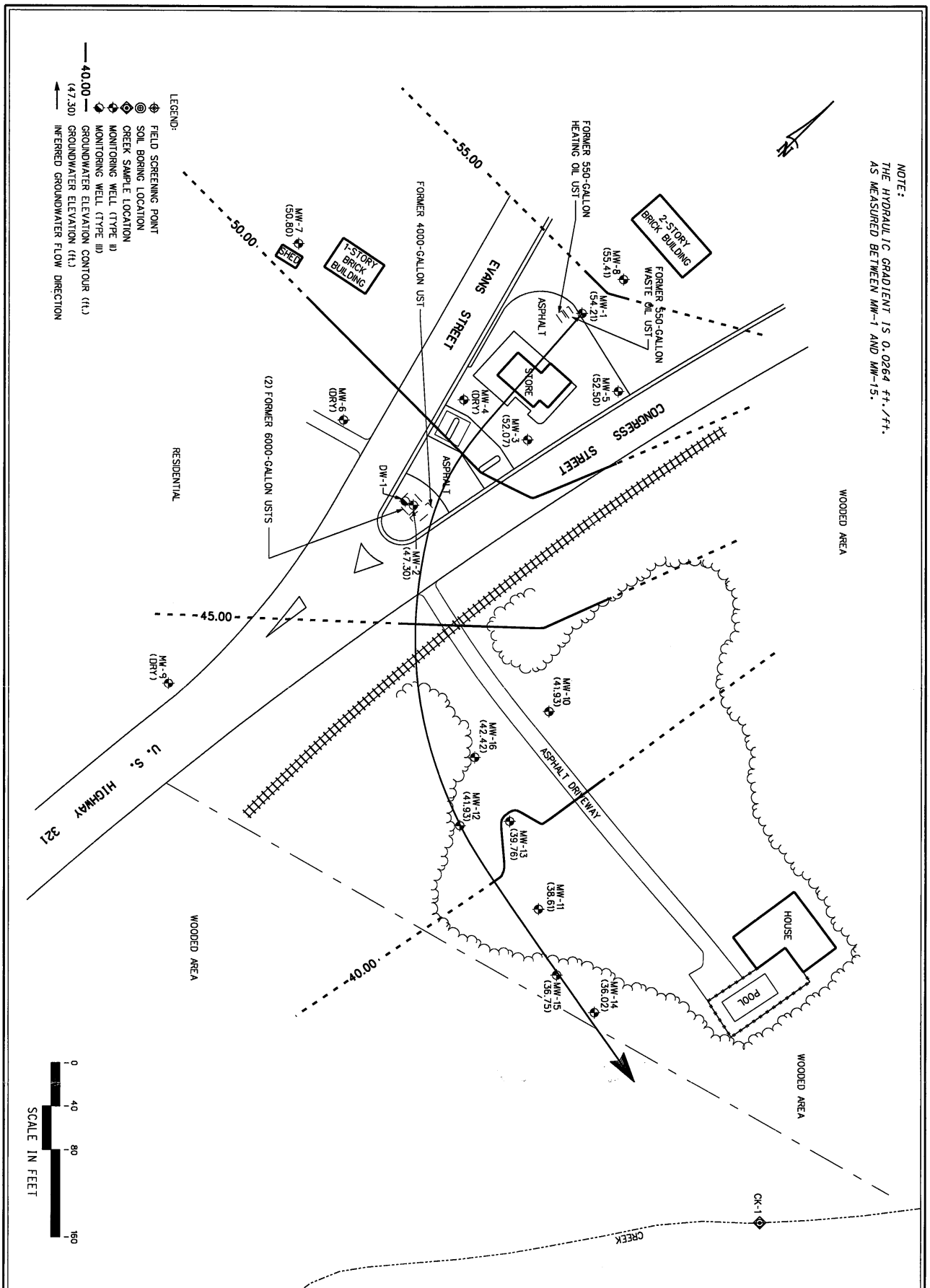
ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	03-30-2005	14.25384.0012

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

NOTES:

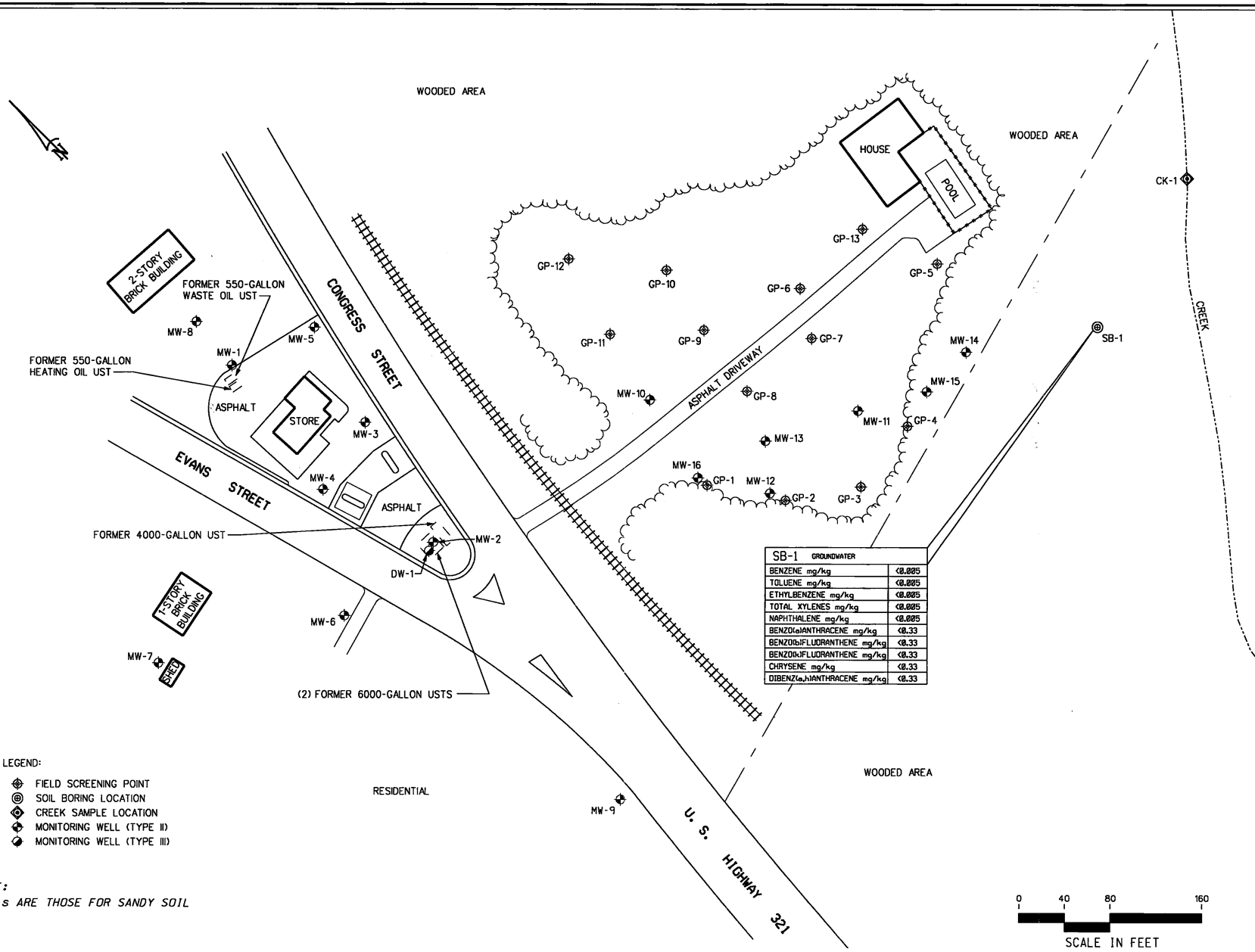


NOTES:

TITLE **FIGURE 3** UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012



SB-1 GROUNDWATER	
BENZENE mg/kg	<0.005
TOLUENE mg/kg	<0.005
ETHYLBENZENE mg/kg	<0.005
TOTAL XYLENES mg/kg	<0.005
NAPHTHALENE mg/kg	<0.005
BENZO(a)ANTHRACENE mg/kg	<0.33
BENZO(b)FLUORANTHENE mg/kg	<0.33
BENZO(k)FLUORANTHENE mg/kg	<0.33
CHRYSENE mg/kg	<0.33
DIBENZ(a,h)ANTHRACENE mg/kg	<0.33

LEGEND:

- FIELD SCREENING POINT
- SOIL BORING LOCATION
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

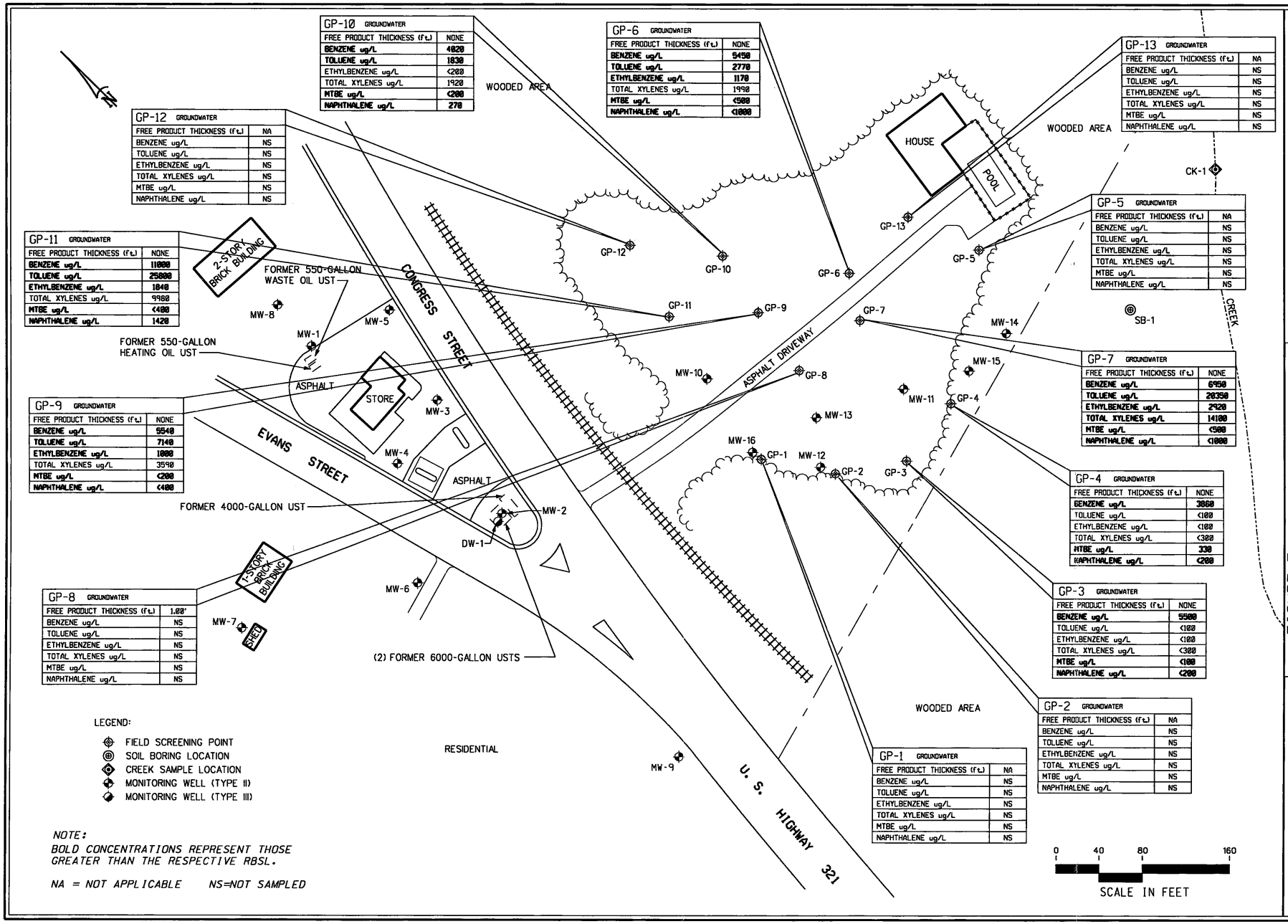
NOTE:
RBSLs ARE THOSE FOR SANDY SOIL

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE **FIGURE 4** UST PERMIT #11760
SOIL CONCENTRATION MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012

NOTES:



GP-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**4020**
TOLUENE ug/L	**1830**
ETHYLBENZENE ug/L	<200
TOTAL XYLENES ug/L	1920
MTBE ug/L	**<200**
NAPHTHALENE ug/L	**270**

GP-6 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5450**
TOLUENE ug/L	**2770**
ETHYLBENZENE ug/L	**1170**
TOTAL XYLENES ug/L	1990
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<1000**

GP-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

GP-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

GP-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

GP-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**11000**
TOLUENE ug/L	**25000**
ETHYLBENZENE ug/L	**1840**
TOTAL XYLENES ug/L	9980
MTBE ug/L	**<400**
NAPHTHALENE ug/L	**1420**

GP-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6950**
TOLUENE ug/L	**20350**
ETHYLBENZENE ug/L	**2920**
TOTAL XYLENES ug/L	**14100**
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<1000**

GP-9 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5540**
TOLUENE ug/L	**7140**
ETHYLBENZENE ug/L	**1000**
TOTAL XYLENES ug/L	3590
MTBE ug/L	**<200**
NAPHTHALENE ug/L	**<400**

GP-4 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**3860**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<300
MTBE ug/L	**330**
NAPHTHALENE ug/L	**<200**

GP-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5500**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	<300
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**<200**

GP-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	1.00'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

GP-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

GP-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS

LEGEND:

- FIELD SCREENING POINT
- SOIL BORING LOCATION
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE:
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

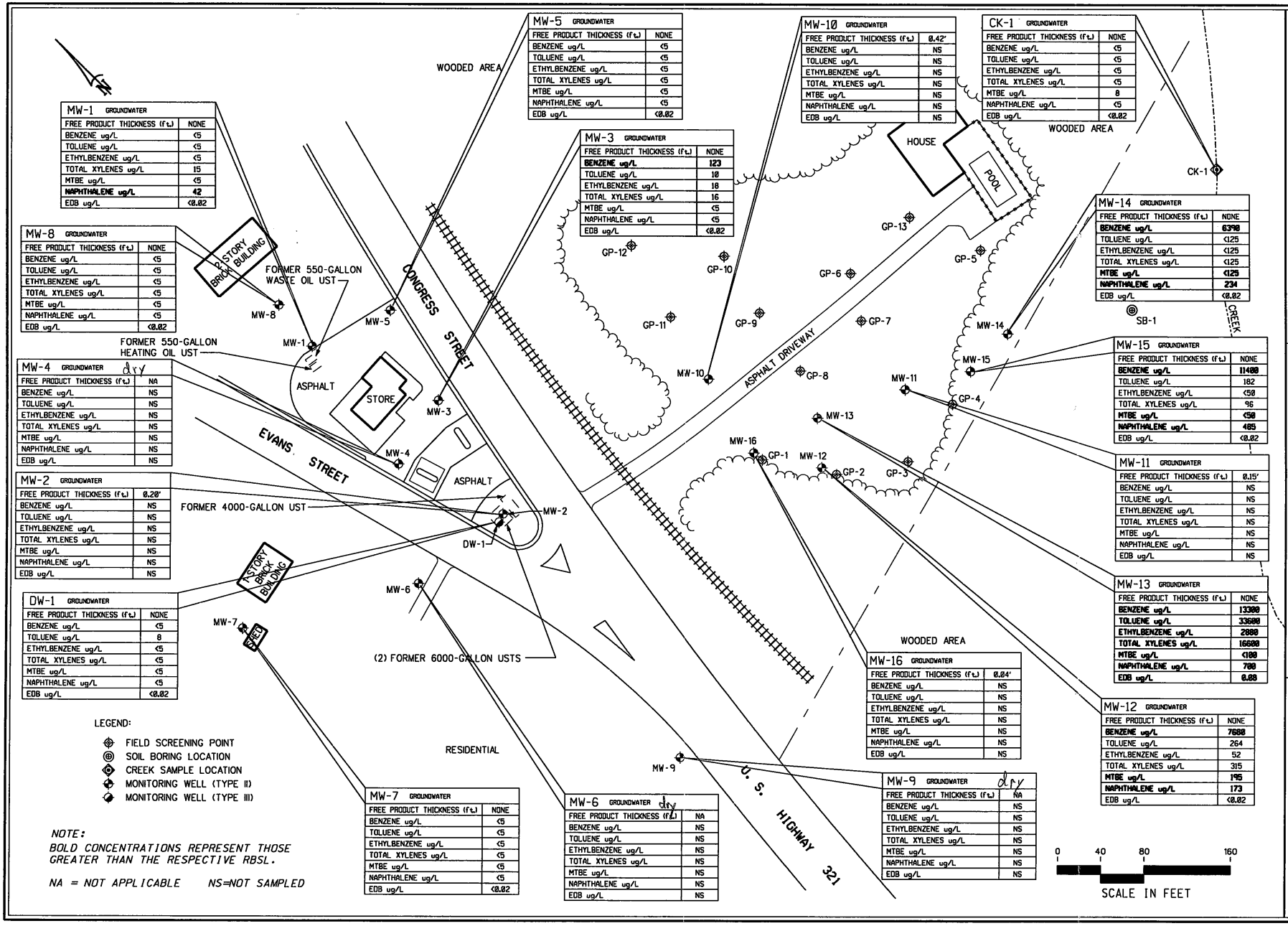
NA = NOT APPLICABLE NS=NOT SAMPLED

NOTES:

TITLE **FIGURE 5** UST PERMIT #11760
FIELD SCREENING GROUNDWATER CONCENTRATION MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012



MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	15
MTBE ug/L	<5
NAPHTHALENE ug/L	**42**
EDB ug/L	<0.02

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.20'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**123**
TOLUENE ug/L	10
ETHYLBENZENE ug/L	18
TOTAL XYLENES ug/L	16
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-4 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-6 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-9 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.42'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.15'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**7680**
TOLUENE ug/L	264
ETHYLBENZENE ug/L	52
TOTAL XYLENES ug/L	315
MTBE ug/L	**195**
NAPHTHALENE ug/L	**173**
EDB ug/L	<0.02

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**13300**
TOLUENE ug/L	**33600**
ETHYLBENZENE ug/L	**2880**
TOTAL XYLENES ug/L	**16600**
MTBE ug/L	**<100**
NAPHTHALENE ug/L	**700**
EDB ug/L	**0.08**

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6390**
TOLUENE ug/L	<125
ETHYLBENZENE ug/L	<125
TOTAL XYLENES ug/L	<125
MTBE ug/L	**<125**
NAPHTHALENE ug/L	**234**
EDB ug/L	<0.02

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**11400**
TOLUENE ug/L	182
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	96
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**485**
EDB ug/L	<0.02

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.04'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	8
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	8
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

NOTE:
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

NA = NOT APPLICABLE NS=NOT SAMPLED

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE **FIGURE 6** UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012

NOTES:

APPENDIX A

SCDHEC Correspondence

BOARD:
Elizabeth M. Hagood
Chairman

Mark B. Kent
Vice Chairman

Howard L. Brilliant, MD
Secretary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

BOARD:
Carl L. Brazell

Louisiana W. Wright

L. Michael Blackmon

Coleman F. Buckhouse, MD

FEB 06 2004

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

RECEIVED

FEB 10 2004

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA# 21054 and 21055; MWA# UMW-17996
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal Received January 7, 2004
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates Incorporated. The Program has reviewed the referenced plan and agrees with your site rehabilitation contractor that the next necessary scope of work to be conduct of an Enhanced Fluid Recovery (EFR) event, installation of additional monitoring wells to delineate the extent of the free product and define petroleum Chemicals of Concern (CoC) closer to the creek, and sampling of the creek and all groundwater monitoring wells.

Cost agreement numbers 21054 (for release number 2) and 21055 (for release number 3) have been approved in the amount shown on the enclosed cost agreement form. Costs have been divided between releases 2 and 3. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. Approval for the installation of up to 360 feet of screening and four shallow groundwater-monitoring wells has been provided to your environmental consultant; a copy is enclosed for your records. Once screening is completed, ATC Associates Incorporated should contact the Program for approval of locations to install groundwater-monitoring wells. To insure the data in the assessment report accurately depicts site conditions if future active corrective action activities are required, final groundwater gauging and sampling events will be initiated more than 30 days after the completion of the EFR event. Groundwater samples should be collected and analyzed for PAHs, BTEX, naphthalene, and MTBE by EPA method 8260B, and EBD by EPA Method 8011. The detection limit for EDB is 0.05 ug/l (micrograms per liter). The assessment report should include a narrative portion documenting the EFR event noting site conditions, the names of the EFR contractor, field personnel, date, times each EFR event started and ended, ambient air temperature, general weather conditions during the EFR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for each event. Wells containing free phase product should be gauged at the beginning and end of an EFR event. Disposal manifests for the EFR event should be included as part of the final report.

ATC Associates Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. **A Report of Findings and invoice are due within 100 days from the date of this letter.** An interim invoice for monitoring well installation may be submitted for this scope of work. Please submit boring logs with the interim invoice. If an invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable, and the right to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum-contaminated soil and up to 5,000 gallons of groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on-site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 21054 and 21055. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ original MWA and ACA)
Technical (w/o enc)

BOARD:
Elizabeth M. Hagood
Chairman

Mark B. Kent
Vice Chairman

Howard L. Brilliant, MD
Secretary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

BOARD:
Carl L. Brazell

Louisiana W. Wright

L. Michael Blackmon

Coleman F. Buckhouse, MD

Monitoring Well Installation Approval Form

Date of Issue: January 8, 2004 Approval No.: UMW-17996

Approval is hereby granted to:	ATC Associates, Inc.
(On behalf of):	Keenan Energy Company, Inc.
UST Permit #	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to 360 feet of screening and four groundwater monitoring wells in accordance with the construction plans and technical specifications outlined in the Tier II Assessment Document. The wells are to be constructed within the surficial aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. **A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Arthur Shrader at (803) 896-6669 or shradeaa@dhec.sc.gov *and* Mark Whittle at (803) 896-0620 or whittlemg@dhec.sc.gov.**
5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) in the technical report.
6. Monitoring wells and temporary monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells and temporary monitoring wells will be abandoned by or under the direct supervision of a licensed well driller certified by the State of South Carolina. Temporary monitoring wells shall not remain in place for longer than 30 days from the date of installation. Monitoring wells may be abandoned only upon concurrence by this Division.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

cc: Central Midlands EQC District

APPENDIX B

Free Product Recovery Summary Reports

NIS FIELD DATA SHEET

Client: ATC and Associates	Site: United Exxon, Winnsboro, SC NuWay Job J24690																		Date: 4/1/04	Event # 1
MW-2	Time hh:mm	Extraction Well-head Vacuum (in Hg)																	Vacuum Truck Exhaust	
		Inlet	MW 2	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Risinger		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
MW-2	9:00	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	55	11.2	5.6
	9:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	56	11.4	5.7
	10:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	67	13.7	6.8
	10:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	73	14.9	14.9
	11:00	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0		6076	76	9.4	9.4
	11:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		3562	82	5.9	5.9
	12:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		2232	92	4.2	2.1
	12:30	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0		2434	65	3.2	1.6
	13:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2162	76	3.3	1.7
	13:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0		3704	80	6.1	3.0
	14:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		3909	70	5.6	2.8
	14:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		3564	76	5.5	2.8
	15:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2560	70	3.7	1.8
	15:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2442	69	3.4	1.7
	16:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		2381	71	3.4	3.4
	16:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0		2244	74	3.4	3.4
	17:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2138	76	3.3	3.3

Extraction Well	Stinger Depth	Breather Port			
			Hydrocarbons Removed (vapor):	76	Pounds
			Hydrocarbons Removed (liquids):	25	Gallons
			Total Hydrocarbons Removed:	35	Equiv. Gal
			Molecular Weight Utilized:	130	g/mole
			Disposal Facility:		
			Total Liquids Removed:	800	Gallons

Comments: Before - Product at 49.85' and water at 51.75'

After - Zero Product

SHAMROCK
ENVIRONMENTAL CORPORATION

March 15, 2005

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon – 401 North Congress Street
Winnsboro, South Carolina
Date of Event: February 9, 2005

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on February 9, 2005.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
February 9, 2005	289	5	0.235

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in various on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: February 9, 2005

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-2	51.36	50.72	51.33	50.72
DMW-1	51.23	NFP	51.28	NFP
MW-10	46.72	46.32	46.75	46.29
MW-11	32.19	31.78	35.26	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 02.09.5

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address UNITED EXXON 401 N. CONGRESS ST. WINNSBORO, SC 29180

4. Generator's Phone (803) 767-1552

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	gasoline mixture, 3, UN1203, PG II	X	001	TT	0028.9	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-05-2231 EGR# 128 Gal FP

Power Unit #: VTD Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 05-0063-B6

11B.

11C.

11D.

TRANSPORTER

16. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: PAUL JACOBS (AGENT FOR ATC) Signature: [signature] Month 02 Day 09 Year 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS Signature: [signature] Month 02 Day 09 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

FACILITY

19. Discrepancy Indication Space

1M01 1M03

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SR

Printed/Typed Name: [illegible] Signature: [signature] Month 02 Day 10 Year 05

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ORIGINAL - RETURN TO GENERATOR

Total Emissions
United Exxon - 401 North Congress Street
Winnsboro, SC

Date of Event: February 9, 2005

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	72.6	284	4	284	1510	0.00009	0.411	0.205
30	65.6	243	4	243	1292	0.00008	0.317	0.159
60	66.8	230	4	230	1223	0.00008	0.306	0.153
90	50.3	211	4	211	1122	0.00007	0.211	0.106
120	48.0	198	4	198	1053	0.00007	0.189	0.095
150	41.8	196	4	196	1042	0.00007	0.163	0.082
180	49.5	183	4	183	973	0.00006	0.180	0.090
210	46.6	191	4	191	1016	0.00006	0.177	0.089
240	59.6	193	4	193	1026	0.00006	0.229	0.115
270	55.4	201	4	201	1069	0.00007	0.222	0.111
300	60.1	200	4	200	1064	0.00007	0.240	0.120
330					**Total emissions in pounds**			**1.323**
			Total Emissions Converted into Gallons:					**0.2354384**

Field Data Record
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 9, 2005

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-11 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/9/2005	9:30	27.0	15.0	2160	6	175	20.6	0.794	72.6	MW-11
2/9/2005	10:00	27.0	16.0	2120	6	190	19.4	0.806	65.6	MW-11
2/9/2005	10:30	27.0	16.0	2265	6	190	18.5	0.815	66.8	MW-11
2/9/2005	11:00	26.5	16.0	2220	6	190	14.2	0.858	50.3	MW-11
2/9/2005	11:30	26.5	16.0	1980	6	190	15.2	0.848	48.0	MW-11
2/9/2005	12:00	26.5	16.0	1810	6	190	14.5	0.855	41.8	MW-11
2/9/2005	12:30	26.5	16.0	1990	6	190	15.6	0.844	49.5	MW-11
2/9/2005	13:00	26.5	16.0	2018	6	195	14.6	0.854	46.6	MW-11
2/9/2005	13:30	26.5	16.0	2230	6	195	16.9	0.831	59.6	MW-11
2/9/2005	14:00	26.5	15.0	1990	6	195	17.6	0.824	55.4	MW-11
2/9/2005	14:30	26.5	15.0	2160	6	195	17.6	0.824	60.1	MW-11

SHAMROCK
ENVIRONMENTAL CORPORATION

March 15, 2005

Mr. Bob Bolton
ATC Associates, Inc.
400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Re: Summary Report for Enhanced Fluid Recovery Event
United Exxon-401 North Congress Street
Winnsboro, South Carolina
Date of Event: February 15, 2005

Dear Mr. Bolton:

Shamrock Environmental Corporation (SEC) is pleased to provide ATC Associates, Inc. (ATC) with this summary report documenting Enhanced Fluid Recovery (EFR) operations for the above referenced project. SEC utilized a Hydro-Vac Series 2000 high vacuum positive displacement blower vacuum truck capable of a maximum of 800 CFM (640 CFM at 15 inches of mercury) and maximum of 27 inches of mercury. This report documents one EFR event recently performed at the above referenced site. The event was conducted on February 15, 2005.

The following table provides the total volume of fluids recovered during the event, the amount of separated free product recovered during the event and the amount of calculated gallons of free product recovered as a result of vapor recovery.

Date of EFR Event	Total Fluids Recovered (Gallons)	Total Separated Free Product (Gallons)	Total Calculated Free Product Recovered (Gallons)
February 15, 2005	258	20	2.797

Attachment A contains a copy of the manifest used to document recovered fluids transportation and disposal. Attachment B contains the Total Emissions Table used to calculate the Petroleum Mass Recovery for the event.

Attachment C contains the Field Data Record used to document the pertinent information collected during the event. The Field Data Record includes the following information:

1. Date of data recordation.
2. Time of data recordation.
3. Effluent stack VOC concentration collected using a photoionization detector.
4. Stack velocity in feet per minute.
5. Stack temperature in DRY degrees Fahrenheit.
6. Relative humidity of stack effluent.
7. Vacuum of the vacuum unit in inches of mercury.
8. Vacuum of the recovery well in inches of mercury.

During the recovery event, vacuum influence, in terms of water level draw-down was collected from two wells located near the well (MW-2) used for the recovery event. The influence data was collected using an interface probe. The following table summarizes the influence data collected.

Influence Data Table
Date of Event: February 15, 2005

Time	DW-1 (DTW)	MW-4 (DTW)
0700	51.24	43.74
0730	51.41	43.74
0800	51.66	43.74
0830	51.77	43.74
0900	51.79	43.74
0930	51.81	43.74
1000	51.84	43.75
1030	51.85	43.75
1100	51.85	43.75
1130	51.87	43.75
1200	51.87	43.75
1230	51.87	43.75
1300	51.89	43.75
1330	51.89	43.75
1400	51.89	43.75
1430	51.89	43.75
1500	51.89	43.75

DTW=Depth to Water in feet below well casing.

The following table provides pre-recovery and post recovery depth to water and depth to product levels in various on-site monitoring wells. The product/water levels were determined using an interface probe.

Pre/Post Recovery Product/Water Levels
Date of Event: February 15, 2005

Well ID	Pre-Event		Post Event	
	DTW	DTP	DTW	DTP
MW-1	42.35	NFP	42.34	NFP
DW-1	51.24	NFP	51.89	NFP
MW-2	51.43	50.79	51.79	NFP
MW-3	43.74	NFP	43.75	NFP
MW-4	43.74	NFP	43.75	NFP
MW-5	42.35	NFP	42.34	NFP

ND=Not Determined
DTW=Depth to Water in feet below well casing.
DTP=Depth to Product in feet below well casing.
NFP=No Free Product detected.

Mr. Bolton, should you have any questions regarding this report, please contact me at (336) 375-1989.

Sincerely,
Shamrock Environmental Corporation

John C. Richardson

John C. Richardson
Senior Project Manager

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.
Manifest Doc. No. 02155
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address United Exton
401 North Congress ST
Winnsboro, SC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name
SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number
N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone
336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
SHAMROCK ENVIRONMENTAL CORP.
6106 CORPORATE PARK DR.
BROWNS SUMMIT, NC 27214

10. US EPA ID Number
N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone
336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE mixture 3 UN1203 PG II	✓	001	TT	00258	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
02-AIV-05-2231
ERG 128
20 gal
KP

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers
11A. 05-0063-B6
11B.
11C.
11D.

TRANSPORTER

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: PAUL JACOBS (AGENT FOR UTC) Signature: [signature] Month 02 Day 15 Year 05

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS Signature: [signature] Month 02 Day 15 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name: Signature: Month Day Year

FACILITY

19. Discrepancy Indication Space
1AM01 1AM03

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.
SR

Printed/Typed Name: [signature] Signature: [signature] Month 02 Day 15 Year 05

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ORIGINAL - RETURN TO GENERATOR

Total Emissions
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 15, 2005

Time (min)	Flow (DSCFM)	PPM Measured (ppm)	K (#C-gas)	PPMg	Cg:m (mg/dsm^3)	Cg (lb/dscf)	PMRg (lb/hr)	PMR (lb)
0	105.2	1,318	4	1318	7009	0.00044	2.762	1.381
30	105.6	1,287	4	1287	6844	0.00043	2.707	1.353
60	99.5	1,323	4	1323	7035	0.00044	2.623	1.311
90	93.1	1,284	4	1284	6828	0.00043	2.382	1.191
120	91.0	1,292	4	1292	6871	0.00043	2.342	1.171
150	81.9	1,250	4	1250	6647	0.00041	2.039	1.019
180	79.7	1,183	4	1183	6291	0.00039	1.878	0.939
210	78.9	1,116	4	1116	5935	0.00037	1.754	0.877
240	77.4	1,119	4	1119	5951	0.00037	1.724	0.862
270	74.7	1,089	4	1089	5791	0.00036	1.621	0.811
300	77.7	1,050	4	1050	5584	0.00035	1.624	0.812
330	70.7	1,031	4	1031	5483	0.00034	1.453	0.726
360	69.5	1,015	4	1015	5398	0.00034	1.405	0.703
390	67.3	1,008	4	1008	5360	0.00033	1.352	0.676
420	69.5	972	4	972	5169	0.00032	1.346	0.673
450	69.9	910	4	910	4839	0.00030	1.267	0.634
480	65.6	887	4	887	4717	0.00029	1.159	0.579
510					**Total emissions in pounds**			**15.719**
			Total Emissions Converted into Gallons:					**2.7968919**

Field Data Record
United Exxon-401 North Congress Street
Winnsboro, SC

Date of Event: February 15, 2005

Date	Time	Unit-Vacuum (inches of Hg)	Well-Head -Vacuum-MW-2 (inches of Hg)	Velocity (ft/min)	Pipe ID (in)	Temp (deg F)	Rel. Humid (%)	Water Vapor (%)	Qstd (flow)	Wells Recovered From
2/15/2005	7:30	24.0	17.0	2805	6	145	21.9	0.781	105.2	MW-2
2/15/2005	8:00	24.0	17.0	2918	6	150	21.3	0.787	105.6	MW-2
2/15/2005	8:30	26.0	18.0	2735	6	175	22.3	0.777	99.5	MW-2
2/15/2005	9:00	26.0	18.0	2655	6	175	21.5	0.785	93.1	MW-2
2/15/2005	9:30	26.0	18.0	2630	6	175	21.2	0.788	91.0	MW-2
2/15/2005	10:00	26.0	18.0	2580	6	180	19.6	0.804	81.9	MW-2
2/15/2005	10:30	26.0	18.0	2660	6	180	18.5	0.815	79.7	MW-2
2/15/2005	11:00	26.0	18.0	2678	6	180	18.2	0.818	78.9	MW-2
2/15/2005	11:30	26.0	18.0	2640	6	180	18.1	0.819	77.4	MW-2
2/15/2005	12:00	26.0	18.0	2593	6	180	17.8	0.822	74.7	MW-2
2/15/2005	12:30	26.0	18.0	2650	6	180	18.1	0.819	77.7	MW-2
2/15/2005	13:00	26.0	18.0	2540	6	180	17.2	0.828	70.7	MW-2
2/15/2005	13:30	26.0	18.0	2510	6	180	17.1	0.829	69.5	MW-2
2/15/2005	14:00	26.0	18.0	2540	6	185	16.5	0.835	67.3	MW-2
2/15/2005	14:30	26.0	18.0	2530	6	185	17.1	0.829	69.5	MW-2
2/15/2005	15:00	26.0	17.0	2610	6	190	16.8	0.832	69.9	MW-2
2/15/2005	15:30	26.0	17.0	2540	6	190	16.2	0.838	65.6	MW-2

APPENDIX C

Soil Boring and Monitor Well Construction Logs

Borehole GP-1 **Sampling Date: 02/09/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
44	382	Tan, medium stiff silt with REFUSAL	Damp; strong petroleum odor

Borehole GP-2 **Sampling Date: 02/09/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
29	Not Applicable	Tan, medium stiff silt with REFUSAL	Dry; no petroleum odor

Borehole GP-3 **Sampling Date: 02/10/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
44	72.6	Brownish-tan, silty clay	Wet; slight petroleum odor

Borehole GP-4 **Sampling Date: 02/10/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
35	Not Applicable	Brownish-tan, silty clay	Wet; slight petroleum odor

Borehole GP-5 **Sampling Date: 02/14/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
34	0.0	Brown, soft silt with REFUSAL	Damp; no petroleum odor

Borehole GP-6 **Sampling Date: 02/16/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
43	3.6	Brownish-red, soft silty clay	Wet; no petroleum odor

Borehole GP-7 **Sampling Date: 02/15/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
48	18	Reddish-brown, soft silty clay	Wet; moderate petroleum odor

Borehole GP-8 **Sampling Date: 02/15/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
48	340	Brownish-red, soft silt	Wet; strong petroleum odor

Borehole GP-9 **Sampling Date: 02/15/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
50	30	Reddish-brown, soft silt	Wet; slight petroleum odor

Borehole GP-10 **Sampling Date: 02/15/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
47	0.0	Tannish-red, medium stiff clay	Wet; no petroleum odor

Borehole GP-11 **Sampling Date: 02/16/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
46	5.0	Brownish-red, soft silt	Wet; moderate petroleum odor

Borehole GP-12 **Sampling Date: 02/16/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
30	5.0	Reddish-brown, stiff micaceous silt with REFUSAL	Dry; no petroleum odor

Borehole GP-13 **Sampling Date: 02/16/05** **Sample Depth: Not Applicable**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
12	5.6	Reddish-brown very stiff clay and rock with REFUSAL	Dry; no petroleum odor

Borehole SB-1 **Sampling Date: 06/01/04** **Sample Depth: 17 feet**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5	0.0	Brown, soft sandy loam	Dry; no petroleum odor
10	0.0	Tan, soft sandy loam	Dry; no petroleum odor
15	0.0	Brown, medium stiff sandy loam with some rock	Dry; no petroleum odor
17	0.0	REFUSAL - ROCK	Dry; no petroleum odor

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-12
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	2/15/2005
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Bob Bolton	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Red brown, medium, sticky loam; No petro odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Orange, medium, fine, clayey, stiff silt; No petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Orange, medium, fine, clayey, stiff silt; No petro odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-12

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Orange, medium, stiff clay; No petro odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			1.0		25.0	Orange, medium, stiff clay; Petro odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1.5		30.0	Tan, medium, stiff, damp clay; No petro odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			3.0		35.0	Tan, medium, stiff, damp clay; Solvent odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	Water Level at 39.28 feet on March 8, 2005
40			6.0		40.0	Tan, medium, stiff, damp clay; Solvent odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-12

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			13.0		45.0	Tan, medium, stiff, damp clay; Solvent odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
					50.0	Termination of Boring at 50 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:

Latitude: Longitude:

Distance and direction from Rand Intersections:

401 N. CONGRESS STREET

Street Address & City of Well Location: WINNSBORO

Sketch Map:

2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
GRASS/TOPSOIL	1.0	1.0
BROWN/RED SANDY CLAYEY SILT	3.0	4.0
ORANGE SANDY SILT	11.0	15.0
WHITE/TAN SANDY SILT	15.0	30.0
TAN SILTY SAND	20.0	50.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-12 BENTONITE SEAL FROM 30.0 TO 33.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMBIA, SC

Telephone No.: 803-767-1552

5. WELL DEPTH: (completed) 50.0 Ft. Date Started: 02/15/04 Date Completed: 02/15/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0.0 In. to 35.0 Ft. depth
In. to Ft. depth

Height: Above/Below Surface: 2.5 Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0
Set 35.0 Ft. and 50.0 Ft.
Ft. and Ft.
Sieve Analysis ☐ Yes (please enclose ☒ No

NOTE: MULTIPLE SCREENS USE SECOND SHEET

Static Water Level: 42.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 33.0 Ft. to 50.0 F
Effective size: 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 30.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 03/16/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Authorized Representative Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-13
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	2/15/2005
PROJECT LOCATION: 401 N. Congress Street, Winnsboro, SC		DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Bob Bolton	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Red - brown, medium clay; No petro odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Orange, medium, fine, clayey silt; No petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1.0		15.0	Orange, medium, fine silt; No petro odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-13

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			1.3		20.0	Tan, medium, fine silt; Solvent odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			2.2		25.0	Tan, medium, very stiff, fine silt; Solvent odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1.8		30.0	Tan, medium, very stiff, fine silt; Solvent odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			1.8		35.0	Tan, medium, very stiff, fine silt; Solvent odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			4.4		40.0	Tan, medium, very stiff, fine silt; Solvent odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VAC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-13

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	Water Level at 41.26 feet on March 8, 2005
					42.0	
					42.5	
					43.0	
					43.5	
					44.0	
					44.5	
45			55.3		45.0	Tan, medium, very stiff, damp, fine silt;
					45.5	Stronger solvent odor
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
					50.0	Termination of Boring at 50 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

ATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

D H E C

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD System Name:

Latitude: Longitude:

Distance and direction from Rand Intersections:

Street Address & City of Well Location: WINNSBORO

Sketch Map:

Evan St.

SITE

US 321 Bus N. Congress St

2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
GRASS/TOPSOIL	1.0	1.0
BROWN/RED SANDY CLAYEY SILT	3.0	4.0
ORANGE SANDY SILT	11.0	15.0
WHITE/TAN SANDY SILT	15.0	30.0
TAN SILTY SAND	20.0	50.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-13 BENTONITE SEAL FROM 30.0 TO 33.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMIBA, SC

Telephone No.: 803-767-1552

5. WELL DEPTH: (completed) 50.0 Ft. Date Started: 02/15/05 Date Completed: 02/15/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0.0 In. to 35.0 Ft. depth
In. to Ft. depth
Height: Above/Below Surface: 2.5 Ft.
Weight: ____ Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 15.0 FEET
Set 35.0 Ft. and 50.0 Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☒ No

Static Water Level: 42.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 33.0 Ft. to 50.0 F
Effective size: 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 30.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 03/16/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Mike McCarley (Authorized Representative) Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-14
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	2/18/2005
PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Bob Bolton	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.3		5.0	Red orange, medium, stiff clay; No petro odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.2		10.0	Tan, medium, soft silt; No petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.3		15.0	Brown, medium, soft silt; No petro odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-14

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.4		20.0	Tan, stiff silt; No petro odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			1.4		25.0	Tan, very stiff, silt; Weathered rock; No petro odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
28			1.6		28.0	Gray, very stiff silt; Weathered rock; No petro odor
					28.5	
					29.0	
					29.5	
					30.0	
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
33			5.9		33.0	Tan, medium, moist silt; No petro odor
					33.5	
					34.0	Water Level at 33.53 feet on March 8, 2005
					34.5	
					35.0	
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
38			0.4		38.0	Tan, medium, moist silt; No petro odor
					38.5	
					39.0	
					39.5	
					40.0	Termination of Boring at 40 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

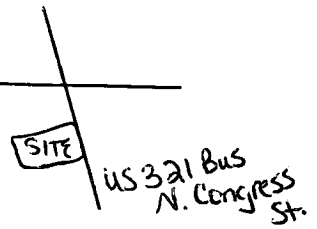
County: FAIRFIELD System Name:

Latitude: Longitude:

Distance and direction from Rand Intersections:

Street Address & City of Well Location: WINNSBORO

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
TOPSOIL/WEEDS	1.0	1.0
TAN/ORANGE SANDY SILT	9.0	10.0
WHITE/TAN SILTY CLAYEY SAND	15.0	25.0
BROWN/TAN SILTY CLAYEY SAND	15.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-14 BENTONITE SEAL FROM 15.0 TO 18.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230

Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMIBA, SC

Telephone No.: 803-767-1552

5. WELL DEPTH: (completed) 40.0 Ft. Date Started: 02/1805 Date Completed: 02/18/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0.0 In. to 20.0 Ft. depth
In. to Ft. depth

Height: Above/Below Surface: 2.5 Ft.
Weight: ____ Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set 20.0 Ft. and 40.0 Ft.
Ft. and Ft.
Sieve Analysis ☐ Yes (please enclose ☒ No

NOTE: MULTIPLE SCREENS USE SECOND SHEET

Static Water Level: 32.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 18.0 Ft. to 40.0 F
Effective size: 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 15.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 03/16/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Authorized Representative Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-15
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	2/18/2005

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	Mike McConahey
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	8.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Bob Bolton	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.1		5.0	Red orange, medium, stiff clay; No petro odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.1		10.0	Red orange, medium, stiff clay; No petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			1.5		15.0	Brown, medium, soft silt; No petro odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 2)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-15

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.5		20.0	Brown, medium, soft silt; No petro odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.6		25.0	Brown, medium, very stiff, soft silt; No petro odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			1.5		30.0	Brown, medium, very stiff, moist soft silt; No petro odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			12.8		35.0	Brown, medium, very stiff, moist soft silt; No petro odor
					35.5	Water Level at 35.31 feet on March 8, 2005
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
					40.0	Termination of Boring at 40 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

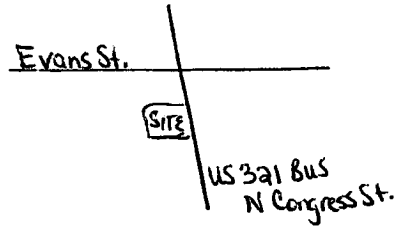
GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL

County: FAIRFIELD
System Name:
Latitude: Longitude:
Distance and direction from Rand Intersections:
Street Address & City of Well Location: WINNSBORO
Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness Of Stratum	Depth to Bottom of Stratum
TOPSOIL/WEEDS	1.0	1.0
TAN/ORANGE SANDY SILT	9.0	10.0
WHITE/TAN SILTY CLAYEY SAND	15.0	25.0
BROWN/TAN SILTY CLAYEY SAND	15.0	40.0
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

3. REMARKS:

MW-15 BENTONITE SEAL FROM 15.0 TO 18.0 FEET.

4. OWNER OF WELL: KEENAN ENERGY CO.
Address: P.O. BOX 3281, COLUMBIA, SC 29230
Telephone No.:

Engineer: ATC ASSOCIATES
Address: 400 NORTHEAST DRIVE, UNIT Q, COLUMIBA, SC
Telephone No.: 803-767-1552

5. WELL DEPTH: (completed) 40.0 Ft.
Date Started: 02/1805
Date Completed: 02/18/05

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other AUGER

7. USE: ☐ Domestic ☐ Public Supply-Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam: 2 INCH
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0.0 In. to 20.0 Ft. depth
In. to Ft. depth
Height: Above/Below
Surface: 2.5 Ft.
Weight: Lb./Ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type SCH 40 PVC Diam.: 2 INCH
Slot/Gauge: .010 Length: 20.0 FEET
Set 20.0 Ft. and 40.0 Ft.
Ft. and Ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose ☒ No

Static Water Level: 32.0 Ft. below land surface after 24 hours

11. PUMPING LEVEL: Below Land Surface.
Ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. Water Quality
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 18.0 Ft. to 40.0 F
Effective size: 1.43 Uniformity Coefficient 1.30

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From: 0.0 Ft. to 15.0 Ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: Ft. direction
Type well disinfected Upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date Installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe Ft. Capacity gpm
Type: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: Geologic Exploration, Inc. Date: 03/16/05
Address: 176 Commerce Blvd. Statesville, NC 28625
Signed: Mike McCarley Authorized Representative Cert. No.: A 01276

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

MONITORING WELL CONSTRUCTION / SOIL BORING LOG

PROJECT NAME:	United Exxon	BORING I.D.:	MW-16
PROJECT NO.:	14.25384.0012	DATE(S) DRILLED:	3/7/2005

PROJECT LOCATION:	401 N. Congress Street Winnsboro, SC	DRILLING CONTR.:	George Flinton
		DRILL METHOD:	Hollow Stem Auger
		BORING DIAMETER:	6.5"
CLIENT:	Keenan Energy Company, Inc.	SAMPLING METHOD/INTERVAL:	Split Spoon
LOGGED BY:	Johnny Horn	REMARKS:	

DESCRIPTIVE LOG

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					0.5	
					1.0	
					1.5	
					2.0	
					2.5	
					3.0	
					3.5	
					4.0	
					4.5	
5			0.0		5.0	Light red, soft, dry silt; No petro odor
					5.5	
					6.0	
					6.5	
					7.0	
					7.5	
					8.0	
					8.5	
					9.0	
					9.5	
10			0.0		10.0	Light red, fine, soft, dry silt; No petro odor
					10.5	
					11.0	
					11.5	
					12.0	
					12.5	
					13.0	
					13.5	
					14.0	
					14.5	
15			0.0		15.0	Light red, fine, soft, dry silt; No petro odor
					15.5	
					16.0	
					16.5	
					17.0	
					17.5	

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

- * -Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 2 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-16

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					18.0	
					18.5	
					19.0	
					19.5	
20			0.0		20.0	Light red, fine, soft, dry silt; No petro odor
					20.5	
					21.0	
					21.5	
					22.0	
					22.5	
					23.0	
					23.5	
					24.0	
					24.5	
25			0.0		25.0	Light red, fine, soft, dry silt; No petro odor
					25.5	
					26.0	
					26.5	
					27.0	
					27.5	
					28.0	
					28.5	
					29.0	
					29.5	
30			0.0		30.0	Tan, slightly clayey, soft, dry silt; No petro odor
					30.5	
					31.0	
					31.5	
					32.0	
					32.5	
					33.0	
					33.5	
					34.0	
					34.5	
35			0.0		35.0	Light red, fine, dry silt; No petro odor
					35.5	
					36.0	
					36.5	
					37.0	
					37.5	
					38.0	
					38.5	
					39.0	
					39.5	
40			0.0		40.0	Tan, damp, soft clay; No petro odor

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DESCRIPTIVE LOG (page 3 of 3)	PROJECT NO.: 14.25384.0012	BORING I.D.: MW-16

SAMPLE INTERVAL	SAMPLE REC. (IN.)	BLOWS PER 6"	PID/FID (ppm)	GRAPHIC COLUMN	DEPTH (FT)	DESCRIPTION OF MATERIAL
					40.5	
					41.0	
					41.5	
					42.0	
					42.5	
					43.0	Water Level at 42.80 feet on March 8, 2005
					43.5	
					44.0	
					44.5	
45			1.0		45.0	Tan with some light red, medium, wet clay; Petro odor
					45.5	
					46.0	
					46.5	
					47.0	
					47.5	
					48.0	
					48.5	
					49.0	
					49.5	
					50.0	Termination of Boring at 50 feet

DRILLING METHODS
AIR - AIR ROTARY
CFA - CONTINUOUS FLIGHT AUGER
DC - DRIVEN CASING
HA - HAND AUGER
HSA - HOLLOW STEM AUGER
MD - MUD DRILLING
RC - ROCK CORING
WR - WATER ROTARY

* - Sample collected for analysis

SAMPLING METHODS
SS - SPLIT SPOON
ST - SHELBY TUBE

GRAPHIC COLUMN
GROUT
BENTONITE
SAND
SCREEN

VATC ASSOCIATES INC.
400 Northeast Drive, Unit Q
Columbia, SC 29203

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:
Name: (last) (first)
Address:
City: State: Zip:
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Fairfield
Name: United Exxon
Street Address: 401 N. Congress ST
City: Winnsboro Zip: 29180
Latitude: Longitude:

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☒ No
Grouted Depth: from N/A ft. to ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Dark Tan Si	5	5
Tan Si	25	30
Tan Si w/Gravel	3	33
Tan Si SA	5	38
Tan w/White SA Si	10	48
Tan SA, Si w/ Weathered Material	2	50
Rock Posc. 52'		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW# 14
Bent Seal 26-28

6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other

7. PERMIT NUMBER:

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☒ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 03-07-05
50' ft. Date Completed: 03-07-05

10. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 30 ft. depth
in. to ft. depth
Height: Above/Below Surface 2' ft.
Weight Sch 40 lb./ft.
Drive Shoe? ☐ Yes ☒ No

11. SCREEN: Type: PVC Diam. 2"
Slot/Gauge: 010 Length: 20'
Set Between: 30 ft. and 50 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL 40 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☒ Yes (please enclose) ☐ No
Yield:

14. WATER QUALITY
Chemical Analysis ☒ Yes ☐ No Bacterial Analysis ☐ Yes ☒ No
Please enclose lab results. See ATC's Report

15. ARTIFICIAL FILTER (filter pack) ☒ Yes ☐ No
Installed from 28 ft. to 50 ft.
Effective size 20/60 Uniformity Coefficient Silica Sand

16. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☒ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From -05 ft. to 26 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
Type
Well Disinfected ☐ Yes ☐ No Type: Amount:

18. PUMP: Date installed: Not installed ☐
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe ft. Capacity gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

19. WELL DRILLER: George Flinton CERT. NO.: 654
Address: (Print) PO Box 2721 Summerville 29484
Level: (A) B C D (circle one)
Telephone No.: (843) 200 0653 Fax No.: (843) 851 9309

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 03-10-05

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004) COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

APPENDIX D

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	42.33	feet
Total Well Depth (TWD)	48.00	feet
Length of the water column (LWC=TWD-DGW)	5.67	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.92 gals
3 casing volume (3 X CV)= 2.76 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1210	
pH (s.u.)	5.85	5.60	5.91				5.96	
Specific Conductivity (µmhos/cm)	.321	.411	.389				.356	
Water Temperature (°C)	18.4	18.4	18.5				18.6	
Dissolved Oxygen	3.18	3.24	3.61				4.33	
PID readings, if required								

Remarks: Hit the bottom of the well during 2nd volume

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.20	feet
Depth to Free Product (DFP)	50.83	feet
Depth to Ground Water (DGW)	51.03	feet
Total Well Depth (TWD)	54.00	feet
Length of the water column (LWC=TWD-DGW)	2.97	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.48 gals
3 casing volume (3 X CV)= 1.44 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ——— gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free Product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-3
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	43.74	feet
Total Well Depth (TWD)	45.00	feet
Length of the water column (LWC=TWD-DGW)	1.26	feet
1 casing volume (CV=LWC X C)= ____ X ____ =	0.21	gals
3 casing volume (3 X CV)= 0.62 gals (standard purge volume)		

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1225	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Hot

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-4
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): _____ feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	—	feet
Total Well Depth (TWD)	52.00	feet
Length of the water column (LWC=TWD-DGW)	0.00	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-5
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	41.91	feet
Total Well Depth (TWD)	45.00	feet
Length of the water column (LWC=TWD-DGW)	3.10	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.51 gals
3 casing volume (3 X CV)= 1.53 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1210	
pH (s.u.)	5.38						6.14	
Specific Conductivity (µmhos/cm)	1258						1237	
Water Temperature (°C)	19.1						19.0	
Dissolved Oxygen	4.89						5.87	
PID readings, if required								

Remarks: Bailed dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no:		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by ____ Date/Time ____ Received by ____ Date/Time ____

Facility Name: United Exxon
Site ID#: 11760 **Monitoring Well #** MW-6
Water Supply Well **Public** ____ **Private** ____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: — feet
Depth to Free Product (DFP) — feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 55.00 feet
Length of the water column (LWC=TWD-DGW) 0.00 feet
1 casing volume (CV=LWC X C)= ____ X ____ = — gals
3 casing volume (3 X CV)= ____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-7
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	51.54	feet
Total Well Depth (TWD)	52.00	feet
Length of the water column (LWC=TWD-DGW)	0.46	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.075 gals
3 casing volume (3 X CV)= 0.225 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1255	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Bailed dry, ~~allow~~ only enough water to fill two VOAs.

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-8
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	42.22	feet
Total Well Depth (TWD)	45.00	feet
Length of the water column (LWC=TWD-DGW)	2.78	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.45 gals
3 casing volume (3 X CV)= 1.35 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1235	
pH (s.u.)	5.82						5.71	
Specific Conductivity (µmhos/cm)	.159						.151	
Water Temperature (°C)	16.9						17.8	
Dissolved Oxygen	5.44						5.52	
PID readings, if required								

Remarks: Bailed dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-9
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	—	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	0.00	feet

1 casing volume (CV=LWC X C)= _____ X _____ = — gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Dry

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-10
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.42	feet
Depth to Free Product (DFP)	46.24	feet
Depth to Ground Water (DGW)	46.66	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	3.34	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.54 gals
3 casing volume (3 X CV)= 1.62 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ——— gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW-11
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.15	feet
Depth to Free Product (DFP)	31.99	feet
Depth to Ground Water (DGW)	32.14	feet
Total Well Depth (TWD)	38.00	feet
Length of the water column (LWC=TWD-DGW)	5.86	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 0.96 gals
3 casing volume (3 X CV)= 2.88 gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by ____ Date/Time ____ Received by ____ Date/Time ____

Facility Name: United Exxon
Site ID#: 11760 **Monitoring Well #** MW12
Water Supply Well **Public** ____ **Private** ____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: ____ feet
Depth to Free Product (DFP) ____ feet
Depth to Ground Water (DGW) 39.28 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 10.72 feet
1 casing volume (CV=LWC X C)= ____ X ____ = 1.75 gals
3 casing volume (3 X CV)= 5.25 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 5.25 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1000	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Odor ?

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW13
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 41.26 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 8.74 feet
1 casing volume (CV=LWC X C)= _____ X _____ =140 gals
3 casing volume (3 X CV)= 420 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1030	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by ____ Date/Time ____ Received by ____ Date/Time ____

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW14
Water Supply Well Public ____ Private ____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	33.53	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	6.47	feet

1 casing volume (CV=LWC X C)= ____ X ____ = 1.05 gals
3 casing volume (3 X CV)= 3.15 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1000	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by ____ Date/Time ____ Received by ____ Date/Time ____

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # MW15
Water Supply Well Public ____ Private ____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	35.31	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	4.69	feet

1 casing volume (CV=LWC X C)= ____ X ____ = .75 gals
3 casing volume (3 X CV)= 2.25 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1020	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: United Exxon
Site ID#: 11760 **Monitoring Well #** MW-16
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.04	feet
Depth to Free Product (DFP)	42.76	feet
Depth to Ground Water (DGW)	42.80	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	7.20	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 1.17 gals
3 casing volume (3 X CV)= 3.51 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ——— gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Free product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 3/8/2005
Field Personnel: John Moneghan / Ryan Stubbs
General Weather Conditions: Cloudy

Ambient Air Temperature: 55 °F

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by ____ Date/Time ____ Received by ____ Date/Time ____

Facility Name: United Exxon
Site ID#: 11760 Monitoring Well # DW-1
Water Supply Well Public ____ Private ____

Monitoring Well Diameter (D): 2" ~~feet~~

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	—	feet
Depth to Free Product (DFP)	—	feet
Depth to Ground Water (DGW)	51.31	feet
Total Well Depth (TWD)	89.00	feet
Length of the water column (LWC=TWD-DGW)	37.69	feet

1 casing volume (CV=LWC X C)= ____ X ____ = 6.14 gals
3 casing volume (3 X CV)= 18.42 gals (standard purge volume)

Total Volume of Water Purged Before Sampling ____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1300	
pH (s.u.)	6.24	6.52	6.53	6.68			6.61	
Specific Conductivity (µmhos/cm)	.132	.134	.134	.137			.138	
Water Temperature (°C)	19.3	18.4	18.5	18.7			18.5	
Dissolved Oxygen	7.48	5.07	5.60	5.01			6.04	
PID readings, if required								

Remarks: ____

APPENDIX E

Laboratory Analytical Results and Chain-of-Custody

HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

Lab Project No. M0406006

Report Date: 6/10/04

Client Name:	**ATC Associates - Columbia, SC**
Contact:	**Bob Bolton**
Address:	400 Northeast Drive
	Suite - Q
	Columbia, SC 29203
Project Name:	**United Exxon**
Project ID:	14.25384.0012
Receipt Date:	6/2/2004

Case Narrative

1. The sample holding times were met for all analyses.
2. Where applicable, results & reporting limits are based on wet weight; dry weight calculations available.
3. The temperature of the sample cooler as received by the laboratory was 4° C.
4. Hygeia Labs assumes a sampling time of 12:00 PM unless otherwise specified on the Chain of Custody.
5. Hygeia Laboratories, Inc., certifies that the following analytical results meet all the requirements of the National Environmental Laboratory Accreditation Conference (NELAC).

Reviewed By: _____

Respectively Submitted:

Hygeia Laboratories, Inc.

Sample Identification

Lab Sample #	Client Sample ID	Sample Supply	Collected
M0406006-01	SB- 1	Soil	6/1/04

Volatile Organics Units: **mg/Kg (ppm)** Method #: **EPA_8260B**

Matrix: Soil Analysis Date: 6/9/2004 Prep Date: 6/9/2004 Analyst: DR

Lab Sample #: **M0406006-01** Client ID: **SB- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Benzene	71-43-2	BRL	0.005	
Toluene	108-88-3	BRL	0.005	
Ethylbenzene	100-41-4	BRL	0.005	
m&p-Xylene	108-38-3	BRL	0.005	
o-Xylene	95-47-6	BRL	0.005	
Naphthalene	91-20-3	BRL	0.005	
Total Xylenes		BRL	0.005	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	109%	70 - 130
1,2-DICHLOROETHANE-d4	112%	70 - 130
TOLUENE-d8	91%	70 - 130
4-BROMOFLUOROBENZENE	116%	70 - 130
1,2-DICHLOROBENZENE-d4	102%	70 - 130

Polynuclear Aromatic Hydrocarbons Units: **mg/Kg(ppm)** Method #: **EPA_8270C**

Matrix: Soil Analysis Date: 6/7/2004 Prep Date: 6/7/2004 Analyst: BG

Lab Sample #: **M0406006-01** Client ID: **SB- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Naphthalene	91-20-3	BRL	0.33	
2-Methylnaphthalene	91-57-6	BRL	0.33	
1-Methylnaphthalene	90-12-0	BRL	0.33	
Acenaphthylene	208-96-87	BRL	0.33	
Acenaphthene	83-32-9	BRL	0.33	
Fluorene	86-73-7	BRL	0.33	
Phenanthrene	85-01-8	BRL	0.33	
Anthracene	120-12-7	BRL	0.33	
Fluoranthene	206-44-0	BRL	0.33	
Pyrene	129-00-0	BRL	0.33	
Benzo(a)anthracene	56-55-3	BRL	0.33	
Chrysene	218-01-9	BRL	0.33	
Benzo(b)fluoranthene	205-99-2	BRL	0.33	
Benzo(k)fluoranthene	207-08-9	BRL	0.33	
Benzo(a)pyrene	50-32-8	BRL	0.33	
Indeno(1,2,3-cd)pyrene	193-39-5	BRL	0.33	
Dibenzo(a,h)anthracene	53-70-3	BRL	0.33	
Benzo(g,h,i)perylene	191-24-2	BRL	0.33	

SURROGATE:	Percent Recoveries	Report Limit
NITROBENZENE-d5	43%	11 - 147
2-FLUOROBIPHENYL	39%	13 - 141
TERPHENYL-d14	78%	25 - 156

NOTES:

- Results relate only to the samples tested as received (See Chain-of-Custody).
- BRL = "Below Reporting Limit"
- RL = "Reporting Limit"
- E = "Estimated Result"
- J = "Result is below the Reporting Limit but above the Method Detection Limit. Result is estimated."
- N = "1-Methylnaphthalene and 2-Methylnaphthalene are reported as per Hygeia Laboratories, Inc., SOP-61(EPA 610/8310)"
- Dates are presented in the format "month/day/year"

Certifications

Arkansas - No. 03-044-0; Connecticut - No. PH 0208; Georgia - No. 804; Indiana - Lab ID C-GA-01
Kentucky - Lab ID 90053, UST - No. 0005; Massachussetts No. M - GA040; North Carolina - No. 409; Oklahoma - No. 9945
Pennsylvania - No. 68-668; South Carolina - No. 98012001; Tennessee - Lab ID 02827; Virginia - Lab ID 00024

Accreditations

NELAC - State of Florida DOH, No. E87257
NELAC - Louisiana DEQ, No. 02084

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Page 1 of 1

CHAIN OF CUSTODY RECORD

PROJ. NO. 14.25384.0012

PROJECT NAME United Exxon

CLIENT ATC Associates

PROJECT LOCATION (STATE) SC

LAB PROJ. NO. M0406006

SAMPLERS: (Signature) Bob Bolton

SAMPLING METHOD GRAB

LABORATORY ANALYSIS

SAMPLE I.D. NO.	DATE	TIME	COMPOSITE	GRAB	WATER	SOIL		FILTERED	ACIDIFIED	ICED		NUMBER OF CONTAINERS	LAB I.D. NUMBER	BTEX+MtBE 8260B	PAH 8270C							SAMPLE LOCATION / REMARKS
														4' R-15 R-5								
SB-1	6/1/04	1055		✓		✓				✓		6	LAB	✓	✓							

Relinquished by: (Signature) Bob Bolton — Date / Time 6/1/04 1500 — Received by: (Signature) To UPS

Relinquished by: (Signature) — Date / Time — Received by: (Signature)

Relinquished by: (Signature) — Date / Time — Received for Laboratory by: (Signature) [illegible] — Date / Time 6/2/04 8:00 — Project Manager / Phone #:

HYGEIA LABORATORIES, INC.
1300 Williams Drive, Suite A
Marietta, Georgia 30066-6299
(770) 514-6933 FAX (770) 514-6966

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

Job#: M05-1283

STL Project#: MA4A0001
Site Name: N/A
Task: United Exxon

Bob Bolton
ATC Associates Inc.
400 Northeast Drive Unit Q
Columbia, SC 29203

STL - Miami (Miramar)

Ashley Amick
Project Manager

02/14/2005

7478 CARLISLE STREET • IRMO, S.C. 29063
PHONE (803) 781-4243 • TOLL FREE (888) 315-4243 • FAX (803) 781-4303 • WWW.ACCESSANALYTICALINC.COM

STL Miami Certifications

State	Certification Number
Florida	E86349
Florida	E86616
Alabama	41180
Puerto Rico	FL00535
South Carolina	96023
USDA Soil Permit	S-70051

Data Qualifier Codes

A Value reported is the mean value of two or more determinations.

B Results based on colony counts outside the acceptable range. The code applies to microbiological tests and specifically to membrane filter colony counts. This code is to be used if the colony count is generated from a plate in which the total number of colonies exceeds the method indicated ranges.

F When reporting species, F indicates the female sex

H Value based on field kit determinations, results may not be accurate. This value is used when the results have been determined using a field kit or method that has not been recognized by the Department as equivalent to EPA methods

J Estimated value. This code may be used if the surrogate exceeded limits, no known quality control criteria exists for the component, the reported valued failed to meet established quality control limits, if the sample matrix interfered with the ability to make an accurate determination, or if the data is questionable because of improper laboratory or field protocols. The "J" values is accompanied by a comment or justification for it's use.

K Off-scale, low. Actual value is known to be less than the reported value. This value is used if the value is less than the lowest calibration standard and the calibration curve is non-linear or if the value is known to be less than the reported value based on size, sample dilution or some other variable.

L Off-scale high. The value is known to be greater than the value given. This value is used when the reported value is greater than the acceptable level for quantitation (exceeded the linear range of the calibration) and the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: the presence of material is verified but not quantified, the actual value is less than the value given. The reported value shall be the laboratory PQL. This code is used if the actual value is too low to permit accurate quantification.

N Presumptive evidence of the presence of a material. This code is used if the component has been determined using a mass spectral library search or if there is evidence that the analyte is present but the quality control requirements were not met.

O Sampled, but the analysis was lost or not performed.

Q Sample was held beyond the acceptable holding item.

T The value reported was less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used for statistical analysis.

U Indicates the compound was analyzed for but not detected. The value associated with the qualifier shall be the laboratory method detection limit.

V Indicated the analyte was detected in both the sample and the associated method blank. The value in the method blank is not subtracted from the associated samples

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z Too many colonies were present (TNTC), the numeric value represents the filtration volume

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

? Data was rejected and should not be used. Some or all of the quality control data for the analyte were outside of control criteria and the presence or absence of the analyte cannot be determined

* Not analyzed due to interference.

D When utilized with field sample results, measurement was made in the field.

D When utilized with surrogates, D indicates surrogates were diluted out of the sample.

E Indicates extra samples were taken at composite stations

R Significant rain in the past 48 hours. Rainfall amounts may contribute to a lower than normal value

! Deviates from historically established concentration ranges

NON-CONFORMANCE SUMMARY

Job#: M05-1283

STL Project#: MA4A0001
Site Name: N/A

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

M05-1283
Sample Cooler(s) were received at the following temperature(s); 3 °C
All samples were received in good condition.

GC/MS Volatile Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Date: 02/14/2005
Time: 17:11:48

United Exxon

Sample ID: GP-3
Lab Sample ID: M5128301
Date Collected: 02/10/2005
Time Collected: 13:10

Date Received: 02/11/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	5500		100	UG/L	8260	02/14/2005 14:55	SKL
Ethylbenzene	BDL		100	UG/L	8260	02/14/2005 14:55	SKL
m/p-Xylenes	BDL		200	UG/L	8260	02/14/2005 14:55	SKL
Methyl tert butyl ether	BDL		100	UG/L	8260	02/14/2005 14:55	SKL
Naphthalene	BDL		200	UG/L	8260	02/14/2005 14:55	SKL
o-Xylene	BDL		100	UG/L	8260	02/14/2005 14:55	SKL
Toluene	BDL		100	UG/L	8260	02/14/2005 14:55	SKL
Total Xylenes	BDL		300	UG/L	8260	02/14/2005 14:55	SKL
Surrogates							
1,2-Dichloroethane-D4	111		QC Lmts: 70-130	%	8260	02/14/2005 14:55	SKL
Dibromofluoromethane	95		QC Lmts: 70-130	%	8260	02/14/2005 14:55	SKL
p-Bromofluorobenzene	106		QC Lmts: 70-130	%	8260	02/14/2005 14:55	SKL
Toluene-D8	103		QC Lmts: 70-130	%	8260	02/14/2005 14:55	SKL

Date: 02/14/2005
Time: 17:11:48

United Exxon

Sample ID: GP-4
Lab Sample ID: M5128302
Date Collected: 02/10/2005
Time Collected: 13:30

Date Received: 02/11/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	3860		100	UG/L	8260	02/14/2005 15:25	SKL
Ethylbenzene	BDL		100	UG/L	8260	02/14/2005 15:25	SKL
m/p-Xylenes	BDL		200	UG/L	8260	02/14/2005 15:25	SKL
Methyl tert butyl ether	330		100	UG/L	8260	02/14/2005 15:25	SKL
Naphthalene	BDL		200	UG/L	8260	02/14/2005 15:25	SKL
o-Xylene	BDL		100	UG/L	8260	02/14/2005 15:25	SKL
Toluene	BDL		100	UG/L	8260	02/14/2005 15:25	SKL
Total Xylenes	BDL		300	UG/L	8260	02/14/2005 15:25	SKL
Surrogates							
1,2-Dichloroethane-D4	110		QC Lmts: 70-130	%	8260	02/14/2005 15:25	SKL
Dibromofluoromethane	95		QC Lmts: 70-130	%	8260	02/14/2005 15:25	SKL
p-Bromofluorobenzene	104		QC Lmts: 70-130	%	8260	02/14/2005 15:25	SKL
Toluene-D8	103		QC Lmts: 70-130	%	8260	02/14/2005 15:25	SKL

Date: 02/14/2005
Time: 16:22:23

Dilution Log w/Code Information
For Job M05-1283

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
GP-3	M5128301	8260	100.00	008
GP-4	M5128302	8260	100.00	008

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

METHOD 8260 - BTEX + NAPHTHALENE, MTBE

Client Sample ID Job No & Lab Sample ID	GP-3 M05-1283 M5128301	GP-4 M05-1283 M5128302			
Sample Date	02/10/2005 13:10	02/10/2005 13:30			
Received Date	02/11/2005 10:10	02/11/2005 10:10			
Extraction Date					
Analysis Date	02/14/2005 14:55	02/14/2005 15:25			
Extraction HT Met?	-	-			
Analytical HT Met?	YES	YES			
Sample Matrix	WATER	WATER			
Dilution Factor	100.0	100.0			
Sample wt/vol	0.005 LITERS	0.005 LITERS			
% Dry					

NA = Not Applicable

Access Analytical - Chain of Custody Record

Project Submission # M05-1283 RA **PO #** _____ **Laboratory ID:** mimi

Company Name: ATC Associates Inc.

Report To: Bob Bolton

Address: 400 Northeast Dr, Unit Q

City: Columbia State: SC Zip: 29203

Phone: 735 0003 Fax: 735 0443

Email: bob.bolton@atc-enviro.com

Project Name: United Exxon

Sampled By (print): Bob Bolton

Preservative: (*see codes below)

↓ REQUESTED LAB ANALYSIS: ↓ BTEX, Naph, MTBE 8260B

Sample Label	Date Collected	Time Collected	Matrix	# of Cont	BTEX, Naph, MTBE 8260B	NOTES / COMMENTS
6P-3	2/10/05	1310	H2O	2	X	Rush Due ASAP
6P-4	2/10/05	1330	↓	2	X	
						Rush KKW 21005-2
						due Mon 2/14

* **Preservative Codes** (*place corresponding # in block above analysis field*): 0=None, 1=HCL, 2=HNO_3, 3=H_2SO_4, 4=NaOH, 5=$Na_2S_2O_3$, 6=$NaHSO_4$, Other=Specify

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303
Toll Free (888) 315-4243
www.accessanalyticalinc.com

Turnaround Time:

___Std. (5-7 Bus. days)
✓RUSH*
*Date Required: 2/14/05
(For rush work, results faxed by end of business day on date required)

Samples Recd. on Ice? 3°
✓Yes
___No
Ice Present

Project Location:
✓SC
___NC
___Other_____(specify)

Relinquished By:	Date:	Time:	Received By:
Bob Bolton	2/10/05	1604	Lou Cotto
Lou Cotto	2/10/05	1700	Fed Ex
[illegible]	2/11/05	10:10	[illegible]
Fed Ex	2/11/05	10:40	

Access Analytical, Inc.
See Reverse for Terms and Conditions

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

Job#: M05-1443

STL Project#: MA4A0001
Site Name: N/A
Task: United Exxon

Bob Bolton
ATC Associates Inc.
400 Northeast Drive Unit Q
Columbia, SC 29203

STL - Miami (Miramar)

Ashley Amick
Project Manager

02/18/2005

STL Miami Certifications

State	Certification Number
Florida	E86349
Florida	E86616
Alabama	41180
Puerto Rico	FL00535
South Carolina	96023
USDA Soil Permit	S-70051

Data Qualifier Codes

A Value reported is the mean value of two or more determinations.

B Results based on colony counts outside the acceptable range. The code applies to microbiological tests and specifically to membrane filter colony counts. This code is to be used if the colony count is generated from a plate in which the total number of colonies exceeds the method indicated ranges.

F When reporting species, F indicates the female sex

H Value based on field kit determinations, results may not be accurate. This value is used when the results have been determined using a field kit or method that has not been recognized by the Department as equivalent to EPA methods

J Estimated value. This code may be used if the surrogate exceeded limits, no known quality control criteria exists for the component, the reported valued failed to meet established quality control limits, if the sample matrix interfered with the ability to make an accurate determination, or if the data is questionable because of improper laboratory or field protocols. The "J" values is accompanied by a comment or justification for it's use.

K Off-scale, low. Actual value is known to be less than the reported value This value is used if the value is less than the lowest calibration standard and the calibration curve is non-linear or if the value is known to be less than the reported value based on size, sample dilution or some other variable.

L Off-scale high. The value is known to be greater than the value given. This value is used when the reported value is greater than the acceptable level for quantitation (exceeded the linear range of the calibration) and the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: the presence of material is verified but not quantified, the actual value is less than the value given. The reported value shall be the laboratory PQL. This code is used if the actual value is too low to permit accurate quantification.

N Presumptive evidence of the presence of a material. This code is used if the component has been determined using a mass spectral library search or if there is evidence that the analyte is present but the quality control requirements were not met.

O Sampled, but the analysis was lost or not performed.

Q Sample was held beyond the acceptable holding item.

T The value reported was less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used for statistical analysis.

U Indicates the compound was analyzed for but not detected. The value associated with the qualifier shall be the laboratory method detection limit.

V Indicated the analyte was detected in both the sample and the associated method blank. The value in the method blank is not subtracted from the associated samples

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z Too many colonies were present (TNTC), the numeric value represents the filtration volume

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

? Data was rejected and should not be used. Some or all of the quality control data for the analyte were outside of control criteria and the presence or absence of the analyte cannot be determined

* Not analyzed due to interference.

D When utilized with field sample results, measurement was made in the field.

D When utilized with surrogates, D indicates surrogates were diluted out of the sample.

E Indicates extra samples were taken at composite stations

R Significant rain in the past 48 hours. Rainfall amounts may contribute to a lower than normal value

I Deviates from historically established concentration ranges

NON-CONFORMANCE SUMMARY

Job#: M05-1443

STL Project#: MA4A0001
Site Name: N/A

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page.

Soil, sediment and sludge sample results are reported on "dry weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

M05-1443
Sample Cooler(s) were received at the following temperature(s); 1.6 °C
All samples were received in good condition.

GC/MS Volatile Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Date: 02/18/2005
Time: 17:09:27

United Exxon

Sample ID: GP-10
Lab Sample ID: M5144303
Date Collected: 02/15/2005
Time Collected: 14:30

Date Received: 02/17/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	4020		200	UG/L	8260	02/18/2005 14:41	SKL
Ethylbenzene	BDL		200	UG/L	8260	02/18/2005 14:41	SKL
m/p-Xylenes	1610		400	UG/L	8260	02/18/2005 14:41	SKL
Methyl tert butyl ether	BDL		200	UG/L	8260	02/18/2005 14:41	SKL
Naphthalene	270		400	UG/L	8260	02/18/2005 14:41	SKL
o-Xylene	314		200	UG/L	8260	02/18/2005 14:41	SKL
Toluene	1830		200	UG/L	8260	02/18/2005 14:41	SKL
Total Xylenes	1920		600	UG/L	8260	02/18/2005 14:41	SKL
Surrogates							
1,2-Dichloroethane-D4	97		QC Lmts: 70-130	%	8260	02/18/2005 14:41	SKL
Dibromofluoromethane	90		QC Lmts: 70-130	%	8260	02/18/2005 14:41	SKL
p-Bromofluorobenzene	110		QC Lmts: 70-130	%	8260	02/18/2005 14:41	SKL
Toluene-D8	103		QC Lmts: 70-130	%	8260	02/18/2005 14:41	SKL

Date: 02/18/2005
Time: 17:09:27

United Exxon

Sample ID: GP-6
Lab Sample ID: M5144304
Date Collected: 02/15/2005
Time Collected: 10:30

Date Received: 02/17/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	5450		500	UG/L	8260	02/18/2005 15:17	SKL
Ethylbenzene	1170		500	UG/L	8260	02/18/2005 15:17	SKL
m/p-Xylenes	1990		1000	UG/L	8260	02/18/2005 15:17	SKL
Methyl tert butyl ether	BDL		500	UG/L	8260	02/18/2005 15:17	SKL
Naphthalene	BDL		1000	UG/L	8260	02/18/2005 15:17	SKL
o-Xylene	BDL		500	UG/L	8260	02/18/2005 15:17	SKL
Toluene	2770		500	UG/L	8260	02/18/2005 15:17	SKL
Total Xylenes	1990		1500	UG/L	8260	02/18/2005 15:17	SKL
Surrogates							
1,2-Dichloroethane-D4	90		QC Lmts: 70-130	%	8260	02/18/2005 15:17	SKL
Dibromofluoromethane	82		QC Lmts: 70-130	%	8260	02/18/2005 15:17	SKL
p-Bromofluorobenzene	112		QC Lmts: 70-130	%	8260	02/18/2005 15:17	SKL
Toluene-D8	100		QC Lmts: 70-130	%	8260	02/18/2005 15:17	SKL

Date: 02/18/2005
Time: 17:09:27

United Exxon

Sample ID: GP-7
Lab Sample ID: M5144301
Date Collected: 02/15/2005
Time Collected: 13:00

Date Received: 02/17/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	6950		500	UG/L	8260	02/18/2005 13:30	SKL
Ethylbenzene	2920		500	UG/L	8260	02/18/2005 13:30	SKL
m/p-Xylenes	10100		1000	UG/L	8260	02/18/2005 13:30	SKL
Methyl tert butyl ether	BDL		500	UG/L	8260	02/18/2005 13:30	SKL
Naphthalene	BDL		1000	UG/L	8260	02/18/2005 13:30	SKL
o-Xylene	4000		500	UG/L	8260	02/18/2005 13:30	SKL
Toluene	20350		500	UG/L	8260	02/18/2005 13:30	SKL
Total Xylenes	14100		1500	UG/L	8260	02/18/2005 13:30	SKL
Surrogates							
1,2-Dichloroethane-D4	92		QC Lmts: 70-130	%	8260	02/18/2005 13:30	SKL
Dibromofluoromethane	85		QC Lmts: 70-130	%	8260	02/18/2005 13:30	SKL
p-Bromofluorobenzene	118		QC Lmts: 70-130	%	8260	02/18/2005 13:30	SKL
Toluene-D8	100		QC Lmts: 70-130	%	8260	02/18/2005 13:30	SKL

Date: 02/18/2005
Time: 17:09:27

United Exxon

Sample ID: GP-9
Lab Sample ID: M5144302
Date Collected: 02/15/2005
Time Collected: 14:00

Date Received: 02/17/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	5540		200	UG/L	8260	02/18/2005 14:05	SKL
Ethylbenzene	1000		200	UG/L	8260	02/18/2005 14:05	SKL
m/p-Xylenes	2680		400	UG/L	8260	02/18/2005 14:05	SKL
Methyl tert butyl ether	BDL		200	UG/L	8260	02/18/2005 14:05	SKL
Naphthalene	BDL		400	UG/L	8260	02/18/2005 14:05	SKL
o-Xylene	906		200	UG/L	8260	02/18/2005 14:05	SKL
Toluene	7140		200	UG/L	8260	02/18/2005 14:05	SKL
Total Xylenes	3590		600	UG/L	8260	02/18/2005 14:05	SKL
Surrogates							
1,2-Dichloroethane-D4	93		QC Lmts: 70-130	%	8260	02/18/2005 14:05	SKL
Dibromofluoromethane	85		QC Lmts: 70-130	%	8260	02/18/2005 14:05	SKL
p-Bromofluorobenzene	114		QC Lmts: 70-130	%	8260	02/18/2005 14:05	SKL
Toluene-D8	103		QC Lmts: 70-130	%	8260	02/18/2005 14:05	SKL

Date: 02/18/2005
Time: 17:09:30

Dilution Log w/Code Information
For Job M05-1443

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
GP-7	M5144301	8260	500.00	008
GP-9	M5144302	8260	200.00	008
GP-10	M5144303	8260	200.00	008
GP-6	M5144304	8260	500.00	008

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

METHOD 8260 - BTEX + NAPHTHALENE, MTBE

Client Sample ID Job No & Lab Sample ID	GP-10 M05-1443 M5144303	GP-6 M05-1443 M5144304	GP-7 M05-1443 M5144301	GP-9 M05-1443 M5144302	
Sample Date	02/15/2005 14:30	02/15/2005 10:30	02/15/2005 13:00	02/15/2005 14:00	
Received Date	02/17/2005 10:00	02/17/2005 10:00	02/17/2005 10:00	02/17/2005 10:00	
Extraction Date					
Analysis Date	02/18/2005 14:41	02/18/2005 15:17	02/18/2005 13:30	02/18/2005 14:05	
Extraction HT Met?	-	-	-	-	
Analytical HT Met?	YES	YES	YES	YES	
Sample Matrix	WATER	WATER	WATER	WATER	
Dilution Factor	200.0	500.0	500.0	200.0	
Sample wt/vol	0.005 LITERS	0.005 LITERS	LITERS	0.005 LITERS	
% Dry					

9/10

NA = Not Applicable

Access Analytical - Chain of Custody Record

Project Submission # MOS - 1443 **PO #** _____ **Laboratory ID:** SR - M

Company Name: ATC Associates, Inc.

Report To: Bob Belton

Address: 400 Northeast Drive, Unit B

City: Columbia State: SC Zip: 29203

Phone: (803) 735-0003 Fax:

Email: bob.belton@atc-associates.com

Project Name: United Exxon

Sampled By (print): Johnny Horn

Preservative: (*see codes below)

REQUESTED LAB ANALYSIS: BTEX + NAPHTHALENE 8260B

Sample Label	Date Collected	Time Collected	Matrix	# of Cont	BTEX + NAPHTHALENE 8260B	NOTES / COMMENTS
GP-7	2/15/05	13:00	W	2	X	
GP-9	2/15/05	14:00	W	2	X	RUSH #:
GP-10	2/15/05	14:30	W	2	X	KKW 21505-1
GP-C	2/15/05	10:30	W	2	X	2/18

* Preservative Codes (*place corresponding # in block above analysis field*): 0=None, 1=HCL, 2=HNO_3, 3=H_2SO_4, 4=NaOH, 5=$Na_2S_2O_3$, 6=$NaHSO_4$, Other=Specify

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303
Toll Free (888) 315-4243
www.accessanalyticalinc.com

Turnaround Time:

___Std. (5-7 Bus. days)
___RUSH*
*Date Required:_____
(For rush work, results faxed by end of business day on date required)

Samples Recd. on Ice? 4.6
✓ Yes
___No

Project Location:
X SC
___NC
___Other_____(specify)

Relinquished By:	Date:	Time:	Received By:
Johnny Horn	2/16/05	16:30	
	2/16/05	1725	FEDEX
FEDEX			
	2/17/05	1:00	

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2/17

10/10

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

Job#: M05-1565

STL Project#: MA4A0001
Site Name: N/A
Task: United Exxon

Bob Bolton
ATC Associates Inc.
400 Northeast Drive Unit Q
Columbia, SC 29203

STL - Miami (Miramar)

Ashley Amick
Project Manager

02/24/2005

STL Miami Certifications

State	Certification Number
Florida	E86349
Florida	E86616
Alabama	41180
Puerto Rico	FL00535
South Carolina	96023
USDA Soil Permit	S-70051

Data Qualifier Codes

A Value reported is the mean value of two or more determinations.

B Results based on colony counts outside the acceptable range. The code applies to microbiological tests and specifically to membrane filter colony counts. This code is to be used if the colony count is generated from a plate in which the total number of colonies exceeds the method indicated ranges.

F When reporting species, F indicates the female sex

H Value based on field kit determinations, results may not be accurate. This value is used when the results have been determined using a field kit or method that has not been recognized by the Department as equivalent to EPA methods

J Estimated value. This code may be used if the surrogate exceeded limits, no known quality control criteria exists for the component, the reported valued failed to meet established quality control limits, if the sample matrix interfered with the ability to make an accurate determination, or if the data is questionable because of improper laboratory or field protocols. The "J" values is accompanied by a comment or justification for it's use.

K Off-scale, low. Actual value is known to be less than the reported value. This value is used if the value is less than the lowest calibration standard and the calibration curve is non-linear or if the value is known to be less than the reported value based on size, sample dilution or some other variable.

L Off-scale high. The value is known to be greater than the value given. This value is used when the reported value is greater than the acceptable level for quantitation (exceeded the linear range of the calibration) and the calibration curve is known to exhibit a negative deflection.

M When reporting chemical analyses: the presence of material is verified but not quantified, the actual value is less than the value given. The reported value shall be the laboratory PQL. This code is used if the actual value is too low to permit accurate quantification.

N Presumptive evidence of the presence of a material. This code is used if the component has been determined using a mass spectral library search or if there is evidence that the analyte is present but the quality control requirements were not met.

O Sampled, but the analysis was lost or not performed.

Q Sample was held beyond the acceptable holding item.

T The value reported was less than the laboratory method detection limit. The value is reported for informational purposes only and shall not be used for statistical analysis.

U Indicates the compound was analyzed for but not detected. The value associated with the qualifier shall be the laboratory method detection limit.

V Indicated the analyte was detected in both the sample and the associated method blank. The value in the method blank is not subtracted from the associated samples

Y The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate

Z Too many colonies were present (TNTC), the numeric value represents the filtration volume

I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

? Data was rejected and should not be used. Some or all of the quality control data for the analyte were outside of control criteria and the presence or absence of the analyte cannot be determined

* Not analyzed due to interference.

D When utilized with field sample results, measurement was made in the field.

D When utilized with surrogates, D indicates surrogates were diluted out of the sample.

E Indicates extra samples were taken at composite stations

R Significant rain in the past 48 hours. Rainfall amounts may contribute to a lower than normal value

! Deviates from historically established concentration ranges

NON-CONFORMANCE SUMMARY

Job#: M05-1565

STL Project#: MA4A0001
Site Name: N/A

General Comments

The enclosed data have been reported utilizing data qualifiers (Q) as defined on the Data Comment Page. Unless otherwise indicated, test results included within the report met all the requirements of NELAC.

Soil, sediment and sludge sample results are reported on "wet weight" basis unless otherwise noted in this data package.

According to 40CFR Part 136.3, pH, Chlorine Residual, Dissolved Oxygen, Sulfite, and Temperature analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g. pH-Field), they were not analyzed immediately, but as soon as possible after laboratory receipt.

Sample dilutions were performed as indicated on the attached Dilution Log. The rationale for dilution is specified by the 3-digit code and definition.

Sample Receipt Comments

M05-1565
Sample Cooler(s) were received at the following temperature(s); 6.6 °C
All samples were received in good condition.

GC/MS Volatile Data

No deviations from protocol were encountered during the analytical procedures.

****

The results presented in this report relate only to the analytical testing and condition of the sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.

Unless otherwise specified, all analyses were performed by STL Miami, 10200 USA Today Way, Miramar, FL 33025. Inquiries regarding this report may be directed to the project manager.

Date: 02/24/2005
Time: 16:34:15

United Exxon

Sample ID: GP-11
Lab Sample ID: M5156501
Date Collected: 02/16/2005
Time Collected: 15:00

Date Received: 02/22/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	11000		400	UG/L	8260	02/23/2005 17:32	MG
Ethylbenzene	1840		400	UG/L	8260	02/23/2005 17:32	MG
m/p-Xylenes	6930		800	UG/L	8260	02/23/2005 17:32	MG
Methyl tert butyl ether	BDL		400	UG/L	8260	02/23/2005 17:32	MG
Naphthalene	1420		400	UG/L	8260	02/23/2005 17:32	MG
o-Xylene	3050		400	UG/L	8260	02/23/2005 17:32	MG
Toluene	25800		400	UG/L	8260	02/23/2005 17:32	MG
Total Xylenes	9980		1200	UG/L	8260	02/23/2005 17:32	MG
Surrogates							
1,2-Dichloroethane-D4	105		QC Lmts: 70-130	%	8260	02/23/2005 17:32	MG
Dibromofluoromethane	95		QC Lmts: 70-130	%	8260	02/23/2005 17:32	MG
p-Bromofluorobenzene	98		QC Lmts: 70-130	%	8260	02/23/2005 17:32	MG
Toluene-D8	97		QC Lmts: 70-130	%	8260	02/23/2005 17:32	MG

Date: 02/24/2005
Time: 16:34:15

United Exxon

Sample ID: GP-11
Lab Sample ID: M5156502
Date Collected: 02/18/2005
Time Collected: 12:10

Date Received: 02/22/2005
Project No: MA4A0001
Client No: 002132

Parameter	Result	Flg	Detection Limit	Units	Method	Date/Time Analyzed	Int
AQUEOUS-SW8463 8260 - BTEX + NAPHTHALENE, MTB							
Benzene	7660		200	UG/L	8260	02/24/2005 10:55	MG
Ethylbenzene	420		200	UG/L	8260	02/24/2005 10:55	MG
m/p-Xylenes	1450		400	UG/L	8260	02/24/2005 10:55	MG
Methyl tert butyl ether	BDL		200	UG/L	8260	02/24/2005 10:55	MG
Naphthalene	BDL		400	UG/L	8260	02/24/2005 10:55	MG
o-Xylene	710		200	UG/L	8260	02/24/2005 10:55	MG
Toluene	9650		200	UG/L	8260	02/24/2005 10:55	MG
Total Xylenes	2160		600	UG/L	8260	02/24/2005 10:55	MG
Surrogates							
1,2-Dichloroethane-D4	107		QC Lmts: 70-130	%	8260	02/24/2005 10:55	MG
Dibromofluoromethane	94		QC Lmts: 70-130	%	8260	02/24/2005 10:55	MG
p-Bromofluorobenzene	100		QC Lmts: 70-130	%	8260	02/24/2005 10:55	MG
Toluene-D8	97		QC Lmts: 70-130	%	8260	02/24/2005 10:55	MG

Date: 02/24/2005
Time: 16:23:13

Dilution Log w/Code Information
For Job M05-1565

Client Sample ID	Lab Sample ID	Parameter (Inorganic)/Method (Organic)	Dilution	Code
GP-11	M5156501	8260	400.00	008
GP-11	M5156502	8260	200.00	008

Dilution Code Definition:

002 - sample matrix effects
003 - excessive foaming
004 - high levels of non-target compounds
005 - sample matrix resulted in method non-compliance for an Internal Standard
006 - sample matrix resulted in method non-compliance for Surrogate
007 - nature of the TCLP matrix
008 - high concentration of target analyte(s)
009 - sample turbidity
010 - sample color
011 - insufficient volume for lower dilution
012 - sample viscosity
013 - other

METHOD 8260 - BTEX + NAPHTHALENE, MTBE

Client Sample ID Job No & Lab Sample ID	GP-11 M05-1565 M5156501	GP-11 M05-1565 M5156502			
Sample Date	02/16/2005 15:00	02/18/2005 12:10			
Received Date	02/22/2005 10:00	02/22/2005 10:00			
Extraction Date					
Analysis Date	02/23/2005 17:32	02/24/2005 10:55			
Extraction HT Met?	-	-			
Analytical HT Met?	YES	YES			
Sample Matrix	GW	GW			
Dilution Factor	400.0	200.0			
Sample wt/vol	LITERS	0.005 LITERS			
% Dry					

NA = Not Applicable

Access Analytical - Chain of Custody Record

Project Submission # M05-1565 RA **PO #** _____ **Laboratory ID:** _____

Company Name: ATC Associates Inc.

Report To: Bob Bolton

Address: 400 Northeast Drive, Unit Q

City: Columbia State: SC Zip: 29203

Phone: 803-735-0003 Fax: 803-735-0443

Email: bob.bolton@atcassociates.com

Project Name: United Exxon

Sampled By (print): Johnny Horn / Bob Bolton

Preservative: (*see codes below)

REQUESTED LAB ANALYSIS:

Sample Label	Date Collected	Time Collected	Matrix	# of Cont	BTEX + Naphthalene MTBE 8260B	8260B
GP-11	2.16.05	1500	GW		✓	
G-P-11	2.18.05	1210	GW		✓	

* Preservative Codes (*place corresponding # in block above analysis field*): 0=None, 1=HCL, 2=HNO$_3$, 3=H$_2$SO$_4$, 4=NaOH, 5=Na$_2$S$_2$O$_3$, 6=NaHSO$_4$, Other=Specify

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303
Toll Free (888) 315-4243
www.accessanalyticalinc.com

NOTES / COMMENTS

* NOTE: Only one vial per sample.

*Rush need 2/23

Turnaround Time:

___Std. (5-7 Bus. days)
X RUSH*
*Date Required: _____
(For rush work, results faxed by end of business day on date required)

Samples Recd. on Ice?
___Yes
6.6 No
Ice Present

Project Location:
___SC
___NC
___Other_____(specify)

Relinquished By:	Date:	Time:	Received By:
Beth Brooks	2.21.05	1:39	
	2/21/05	1600	
	2/22/05	10:00	

Pg_____of_____

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HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

Lab Project No. M0503076

Report Date: 3/23/05

Client Name: **ATC Associates - Columbia, SC**
Contact: **Bob Bolton**
Address: 400 Northeast Drive
Suite Q
Columbia, SC 29203
Project Name: **United Exxon**
Project ID: 14.25384.0012
Receipt Date: 3/9/2005

Case Narrative

1. The sample holding times were met for all analyses.
2. The temperature of the sample cooler as received by the laboratory was 3° C.
3. Hygeia Laboratories, Inc., certifies that the following analytical results meet all the requirements of the National Environmental Laboratory Accreditation Conference (NELAC).

Reviewed By: BH

Respectfully Submitted:
Michelle Eppes
Hygeia Laboratories, Inc.

Sample Identification

Lab Sample #	Client Sample ID	Sample Supply	Collected
M0503076-01	CK 1	Water	3/8/05
M0503076-02	MW- 1	Water	3/8/05
M0503076-03	MW- 3	Water	3/8/05
M0503076-04	MW- 5	Water	3/8/05
M0503076-05	MW- 7	Water	3/8/05
M0503076-06	MW- 8	Water	3/8/05
M0503076-07	MW- 12	Water	3/8/05
M0503076-08	MW- 13	Water	3/8/05
M0503076-09	MW- 14	Water	3/8/05
M0503076-10	MW- 15	Water	3/8/05
M0503076-11	DW- 1	Water	3/8/05

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-01** Client ID: **CK 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	8	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	98%	70 - 130
1,2-DICHLOROETHANE-d4	93%	70 - 130
TOLUENE-d8	91%	70 - 130
4-BROMOFLUOROBENZENE	99%	70 - 130
1,2-DICHLOROBENZENE-d4	101%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-01** Client ID: **CK 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	108%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-02** Client ID: **MW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	7	5	
o-Xylene	95-47-6	8	5	
Total Xylenes	001330-20-7	15	5	
Naphthalene	91-20-3	42	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	97%	70 - 130
1,2-DICHLOROETHANE-d4	92%	70 - 130
TOLUENE-d8	97%	70 - 130
4-BROMOFLUOROBENZENE	106%	70 - 130
1,2-DICHLOROBENZENE-d4	100%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-02** Client ID: **MW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	124%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-03** Client ID: **MW- 3**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	123	5	
Toluene	108-88-3	10	5	
Ethylbenzene	100-41-4	18	5	
m&p-Xylene	108-38-3	16	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	16	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	88%	70 - 130
1,2-DICHLOROETHANE-d4	98%	70 - 130
TOLUENE-d8	97%	70 - 130
4-BROMOFLUOROBENZENE	91%	70 - 130
1,2-DICHLOROBENZENE-d4	93%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-03** Client ID: **MW- 3**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	100%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-04** Client ID: **MW- 5**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	92%	70 - 130
1,2-DICHLOROETHANE-d4	95%	70 - 130
TOLUENE-d8	96%	70 - 130
4-BROMOFLUOROBENZENE	99%	70 - 130
1,2-DICHLOROBENZENE-d4	99%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-04** Client ID: **MW- 5**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	100%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-05** Client ID: **MW- 7**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	93%	70 - 130
1,2-DICHLOROETHANE-d4	94%	70 - 130
TOLUENE-d8	95%	70 - 130
4-BROMOFLUOROBENZENE	96%	70 - 130
1,2-DICHLOROBENZENE-d4	99%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-05** Client ID: **MW- 7**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	80%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-06** Client ID: **MW- 8**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	98%	70 - 130
1,2-DICHLOROETHANE-d4	92%	70 - 130
TOLUENE-d8	92%	70 - 130
4-BROMOFLUOROBENZENE	96%	70 - 130
1,2-DICHLOROBENZENE-d4	104%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-06** Client ID: **MW- 8**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	104%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-07** Client ID: **MW- 12**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	195	5	
Benzene	71-43-2	7,680	250	
Toluene	108-88-3	264	50	
Ethylbenzene	100-41-4	52	5	
m&p-Xylene	108-38-3	230	5	
o-Xylene	95-47-6	85	5	
Total Xylenes	001330-20-7	315	5	
Naphthalene	91-20-3	173	50	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	87%	70 - 130
1,2-DICHLOROETHANE-d4	86%	70 - 130
TOLUENE-d8	101%	70 - 130
4-BROMOFLUOROBENZENE	98%	70 - 130
1,2-DICHLOROBENZENE-d4	100%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-07** Client ID: **MW- 12**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	80%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/17/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-08** Client ID: **MW- 13**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	100	
Benzene	71-43-2	13,300	1000	
Toluene	108-88-3	33,600	1000	
Ethylbenzene	100-41-4	2,880	1000	
m&p-Xylene	108-38-3	11,800	1000	
o-Xylene	95-47-6	4,840	1000	
Total Xylenes	001330-20-7	16,600	1000	
Naphthalene	91-20-3	700	100	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	106%	70 - 130
1,2-DICHLOROETHANE-d4	104%	70 - 130
TOLUENE-d8	92%	70 - 130
4-BROMOFLUOROBENZENE	91%	70 - 130
1,2-DICHLOROBENZENE-d4	96%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-08** Client ID: **MW- 13**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	0.08	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	120%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/17/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-09** Client ID: **MW- 14**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	125	
Benzene	71-43-2	6,390	250	
Toluene	108-88-3	BRL	125	
Ethylbenzene	100-41-4	BRL	125	
m&p-Xylene	108-38-3	BRL	125	
o-Xylene	95-47-6	BRL	125	
Total Xylenes	001330-20-7	BRL	125	
Naphthalene	91-20-3	234	125	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	104%	70 - 130
1,2-DICHLOROETHANE-d4	100%	70 - 130
TOLUENE-d8	96%	70 - 130
4-BROMOFLUOROBENZENE	98%	70 - 130
1,2-DICHLOROBENZENE-d4	108%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-09** Client ID: **MW- 14**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	112%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/17/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-10** Client ID: **MW- 15**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	50	
Benzene	71-43-2	11,400	500	
Toluene	108-88-3	182	50	
Ethylbenzene	100-41-4	BRL	50	
m&p-Xylene	108-38-3	96	50	
o-Xylene	95-47-6	BRL	50	
Total Xylenes	001330-20-7	96	50	
Naphthalene	91-20-3	485	50	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	105%	70 - 130
1,2-DICHLOROETHANE-d4	100%	70 - 130
TOLUENE-d8	95%	70 - 130
4-BROMOFLUOROBENZENE	95%	70 - 130
1,2-DICHLOROBENZENE-d4	106%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**
Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-10** Client ID: **MW- 15**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	184%	70 - 130

Volatile Organics Units: **ug/L (ppb)** Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 3/16/2005 Prep Date: 3/16/2005 Analyst: SS

Lab Sample #: **M0503076-11** Client ID: **DW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	8	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	001330-20-7	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	93%	70 - 130
1,2-DICHLOROETHANE-d4	95%	70 - 130
TOLUENE-d8	95%	70 - 130
4-BROMOFLUOROBENZENE	97%	70 - 130
1,2-DICHLOROBENZENE-d4	98%	70 - 130

EDB/DBCP Units: **ug/L(ppb)** Method #: **EPA_504.1**

Matrix: Water Analysis Date: 3/18/2005 Prep Date: 3/17/2005 Analyst: BG

Lab Sample #: **M0503076-11** Client ID: **DW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

SURROGATE:	Percent Recoveries	Report Limit
BROMOFORM	96%	70 - 130

NOTES:

- Results relate only to the samples tested as received (See Chain-of-Custody).
- BRL = "Below Reporting Limit"
- RL = "Reporting Limit"
- E = "Estimated Result"
- J = "Result is below the Reporting Limit but above the Method Detection Limit. Result is estimated."
- * = "Methoxychlor is reported as per Hygeia Laboratories, Inc., SOP-S41(current revision)"
- N = "1-Methylnaphthalene and 2-Methylnaphthalene are reported as per Hygeia Laboratories, Inc., SOP-S61(EPA 610/8310) current revision"
- Dates are presented in the format "month/day/year"

Certifications

Arkansas - No. 03-044-0; Connecticut - No. PH 0208; Georgia - No. 804; Indiana - Lab ID C-GA-01
Kentucky - Lab ID 90053, UST - No. 0005; Massachussetts No. M - GA040; North Carolina - No. 409; Oklahoma - No. 9945
Pennsylvania - No. 68-668; South Carolina - No. 98012001; Tennessee - Lab ID 02827; Virginia - Lab ID 00024

Accreditations

NELAC - State of Florida DOH, No. E87257
NELAC - Louisiana DEQ, No. 02084

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HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6

Cooler Receipt Form

Client ATC Associates - Columbia, SC **Order #:** M0503076
Client Code: 90767.1401
Project United Exxon
Cooler ID: 1

A. Preliminary Examination Phase: **Date cooler opened:** 3/9/2005
Cooler opened by: AY **Signature** [signature]

1. **Was airbill Attached?** Yes **Airbill #** 849938581844 **Carrier Name:** FedEx
2. **Custody Seals?** N/A **How many?** 0 **Location:** **Seal Name:**
3. **Seals intact?** N/A
4. **Screened for radiation?** N/A
5. **COC Attached?** Yes **Properly Completed?** Yes **Signed by Lab** Yes
6. **Project Identification from custody paper:** United Exxon
7. **Preservative:** Yes **Temperature:** 3 C

Have designated person initial here to acknowledge receipt of cooler: AY **Date:** 3/9/05
Comments:

B. Log-In Phase: **Samples Log-in** 3/9/2005 **Log-in By** AY **Signature** [signature]

1. **Packing Type:** Bubble Wra
2. **Were samples in separate bags** Yes
3. **Were containers intact?** Yes **Labels agree with COC?** Yes
4. **Number of bottles received** 42 **Number of samples received** 11
5. **Correct containers used?** Yes **Correct preservatives added** Yes
6. **Sufficient sample volume** Yes
7. **Bubbles in VOA samples** No
8. **Was Project manager called and status discussed?** N/A
9. **Was anyone called?** No **Who was called?** _____ **By whom?** _____ **Date** _____

Comments:

PROJECT NO.	SAMPLER NAME please print	page 1 of 1
14.25384.0012	John Moneghan / Ryan Stubbs	HYGEIA LABORATORIES, INC.
PROJECT NAME: United Exxon	PROJECT LOCATION: Winnsboro, SC	1300 WILLIAMS DRIVE
		P: 770-514-6933 F: 770-514-6966

Bob Bolton @ (803) 735-0003
PROJECT MANAGER AND PHONE

LAB PROJECT NO.: M0503076

DW: drinking water W: non-drinking water
S: Soil/ Solid/ Semi-solid P: Product A: Air
O: Oil PC: Paint Chips W: Wipe F: Filter

LABORATORY ANALYSIS

HCL: Hydrochloric acid
H2SO4: Sulfuric acid
HNO3: Nitric acid
SB: Sodium bisulfate
Me: Methanol
ZA: Zinc acetate
NaOH: Sodium hydroxide
Unp: Unpreserved
DI: Deionized water

TEMP 3.1 R-15

Samples Intact? Y N	CLIENT SAMPLE I. D. EACH ID SHOULD BE UNIQUE	DATE	TIME	COMPOSITE/ GRAB	FILTERED	MATRIX ⇧	NO. OF CONTAINERS	BTEX, Naph, MTBE HCL	EDB HCL								⇦ Preservation
1AB	CK1	3/8/05	1035	G		W	04	X	X								
2AB	MW-1		1210				04	X	X								
3AB	MW-3		1225				04	X	X								
4AB	MW-5		1210				04	X	X								
5AB	MW-7		1255				02	X	X								Only able to get 2
6AB	MW-8		1235				04	X	X								VOAs for MW-7
7AB	MW-12		1000				04	X	X								
8AB	MW-13		1030				04	X	X								
9AB	MW-14		1000				04	X	X								
10AB	MW-15		1020				04	X	X								
11AB	DW-1		1300				04	X	X								

REPORT DUE DATE_____ OR STD TAT

STANDARD QC ☐ LEVEL 3 QC ☐
LEVEL 4 QC ☐ PDF ☐

Please contact lab for availibilty if TAT of less than 5 business days is needed. Surcharges may apply.

Report fax # or e-mail address: bob.bolton@atcassociates.com

SPECIAL REQUESTS/ DETECTION LIMITS

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME	CLIENT NAME/ ADDRESS
Ryan C. Stubbs	3/8/05 @ 1415			
RELINQUISHED BY:	DATE/TIME	RECEIVED BY LAB:	DATE/TIME	
		AH JL	3/9/05 1000	

APPENDIX F

Disposal Manifests

Please print or type
(Form designed for use on elite (12 pitch) typewriter.)

24697

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 24697

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address

SUPERIOR GAS
401 N. CONGRESS STREET
WINNSBORO, SC 29180

4. Generator's Phone ( )

ATC ASSOCIATES
803-735-0003
Bob Bolton

5. Transporter 1 Company Name: NU-WAY INDUSTRIAL SVC., INC.

6. US EPA ID Number: SCD987598331

A. Transporter's Phone: 803-957-9175

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

NU-WAY ENVIRONMENTAL SERVICES
1741 CALKS FERRY ROAD
LEXINGTON, SC 29073

10. US EPA ID Number

C. Facility's Phone: 803-957-9175

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON REGULATED NON HAZARDOUS MATERIAL (WELL WATER)	001	TT	800	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

EMERGENCY CONTACT: NUWAY ENVIRONMENTAL, INC. 803-957-9175
NIS JOB#24690

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name | Signature | Month | Day | Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Risinger | Signature | Month: 4 | Day: 1 | Year: 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: CHRIS RABLEY | Signature | Month: 04 | Day: 01 | Year: 04

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

12-BLC-M5

TO REORDER CALL 1-800-327-6868

SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 02095

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address UNITED EXXON 401 N. CONGRESS ST. WINNSBORO, SC 29180

4. Generator's Phone (803) 767-1552

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	gasoline mixture, 3, UN1203, PG II	X	001	TT	0028.9	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AFV-05-2231 EGR# 128 Gal FP

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

Profile Numbers

11A. 05-0063-B6

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: PAUL JACOBS (AGENT FOR ATC) Signature: [signature] Month 02 Day 09 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: PAUL JACOBS Signature: [signature] Month 02 Day 09 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

FACILITY

19. Discrepancy Indication Space

1mo1 1mo3

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SR

Printed/Typed Name: Ty Cm Signature: [signature] Month 02 Day 10 Year 05

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SHAMROCK ENVIRONMENTAL CORPORATION

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No. 02155

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address United Exton 401 North Congress ST Winnsboro, SC 29180

4. Generator's Phone (803) 735-0003

5. Transporter 1 Company Name: SHAMROCK ENVIRONMENTAL CORP.

6. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

A. Transporter's Phone: 336-375-1989

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address: SHAMROCK ENVIRONMENTAL CORP. 6106 CORPORATE PARK DR. BROWNS SUMMIT, NC 27214

10. US EPA ID Number: N.C.0.0.0.0.9.4.2.1.4.4

C. Facility's Phone: 336-375-1989

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a.	GASOLINE mixture 3 UN1203 PG II	✓	001	TT	00258	G
b.						
c.						
d.						

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

02-AIV-05-2231
ERG 128

Power Unit #: VT7 Trailer #:

Emergency Phone #: 800-881-1098

20 gal FP

Profile Numbers

11A. 05-0063-B6

11B.

11C.

11D.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Paul Jacobs (Agent for ATC) Signature: [signature] Month 02 Day 15 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Paul Jacobs Signature: [signature] Month 02 Day 15 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name Signature Month Day Year

FACILITY

19. Discrepancy Indication Space

Item 01 Item 03

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

SR

Printed/Typed Name: Guy Owen Signature: [signature] Month 02 Day 15 Year 05

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ORIGINAL - RETURN TO GENERATOR

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Emergency Phone Number: (864) 583-2717

Manifest Document No. D-0215155

Page of

Job No. D-0215155

GENERATOR INFORMATION

Name: ATC Associates (Superior Gas)

US EPA ID No.

Street Address: Superior Gas, 401 N Congress St, Winnsboro, SC

Mailing Address: 400 NE Dr. Suite Q, Columbia, SC

Phone No.: (803) 735-0003

Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON HAZ LIQUID, NOS	—	—	—	1	DM	1	DM
b.		NON HAZ SOLID, NOS	—	—	—	9	DM	9	DM
c.						2.25	TONS	4,500	LBS

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	WATER		AT-0115511	For Disposal
b.	SOIL		AT-0114453	
c.				

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name | Signature | Mo./Day/Yr.

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Transporter or EPA ID No.: SCR000004358 | Unit No.: 4

Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [signature] Shipment Date: 02-16-05

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [signature] Delivery Date: 02-16-05

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: [signature] Receipt Date: 2-16-05

Discrepancies	Routing Codes	Handling Methods
a.	4443219	
b.		
c.		

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-0291187
Page of
Job No. D-0291187

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: ATC (Haymarket Corp)
US EPA ID No.

Street Address: 401 NORTH (INVERSE ST. WINNSBORO, SC
Mailing Address: 400 NE DR SUITE Q COLUMBIA, SC
Phone No.: (803) 735-0003
Contact: BOB BOKTOW

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON-HAZ SOLID, NOS	—	—	—	7	DM	7	DM 3,000 lbs
b.		NON-HAZ LIQUID, NOS	—	—	—	1	DM	1	DM
c.								1.8 TONS	

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	SOIL		AT-01 SOIL	Approved for Disposal
b.	WATER		AT-WATER	
c.				

GENERATORS CERTIFICATION

This is to certify that the above-described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name | Signature | Mo./Day/Yr.

TRANSPORTER INFORMATION

Transporter: JBR Environmental Services
Address: 210 Alice Street, Spartanburg, SC 29303
Transporter or EPA ID No.: SCR000004358
Unit No.: 4
Phone: 864-583-2717

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.
Signature: [signature] Shipment Date: 02-21-05

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.
Signature: [signature] Delivery Date: 02-21-05

FACILITY INFORMATION

Facility: JBR Environmental Services
Address: 210 Alice Street, Spartanburg, SC 29303
Facility or EPA ID No.: SCR000004358
Phone: 864-583-2717
Contact: Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.
Signature: [signature] Receipt Date: 3/21/05

	Discrepancies	Routing Codes	Handling Methods
a.		1.003217	
b.			
c.			

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

Please print or type
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NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 25306

2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address

United Exxon
Winnsboro, Sc

ATC & Associates
Bob Bolton
803-735-0003

4. Generator's Phone ( )

5. Transporter 1 Company Name: NU-WAY INDUSTRIAL SVC., INC.

6. US EPA ID Number: SCD987598331

A. Transporter's Phone: 803-957-9175

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

NUWAY ENVIRONMENTAL, INC.
1741 CALKS FERRY ROAD
LEXINGTON, SC 29073

10. US EPA ID Number

C. Facility's Phone: 803-957-9175

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-REGULATED, NON-HAZARDOUS MATERIAL (contaminated soil) profile#750	001	DM		P
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

EMERGENCY CONTACT: NUWAY ENVIRONMENTAL, INC. 803-957-9175
JOB #23466

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Johnny Horn — Signature: Johnny Horn — Month 03 Day 07 Year 05

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Johnny Horn — Signature: Johnny Horn — Month 03 Day 07 Year 05

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JW HALL — Signature: JW HALL — Month 03 Day 07 Year 05

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MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-0309249

Page 1 of 1

Job No. D-0309249

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: ATC Associates Inc.

US EPA ID No.

Street Address: United Exxon, Winnsboro, S.C.

Mailing Address: 400 Northeast Dr. Suite Q, Columbia, S.C. 29203

Phone No. 803-735-0003

Contact: Bob Bolton

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON HAZARDOUS LIQUID, NOS				1	Dm		450lbs
b.									
c.									.23 TON.

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	PURGE WATER		AT[illegible]453	Approved for Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Tim Monaghan

Signature: [signature]

Mo./Day/Yr. 3/9/05

TRANSPORTER INFORMATION

Transporter: ATC Associates

Address: 400 Northeast Drive Suite Q, Columbia, S.C. 29203

Transporter or EPA ID No.

Unit No.

Phone: 803-735-0003

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: [signature] Shipment Date 3/9/05

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: [signature] Delivery Date 3/9/05

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

Facility or EPA ID No. SCR000004358

Phone 864-583-2717

Contact Rex Russell

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: [signature] Receipt Date 3/9/05

	Discrepancies	Routing Codes	Handling Methods
a.		D-0309249	
b.			
c.			

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ATC ASSOCIATES INC.

3421 - M St. Vardell Lane
Charlotte, North Carolina 28217
704.529.3200
Fax 704.529.3272

RECEIVED
SEP 1 1 2003
UNDERGROUND STORAGE TANK PROGRAM

September 11, 2003

Ms. Susan Block, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Sampling Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Ms. Block:

Attached is the Groundwater Sampling Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 704-529-3200.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST PROGRAM
DOCKETING # 38 Tech

3421 - M St. Vardell Lane
Charlotte, North Carolina 28217
704.529.3200
Fax 704.529.3272

GROUNDWATER SAMPLING REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
3421-M St. Vardell Lane
Charlotte, North Carolina 28217
(704) 529-3200

Robert G. Bolton, Jr.
Project Manager

Frederick P. Lyke, P.G. #1055

September 11, 2003

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APPENDIX C	Laboratory Analytical Results and Chain-of-Custody
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1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater sampling activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater sampling activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated July 25, 2003. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Site Hydrogeology

During the August 20, 2003, gauging event, approximately 0.33 feet and 1.95 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2 and MW-11, respectively. In addition, a petroleum sheen was observed at Monitor Well MW-10 during the sampling process. Groundwater flow direction is toward the southeast with a hydraulic gradient of 0.0352 feet per foot, as measured between the 55.00 ft. and 40.00 ft. contour lines. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.2 Groundwater Sampling and Analysis

During the current assessment activities, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-3, MW-5 through MW-8, MW-10, MW-11, and DW-1. Samples were not obtained from Monitor Wells MW-2 and MW-11 due to the presence of LPH, and samples were not collected from Monitor Wells MW-4 and MW-9 since these wells were dry. In addition, a surface water sample (identified as CK-1) was collected from the headwaters of McCulley Creek. A new, disposable, polyethylene bailer was used for the collection of the water samples from the monitor wells. Each sample was obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes

were purged. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix B. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via UPS to Hygeia Laboratories, Inc. in Marietta, Georgia for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8260B; and ethylene dibromide (EDB) by EPA method 504.1.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at MW-3, MW-10, and CK-1. Toluene, ethylbenzene, xylenes, and naphthalene concentrations were detected at Monitor Well MW-10. MTBE concentrations were detected at Sample CK-1. It is probable that MTBE concentrations exist at Monitor Well MW-10 due to a high dilution factor which caused results to be less than detection limits. EDB concentrations were not detected at any sampled locations.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 µg/l at Samples MW-3, MW-10, and CK-1. Toluene, ethylbenzene, and naphthalene concentrations were detected greater than their respective RBSLs of 1000 µg/l, 700 µg/l, and 25 µg/l at Monitor Well MW-10. MTBE concentrations were detected greater than its RBSL of 40 µg/l at Sample CK-1; however, it is probable that MTBE concentrations may be greater than its RBSL at Monitor Wells MW-10 due to a high dilution factor at this location which caused results to be less than detection limits. Laboratory analytical results are summarized in Table II and Figure 4. Laboratory analytical results and chain-of-custody are presented in Appendix C.

4.0 CONCLUSIONS

- Groundwater flow at the site is in a southeastern direction with a hydraulic gradient of 0.0352 feet per foot, as measured between the 55.00 ft. and 40.00 ft. contour lines.
- Approximately 0.33 feet and 1.95 feet of liquid phase hydrocarbons were detected at Monitor Wells MW-2 and MW-9, respectively during the August 20, 2003, gauging event. In addition, a petroleum sheen was observed at Monitor Well MW-10 during the sampling activities. Prior to the August 20, 2003, gauging event, liquid phase hydrocarbons had not been detected at any monitor wells associated with the subject property.
- Total BTEX and MTBE concentrations have increased at Sample CK-1 since the December 2000, sampling event; however, total BTEX and MTBE concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. Naphthalene concentrations have decreased or remained below detection limits at all sampled locations since the previous sampling event of December 2000.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

SEI Environmental, Inc., January 24, 2001, *Groundwater Assessment Report – United Exxon,* Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-1	08/20/03	96.54	41.29	0	48	55.25
MW-2	08/20/03	98.17	49.75*	0.33	54	48.42
MW-3	08/20/03	95.81	42.81	0	45	53.00
MW-4	08/20/03	98.52	Dry	0	45	Not Applicable
MW-5	08/20/03	94.41	41.05	0	45	53.36
MW-6	08/20/03	103.40	54.54	0	55	48.86
MW-7	08/20/03	102.34	50.01	0	52	52.33
MW-8	08/20/03	97.63	41.20	0	45	56.43
MW-9	08/20/03	100.62	Dry	0	50	Not Applicable
MW-10	08/20/03	88.26	45.82	Sheen	50	42.44
MW-11	08/20/03	70.63	31.48*	1.95	38	39.15
DW-1	08/20/03	98.62	50.15	0	89	48.47

LPH = Liquid Phase Hydrocarbons; * Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II
Groundwater Analytical Results (8/20/03)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)
Free Product Thickness	NA	None	0.33'	None	NA	None	None	None	None
Benzene	5	<5	NS	**385**	NS	<5	<5	<5	<5
Toluene	1000	<5	NS	<25	NS	<5	<5	<5	<5
Ethylbenzene	700	<5	NS	<25	NS	<5	<5	<5	<5
Xylenes	10000	<5	NS	<25	NS	<5	<5	<5	<5
Total BTEX	NA	<20	NA	<460	NA	<20	<20	<20	<20
MTBE	40	<5	NS	<25	NS	<5	<5	<5	<5
Naphthalene	25	<5	NS	<25	NS	<5	<5	<5	<5
EDB	0.05	<0.02	NS	<0.02	NS	<0.02	<0.02	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE II (continued)
Groundwater Analytical Results (8/20/03)
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-9 (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	NA	None	1.95'	None	None
Benzene	5	NS	**8010**	NS	<5	**15**
Toluene	1000	NS	**8770**	NS	<5	<5
Ethylbenzene	700	NS	**2310**	NS	<5	<5
Xylenes	10000	NS	7200	NS	<5	<5
Total BTEX	NA	NA	26290	NA	<20	<30
MTBE	40	NS	**<250**	NS	<5	**295**
Naphthalene	25	NS	**774**	NS	<5	<5
EDB	0.05	NS	<0.02	NS	<0.02	<0.02

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

TABLE III
Historical Groundwater Analytical Results, dated December 2000
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None
Benzene	5	<1.0	**15900**	**434**	NS	<1.0	2.4	1.4	1.0
Toluene	1000	<1.0	**90700**	288	NS	<1.0	19.3	13.0	9.2
Ethylbenzene	700	<1.0	**4800**	182	NS	<1.0	2.6	3.1	1.9
Xylenes	10000	<1.0	**26700**	146	NS	<1.0	8.3	5.0	3.5
Total BTEX	NA	<4.0	138100	1050	NA	<4.0	32.6	22.5	15.6
MTBE	40	<5.0	**82000**	**89.9**	NS	<5.0	<5.0	<5.0	<5.0
Naphthalene	25	<5.0	**840**	**12.9**	NS	<5.0	<5.0	<5.0	<5.0
EDB	0.05	<1.0	**127**	<1.0	NS	<1.0	<1.0	<1.0	<1.0

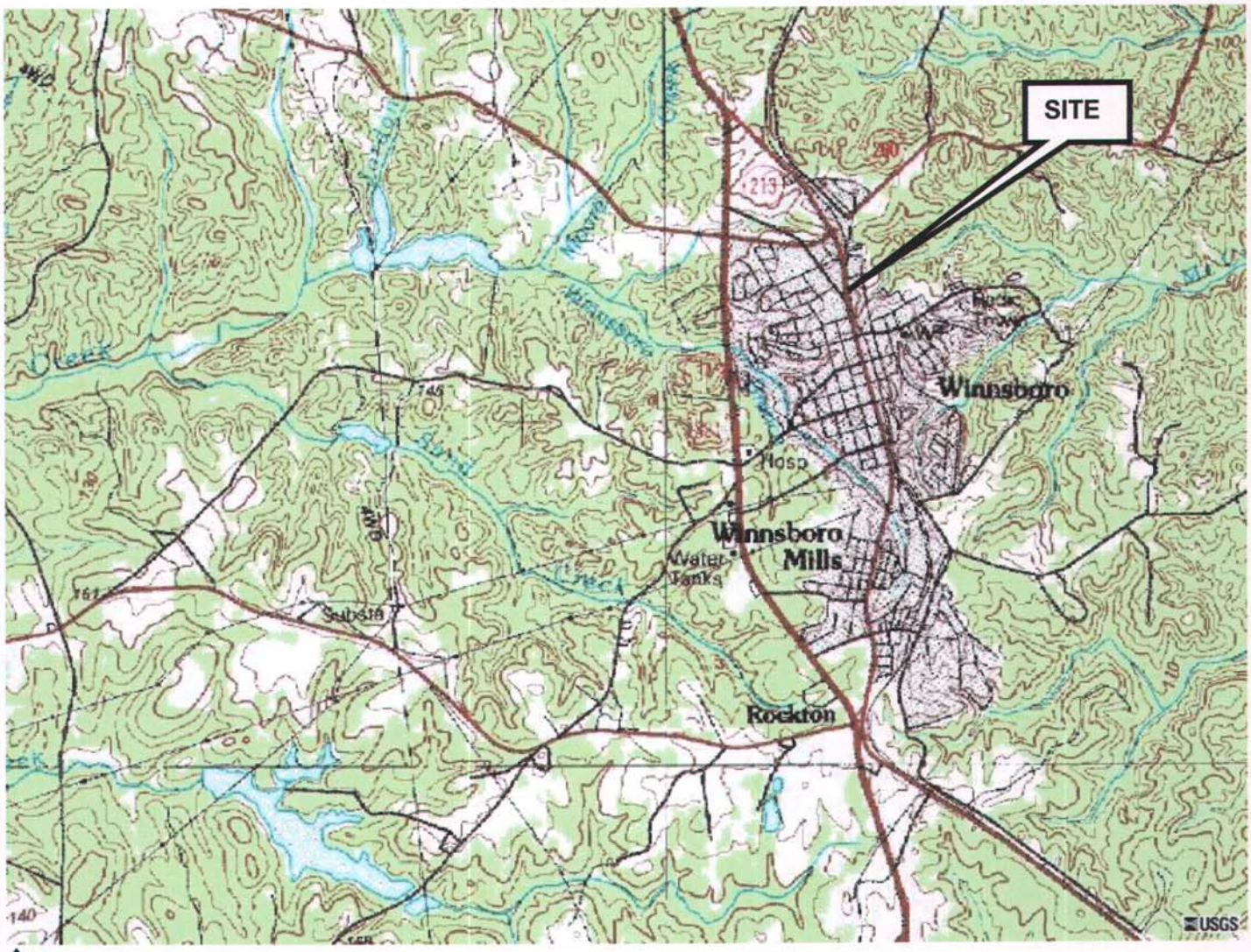
Bold concentrations represent those greater than the respective RBSL; NA = Not Applicable; NS = Not Sampled

TABLE III (continued)
Historical Groundwater Analytical Results, dated December 2000
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-9 (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None
Benzene	5	NS	**8950**	**8000**	1.0	<1.0
Toluene	1000	NS	**49000**	**11800**	9.9	<1.0
Ethylbenzene	700	NS	**8550**	**3470**	<1.0	<1.0
Xylenes	10000	NS	**49000**	**16400**	3.1	<1.0
Total BTEX	NA	NA	115500	39670	<15.0	<4.0
MTBE	40	NS	22.0	31.0	<5.0	1.2
Naphthalene	25	NS	**3300**	**1440**	<5.0	<5.0
EDB	0.05	NS	<500	<100	<1.0	<1.0

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

FIGURES



↑N

Figure 1 Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

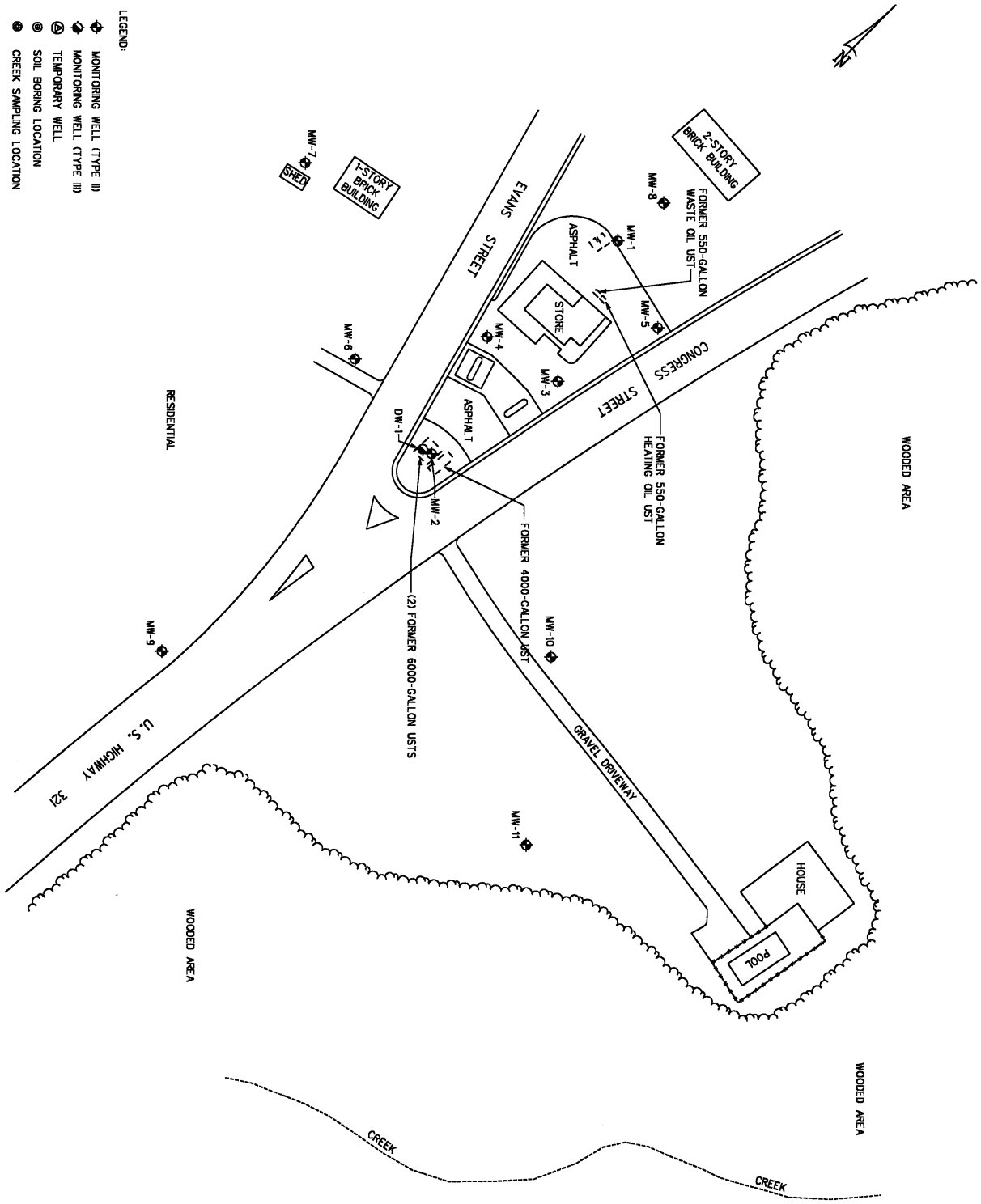
ATC ASSOCIATES INC.

3421-M St. Vardell Lane P (704) 529-3200
Charlotte, North Carolina F (704) 529-3272

ATC PROJECT No: 89.25384.0449

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 2,000'



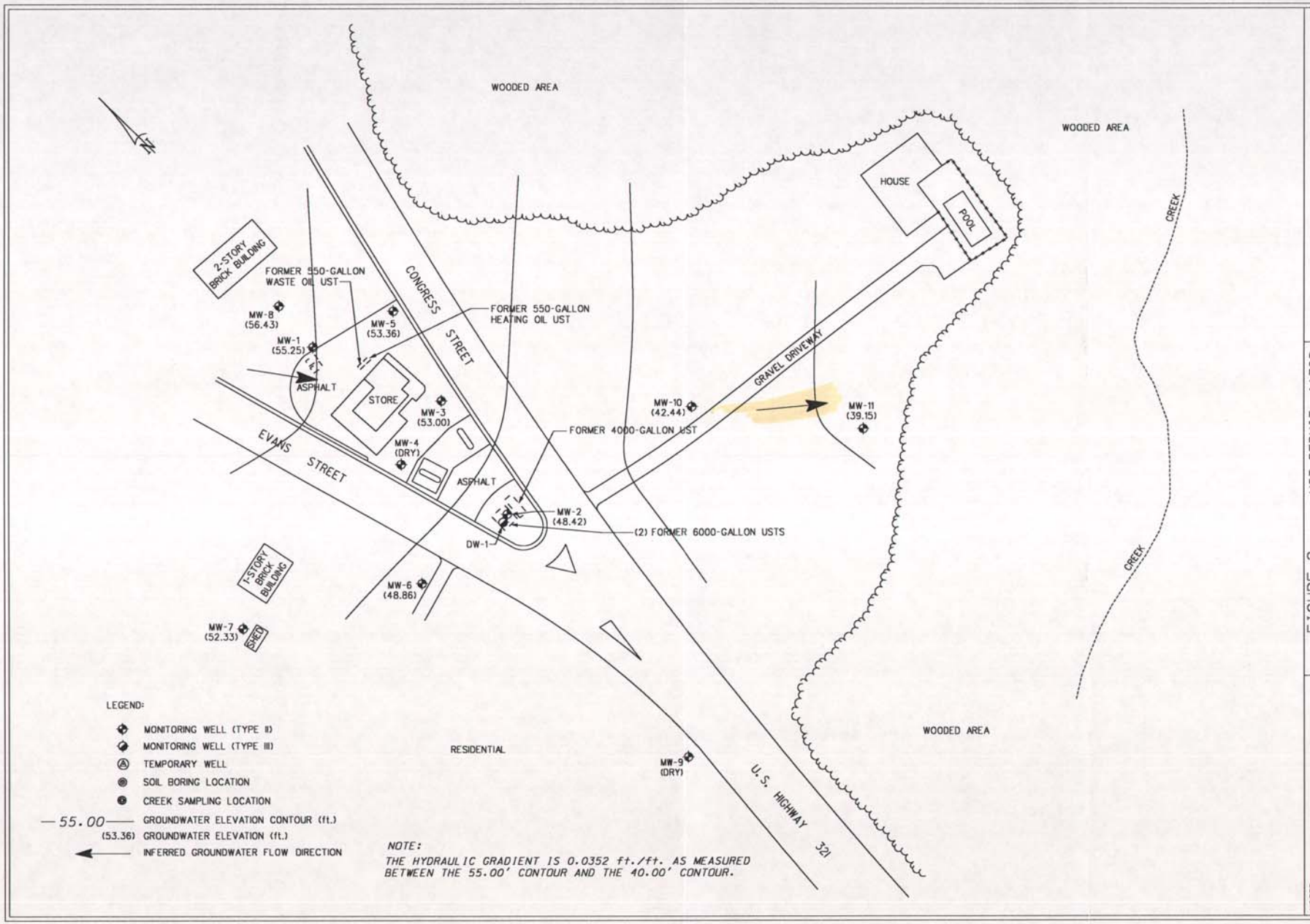
NOTES:

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	09-09-2003	89.25384.0449

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com



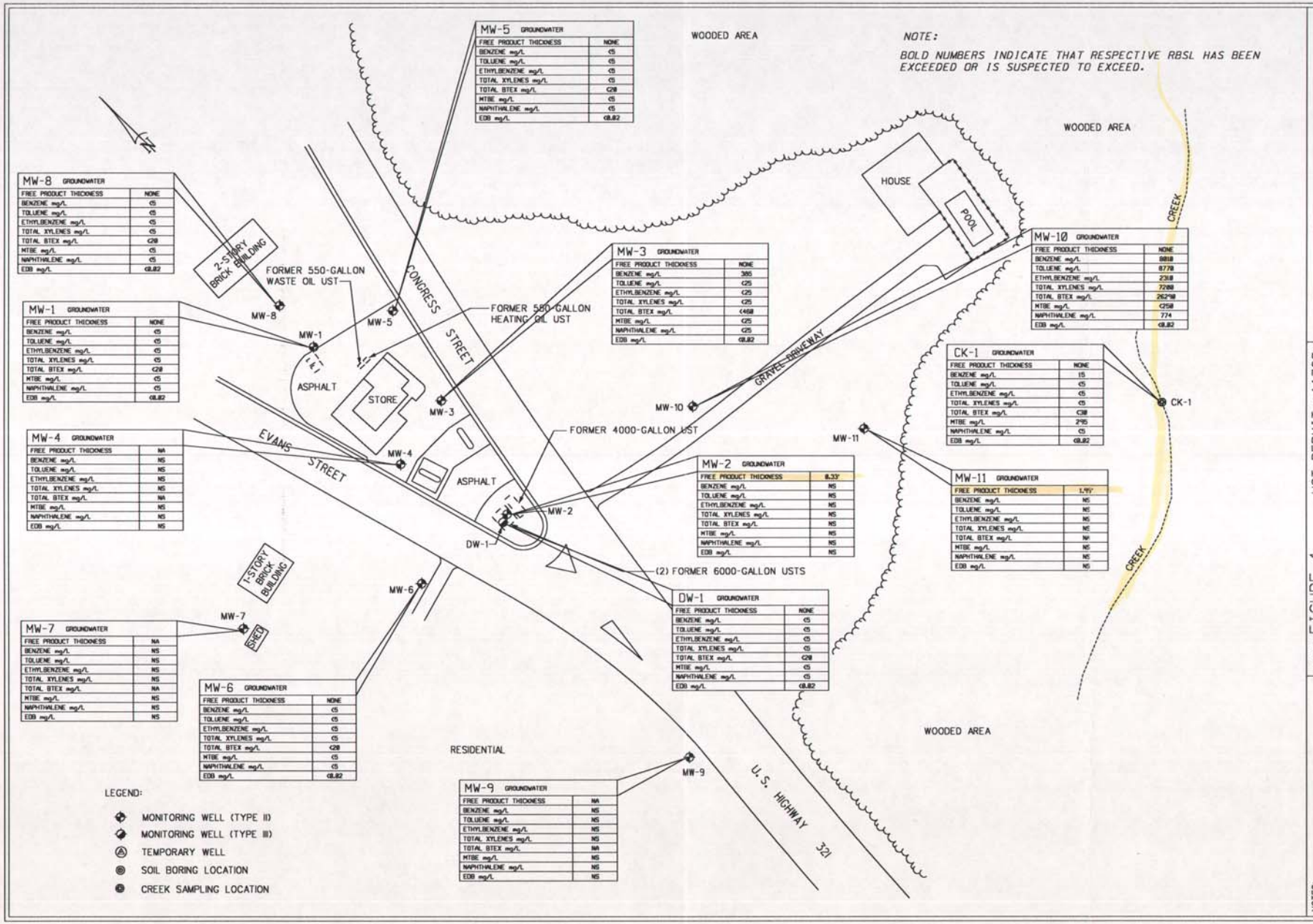
ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	09-09-2003	89.25384.0449

NOTES:

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com



MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	<5
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<20
MTBE mg/L	<5
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	<5
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<20
MTBE mg/L	<5
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	<5
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<20
MTBE mg/L	<5
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

MW-4 GROUNDWATER	
FREE PRODUCT THICKNESS	NA
BENZENE mg/L	NS
TOLUENE mg/L	NS
ETHYLBENZENE mg/L	NS
TOTAL XYLENES mg/L	NS
TOTAL BTEX mg/L	NA
MTBE mg/L	NS
NAPHTHALENE mg/L	NS
EDB mg/L	NS

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS	NA
BENZENE mg/L	NS
TOLUENE mg/L	NS
ETHYLBENZENE mg/L	NS
TOTAL XYLENES mg/L	NS
TOTAL BTEX mg/L	NA
MTBE mg/L	NS
NAPHTHALENE mg/L	NS
EDB mg/L	NS

MW-6 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	<5
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<20
MTBE mg/L	<5
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

MW-9 GROUNDWATER	
FREE PRODUCT THICKNESS	NA
BENZENE mg/L	NS
TOLUENE mg/L	NS
ETHYLBENZENE mg/L	NS
TOTAL XYLENES mg/L	NS
TOTAL BTEX mg/L	NA
MTBE mg/L	NS
NAPHTHALENE mg/L	NS
EDB mg/L	NS

MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	385
TOLUENE mg/L	<25
ETHYLBENZENE mg/L	<25
TOTAL XYLENES mg/L	<25
TOTAL BTEX mg/L	<468
MTBE mg/L	<25
NAPHTHALENE mg/L	<25
EDB mg/L	<0.02

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	8810
TOLUENE mg/L	8770
ETHYLBENZENE mg/L	2310
TOTAL XYLENES mg/L	7280
TOTAL BTEX mg/L	26290
MTBE mg/L	<258
NAPHTHALENE mg/L	774
EDB mg/L	<0.02

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	15
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<38
MTBE mg/L	295
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS	0.33'
BENZENE mg/L	NS
TOLUENE mg/L	NS
ETHYLBENZENE mg/L	NS
TOTAL XYLENES mg/L	NS
TOTAL BTEX mg/L	NS
MTBE mg/L	NS
NAPHTHALENE mg/L	NS
EDB mg/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS	1.95'
BENZENE mg/L	NS
TOLUENE mg/L	NS
ETHYLBENZENE mg/L	NS
TOTAL XYLENES mg/L	NS
TOTAL BTEX mg/L	NA
MTBE mg/L	NS
NAPHTHALENE mg/L	NS
EDB mg/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS	NONE
BENZENE mg/L	<5
TOLUENE mg/L	<5
ETHYLBENZENE mg/L	<5
TOTAL XYLENES mg/L	<5
TOTAL BTEX mg/L	<20
MTBE mg/L	<5
NAPHTHALENE mg/L	<5
EDB mg/L	<0.02

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

TITLE FIGURE 4 UST PERMIT #11760
GROUNDWATER CONCENTRATION MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	09-09-2003	89.25384.0449

NOTES:

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com

APPENDIX A

SCDHEC Correspondence

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

UNDERGROUND STORAGE TANK PROGRAM
BUREAU OF LAND AND WASTE MANAGEMENT

Phone (803) 896-6240 Fax (803) 896-6245

JUL 25 2003

RECEIVED
JUL 30 2003
ATC ASSOCIATES, INC
RALEIGH, NC

MR BILLY KEENAN
KEENAN OIL CO INC
PO BOX 3218
COLUMBIA SC 29230-3218

RECEIVED
07-31-03

Re: United Exxon, 401 N. Congress St., Winnsboro, SC
UST Permit #11760, CA #19077 & 19079
Releases 2 & 3 Reported August 1, 1997
Technical File Reviewed June 2, 2003
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates. The Program has reviewed the referenced technical file and determined the next necessary scope of work to be a comprehensive groundwater sampling event to obtain current data.

Cost Agreements #19077 and 19079 have been approved in the amounts shown on the enclosed approved cost agreements to sample all monitoring wells associated with the release. Samples should be analyzed for BTEX + Naph. + MTBE by EPA method 8260B and EDB by EPA method 8011.

Please have ATC Associates submit groundwater sampling results to the Program in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice is due within 60 days from the date of this letter. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference **UST Permit #11760 and CA #'s 19077 and 19079.** If there are any questions concerning this project, please contact me at (803) 896-6323 or (800) 826-5435 (within South Carolina only).

Sincerely,

Susan Block

Susan Block, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division

enc: Approved Cost Agreements (ACAs)

cc: ATC Associates, 2725 E. Millbrook Rd., Ste. 121, Raleigh, NC 27604 (w/ copy of ACAs)
Technical file (w/ copy of ACAs)
Read file (no enc.)

SCDHEC/UST/060303

APPENDIX B

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanier + Bob Bolton
General Weather Conditions: sunny hot 90+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0	✓	standard	✓

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
Dlanier	8-20-03 17:00		

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # 1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 41.29 feet
Total Well Depth (TWD) 47.83 feet
Length of the water column (LWC=TWD-DGW) 6.63 feet
1 casing volume (CV=LWC X C)= 6.63 X 1.63 = 10.8 gals
3 casing volume (3 X CV)= 3.24 gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)		not enough water to						
Specific Conductivity (µmhos/cm)		Collect field parameter						
Water Temperature (°C)		sampled.						
Dissolved Oxygen								
PID readings, if required								

Remarks: odor detected sample time: 13:30

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanier + Bob Bolton
General Weather Conditions: Sunny, hot, 90+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** 2
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: 0.33 feet
Depth to Free Product (DFP) 49.68 feet
Depth to Ground Water (DGW) 50.01 feet
Total Well Depth (TWD) _____ feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)		product detected - not sampled						
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanin & Bob Bolton
General Weather Conditions:

Ambient Air Temperature: °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0	✓	standard	✓

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
[illegible]	8-20-03 / 17:00		

Facility Name: United Exxon
Site ID#:
Monitoring Well # 3
Water Supply Well **Public** **Private**

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 42.81 feet
Total Well Depth (TWD) 44.91 feet
Length of the water column (LWC=TWD-DGW) 2.1 feet
1 casing volume (CV=LWC X C)= 2.1 X 0.163 = 0.34 gals
3 casing volume (3 X CV)= 1.02 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.02 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: Strong odor - no field parameters collected; Sample time 12:40

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8·20·03
Field Personnel: Diana Lanier + Bob Bolton
General Weather Conditions: sunny, hot, 90° +

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** ~~3~~ 4
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) _____ feet
Total Well Depth (TWD) 45 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)		DRY						
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03

Field Personnel: Diana Lanier + Bob Bolton

General Weather Conditions: sunny hot 90° +

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0	✓	standard	✓

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
[illegible]	8-20-03 17		

Facility Name: United Exxon

Site ID#: _____ **Monitoring Well #** 5

Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 41.05 feet
Total Well Depth (TWD) 45.00 feet
Length of the water column (LWC=TWD-DGW) 3.95 feet
1 casing volume (CV=LWC X C)= 3.95 X 0.163 = 0.64 gals
3 casing volume (3 X CV)= 1.93 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 1.5 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	~~Inital~~	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)		Initial	1st vol					
pH (s.u.)		5.51	5.50	well	going	dry		
Specific Conductivity (µmhos/cm)		211.1	106.0	therefore	sampled			
Water Temperature (°C)		24.2	21.6					
Dissolved Oxygen								
PID readings, if required								

Remarks: Sample time: 13:00

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanient Bob Bolton
General Weather Conditions: sunny, hot, 90+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

D Lenin / 8-20-03/17 — Relinquished by — Date/Time
Received by — Date/Time

Facility Name: ~~Shaffer~~ United Exxon
Site ID#: _____ **Monitoring Well #** 6
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 54.54 feet
Total Well Depth (TWD) 54.87 feet
Length of the water column (LWC=TWD-DGW) 0.28 feet
1 casing volume (CV=LWC X C)= 0.28 X 0.163 = 0.048 gals
3 casing volume (3 X CV)= 0.136 gals (standard purge volume)

Total Volume of Water Purged Before Sampling — gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)			not enough water					
Specific Conductivity (µmhos/cm)			to collect field parameters					
Water Temperature (°C)			therefore sampled well					
Dissolved Oxygen								
PID readings, if required								

Remarks: Sample time: 12:22

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03

Field Personnel: Diana Lanier + Bob Bolton

General Weather Conditions: sunny hot 90°+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0	✓	standard	✓

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
[illegible]	8-20-03/1700		

Facility Name: United Exxon

Site ID#: _____ **Monitoring Well #** 7

Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 50.01 feet
Total Well Depth (TWD) 51.78 feet
Length of the water column (LWC=TWD-DGW) 1.77 feet
1 casing volume (CV=LWC X C)= 1.77 X 0.163 = 0.29 gals
3 casing volume (3 X CV)= 0.86 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 0.5 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)	5.16	Well going dry						
Specific Conductivity (µmhos/cm)	107.7	therefore sampled						
Water Temperature (°C)	24.0							
Dissolved Oxygen								
PID readings, if required								

Remarks: no odor; Sample time: 14:15

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8 20 03

Field Personnel: Drana Lanier + Bob Bolton

General Weather Conditions: Sunny, hot, 90° +

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0	✓	standard	✓

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
[illegible]	8-20-03 / 17:00		

Facility Name: United Exxon

Site ID#: _____ **Monitoring Well #** 8

Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 41.20 feet
Total Well Depth (TWD) 44.28 feet
Length of the water column (LWC=TWD-DGW) 3.58 feet
1 casing volume (CV=LWC X C)= 3.58 X 0.163 = 0.58 gals
3 casing volume (3 X CV)= 1.75 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 0.5 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)	5.38	5.49	Well going dry therefore Sampled					
Specific Conductivity (µmhos/cm)	1677	—						
Water Temperature (°C)	~~5.49~~ 24.3	29.3						
Dissolved Oxygen								
PID readings, if required								

Remarks: Sample time: 14:00

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanier + Bob Bolton
General Weather Conditions: Sunny, hot, 90°F

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** 9
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) _____ feet
Total Well Depth (TWD) 50 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (μmhos/cm)		DRY						
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanin + Bob Bolton
General Weather Conditions: sunny, hot, 90°+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
[illegible]	8-20-03/17		

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** 10
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: Sheen feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 45.82 feet
Total Well Depth (TWD) 50.32 feet
Length of the water column (LWC=TWD-DGW) 4.5 feet
1 casing volume (CV=LWC X C)= 4.5 X 0.163 = 0.73 gals
3 casing volume (3 X CV)= 2.2 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 0.73 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)		odor detected, sheen						
Specific Conductivity (µmhos/cm)		therefore field parameters						
Water Temperature (°C)		not collected, 3 purge volumes						
Dissolved Oxygen		removed then sampled						
PID readings, if required								

Remarks: strong odor, sheen detected; sample time: 13:30

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanier
General Weather Conditions: Sunny, hot, 90°+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** 11
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: 1.95 feet
Depth to Free Product (DFP) ~~33.00~~ 31.05 feet
Depth to Ground Water (DGW) ~~31.05~~ 33.00 feet
Total Well Depth (TWD) _____ feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)		Product detected in well ∴						
Specific Conductivity (μmhos/cm)		not sampled.						
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 8-20-03
Field Personnel: Diana Lanier + Bob Boton
General Weather Conditions: sunny, hot, 90°+

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 ✓

Conductivity Meter
serial no. _____
standard _____
standard _____
standard ✓

Chain of Custody

[signature] 8-20-03/17
Relinquished by Date/Time

_____
Received by Date/Time

Facility Name: United Exxon
Site ID#: _____ **Monitoring Well #** DMW-1
Water Supply Well **Public** _____ **Private** _____

Monitoring Well Diameter (D): 0.163 feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: na feet
Depth to Free Product (DFP) na feet
Depth to Ground Water (DGW) 50.15 feet
Total Well Depth (TWD) 89.31 feet
Length of the water column (LWC=TWD-DGW) 38.98 feet
1 casing volume (CV=LWC X C)= 38.98 X 0.163 = 6.35 gals
3 casing volume (3 X CV)= 19.06 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)	6.00	6.34	6.36	6.42				
Specific Conductivity (µmhos/cm)	120.6	120.2	120	118.6				
Water Temperature (°C)	22.5	21.7	20.9	21.3				
Dissolved Oxygen								
PID readings, if required								

Remarks: Sample time: 11:45

APPENDIX C

Laboratory Analytical Results and Chain-of-Custody

HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

Lab Project No. M0308179 Report Date: 9/05/03

Client Name: ATC Associates - CHARLOTTE, NC
Contact: Bob Bolton
Address: 3421-M, St. Vardell Lane
Charlotte, NC 28217
Project Name: UNITED EXXON
Project ID: 89.25384.0449
Receipt Date: 8/21/2003

Case Narrative

1. The sample holding times were met for all analyses. All samples were preserved in accordance with the Federal Register 40 CFR, Part 136 unless otherwise noted.
2. Where applicable, results & reporting limits are based on wet weight.
3. The temperature of the sample cooler as received by the laboratory was 4°C.
4. Hygeia Laboratories, Inc., certifies that the following analytical results meet all the requirements of the National Environmental Laboratory Accreditation Conference (NELAC).

Respectively Submitted:

Reviewed By:

Hygeia Laboratories, Inc.

Sample Identification

Lab Sample #	Client Sample ID	Sample Supply	Collected
M0308179-01	MW- 1	Water	8/20/03
M0308179-02	MW- 3	Water	8/20/03
M0308179-03	MW- 5	Water	8/20/03
M0308179-04	MW- 6	Water	8/20/03
M0308179-05	MW- 7	Water	8/20/03
M0308179-06	MW- 8	Water	8/20/03
M0308179-07	MW- 10	Water	8/20/03
M0308179-08	DMW- 1	Water	8/20/03
M0308179-09	CK- 1	Water	8/20/03

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**

Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-01** Client ID: **MW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	100%	70 - 130
1,2-DICHLOROETHANE-d4	114%	70 - 130
TOLUENE-d8	94%	70 - 130
4-BROMOFLUOROBENZENE	97%	70 - 130
1,2-DICHLOROBENZENE-d4	111%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-01** Client ID: **MW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**

Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-02** Client ID: **MW- 3**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	25	
Benzene	71-43-2	385	25	
Toluene	108-88-3	BRL	25	
Ethylbenzene	100-41-4	BRL	25	
m&p-Xylene	108-38-3	BRL	25	
o-Xylene	95-47-6	BRL	25	
Total Xylenes	N/A	BRL	25	
Naphthalene	91-20-3	BRL	25	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	96%	70 - 130
1,2-DICHLOROETHANE-d4	104%	70 - 130
TOLUENE-d8	102%	70 - 130
4-BROMOFLUOROBENZENE	106%	70 - 130
1,2-DICHLOROBENZENE-d4	99%	70 - 130

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EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-02** Client ID: **MW- 3**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**

Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-03** Client ID: **MW- 5**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	99%	70 - 130
1,2-DICHLOROETHANE-d4	105%	70 - 130
TOLUENE-d8	90%	70 - 130
4-BROMOFLUOROBENZENE	104%	70 - 130
1,2-DICHLOROBENZENE-d4	107%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-03** Client ID: **MW- 5**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

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Volatile Organics Units: ug/L (ppb) Method #: EPA_8260B(BTEX)
Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH
Lab Sample #: **M0308179-04** Client ID: **MW- 6**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	101%	70 - 130
1,2-DICHLOROETHANE-d4	106%	70 - 130
TOLUENE-d8	92%	70 - 130
4-BROMOFLUOROBENZENE	114%	70 - 130
1,2-DICHLOROBENZENE-d4	114%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: EPA_504.1
Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG
Lab Sample #: **M0308179-04** Client ID: **MW- 6**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: EPA_8260B(BTEX)
Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH
Lab Sample #: **M0308179-05** Client ID: **MW- 7**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	105%	70 - 130
1,2-DICHLOROETHANE-d4	112%	70 - 130
TOLUENE-d8	91%	70 - 130
4-BROMOFLUOROBENZENE	109%	70 - 130
1,2-DICHLOROBENZENE-d4	114%	70 - 130

HEGLIA

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-05** Client ID: **MW- 7**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**

Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-06** Client ID: **MW- 8**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	**Percent Recoveries**	**Report Limit**
DIBROMOFLUOROMETHANE	103%	70 - 130
1,2-DICHLOROETHANE-d4	109%	70 - 130
TOLUENE-d8	92%	70 - 130
4-BROMOFLUOROBENZENE	106%	70 - 130
1,2-DICHLOROBENZENE-d4	111%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-06** Client ID: **MW- 8**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

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Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-07** Client ID: **MW- 10**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	250	
Benzene	71-43-2	8,010	250	
Toluene	108-88-3	8,770	250	
Ethylbenzene	100-41-4	2,310	250	
m&p-Xylene	108-38-3	5,800	250	
o-Xylene	95-47-6	1,400	250	
Total Xylenes	N/A	7,200	250	
Naphthalene	91-20-3	774	250	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	95%	70 - 130
1,2-DICHLOROETHANE-d4	99%	70 - 130
TOLUENE-d8	98%	70 - 130
4-BROMOFLUOROBENZENE	101%	70 - 130
1,2-DICHLOROBENZENE-d4	108%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**
Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-07** Client ID: **MW- 10**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**
Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-08** Client ID: **DMW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	BRL	5	
Benzene	71-43-2	BRL	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	110%	70 - 130
1,2-DICHLOROETHANE-d4	106%	70 - 130
TOLUENE-d8	91%	70 - 130
4-BROMOFLUOROBENZENE	106%	70 - 130
1,2-DICHLOROBENZENE-d4	111%	70 - 130

HEGETA

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-08** Client ID: **DMW- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

Volatile Organics Units: ug/L (ppb) Method #: **EPA_8260B(BTEX)**

Matrix: Water Analysis Date: 8/22/2003 Prep Date: 8/24/2003 Analyst: KDH

Lab Sample #: **M0308179-09** Client ID: **CK- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
Methyl-tert-butyl ether (MTBE)	1634-04-4	295	25	
Benzene	71-43-2	15	5	
Toluene	108-88-3	BRL	5	
Ethylbenzene	100-41-4	BRL	5	
m&p-Xylene	108-38-3	BRL	5	
o-Xylene	95-47-6	BRL	5	
Total Xylenes	N/A	BRL	5	
Naphthalene	91-20-3	BRL	5	

SURROGATE:	Percent Recoveries	Report Limit
DIBROMOFLUOROMETHANE	103%	70 - 130
1,2-DICHLOROETHANE-d4	108%	70 - 130
TOLUENE-d8	101%	70 - 130
4-BROMOFLUOROBENZENE	109%	70 - 130
1,2-DICHLOROBENZENE-d4	113%	70 - 130

EDB/DBCP Units: ug/L(ppb) Method #: **EPA_504.1**

Matrix: Water Analysis Date: 9/3/2003 Prep Date: 9/3/2003 Analyst: BG

Lab Sample #: **M0308179-09** Client ID: **CK- 1**

Analyte(s)	CAS #	Result	Report Limit	Flag Code
1,2-Dibromoethane (EDB)	106-93-4	BRL	0.02	

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NOTES:

- Results relate only to the samples tested as received (See Chain-of-Custody).
- BRL = "Below Reporting Limit"
- RL = "Reporting Limit"
- E = "Estimated Result"
- Dates are presented in the format "month/day/year"

Certifications

Alabama - Lab ID 40970; Arkansas - No. 03-044-0; Connecticut - No. PH 0208; Georgia - No. 804; Indiana - Lab ID C-GA-01
Kentucky - Lab ID 90053; UST - No. 0005; Maryland - No. 293; Massachussetts No. M - GA040; North Carolina - No. 409; Oklahoma - No. 9945
Pennsylvania - No. 68-668; Rhode Island - License No. 263; South Carolina - No. 98012001; Tennessee - Lab ID 02827; Virginia - Lab ID 00024

Accreditations

NELAC - State of Florida DOH, No. E87257
NELAC - Louisiana DEQ, No. 02084

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HYGEIA

HYGEIA LABORATORIES, INC.

1300 Williams Drive, Suite A - Marietta, Georgia 30066-6299 - (770) 514-6933, FAX (770) 514-6966

Cooler Receipt Form

Client: ATC Associates - CHARLOTTE, NC **Order #:** M0308179
Client Code: 9390789
Project: UNITED EXXON
Cooler ID: 1

A. Preliminary Examination Phase: **Date cooler opened:** 8/21/2003
Cooler opened by: AY **Signature:** [signature]

1. **Was airbill Attached?** Yes **Airbill #:** 1ZF3851V2210002970 **Carrier Name:** UPS
2. **Custody Seals?** N/A **How many?** 0 **Location:** **Seal Name:**
3. **Seals intact?** N/A
4. **Screened for radiation?** N/A
5. **COC Attached?** Yes **Properly Completed?** Yes **Signed by Lab employee?** Yes
6. **Project Identification from custody paper:** UNITED EXXON
7. **Preservative:** Yes **Temperature:** 4 C

Have designated person initial here to acknowledge receipt of cooler: AY **Date:** 8/21/03
Comments:

B. Log-In Phase: **Samples Log-in Date:** 8/21/2003 **Log-in By:** AY **Signature:** [signature]

1. **Packing Type:** Bubble Wrap
2. **Were samples in separate bags?** Yes
3. **Were containers intact?** Yes **Labels agree with COC?** Yes
4. **Number of bottles received:** 32 **Number of samples received:** 8
5. **Correct containers used?** Yes **Correct preservatives added?** N/A
6. **Sufficient sample volume?** Yes
7. **Bubbles in VOA samples?** No
8. **Was Project manager called and status discussed?** N/A
9. **Was anyone called?** No **Who was called?** _____ **By whom?** _____ **Date:** _____

Comments:

Page____of____

CHAIN OF CUSTODY RECORD

PROJ. NO. 8925384044 9

PROJECT NAME: UNITED EXXON

CLIENT:

PROJECT LOCATION (STATE): SC

LAB PROJ. NO.: M0308179

SAMPLERS: (Signature) D Lanier + Bob Bolton

SAMPLING METHOD:

LABORATORY ANALYSIS: 4°C; R-7; R-1; 8260 (BTEX, MTBE + NAPH); SOIL (EDB)

SAMPLE I.D. NO.	DATE	TIME	COMPOSITE	GRAB	WATER	SOIL		FILTERED	ACIDIFIED	ICED		NUMBER OF CONTAINERS	LAB I.D. NUMBER	8260 (BTEX, MTBE + NAPH)	SOIL (EDB)	SAMPLE LOCATION / REMARKS
MW-1	8-20-03	13:30			✓				✓	✓		4	1AB	✓	✓	
~~MW-2~~																
MW-3	8-20-03	12:40			✓				✓	✓		4	2AB	✓	✓	
MW-5	↓	13:00			✓				✓	✓		4	3AB	✓	✓	
MW-6	↓	12:22			✓				✓	✓		4	4AB	✓	✓	
MW-7	↓	14:15			✓				✓	✓		4	5AB	✓	✓	
MW-8	↓	14:00			✓				✓	✓		4	6AB	✓	✓	
MW-10	↓	13:30			✓				✓	✓		4	7AB	✓	✓	
~~DMW-1~~	↓	11:45			✓				✓	✓		4	8AB	✓	✓	
CK-1	↓	12:30							✓	✓		4	9AB	✓	✓	

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	8-20-03 17:00				

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Project Manager / Phone #:
		[signature]	8/21/03 9:30	BOB BOLTON

MW-10 IS HOT - NEEDS TO BE DILUTED!

HYGEIA LABORATORIES, INC.
1300 Williams Drive, Suite A
Marietta, Georgia 30066-6299
(770) 514-6933 FAX (770) 514-6966

APPENDIX D

Disposal Manifest

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Doc. No.

2. Page 1 of 1

3. Generator's Name and Mailing Address
United Exxon
Winnsboro SC

4. Generator's Phone ( )

ATC + Assoc
Charlotte NC
ATTN Bob Bolton

5. Transporter 1 Company Name
ATC + Assoc.

6. US EPA ID Number

A. Transporter's Phone

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
Nu-Way Environmental Inc
1741 Calks Ferry Rd
Lexington SC 29073

10. US EPA ID Number

C. Facility's Phone

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. non-hazardous, non-regulated material (petroleum contaminated groundwater)	001	DM	150	P
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above
NIS JOB J23466

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Emergency Contact - Chris Raldey - 803-957-9175

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name | Signature | Month | Day | Year

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: BOB BOLTON - ATC | Signature: Bob Bolton | Month 08 | Day 20 | Year 03

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month | Day | Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Christopher M. Lock | Signature: Chrpl M. Lock | Month 08 | Day 20 | Year 03

GENERATOR — TRANSPORTER — FACILITY

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

TRANSPORTER #1

SSTLs t 1000 yrs

UST Permit # 11760
Site Name: United Exxon

SSTLs in mg/L			RBSLs (mg/L):	0.005	1.000	0.700	10.000	0.040	0.025	0.00005	
MW #	x (ft)	y (ft)	z (ft)	Benzene SSTL	Toluene SSTL	Ethylbenzene SSTL	Xylenes SSTL	MtBE SSTL	Naphthalene SSTL	EDB SSTL	
MW-2 (Creek	750	0	0	0.016	14.966	12.786	1461.746	>99999	158.012	>99999	
MW-16	600	0	0	0.013	8.840	7.258	547.366	>99999	27.856	60662.15931	
MW-13	465	0	0	0.010	5.433	4.303	223.192	>99999	5.766	550.22730	
MW-23	165	0	0	0.006	1.743	1.275	28.776	9.744	0.165	0.01507	
MW-25	65	0	0	0.005	1.216	0.866	14.810	0.340	0.051	0.00046	
			λ (yr^{-1}):	0.012	0.035	0.035	0.035	0.693	0.035	0.693	
			R:	1.246	1.405	1.535	2.944	1.033	5.695	1.085	
			Pure Substance Solubility:	1750	526	169	175	5110	31	4321	
			Effective Solubility:	44.39	26.54	3.7	21.68	173	6.7	1.9	

Domenico Model

UST # 11760
Site Name: United Exxon
Modeler: Sriram
Date: 2/29/2008

Groundwater Flow Parameters

K	170	ft/yr
dh/dx	0.0329	
θ	0.35	dec. %
v_x	15.98	ft/yr

Transport Parameters

x_{max}	800	ft
y_{max}	500	ft
z	0	ft
Source Width	70	ft
Source Thickness	25	ft
Plume Length	200	ft
α_x	11.02804	ft
α_y	1.102804	ft
α_z	1.00E-99	ft

Simulation Time

t_{sim}	25	yrs

Aquifer Characteristics

ρ_d	1.53	kg/L
f_{oc}	0.000696	

Source Area CoC Data

CoC	C_{source} (mg/L)	K_{oc} (L/kg)
Benzene	14	81
Toluene	48	133
Ethylbenzene	5.9	176
Xylenes	33	639
Naphthalene	10	1543
MtBE	43	11
EDB	0.054	28
1,2-DCA		17.5

Retarded Velocity (ft/yr)

CoC	R	v_R
Benzene	1.246	12.82
Toluene	1.405	11.38
Ethylbenzene	1.535	10.41
Xylenes	2.944	5.43
Naphthalene	5.695	2.81
MtBE	1.033	15.46
EDB	1.085	14.73
1,2-DCA	1.053	15.17

Simulation Points for Breakthrough Curves

	Mw-22	
x	500	ft
y	0	ft
z	0	ft

	MW-11	
x	360	ft
y	0	ft
z	0	ft

$$C(x,y,z,t)=\left(\frac{C_0}{8}\right)\exp\left[\left(\frac{x}{2\alpha_x}\right)\left(1-\sqrt{1+\frac{4\lambda\alpha_x}{v}}\right)\right]erfc\left[\frac{x-vt\sqrt{1+\frac{4\lambda\alpha_x}{v}}}{2\sqrt{\alpha_x vt}}\right]\left\{erf\left[\frac{y+\frac{Y}{2}}{2\sqrt{\alpha_y x}}\right]-erf\left[\frac{y-\frac{Y}{2}}{2\sqrt{\alpha_y x}}\right]\right\}\left\{erf\left[\frac{z+Z}{2\sqrt{\alpha_z x}}\right]-erf\left[\frac{z-Z}{2\sqrt{\alpha_z x}}\right]\right\}$$

Benzene Calibration

Spatial Calibration Data (centerline)

x	C_{obs} (mg/L)	C_{sim} (mg/L)
0	14	14
80		12.904
160		11.111
240	8.1	8.366
320	9.9	4.550
400	8.7	1.433
480	4.5	0.224
560	3.1	0.016
640		0.001
720	0.4	0.000
800	0.001	0.000

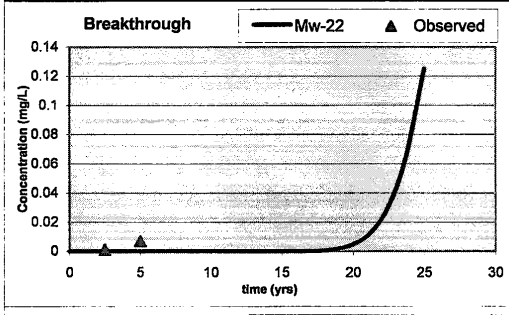
Temporal Calibration Data

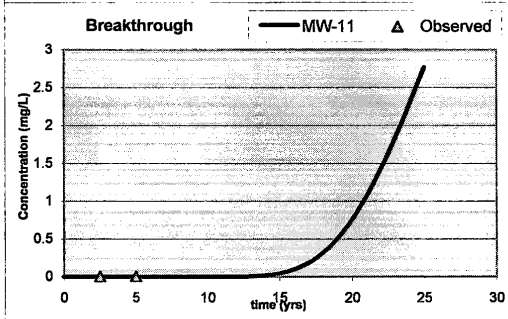
	Mw-22		MW-11	
t (yrs)	C_{obs} (mg/L)	C_{sim} (mg/L)	C_{obs} (mg/L)	C_{sim} (mg/L)
0		0		0
2.5	0.001	0.000	0.001	0.000
5	0.007	0.000	0.002	0.000
7.5		0.000		0.000
10		0.000		0.000
12.5		0.000		0.004
15		0.000		0.047
17.5		0.000		0.248
20		0.005		0.758
22.5		0.031		1.632
25		0.125		2.765

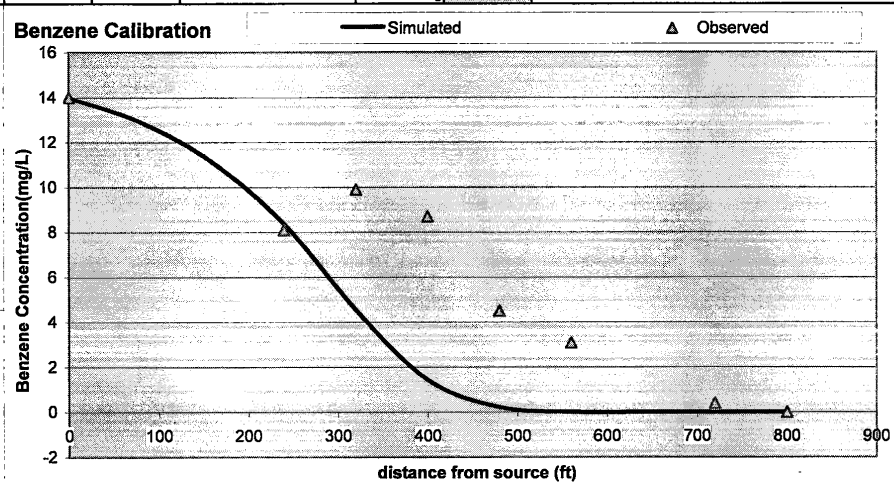
Site ID 11760
Site Name United Exxon

Model Calibration Parameters

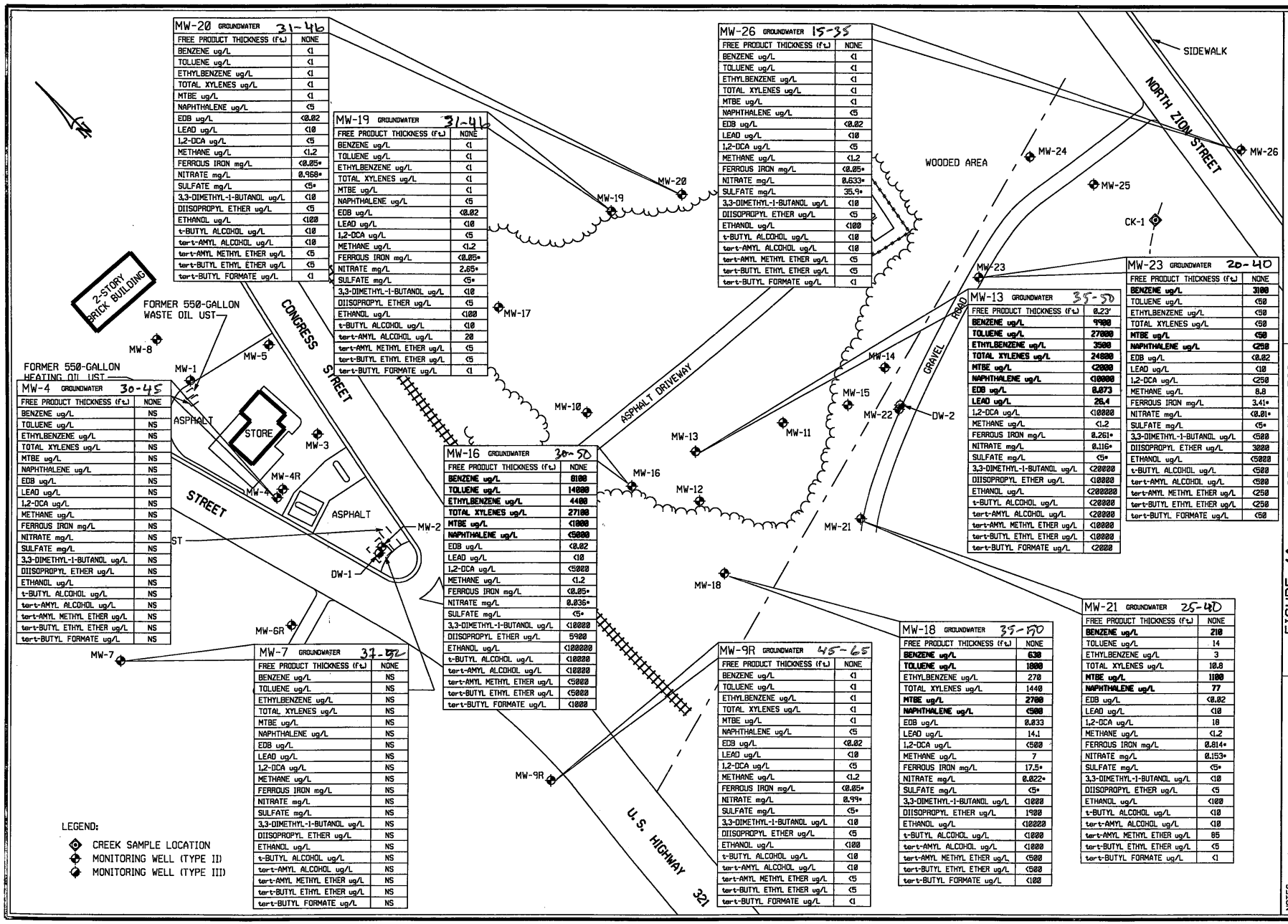
$t_{1/2}$	60	yrs	λ	0.01155	yr^{-1}
v_x	15.98	ft/yr			
R	1.246				
v_R	12.820	ft/yr	C_{source}	14	mg/L
L_p	200	ft			
α_x	11.028039	ft	t_{sim}	25	yrs
α_y	1.1028039	ft			
α_z	1E-99	ft			







Source	80	160	240	320	400	480	560	640	720	800
500	0	0	0	0	0	0	0	0	0	0
250	0	0	0	0	4.2701E-13	6.094E-12	1.12E-11	4.06E-12	3.68E-13	9.64E-15
0	12.904403	11.1109563	8.36599907	4.55026224	1.43261196	0.2242466	0.01604	0.000501	6.67E-06	3.72E-08
250	0	0	0	0	4.2701E-13	6.094E-12	1.12E-11	4.06E-12	3.68E-13	9.64E-15
500	0	0	0	0	0	0	0	0	0	0



MW-20 GROUNDWATER 31-46	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.968*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-19 GROUNDWATER 31-46	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.65*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	20
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-26 GROUNDWATER 15-35	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.633*
SULFATE mg/L	35.9*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-13 GROUNDWATER 35-50	
FREE PRODUCT THICKNESS (ft.)	0.23'
BENZENE ug/L	**9900**
TOLUENE ug/L	**27000**
ETHYLBENZENE ug/L	**3500**
TOTAL XYLENES ug/L	**24000**
MTBE ug/L	**<2000**
NAPHTHALENE ug/L	**<10000**
EDB ug/L	**0.073**
LEAD ug/L	**26.4**
1,2-DCA ug/L	<10000
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.261*
NITRATE mg/L	0.116*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<20000
DIISOPROPYL ETHER ug/L	<10000
ETHANOL ug/L	<200000
t-BUTYL ALCOHOL ug/L	<20000
tert-AMYL ALCOHOL ug/L	<20000
tert-AMYL METHYL ETHER ug/L	<10000
tert-BUTYL ETHYL ETHER ug/L	<10000
tert-BUTYL FORMATE ug/L	<2000

MW-23 GROUNDWATER 20-40	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**3100**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**<250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	8.8
FERROUS IRON mg/L	3.41*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	3000
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

MW-4 GROUNDWATER 30-45	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-16 GROUNDWATER 30-50	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**8100**
TOLUENE ug/L	**14000**
ETHYLBENZENE ug/L	**4400**
TOTAL XYLENES ug/L	**27100**
MTBE ug/L	**<1000**
NAPHTHALENE ug/L	**<5000**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5000
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.036*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10000
DIISOPROPYL ETHER ug/L	5900
ETHANOL ug/L	<100000
t-BUTYL ALCOHOL ug/L	<10000
tert-AMYL ALCOHOL ug/L	<10000
tert-AMYL METHYL ETHER ug/L	<5000
tert-BUTYL ETHYL ETHER ug/L	<5000
tert-BUTYL FORMATE ug/L	<1000

MW-7 GROUNDWATER 37-52	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-9R GROUNDWATER 45-65	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.99*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-18 GROUNDWATER 35-50	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**630**
TOLUENE ug/L	**1800**
ETHYLBENZENE ug/L	270
TOTAL XYLENES ug/L	1440
MTBE ug/L	**2700**
NAPHTHALENE ug/L	**<500**
EDB ug/L	0.033
LEAD ug/L	14.1
1,2-DCA ug/L	<500
METHANE ug/L	7
FERROUS IRON mg/L	17.5*
NITRATE mg/L	0.022*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<1000
DIISOPROPYL ETHER ug/L	1900
ETHANOL ug/L	<10000
t-BUTYL ALCOHOL ug/L	<1000
tert-AMYL ALCOHOL ug/L	<1000
tert-AMYL METHYL ETHER ug/L	<500
tert-BUTYL ETHYL ETHER ug/L	<500
tert-BUTYL FORMATE ug/L	<100

MW-21 GROUNDWATER 25-40	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**210**
TOLUENE ug/L	14
ETHYLBENZENE ug/L	3
TOTAL XYLENES ug/L	10.8
MTBE ug/L	**1100**
NAPHTHALENE ug/L	**77**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	18
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.814*
NITRATE mg/L	0.153*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	85
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

LEGEND:

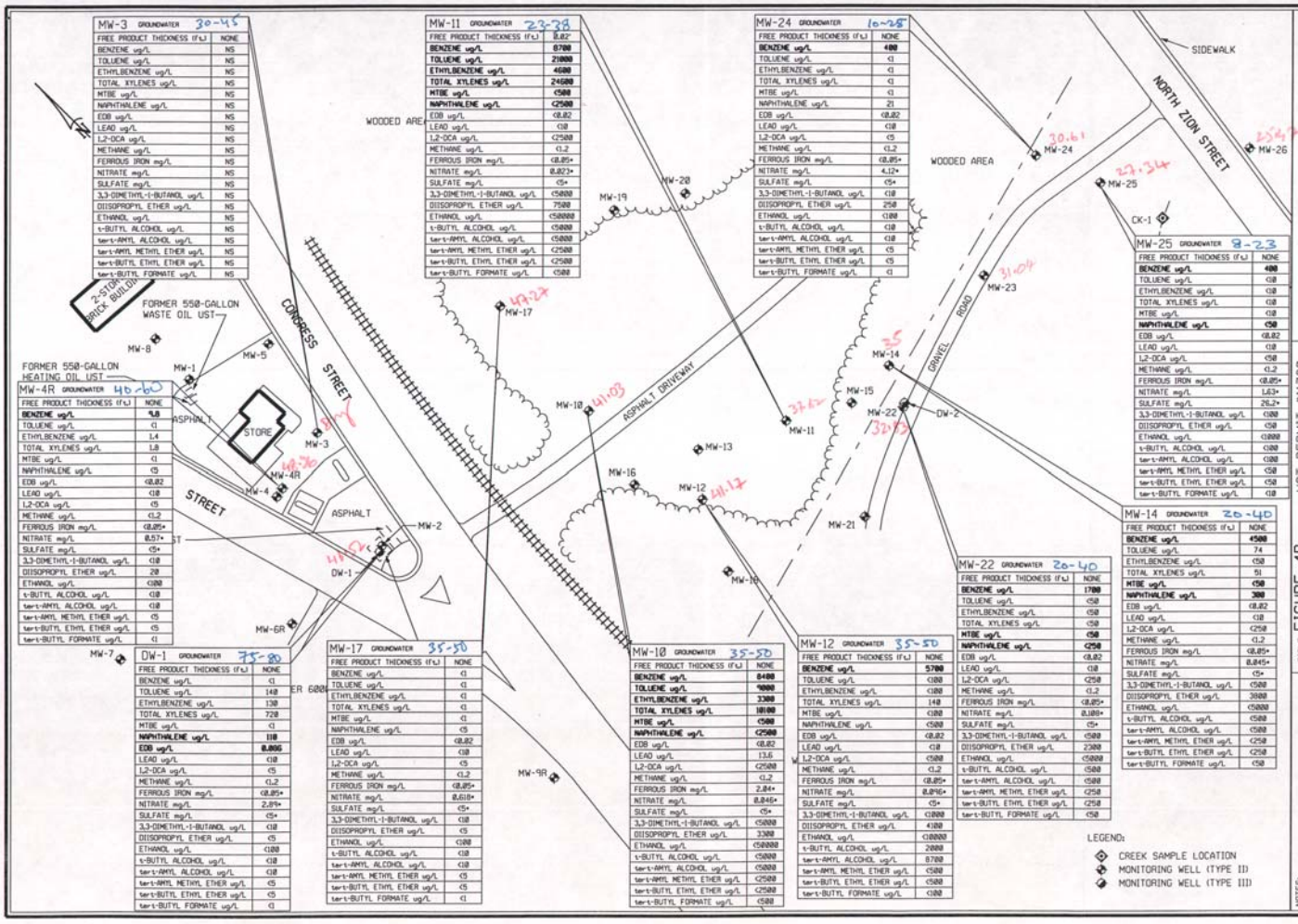
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 4A
UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012



MW-3 GROUNDWATER 30-45	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-4R GROUNDWATER 40-60	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**48**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	1.4
TOTAL XYLENES ug/L	1.8
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	8.57*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	20
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

DW-1 GROUNDWATER 75-80	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	140
ETHYLBENZENE ug/L	130
TOTAL XYLENES ug/L	720
MTBE ug/L	<1
NAPHTHALENE ug/L	**110**
EDB ug/L	**0.005**
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.89*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-11 GROUNDWATER 23-38	
FREE PRODUCT THICKNESS (ft.)	0.02
BENZENE ug/L	**8700**
TOLUENE ug/L	**21000**
ETHYLBENZENE ug/L	**4600**
TOTAL XYLENES ug/L	**24600**
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.023*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	7500
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	<5000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-24 GROUNDWATER 10-25	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**400**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	21
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	4.12*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	250
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-25 GROUNDWATER 8-23	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**400**
TOLUENE ug/L	<10
ETHYLBENZENE ug/L	<10
TOTAL XYLENES ug/L	<10
MTBE ug/L	<10
NAPHTHALENE ug/L	**<50**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<50
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	1.63*
SULFATE mg/L	26.2*
3,3-DIMETHYL-1-BUTANOL ug/L	<100
DIISOPROPYL ETHER ug/L	<50
ETHANOL ug/L	<1000
t-BUTYL ALCOHOL ug/L	<100
tert-AMYL ALCOHOL ug/L	<100
tert-AMYL METHYL ETHER ug/L	<50
tert-BUTYL ETHYL ETHER ug/L	<50
tert-BUTYL FORMATE ug/L	<10

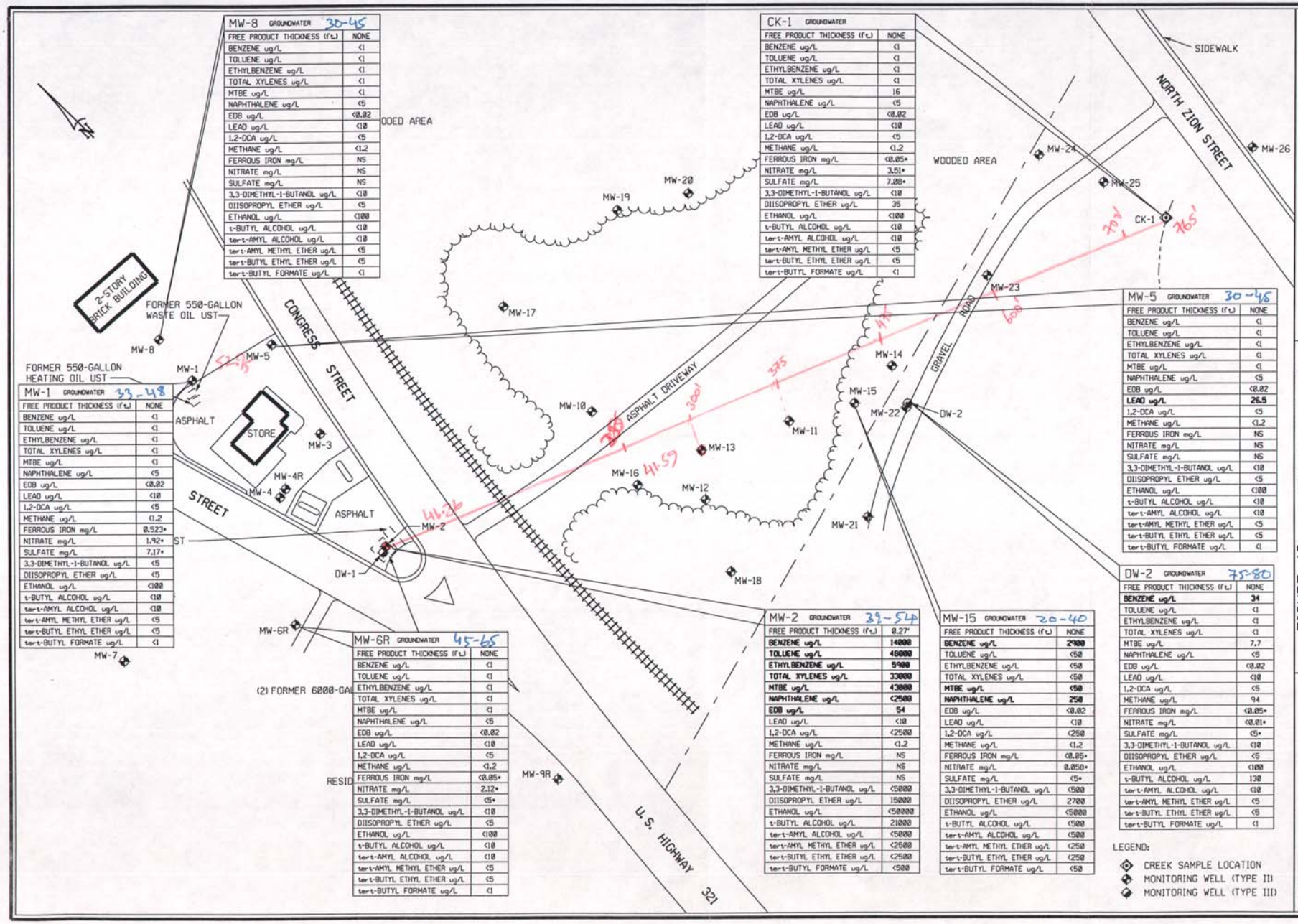
MW-14 GROUNDWATER 20-40	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**4500**
TOLUENE ug/L	74
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	51
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**300**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.085*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	3000
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

MW-22 GROUNDWATER 20-40	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**1700**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**<250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.108*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	2300
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

MW-17 GROUNDWATER 35-50	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.618*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-10 GROUNDWATER 35-50	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**8400**
TOLUENE ug/L	**9000**
ETHYLBENZENE ug/L	**3300**
TOTAL XYLENES ug/L	**18100**
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	<0.02
LEAD ug/L	13.6
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	2.84*
NITRATE mg/L	0.046*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	3300
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	<5000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-12 GROUNDWATER 35-50	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**5700**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	140
MTBE ug/L	<100
NAPHTHALENE ug/L	<500
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<500
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.046*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<1000
DIISOPROPYL ETHER ug/L	4100
ETHANOL ug/L	<10000
t-BUTYL ALCOHOL ug/L	2000
tert-AMYL ALCOHOL ug/L	8700
tert-AMYL METHYL ETHER ug/L	<500
tert-BUTYL ETHYL ETHER ug/L	<500
tert-BUTYL FORMATE ug/L	<100



MW-8 GROUNDWATER 30-45	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	16
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	3.51*
SULFATE mg/L	7.08*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	35
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-5 GROUNDWATER 30-45	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**26.5**
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-1 GROUNDWATER 33-48	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.523*
NITRATE mg/L	1.92*
SULFATE mg/L	7.17*
3,3-DIMETHYL-1-BUTANOL ug/L	<5
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

DW-2 GROUNDWATER 75-80	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**34**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	7.7
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	94
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	130
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-6R GROUNDWATER 45-65	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.12*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-2 GROUNDWATER 39-54	
FREE PRODUCT THICKNESS (ft.)	0.27'
BENZENE ug/L	**14000**
TOLUENE ug/L	**48000**
ETHYLBENZENE ug/L	**5900**
TOTAL XYLENES ug/L	**33000**
MTBE ug/L	**43000**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	**54**
LEAD ug/L	<10
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	15000
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	21000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-15 GROUNDWATER 20-40	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**2900**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.058*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	2700
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 4C UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012

SEI
Environmental, Inc.

3021 McNaughton Drive
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Columbia, SC 29223
800.377.2826
803.788.2535
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34 38674
81 08875

March 25, 1999

Ms. Kristen Hein, Hydrogeologist
SCDHEC
Bureau of UST Management
2600 Bull Street
Columbia, South Carolina 29201

RECEIVED
MAR 2 6 1999
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

Re: Rapid Assessment Report
United Exxon
Fairfield County
Site ID# 11760

Dear Ms. Hein:

Attached please find the Rapid Assessment Report for the above referenced site. If you have any questions or need additional information, please contact me at 803-788-2535.

Sincerely,
SEI Environmental, Inc.

Robert G. Bolton, Jr.
Project Manager

Attachment

DOCKETING# 39

cc: Mr. Billy Keenan, Keenan Energy Company

SEI
Environmental, Inc.

RAPID ASSESSMENT REPORT

United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
Site ID # 11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

SEI Environmental, Inc.
3021 McNaughton Drive, Suite 9
Columbia, South Carolina
(803) 788-2535

Robert G. Bolton, Jr.
Project Manager

Frederick P. Lyke, P.G.#1055

March 25, 1999

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1.0 INTRODUCTION

Keenan Energy Company, Inc. contracted SEI Environmental, Inc. (SEI) to provide soil and groundwater assessment services for the United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. The scope of work was required by South Carolina Department of Health and Environmental Control (SCDHEC) in correspondence to Keenan Energy Company, Inc. dated May 1, 1998. A site location map is presented as Figure 1.

1.1 Regional Geology

Winnsboro is located in the Piedmont Geologic Province of South Carolina. Specifically, the Charlotte Belt, which is distinguished by numerous intrusions ranging from granitic to gabbroic composition, is situated beneath the subject property. Medium to high grade metamorphic rocks are a common feature of this belt. The most common rock types found in this belt are gneiss, schist, and amphibolite. The stratified rocks of this belt have not undergone much metamorphosism as have rocks to the north. These rocks occur as meta-volcanics, sandy phyllites, argillite, and slate (Fairey, 1977).

1.2 Regional Hydrogeology

The Piedmont Geologic Province is underlain by granitic and slate-like rocks that contain numerous fractures. These rocks are mantled by a layer of soil and weathered rock, commonly known as saprolite. Groundwater is commonly found in the lower part of the soil zone where the saprolite is common and in the rock fractures located in the upper portions of the bedrock. Specifically, groundwater in this section of the Piedmont can occur in either the clayey, sandy soils, and weathered rock (saprolite) or the bedrock that is located beneath the above mentioned strata.

2.0 METHODOLOGY

2.1 Previous Assessment Activities

On June 25-26, 1997, SEI removed six (6) underground storage tanks (UST) from the United Exxon facility. Soil analytical data from the removal of these USTs indicated that a petroleum release had occurred beneath the gasoline USTs and the diesel dispenser. As a result of these releases, SCDHEC requested that an Initial Ground Water Assessment (IGWA) be completed in the former gasoline UST basin and beneath the former diesel dispenser. On February 27, 1998, SEI installed one (1) Type II groundwater monitor well (identified as MW-1) at the former diesel dispenser location, and SEI conducted a soil boring in the former gasoline UST basin. ~~A monitor well was not installed in the former gasoline UST basin since groundwater was not encountered within 50 feet of the ground surface at this location~~. Laboratory analytical results from both of these locations indicated that additional assessment work was necessary.

During the current Rapid Assessment activities, SEI performed eight (8) soil borings, installed ten (10) additional Type II groundwater monitor wells (identified as MW-2 through MW-11), and installed one (1) Type III groundwater monitor well (identified as DW-1).

2.2 Soil Boring Activities

On May 20, 1998, SEI personnel mobilized to the site to perform four (4) soil borings (identified as GP-1 through GP-4) utilizing a Geoprobe™ direct push sampler. The approximate depths for these four borings ranged from 10 to 25 feet below ground surface (bgs). On August 13, 1998, SEI personnel mobilized to the site to perform one (1) soil boring (identified as SB-4) to an approximate depth of 52 feet bgs utilizing a CME 45 truck mounted drill rig. On October 29, 1998, SEI personnel mobilized to the site to perform three (3) soil borings (identified as SB-1 through SB-3) to an approximate depth of 25 feet bgs utilizing a CME 45 truck mounted drill rig. The soil borings were necessary for background analysis, horizontal delineation, and/or field screening points for the proper placement of one (1) Type II monitor well, identified as MW-7.

Specifically, Boring GP-1 (identified as the background sample) and Boring SB-2 were installed west of Monitor Well MW-1. Boring GP-2 was installed near Monitor Well MW-5, and Boring GP-3 was installed northeast of Monitor Well MW-4. Boring GP-4 was installed adjacent to the product piping, and Boring SB-1 was installed near the property boundary northeast of Monitor Well MW-2. Boring SB-3 was installed in the former diesel UST basin, and Boring SB-4 was installed west of Monitor Well MW-4 on adjacent property. Boring SB-4 was used as a field screening point for the correct placement of Monitor Well MW-7. Soil lithologic descriptions are presented in Appendix A. Soil boring locations are identified in Figure 2.

2.3 Monitor Well Installation

~~Environmental Construction Services installed~~ two (2) Type II groundwater monitor wells (identified as MW-2 and MW-3) on May 12, 1998, utilizing a truck mounted CME 45 drill rig. Monitor Well MW-2 was installed at an approximate depth of 54 feet bgs in the former gasoline UST basin, and Monitor Well MW-3 was installed at an approximate depth of 45 feet bgs near the property's boundary north-northeast of Monitor Well MW-2. Soil samples were obtained for laboratory analysis during the installation of these monitor wells.

Environmental Construction Services installed two (2) additional Type II groundwater monitor wells (identified as MW-4 and MW-5) and one (1) Type III groundwater monitor well (identified as DW-1) on July 9-10, 1998, utilizing a truck mounted CME 75 drill rig. Monitor Well MW-4 was installed at an approximate depth of 45 feet bgs near the property's boundary north of Monitor Well MW-2. Monitor Well MW-5 was installed at an approximate depth of 45 feet bgs near the property's boundary east-southeast Monitor Well MW-1. Monitor Well DW-1 was installed at an approximate depth of 89 feet bgs adjacent to Monitor Well MW-2. Soil samples were obtained for laboratory analysis during the installation of Monitor Wells MW-4 and DW-1.

Environmental Construction Services installed three (3) additional Type II groundwater monitor wells (identified as MW-6, MW-7, and MW-8) on August 13-14, 1998, utilizing a truck mounted CME 45 drill rig. Monitor Well MW-6 was installed at an approximate depth of 55 feet bgs in a

lateral direction from Monitor Well MW-2, and Monitor Well MW-7 was installed at an approximate depth of 52 feet bgs in a lateral direction from Monitor Well MW-1. Monitor Well MW-8 was installed at an approximate depth of 45 feet bgs in the up-gradient direction from Monitor Well MW-1. This set of monitor wells was installed on property located adjacent to the subject property. Soil samples were obtained for laboratory analysis during the installation of Monitor Wells MW-6 and MW-8.

Environmental Construction Services installed three (3) additional Type II groundwater monitor wells (identified as MW-9, MW-10, and MW-11) on October 28-29, 1998, utilizing a truck mounted CME 45 drill rig. Monitor Well MW-9 was installed at an approximate depth of 50 feet bgs in a lateral direction from Monitor Well MW-2. Monitor Wells MW-10 and MW-11 were installed at approximate depths of 50 feet bgs and 38 feet bgs, respectively in the down-gradient direction from the subject property. This set of monitor wells was not installed on the subject property. Soil samples were obtained for laboratory analysis during the installation of the monitor wells. Monitor well locations are depicted in Figure 2.

The monitor wells are constructed of 2-inch diameter, Schedule 40, flush threaded PVC well casing with factory slotted (0.01-inch opening) Schedule 40 PVC well screen attached. Each Type II monitor well is constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2.0 to 7.0 feet above the top of the screen and followed by approximately 2.0 to 4.0 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. All monitor wells were completed with a water tight, locking PVC cap, protected by a flush finished concrete pad with a 9-inch diameter steel, traffic rated manhole with a bolt down cover. Monitor Well DW-1 was similarly constructed with the exception of a six-inch diameter outer casing set at a depth of 80 feet bgs. Air rotary techniques were used to drill through the outer casing and complete the well (from approximately 80 to 89 feet bgs) the following day. Following installations, each monitor well was developed with a clean, centrifugal pump to remove any fine materials that

may impede the flow of groundwater into the well. Monitor well construction details and lithologic descriptions are presented in Appendix A.

2.4 Site Geology

Visual analysis of subsurface soils collected from field screening activities and monitor well installations conducted as part of this assessment ~~indicated the soil types ranging from soft clay to stiff clay with traces of sand and silt. Granite was encountered at an approximate depth of 80 feet bgs during the installation of Monitor Well DW-1. The maximum depth of the current investigation was approximately 89 feet bgs.~~ A geologic transect map is provided as Figure 4, and geologic cross sections are provided as Figures 5 and 6.

2.5 Site Hydrogeology

~~During the November 2, 1998, gauging event, liquid phase hydrocarbons (LPH) were not detected in any monitor wells.~~ Groundwater flow direction is toward ~~the east and southeast as determined by groundwater measurements obtained November 2, 1998~~. The hydraulic gradient, as averaged between Monitor Well MW-1 and the 41.00 feet contour line and between Monitor Well MW-2 and the 41.00 feet contour line is 0.0329 feet per foot. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 7.

2.6 Soil Organic Vapor Measurements

Soil organic vapor concentration measurements were performed on soil samples obtained during sampling events with a Foxboro™ Model 128 OVA-FID. The OVA-FID was compared with a known standard (i.e. methane @ 95ppm) each day before it was used. Results of this comparison are documented in Table II. Each soil sample was placed in a new, resealable, plastic bag and allowed to volatilize for a minimum of fifteen minutes. The OVA-FID probe was then inserted into the headspace of the bag, and the highest organic vapor reading observed was recorded for each sample. Organic vapor concentrations are recorded on the lithologic logs.

2.7 Soil Sampling and Analysis

During the soil sampling activities of May 20, 1998, and October 29, 1998, samples from Borings GP-1, GP-2, GP-3, SB-1, SB-2, and SB-3 were collected for analysis. During monitor well installations, soil samples were collected at MW-3, MW-4, MW-6, MW-8, MW-9, MW-10, and MW-11. The soil sample that exhibited the highest OVA reading from each of these locations, with the exception of GP-1, was collected for laboratory analysis. If no concentrations or identical concentrations were detected, the deepest sampling interval within the vadose zone was submitted for laboratory analysis. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. Soil samples were placed in laboratory supplied containers, placed on ice, and delivered to TestAmerica, Inc. (formerly Hydrologic, Inc.) in Lexington, South Carolina for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling/analysis process. The soil sample from Boring GP-1 was analyzed for total organic carbon (TOC) by EPA method 415.1. The remaining soil samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), and naphthalene by EPA method 8021B; polynuclear aromatic hydrocarbons (PAH) by EPA methods 8100 or 8270; and 8 RCRA metals by EPA methods 3050 and 7471. In addition to the above analyses, Boring SB-2 was also analyzed for total petroleum hydrocarbons (TPH) by EPA method 3550, and a soil sample collected during the installation of Monitor Well DW-1 was delivered to Schnabel Engineering in West Columbia, South Carolina for grain size analysis.

2.8 Groundwater Sampling and Analysis

During the Rapid Assessment activities, SEI personnel obtained groundwater samples from Monitor Wells MW-1 through MW-11 and DW-1. In addition, SEI personnel obtained a surface water sample (identified as CK-1) from the headwaters of McCulley Creek. A new, disposable, polyethylene bailer was used for the collection of each groundwater sample. Each monitor well was sampled after temperature and pH values had equilibrated. If a strong petroleum odor was observed in any monitor well, three well volumes were removed before the groundwater sample was collected. The purge water was containerized and placed in drums for proper disposal.

Dissolved oxygen and specific conductance values were also obtained during the sampling process. Field measurements obtained during the sampling process are presented in Appendix A. New, disposable, latex gloves were used to maintain sample integrity during the sampling process. Groundwater samples were placed in laboratory supplied containers, placed on ice, and delivered to TestAmerica, Inc. in Lexington, South Carolina for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. All groundwater samples and the surface water sample were analyzed for BTEX, methyl-tert-butyl-ether (MTBE), and naphthalene by EPA method 8021B or 8260; PAH by EPA method 504.1 or 8260; and 8 RCRA metals by EPA methods 200.7, 206.2, 245.1, and 270.2.

3.0 LABORATORY ANALYTICAL RESULTS

3.1 Soil Results

Soil laboratory analytical results are included in this report from the IGWA activities for the sample collected at the location of Monitor Well MW-2. Soil laboratory analytical results for samples associated with this Rapid Assessment detected the presence of benzene and naphthalene concentrations at Monitor Well MW-2. Analytical results detected the presence of toluene at Soil Borings SB-1, SB-2, SB-3, and Monitor Wells MW-2 and MW-11. Ethylbenzene and xylenes concentrations were detected at Soil Borings SB-1, SB-2, SB-3, and Monitor Well MW-2. Laboratory results detected the presence of TOC concentrations at Boring GP-1, and TPH concentrations were detected at Monitor Well MW-2. Arsenic concentrations were detected at Samples SB-1, SB-2, SB-3, MW-4, and MW-9. Barium and lead concentrations were detected at all soil sample locations. Cadmium concentrations were detected in Samples GP-2, GP-3, MW-3, MW-6, and MW-8. Chromium concentrations were detected in Samples GP-2, GP-3, SB-1, SB-2, SB-3, MW-3, and MW-6 through MW-11. Mercury concentrations were detected in Samples GP-2, GP-3, and MW-3. Selenium concentrations were detected in Samples SB-1, SB-2, SB-3, MW-4, MW-9, MW-10, MW-11, and DW-1. Silver concentrations were not detected in any soil samples.

BTEX and naphthalene concentrations were detected greater than their respective risk based screening levels (RBSL) of 5 µg/kg, 1622 µg/kg, 1260 µg/kg, 42471 µg/kg, and 210 µg/kg at Monitor Well MW-2. The RBSLs are those for sandy soil where the depth to groundwater is less than five feet from the bottom of the worst case soil sample (identified as MW-2). Grain size analysis, as performed during the current assessment activities, indicated the soil type as loam. Soil analytical results are presented in Appendix A, and soil concentrations are depicted in Figures 8 through 27. Laboratory analyses and chain-of-custody are presented in Appendix B.

3.2 Groundwater Results

Groundwater analytical results for the samples, obtained during this Rapid Assessment, detected the presence of benzene and ethylbenzene concentrations at Monitor Wells MW-2, MW-3, MW-4, MW-10, and MW-11. Toluene concentrations were detected at Monitor Wells MW-2, MW-3, MW-4, MW-9, MW-10, and MW-11. Xylenes concentrations were detected at Monitor Wells MW-1 through MW-4, MW-10, and MW-11. Naphthalene concentrations were detected at Monitor Wells MW-1, MW-2, MW-4, MW-10, and MW-11. MTBE and EDB concentrations were detected at Monitor Well MW-2. Arsenic concentrations were detected at Monitor Wells MW-4, MW-6, and MW-8, and barium concentrations were detected at all monitor wells except MW-11. Cadmium concentrations were detected at Monitor Wells MW-2, and MW-4 through MW-8. Chromium concentrations were detected at Monitor Wells MW-3 through MW-6, MW-8, MW-9, and MW-10. Lead concentrations were detected at Monitor Wells MW-3 through MW-10. Mercury concentrations were not detected at any monitor wells. Selenium and silver concentrations were only detected at Monitor Well MW-6.

Benzene concentrations were detected greater than its RBSL of 5 µg/l at Monitor Wells MW-2, MW-3, MW-4, MW-10, and MW-11. Toluene, ethylbenzene, and xylenes concentrations were detected greater than their respective RBSLs of 1,000 µg/l, 700 µg/l, and 10000 µg/l at Monitor Wells MW-2, MW-10, and MW-11. MTBE concentrations were detected greater than its RBSL of 40 µg/l at Monitor Well MW-2. However, the potential exists for MTBE concentrations to be greater than its RBSL at Monitor Wells MW-3, MW-10, and MW-11 due to high dilution

factors. Naphthalene concentrations were detected greater than its RBSL of 10 µg/l at Monitor Wells MW-2, MW-4, MW-10, and MW-11. Naphthalene concentrations may exist above its RBSL at Monitor Well MW-3 due to a high dilution factor. EDB concentrations were detected greater than its RBSL of 5 µg/l at Monitor Well MW-2; and concentrations may exist greater than its RBSL at Monitor Wells MW-10 and MW-11 due to high dilution factors. Groundwater analytical results are presented in Appendix A, and groundwater concentrations are depicted in Figures 28 through 47. Laboratory analyses and chain-of-custody are presented in Appendix C.

BTEX, MTBE, EDB, naphthalene, or other PAH constituents were not detected in the surface water sample (identified as CK-1) collected from the headwaters of McCulley Creek. Of the 8 RCRA metals were analyzed in Sample CK-1, only barium was detected.

4.0 TIER 2 EVALUATION

Because dissolved petroleum hydrocarbon concentrations in groundwater, detected as part of this assessment, exceed current RBSL criteria, a Tier 2 Evaluation is warranted.

4.1 Establishment of Exposure Points

During the Rapid Assessment activities, SEI personnel performed a receptor survey for the subject property. This survey failed to detect the presence of any private or public water wells within 1000 feet of the site. ~~SEI personnel did identify the presence of the headwaters of McCulley Creek located approximately 600 feet east of the site.~~ No other ponds, lakes, or bodies of water were identified within a 1000 feet radius of the site. ~~The City of Winnsboro does not have an ordinance that prohibits the installation of potable private wells within the city limits.~~ A utility location map is provided as Figure 3. A summary of current and future land use formats is presented in Appendix D.

4.2 Establishment of SSTL

Based on previously reported data, petroleum impacted soil is limited to the vicinity of the former USTs and dispenser area. Because BTEX and naphthalene soil concentrations are greater than their respective RBSLs at Monitor Well MW-2, the soil leachability model was performed as part of this assessment. The site specific threshold levels (SSTLs) for BTEX and naphthalene, that were calculated with the soil leachability model, are 0.002 mg/kg, 0.753 mg/kg, 0.697 mg/kg, 36.164 mg/kg, and 0.087 mg/kg, respectively. Soil concentrations exist greater than the calculated SSTLs at Monitor Well MW-2. Soil leachability model results are presented in Appendix E.

The SSTLs of chemicals of concern (COC) in the saturated zone have been determined using collected data from this Rapid Assessment. The worst case concentrations occurred in Monitor Well MW-2, and these concentrations were used as the worst case concentration in the calculation of the SSTL. Monitor Well MW-2 is also the point of compliance as there are no other wells located between it and the property boundary in the down-gradient direction.

Petroleum Constituent	MW-2 Worst case Concentration (µg/l)	MW-2 concentration (µg/l)	Contamination Reduction Factor	RBSL (µg/l)	SSTL (µg/l)
Benzene	23,100	23,100	1	5	5
Toluene	89,000	89,000	1	1,000	1,000
Ethylbenzene	5,380	5,380	1	700	700
Xylenes	27,380	27,380	1	10,000	10,000
Naphthalene	2,140	2,140	1	10	10
MTBE	227,000	227,000	1	40	40

4.3 Fate Transport

Groundwater flow velocity (V) was calculated from slug test data collected during the Rapid Assessment activities. During the slug test events, the hydraulic conductivity (K) was calculated to be 0.115 feet per day, 0.302 feet per day, and 0.465 feet per day for Monitor Wells MW-8, MW-11, and DW-1, respectively. The hydraulic conductivity (K) value of 76.101 feet per year was calculated as the average K value determined from Monitor Wells MW-8 and MW-11. The hydraulic gradient (i), as averaged between Monitor Well MW-1 and the 41.00 feet contour line and between Monitor Well MW-2 and the 41.00 feet contour line is 0.0329 feet per foot. Porosity (n) was assumed to be 35% for loam soils. ~~Groundwater flow velocity (V=Ki/n) was estimated at 7.15 feet per year,~~ where K = 76.101 feet per year and i = 0.0329 feet per foot. The slug test data is presented in Appendix F.

BIOSCREEN Natural Attenuation Decision Support System (1996) was utilized to determine fate transport of benzene concentrations. The use of this model assumes that the plume has reached equilibrium. Fate transport of benzene was calculated due to its mobility and elevated concentrations at the site. ~~Data used in this model is illustrated in Appendix G. Seepage velocity of 7.15 feet per year, as calculated above, was used for hydrogeology data. Dispersion data was determined from an estimated plume length of 600 feet.~~ Adsorption values were calculated from specific site data. The 1st order decay coefficient values were substituted in a trial and error method to determine the value that best matches observed site concentrations.

~~The worse case dissolved concentration of benzene (23100 µg/l) in groundwater was determined by sampling Monitor Well MW-2. A 1st order decay coefficient of 0.35 per year provided the best fit to current site conditions for benzene, assuming the release occurred in 1997.~~ The release has the potential to have occurred between 1985 (approximate date of USTs installation) and 1997 (approximate date of USTs removal).

Using data from the two year plume centerline calculations, consecutive plume centerline analyses were also run to determine the maximum distance and time for benzene migration. The result of these plume centerline analyses illustrates that the maximum migration of the highest benzene concentration will occur approximately 34 years after the release date at a distance of approximately 270 feet to less than 360 feet down-gradient from Monitor Well MW-2. Data for benzene is provided as Figures 1a, 1b, and 1c in Appendix G.

A similar process was also followed for toluene, ethylbenzene, xylenes, and naphthalene. Using current data and worse case concentrations from Monitor Well MW-2, 1st order decay coefficients of 9.0, 1.1, 4.5, and 0.98 per year were found to best represent current conditions for these compounds, respectively. Data for these compounds is provided in Appendix G as Figures 2 through 5, respectively. Consecutive plume centerline analyses conducted for toluene, xylenes, and naphthalene indicated that the maximum migration of these compounds has already occurred at a distance of 0 feet to less than 90 feet down-gradient from Monitor Well MW-2. Consecutive plume centerline analyses conducted for ethylbenzene indicated that the maximum migration distance of this compound will occur at a distance of 90 feet to less than 180 feet down-gradient from Monitor Well MW-2.

5.0 CONCLUSIONS AND RECOMMENDATIONS

- Groundwater flow direction is in an eastern and southeastern direction and has a seepage velocity of 7.15 feet per year.
- Petroleum hydrocarbons in the soil have been horizontally delineated. Groundwater has been vertically and horizontally delineated with the exception of the down-gradient direction. Monitor Well MW-11 is the last possible location for a down-gradient well due to the presence of a wooded area that extends past McCulley Creek. However, SEI personnel sampled the surface water from McCulley Creek, and petroleum constituents were not detected greater than their respective detection limits.
- Liquid phase hydrocarbons were not detected in any monitor wells during these Rapid Assessment activities.

- Soil concentrations exist greater than the SSTLs calculated with the soil leachability model at Monitor Well MW-2.

- BTEX, MTBE, EDB, and/or naphthalene concentrations were detected greater than their respective groundwater SSTLs at Monitor Wells MW-2, MW-3, MW-4, MW-10, and MW-11.

Because groundwater SSTLs are exceeded in the above mentioned monitor wells and soil concentrations at Monitor Well MW-2 are greater than the SSTLs as calculated with the soil leachability model, SEI Environmental, Inc. recommends that active corrective action is warranted at United Exxon.

6.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

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SEI Environmental, Inc., March 12, 1998, *Initial Ground Water Assessment (Release #2) - United Exxon*, Columbia, South Carolina.

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TABLES

TABLE I
Groundwater Elevation Data
United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Screened Interval (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-1	11/02/98	96.54	38.19	0	15	48	58.35
MW-2	11/02/98	98.17	47.18	0	25	54	50.99
MW-3	11/02/98	95.81	39.82	0	15	45	55.99
MW-4	11/02/98	98.52	44.22	0	15	45	54.30
MW-5	11/02/98	94.41	38.05	0	15	45	56.36
MW-6	11/02/98	103.40	50.09	0	15	55	53.31
MW-7	11/02/98	102.34	45.32	0	20	52	57.02
MW-8	11/02/98	97.63	37.79	0	15	45	59.84
MW-9	11/02/98	100.62	46.33	0	10	50	54.29
MW-10	11/02/98	88.26	43.49	0	10	50	44.77
MW-11	11/02/98	70.63	29.96	0	10	38	40.67
DW-1	11/02/98	98.62	46.21	0	5	89	52.41

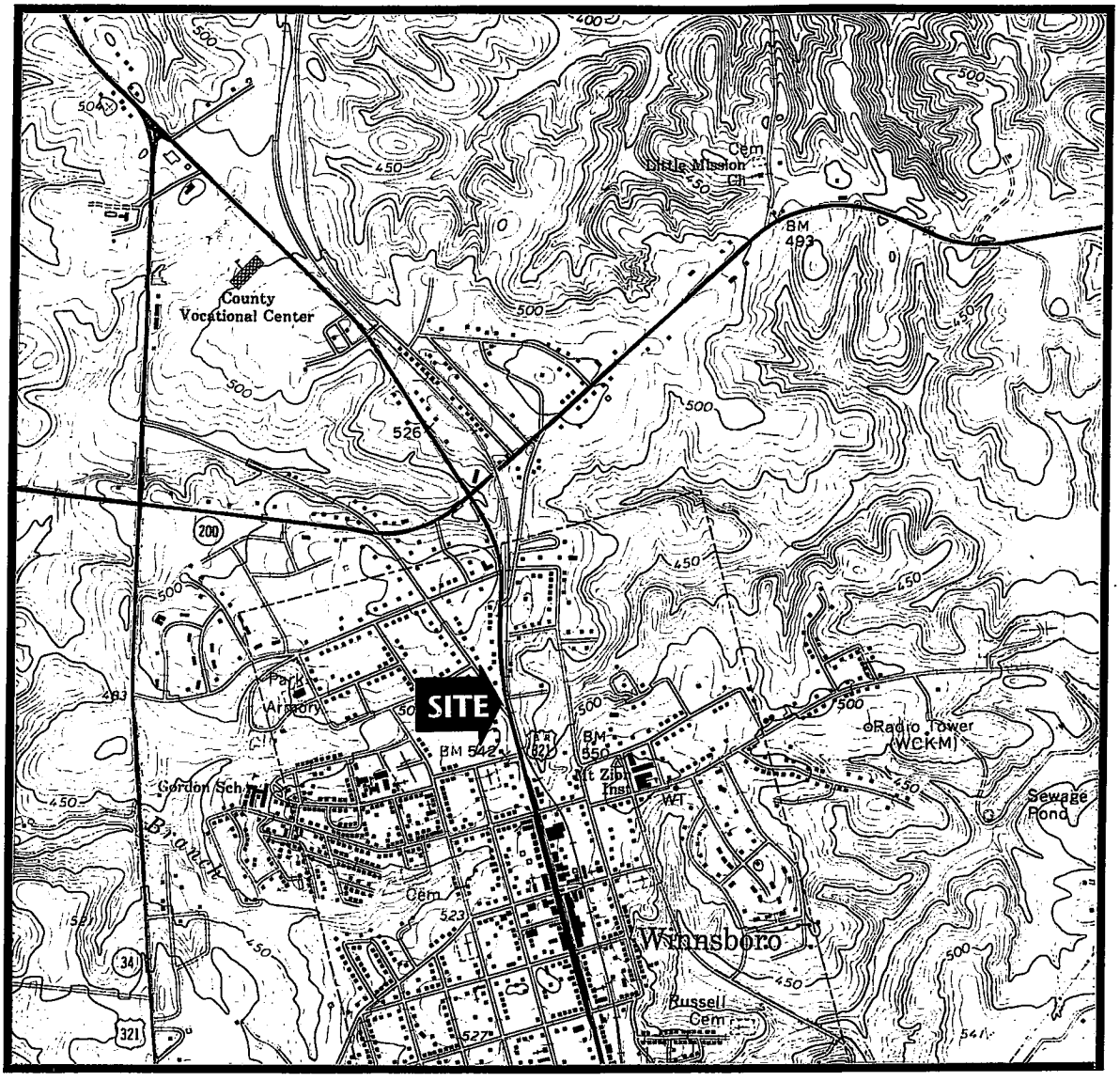
Elevations refer to an assumed elevation
LPH=Liquid Phase Hydrocarbons

TABLE II Field Calibration Results United Exxon / Winnsboro, South Carolina					
Calibration Date	Field Instrument	Model Number	Serial Number	Calibration Standard	Instrument Reading
05/12/98	OVA-FID	128	41171	Methane (95 ppm)	90 ppm
05/13/98	OVA-FID	128	41171	Methane (95 ppm)	78 ppm
05/20/98	OVA-FID	128	41171	Methane (95 ppm)	90 ppm
07/08/98	OVA-FID	128	41171	Methane (95 ppm)	100 ppm
07/09/98	OVA-FID	128	41171	Methane (95 ppm)	95 ppm
08/13/98	OVA-FID	128	41171	Methane (95 ppm)	95 ppm
08/14/98	OVA-FID	128	41171	Methane (95 ppm)	95 ppm
10/28/98	OVA-FID	128	41171	Methane (95 ppm)	85 ppm
10/29/98	OVA-FID	128	41171	Methane (95 ppm)	98 ppm

FIGURES

USGS TOPOGRAPHICAL MAP

WINNSBORO QUADRANGLE



SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

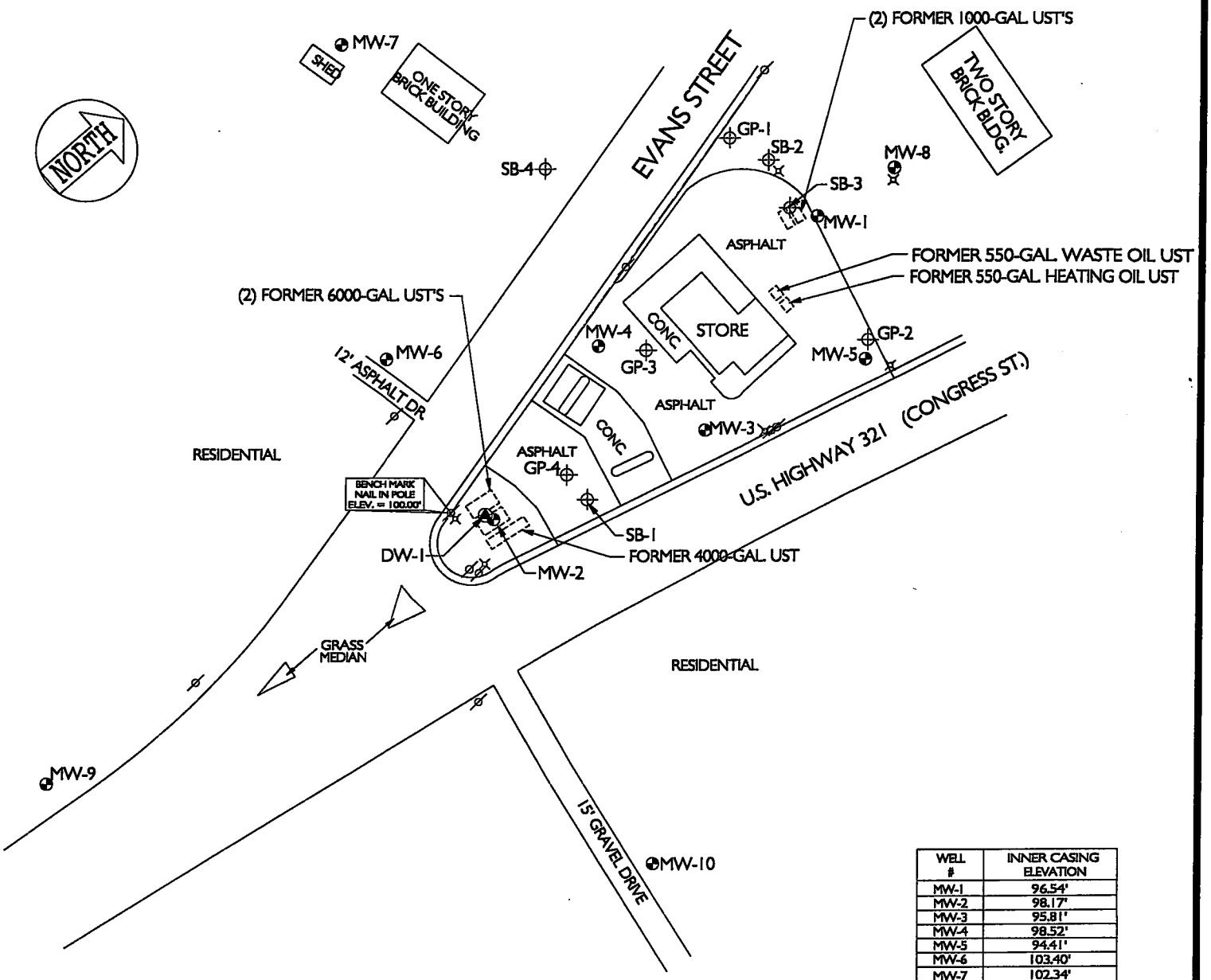
1 .5 0 1 KILOMETER

NORTH

SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC

WO #197-343	DATE: 1/16/98
DWG #	DRAWN BY: JCJ



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

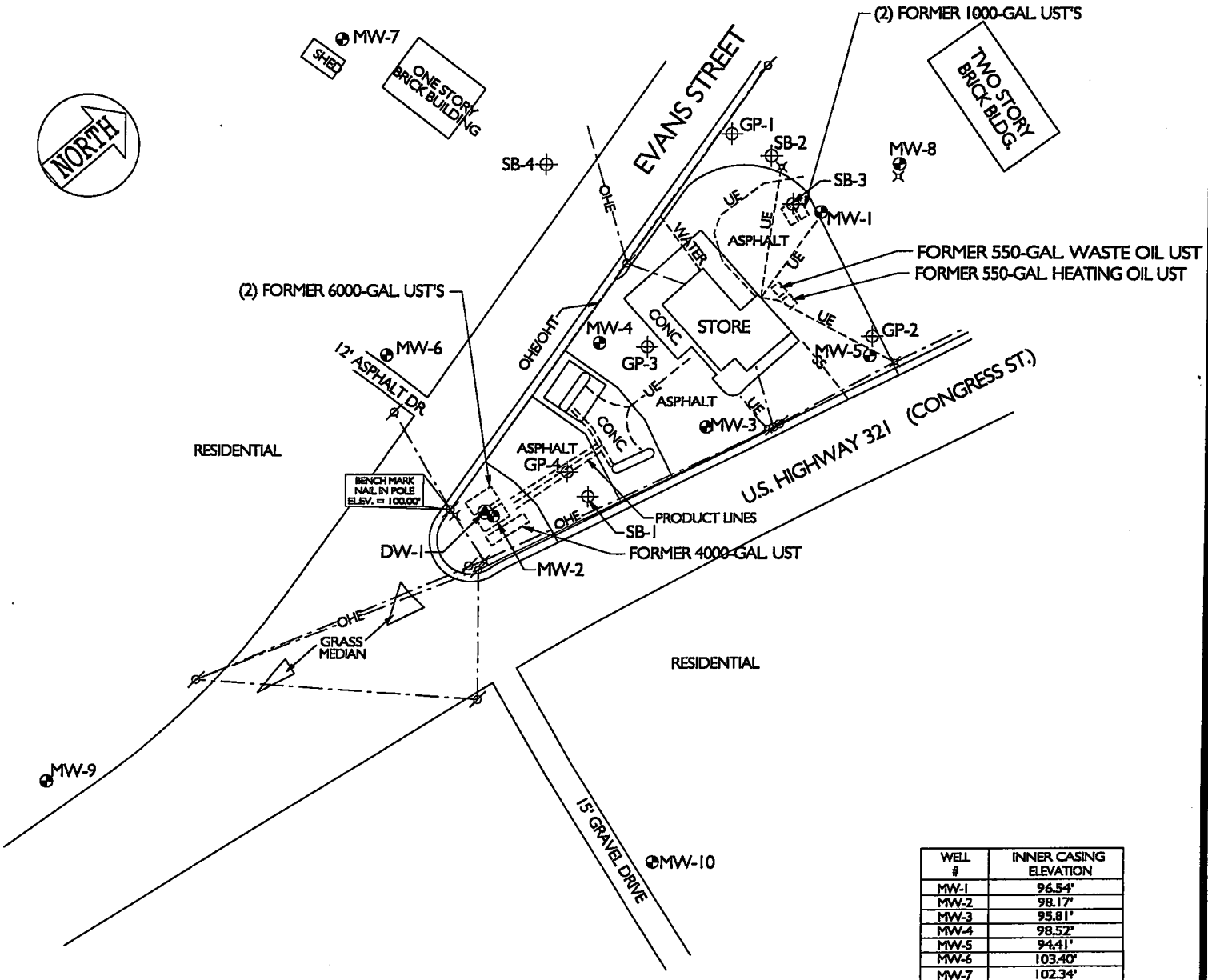
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION

SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE00082b	DRAWN BY: JCJ



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

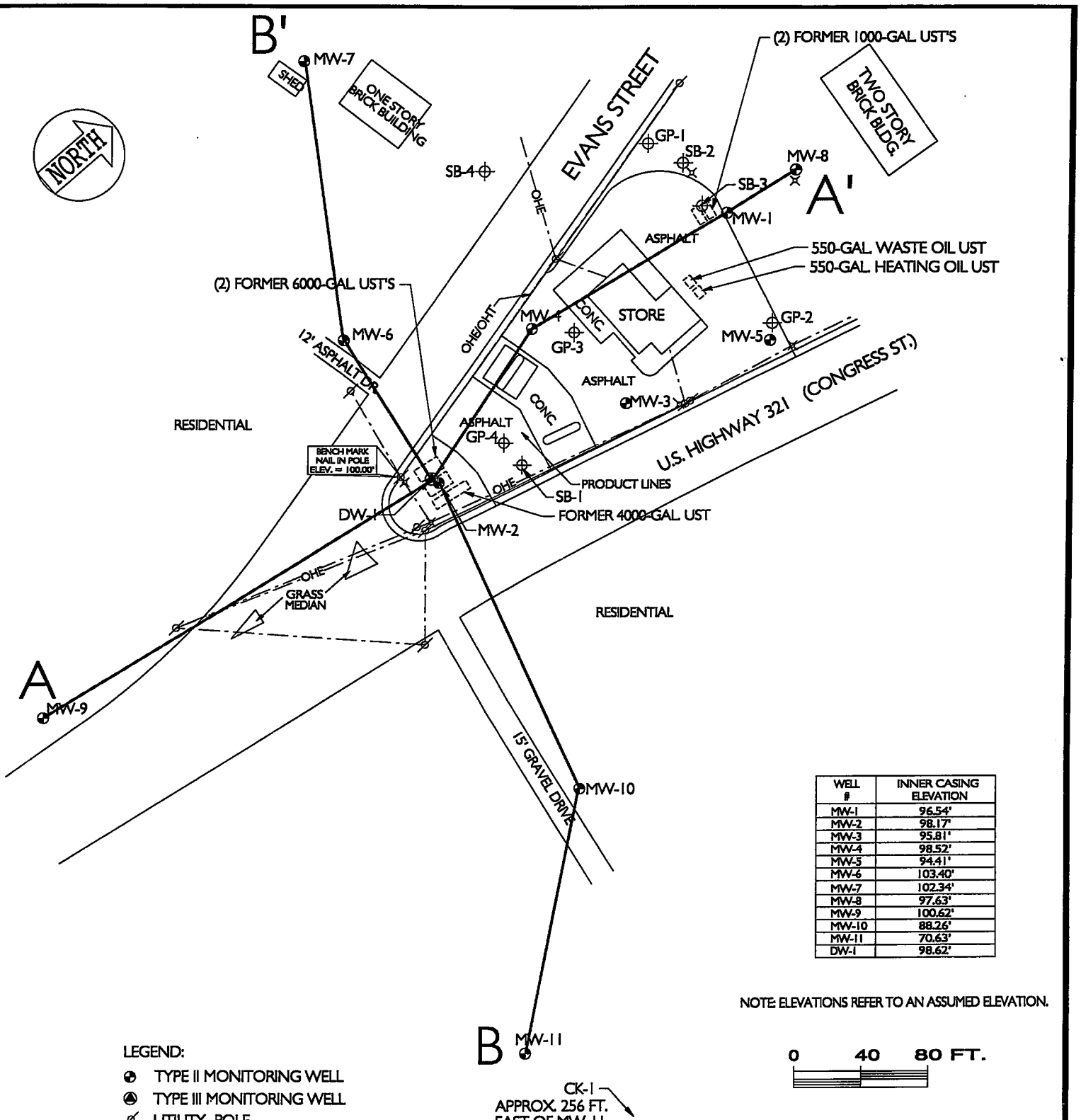
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- UE — UNDERGROUND ELECTRIC LINE
- SS — SANITARY SEWER LINE
- SOIL BORING LOCATION

SEI Environmental, Inc.

FIGURE 3: UTILITIES MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE00083B	DRAWN BY: JCJ



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

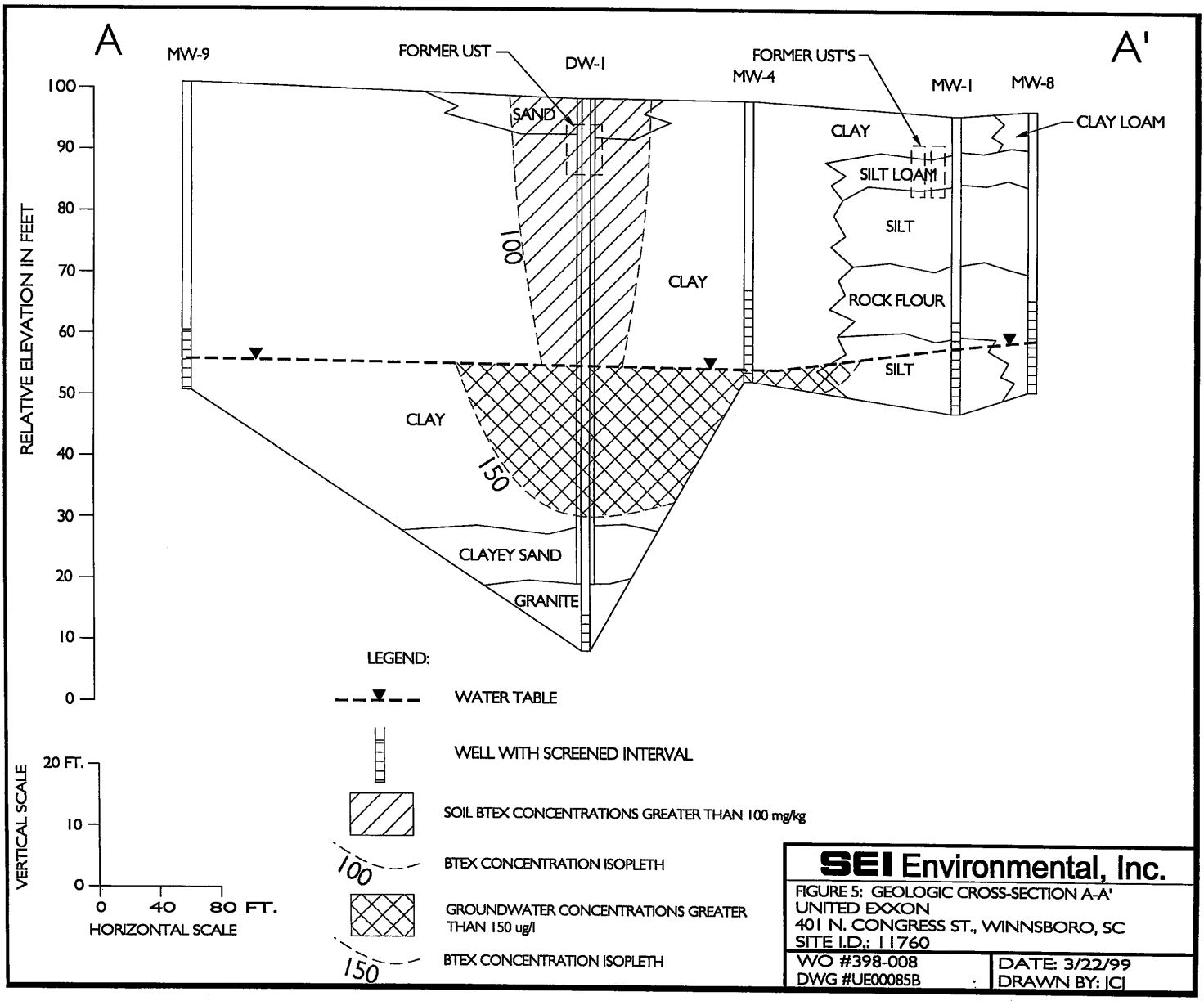
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION

SEI Environmental, Inc.

FIGURE 4: GEOLOGIC TRANSECT MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

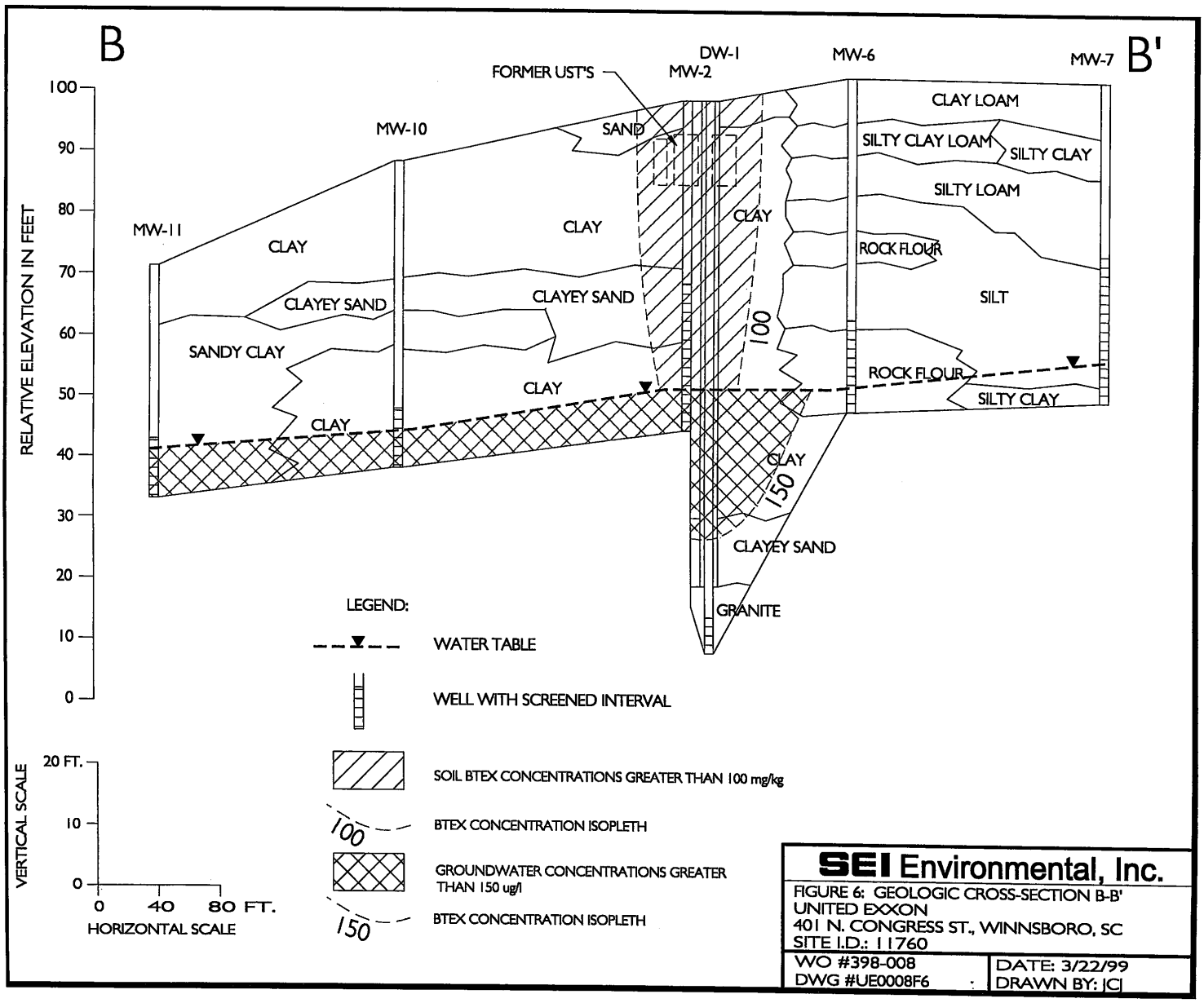
WO #398-008	DATE: 3/19/99
DWG #UE00084B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 5: GEOLOGIC CROSS-SECTION A-A'
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

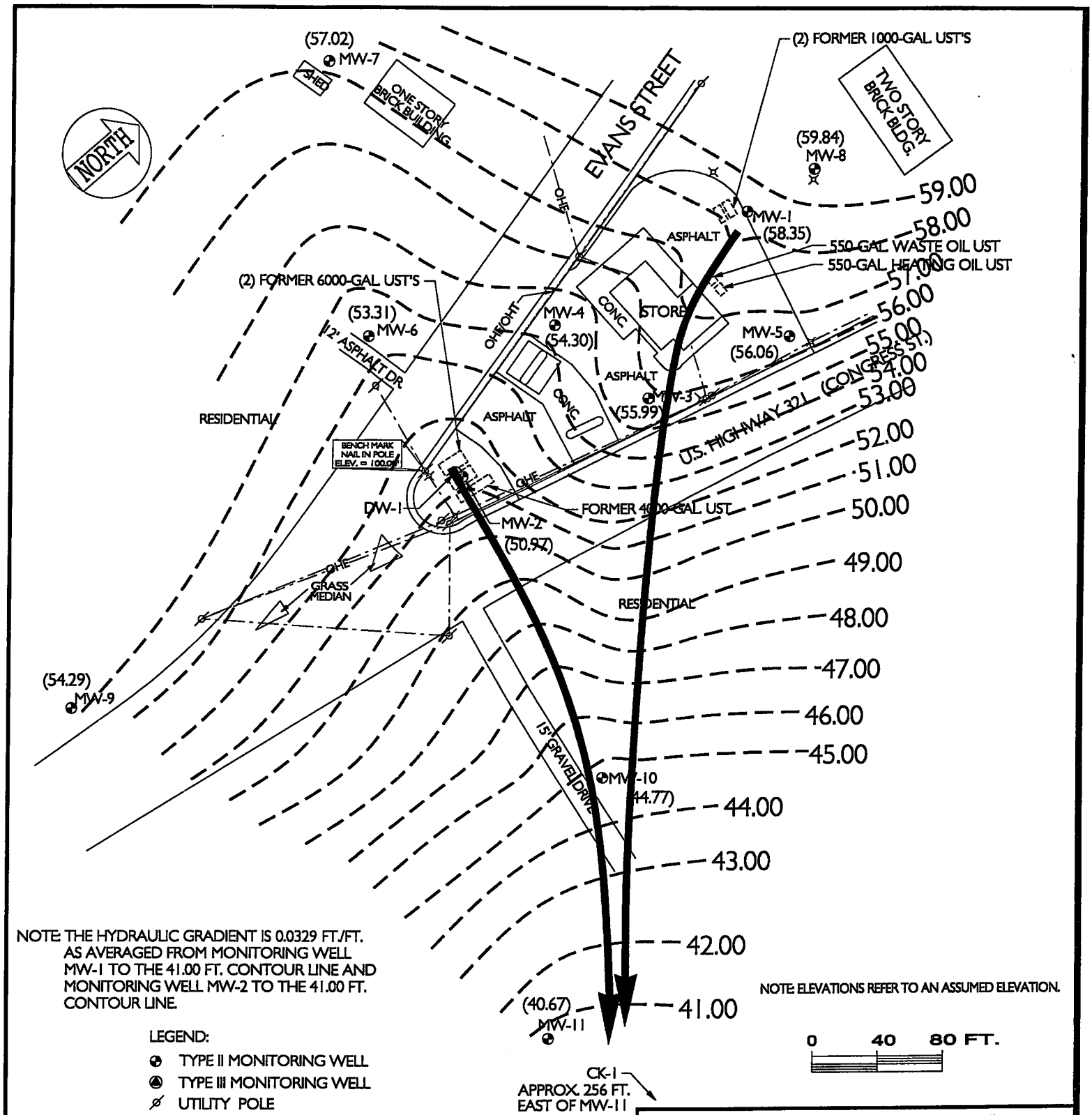
WO #398-008	DATE: 3/22/99
DWG #UE00085B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 6: GEOLOGIC CROSS-SECTION B-B'
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/22/99
DWG #UE0008F6	DRAWN BY: JCJ



NOTE: THE HYDRAULIC GRADIENT IS 0.0329 FT./FT. AS AVERAGED FROM MONITORING WELL MW-1 TO THE 41.00 FT. CONTOUR LINE AND MONITORING WELL MW-2 TO THE 41.00 FT. CONTOUR LINE.

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

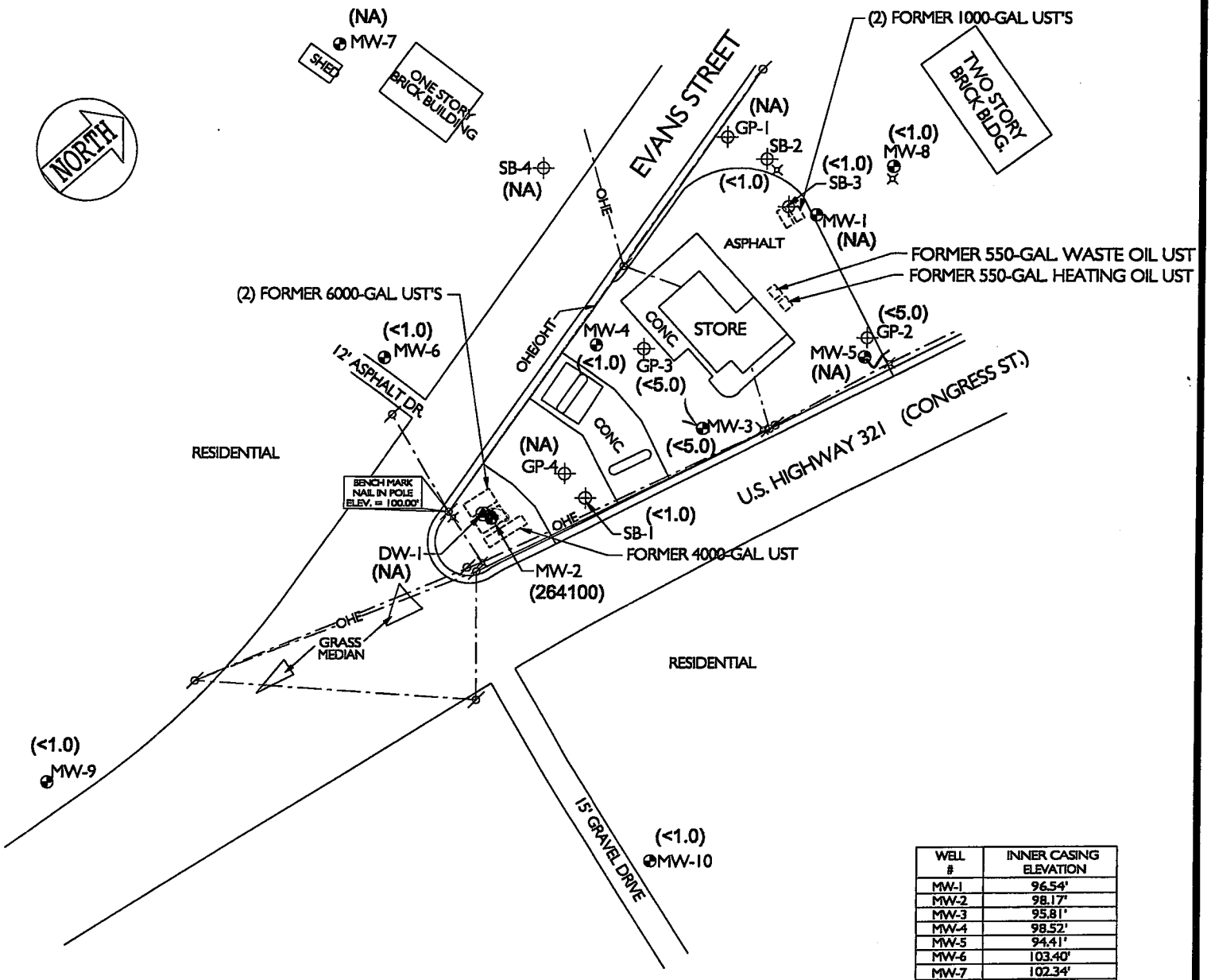
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- (XXX) GROUNDWATER ELEVATION(FT.) BASED ON ARBITRARY DATUM OF 100.00 FT.
- 57.00 GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

SEI Environmental, Inc.

FIGURE 7: GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE00087B	DRAWN BY: JCJ



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

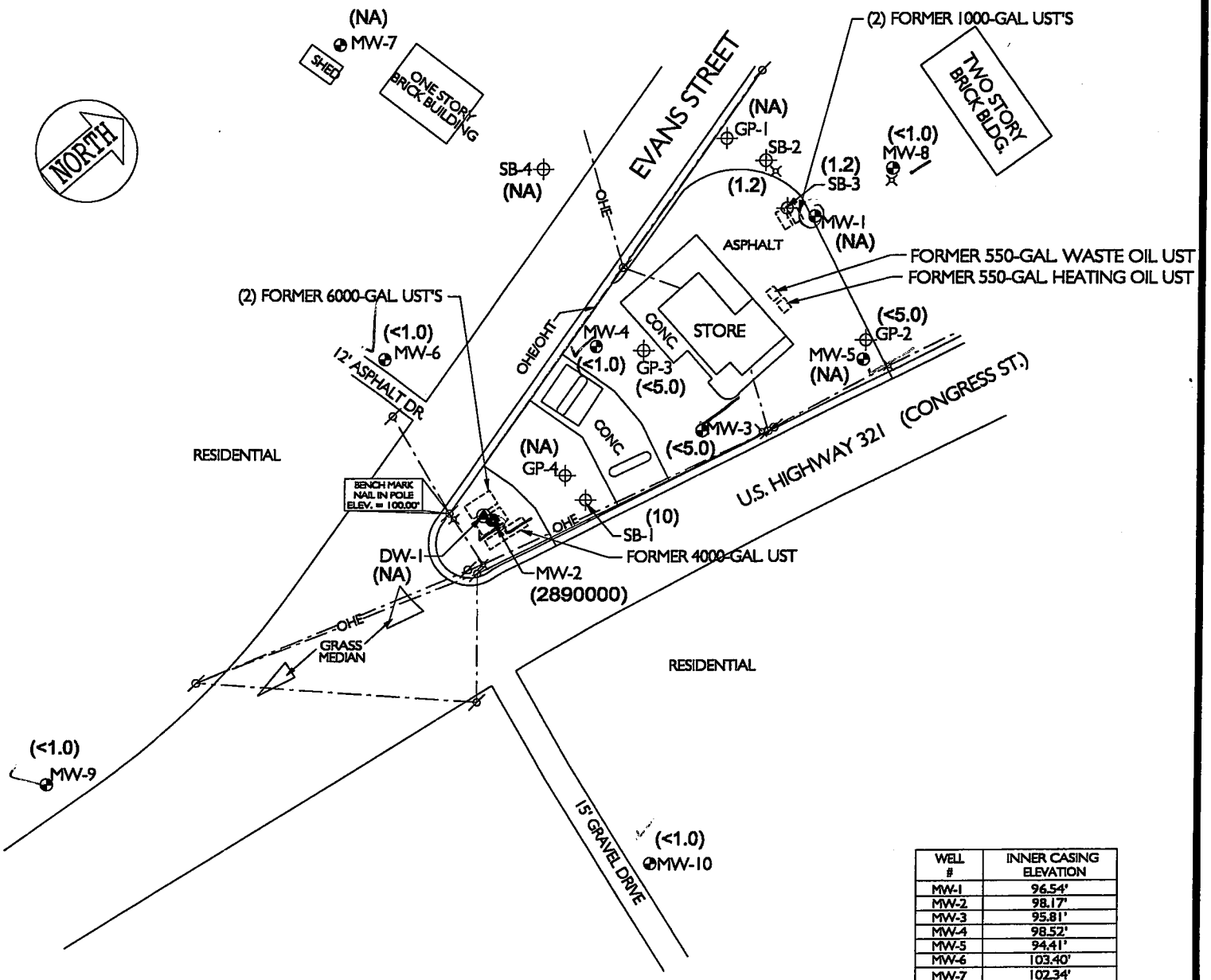
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) BENZENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 8: SOIL CONCENTRATION MAP: BENZENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE00088B	DRAWN BY: JCJ



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

0 40 80 FT.

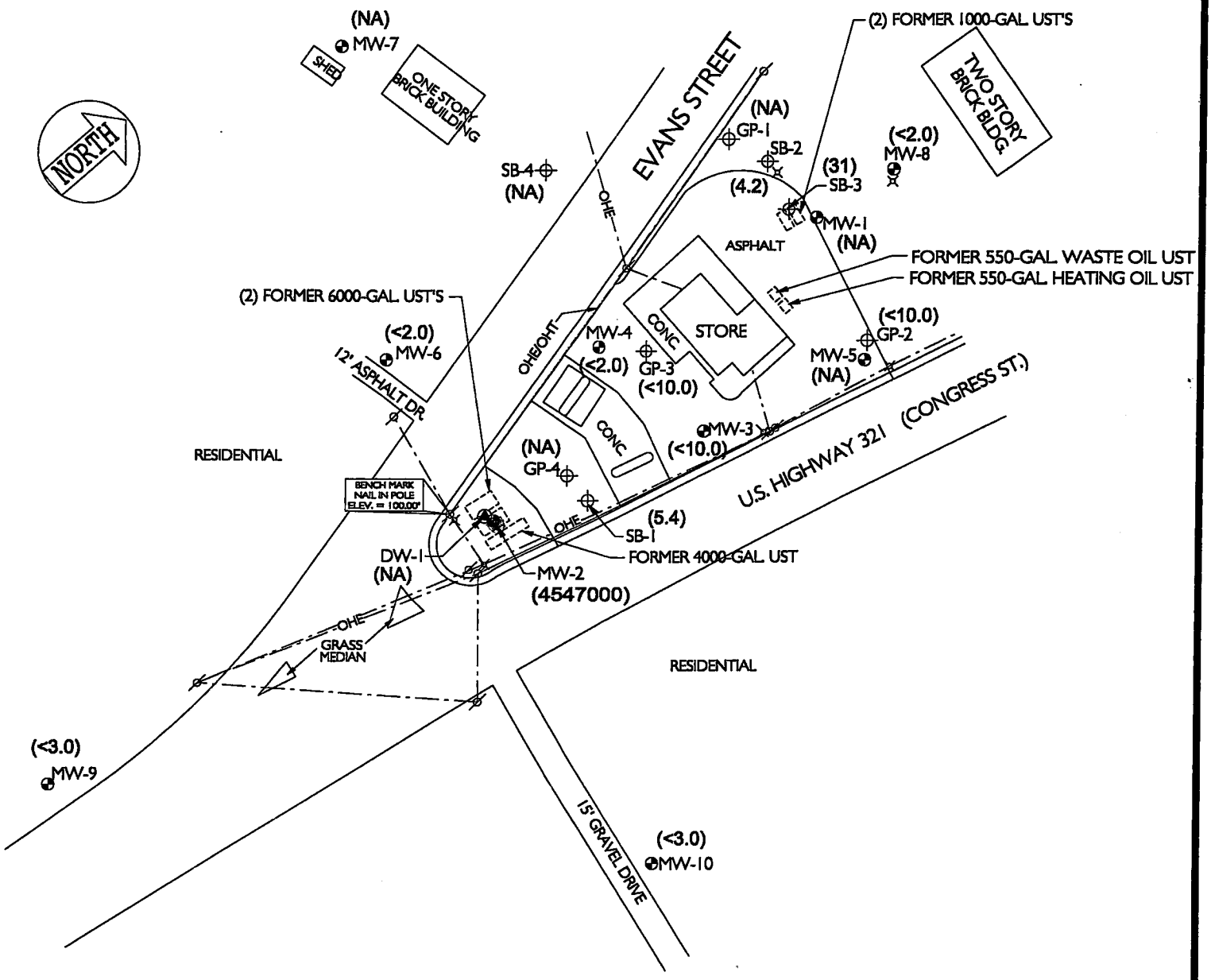
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) TOLUENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 9: SOIL CONCENTRATION MAP: TOLUENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE00089B	DRAWN BY: JCJ



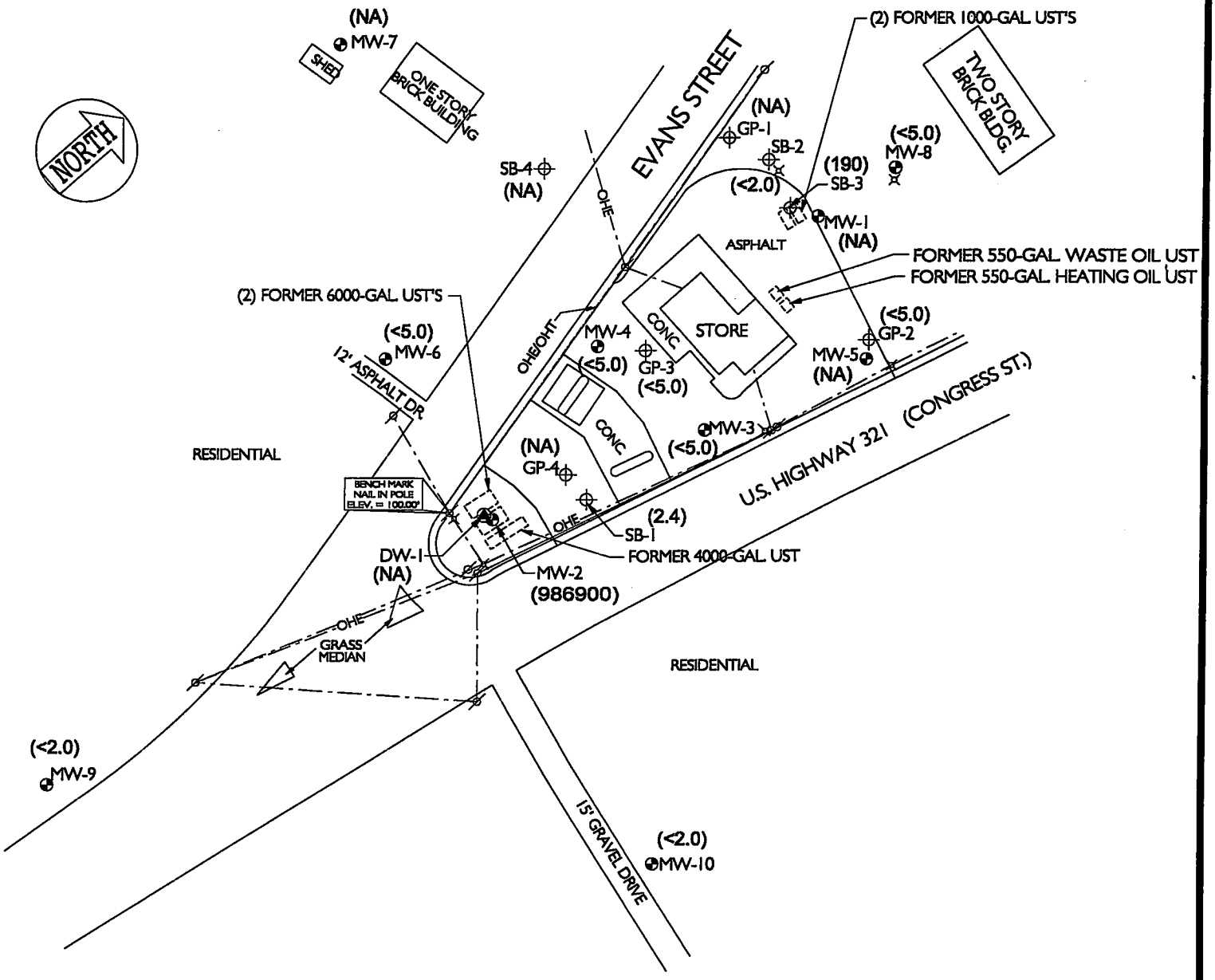
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) XYLENES CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 11: SOIL CONCENTRATION MAP: XYLENES
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000811B	DRAWN BY: JCJ



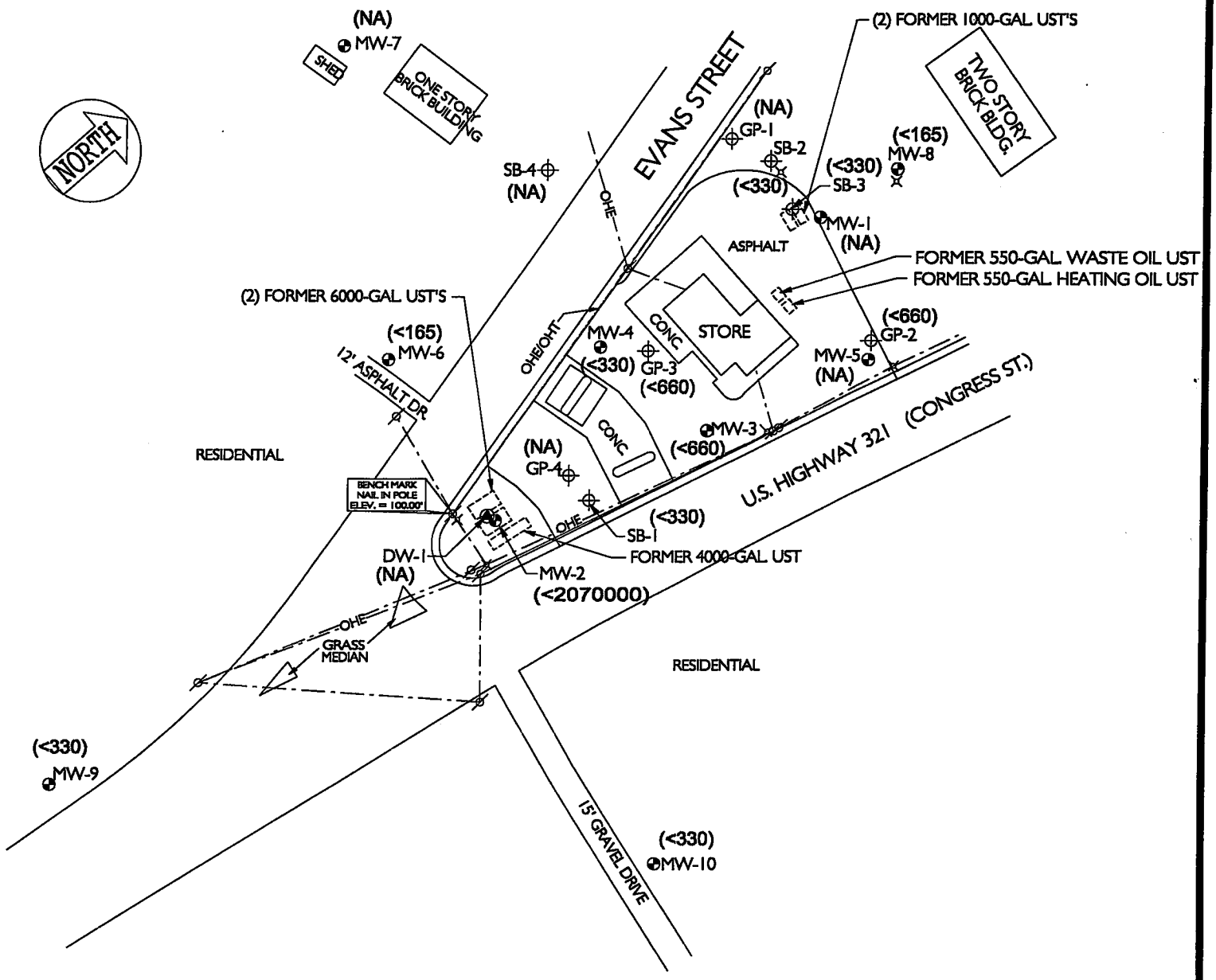
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) NAPHTHALENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 12: SOIL CONCENTRATION MAP: NAPHTHALENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000812B	DRAWN BY: JCJ



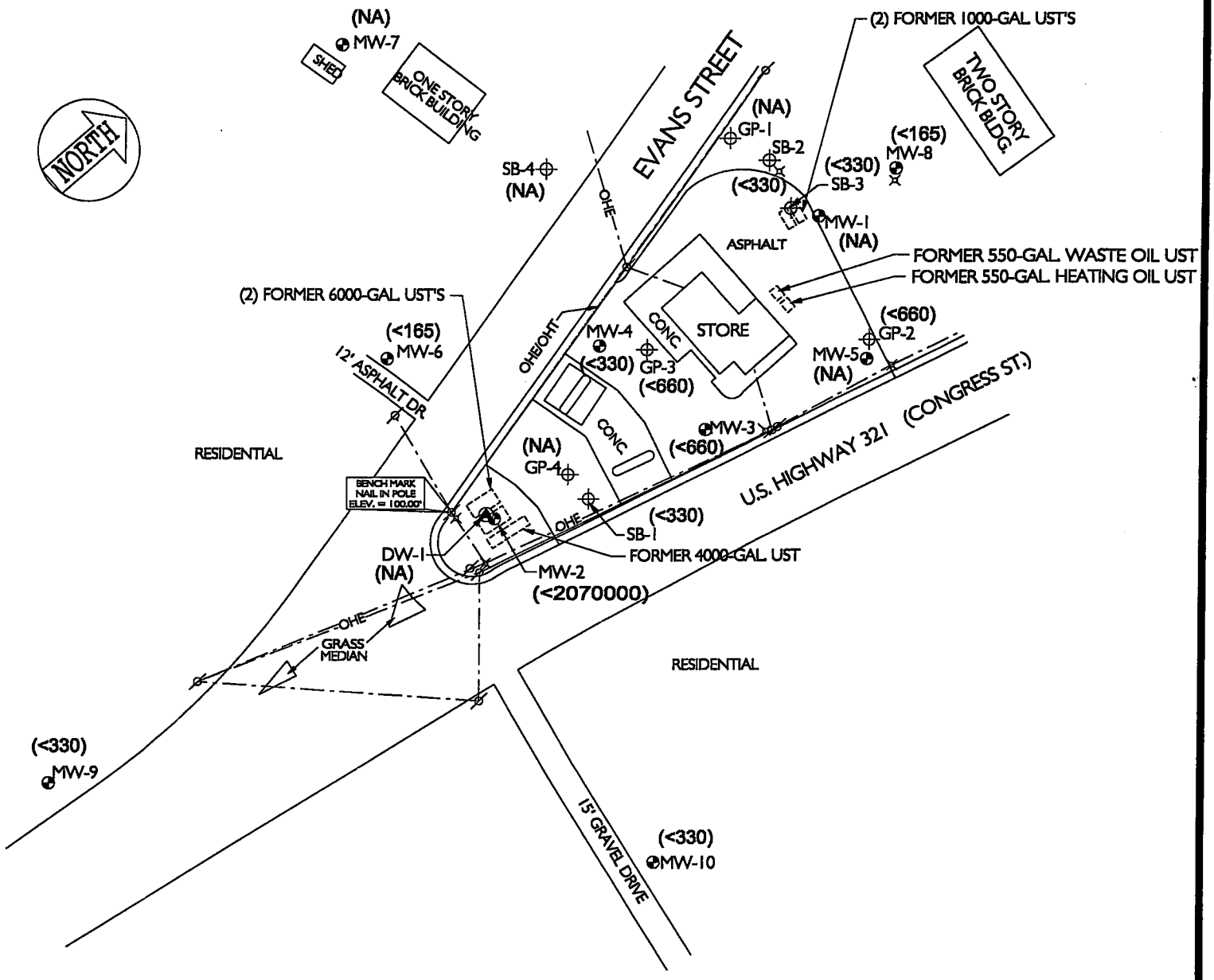
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) BENZO(a)ANTHRACENE CONCENTRATION(ug/kg)
  NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 13: SOIL CONCENTRATION MAP:
BENZO(a)ANTHRACENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000813B	DRAWN BY: JCJ



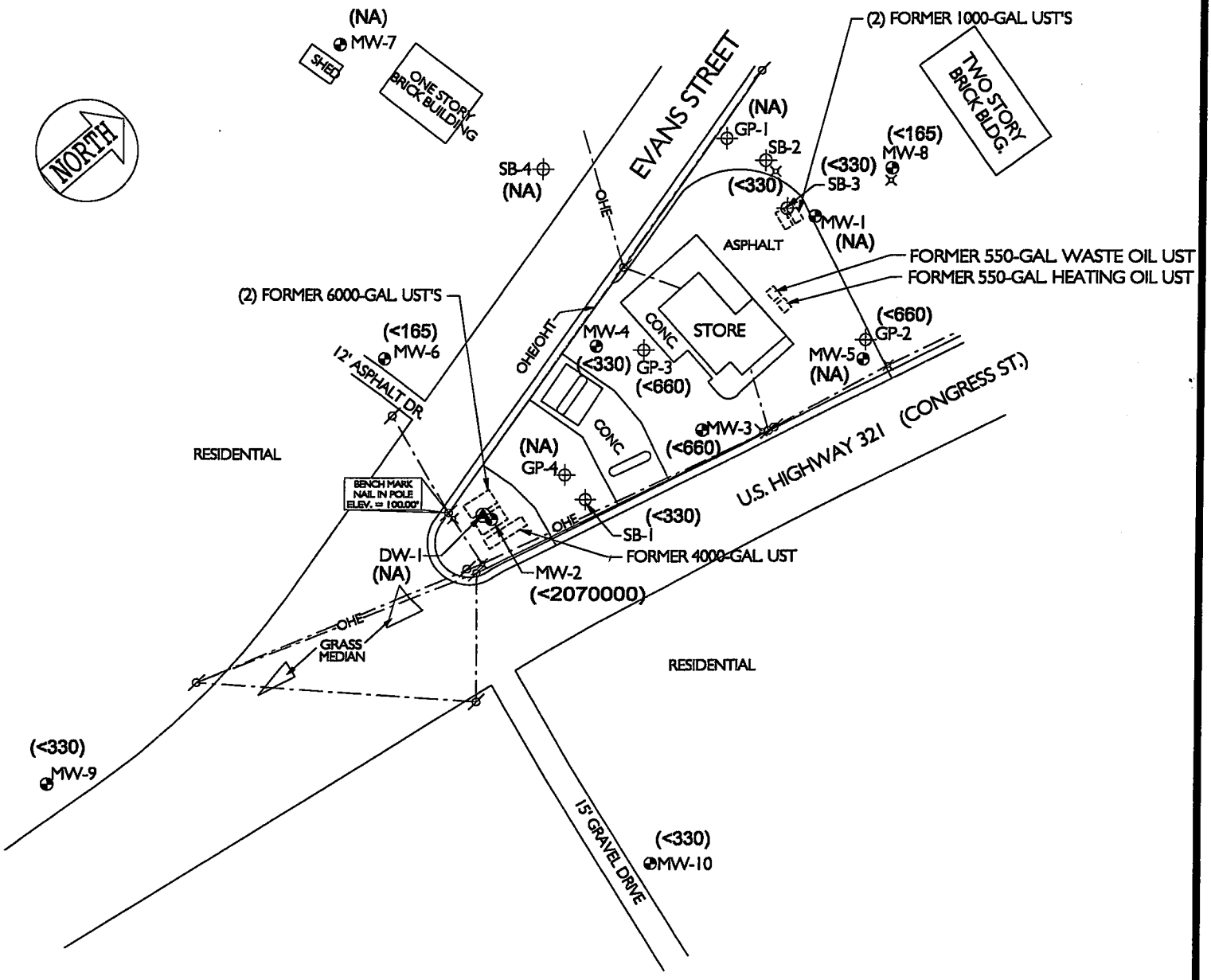
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) BENZO(b)FLUORANTHENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 14: SOIL CONCENTRATION MAP: BENZO(b)FLUORANTHENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000814B	DRAWN BY: JCJ



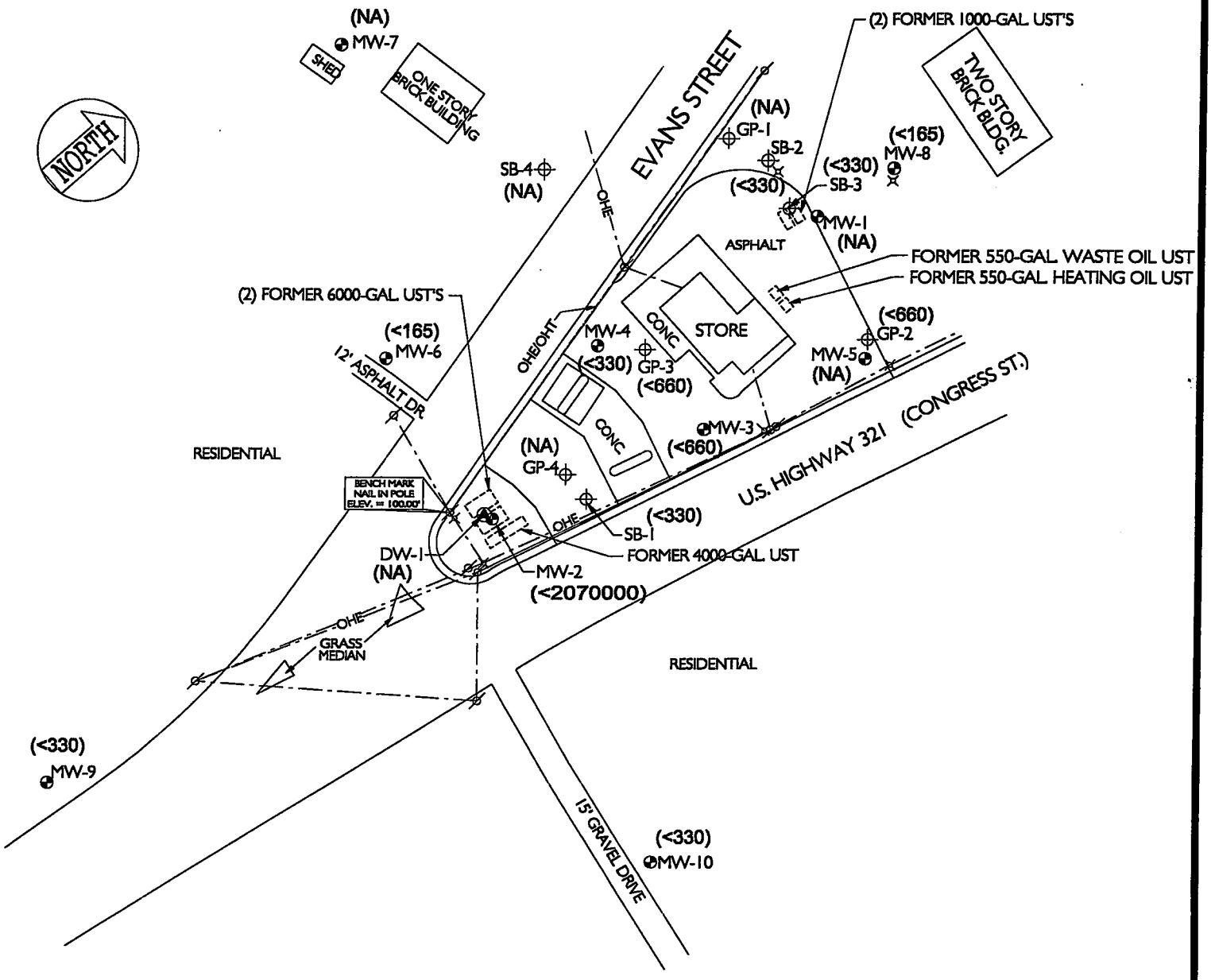
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) BENZO(k)FLUORANTHENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 15: SOIL CONCENTRATION MAP:
BENZO(k)FLUORANTHENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000815B	DRAWN BY: JCJ



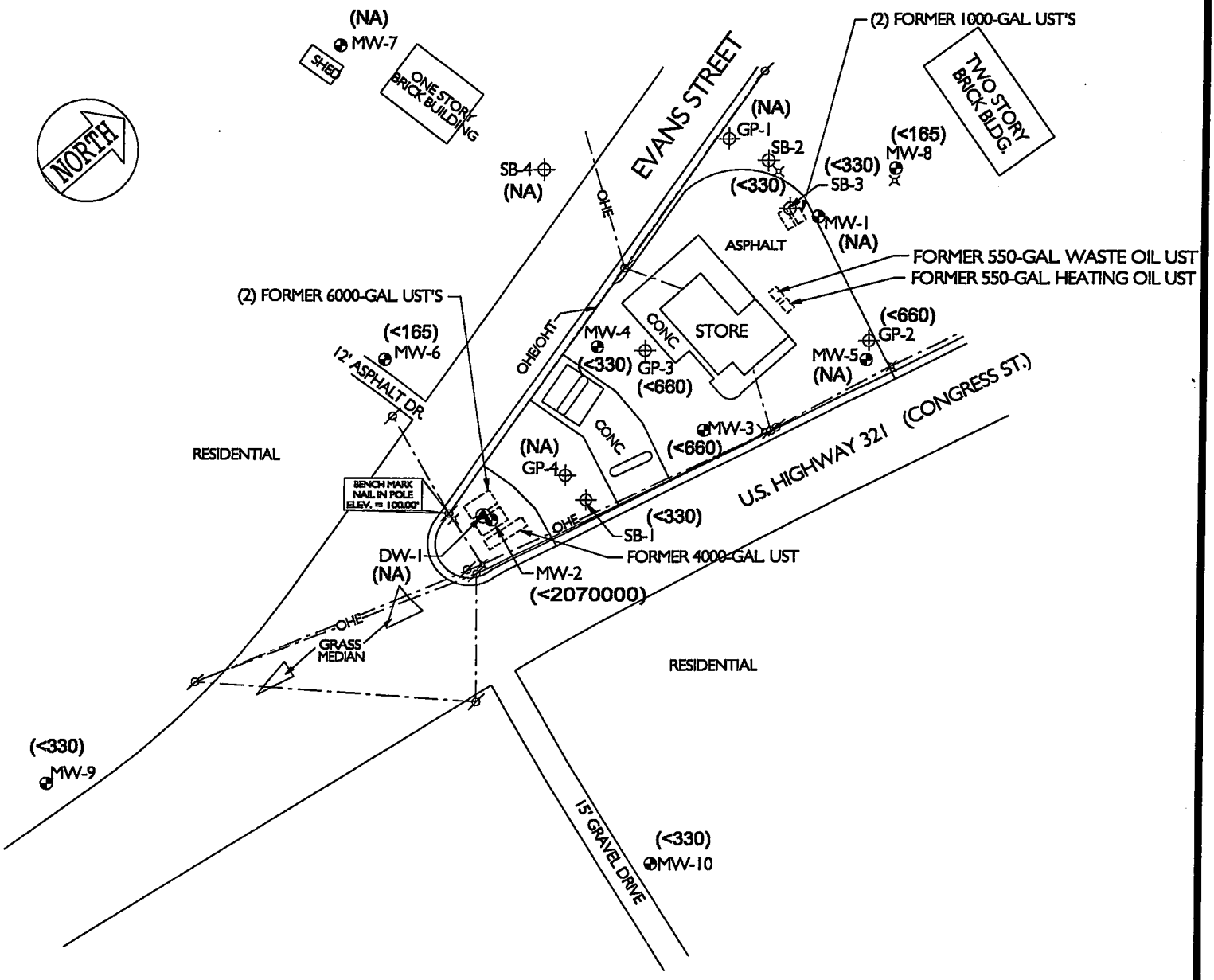
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) CHRYSENE CONCENTRATION(ug/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 16: SOIL CONCENTRATION MAP: CHRYSENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000816B	DRAWN BY: JCJ



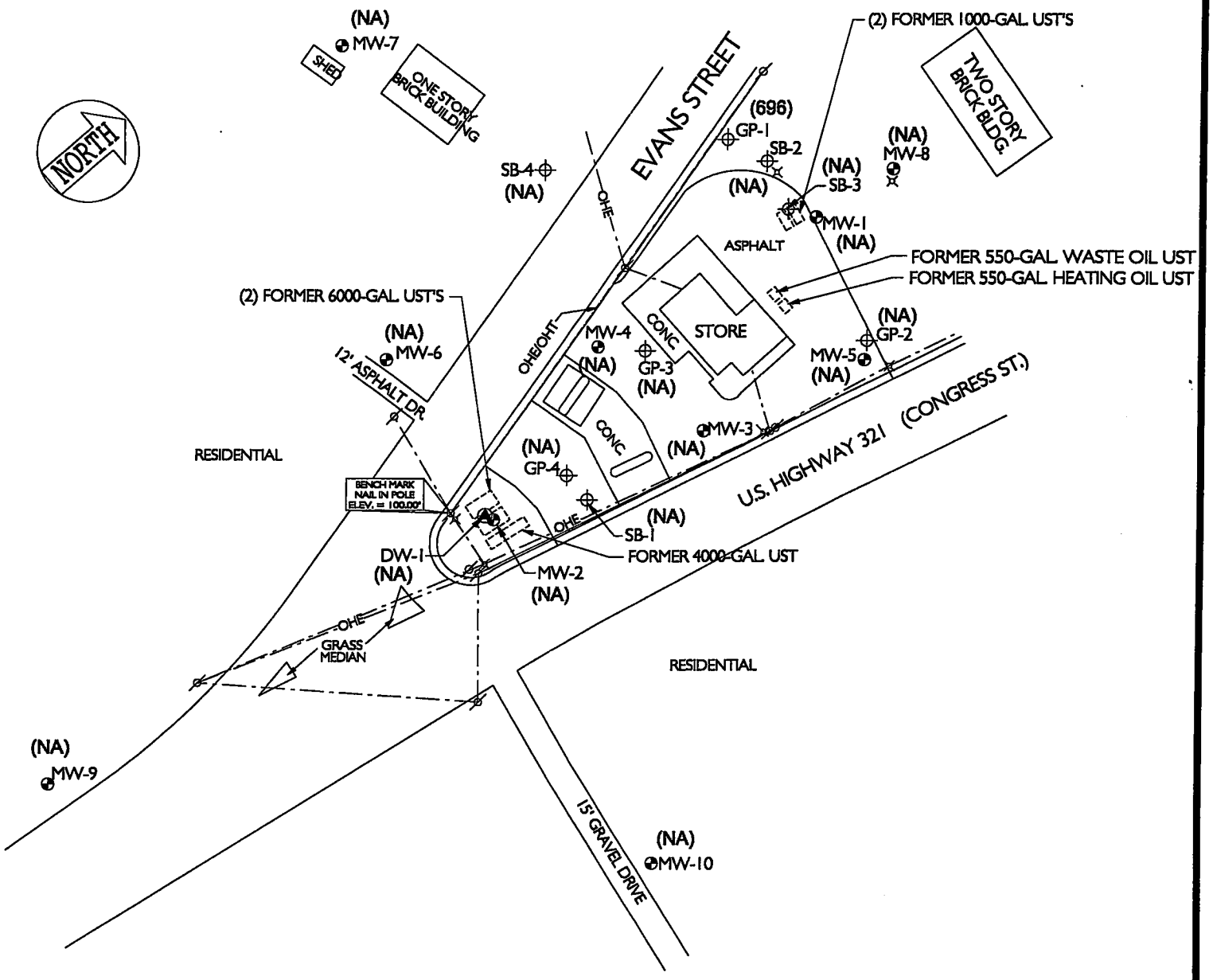
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) DIBENZO(a,h)ANTHRACENE CONCENTRATION(ug/kg)
  NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 17: SOIL CONCENTRATION MAP: DIBENZO(a,h)ANTHRACENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000817B	DRAWN BY: JCJ



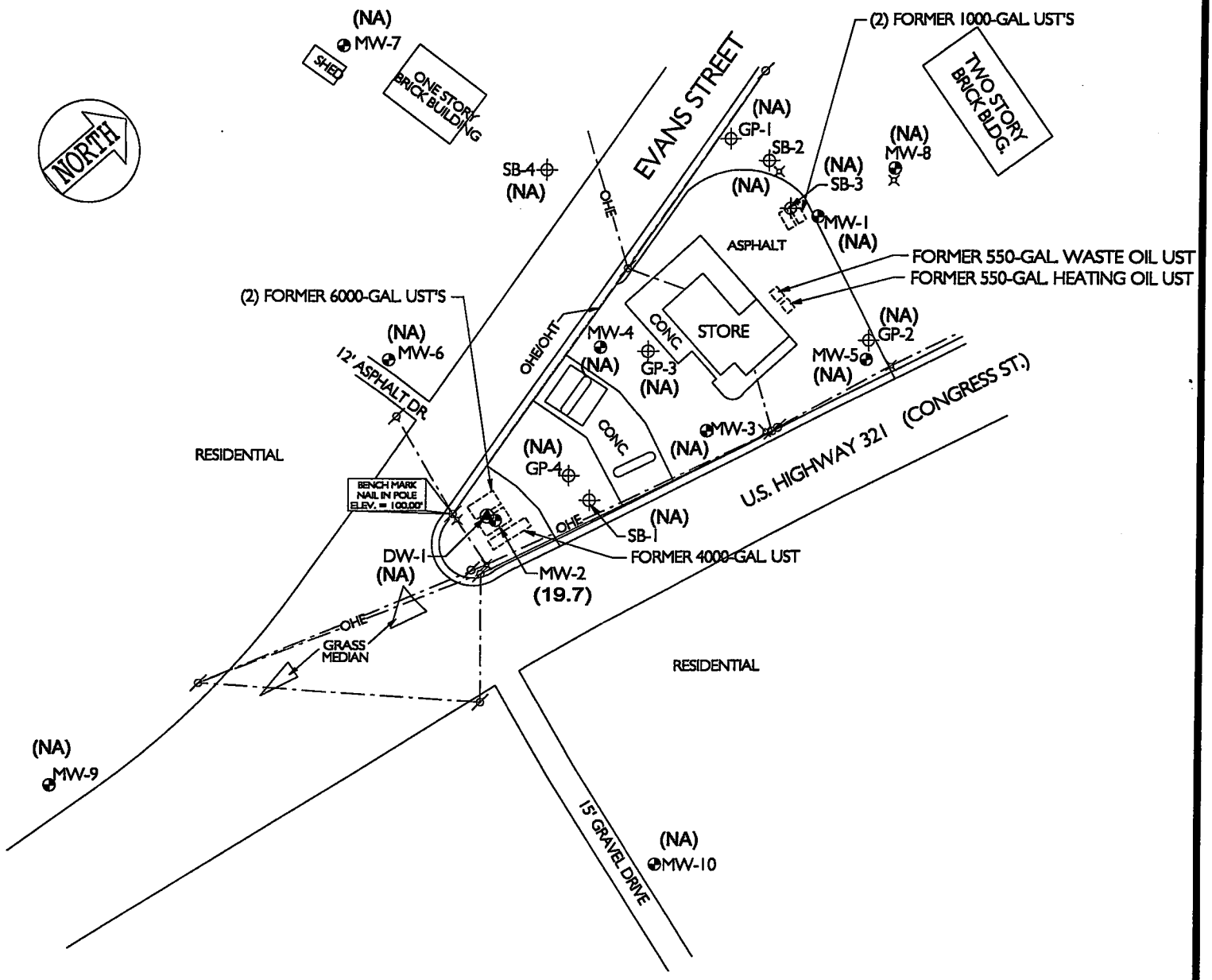
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) TOTAL ORGANIC CARBON CONCENTRATION(mg/kg)
  NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 18: SOIL CONCENTRATION MAP:
TOTAL ORGANIC CARBON
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

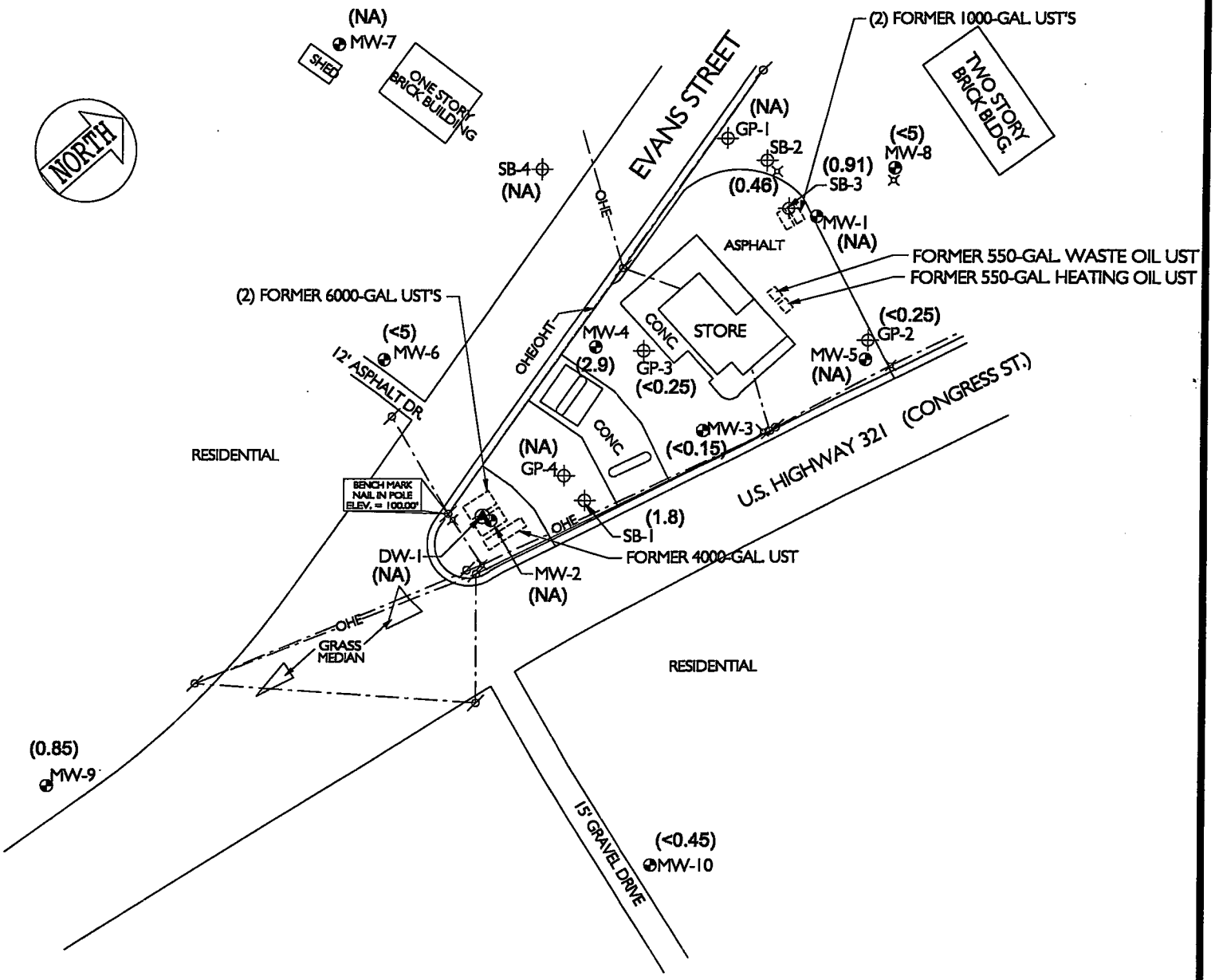
WO #398-008	DATE: 3/19/99
DWG #UE000818B	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 19: SOIL CONCENTRATION MAP:
TPH
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000819B	DRAWN BY: JCJ



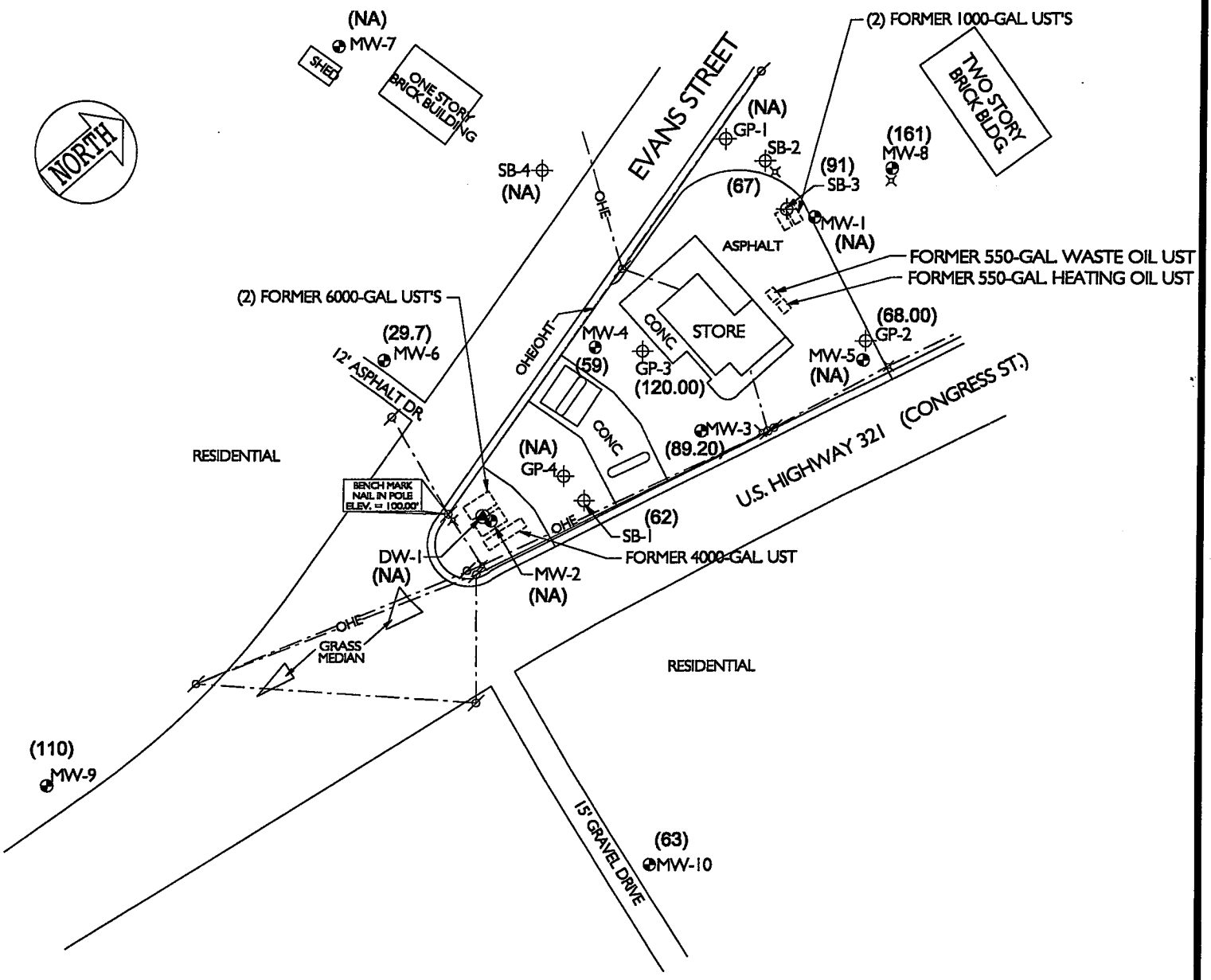
LEGEND:

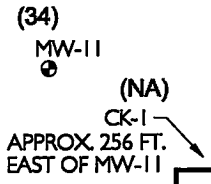
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- —OHE— OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) ARSENIC CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 20: SOIL CONCENTRATION MAP: ARSENIC
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000820B	DRAWN BY: JCJ





LEGEND:

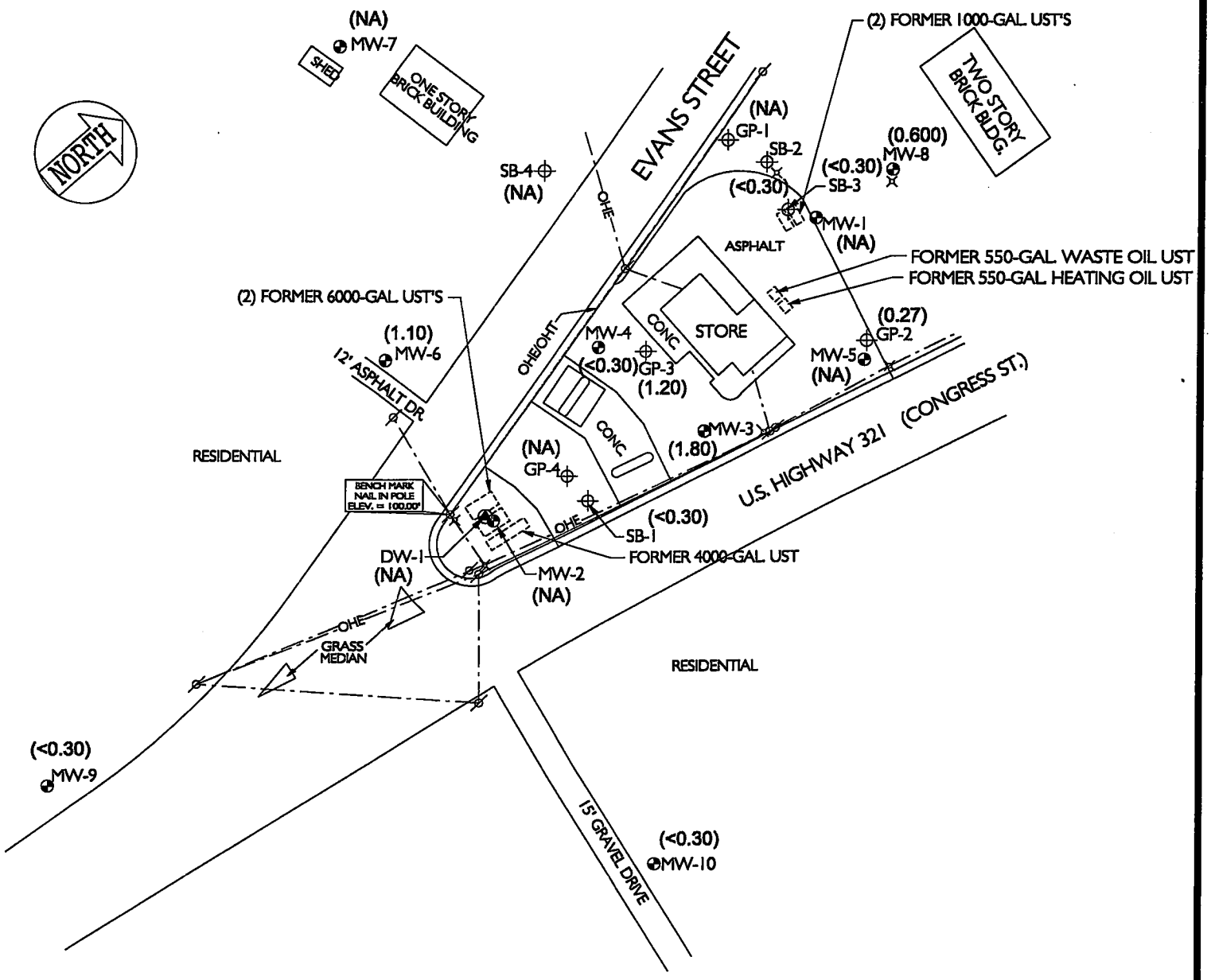
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) BARIUM CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 21: SOIL CONCENTRATION MAP: BARIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000821B	DRAWN BY: JCJ



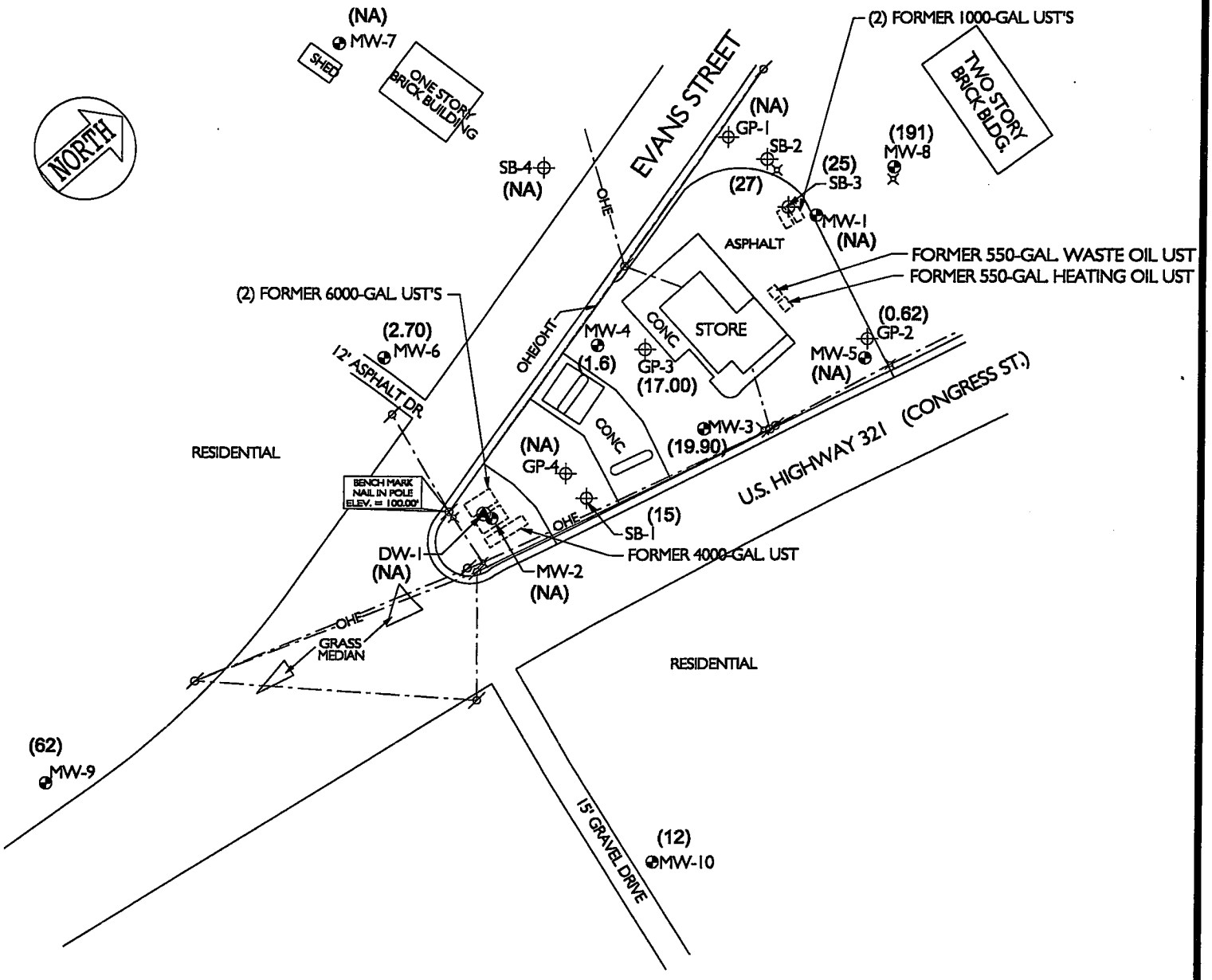
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) CADMIUM CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 22: SOIL CONCENTRATION MAP: CADMIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000822B	DRAWN BY: JCJ



(51)
MW-11
(NA)
CK-1
APPROX. 256 FT. EAST OF MW-11

0 40 80 FT.

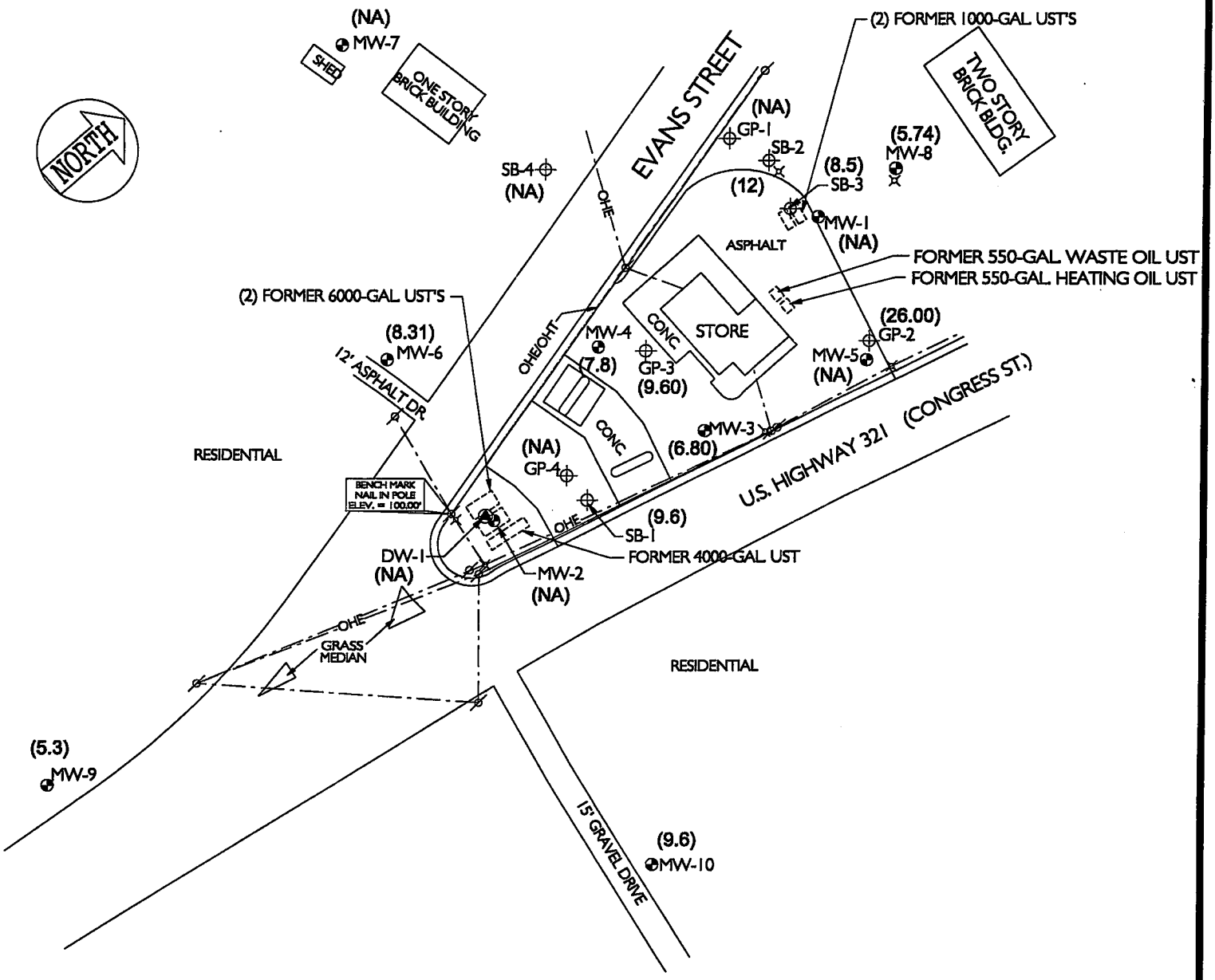
LEGEND:

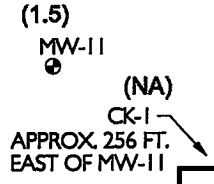
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) CHROMIUM CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 23: SOIL CONCENTRATION MAP: CHROMIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000823B	DRAWN BY: JCJ





LEGEND:

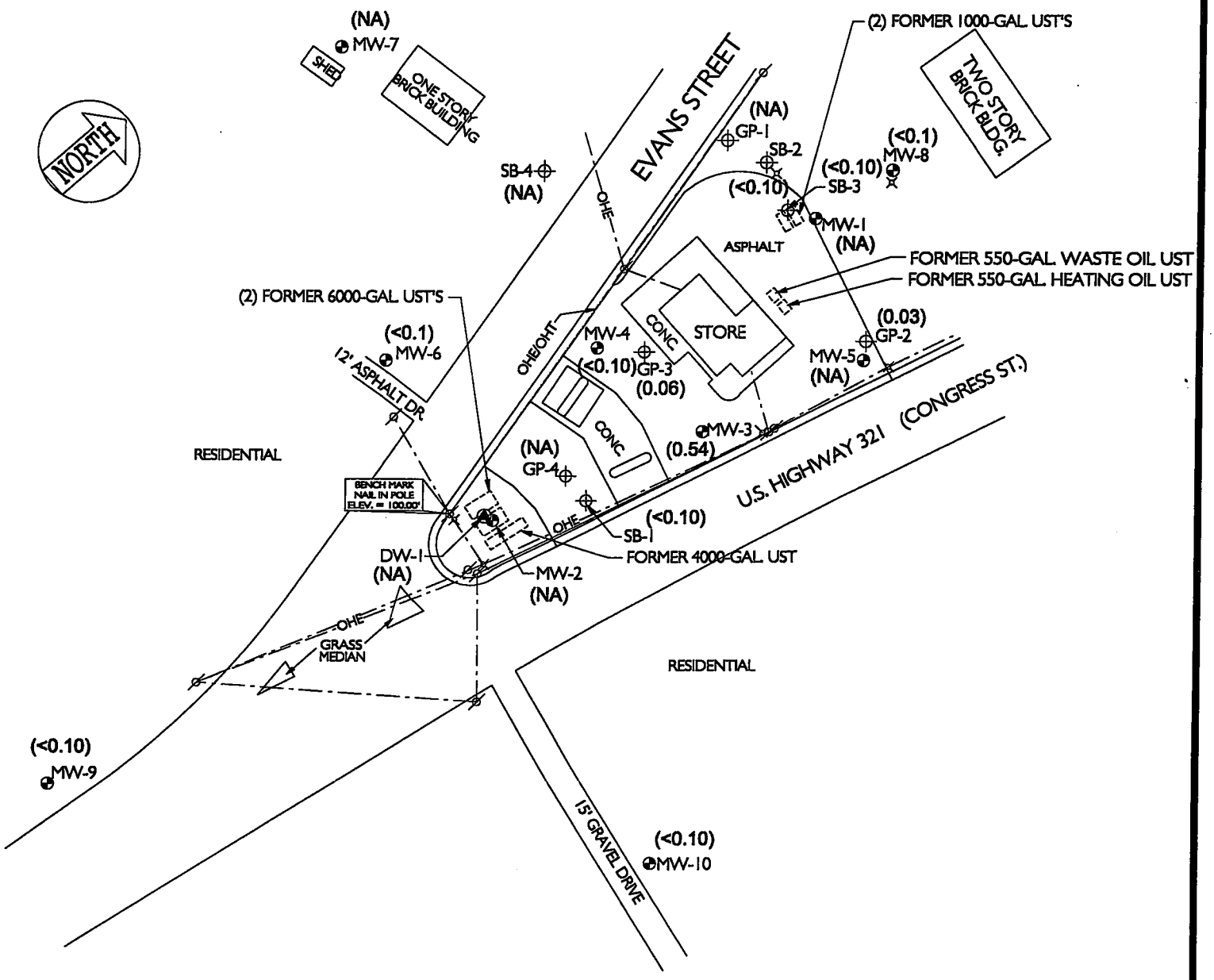
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) LEAD CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 24: SOIL CONCENTRATION MAP:
LEAD
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000824B	DRAWN BY: JCJ



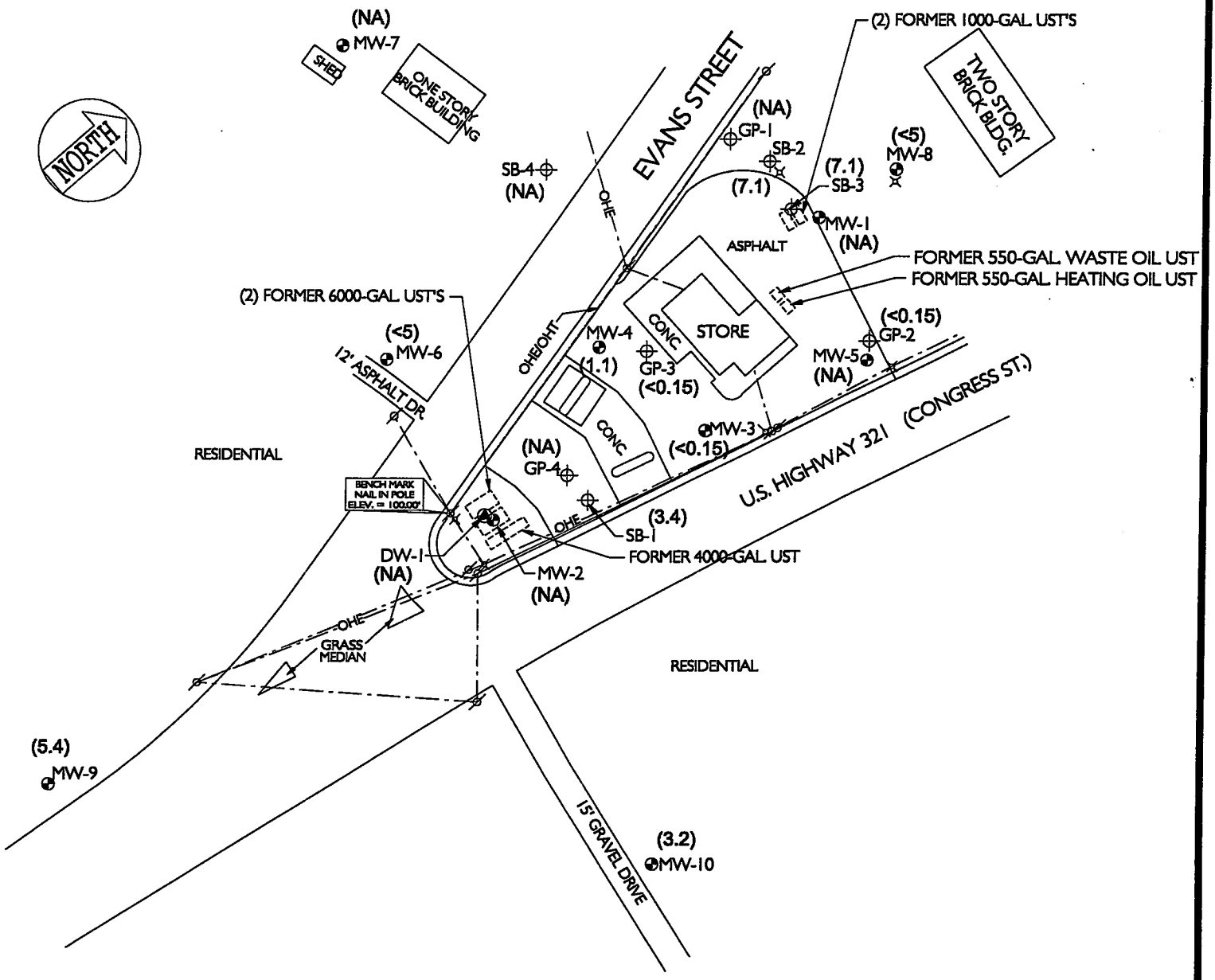
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) MERCURY CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 25: SOIL CONCENTRATION MAP: MERCURY
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000825B	DRAWN BY: JCJ



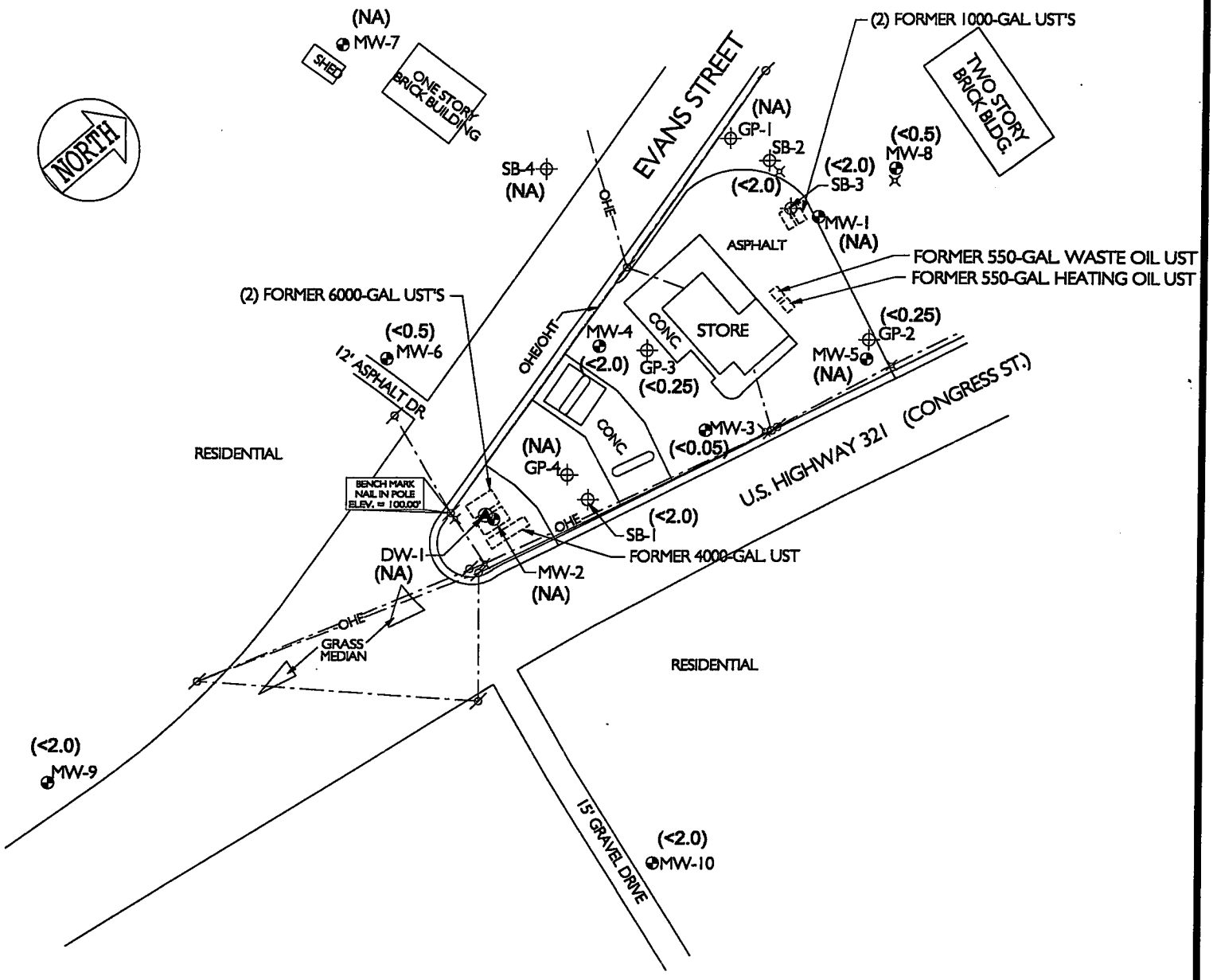
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) SELENIUM CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 26: SOIL CONCENTRATION MAP: SELENIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000826B	DRAWN BY: JCJ



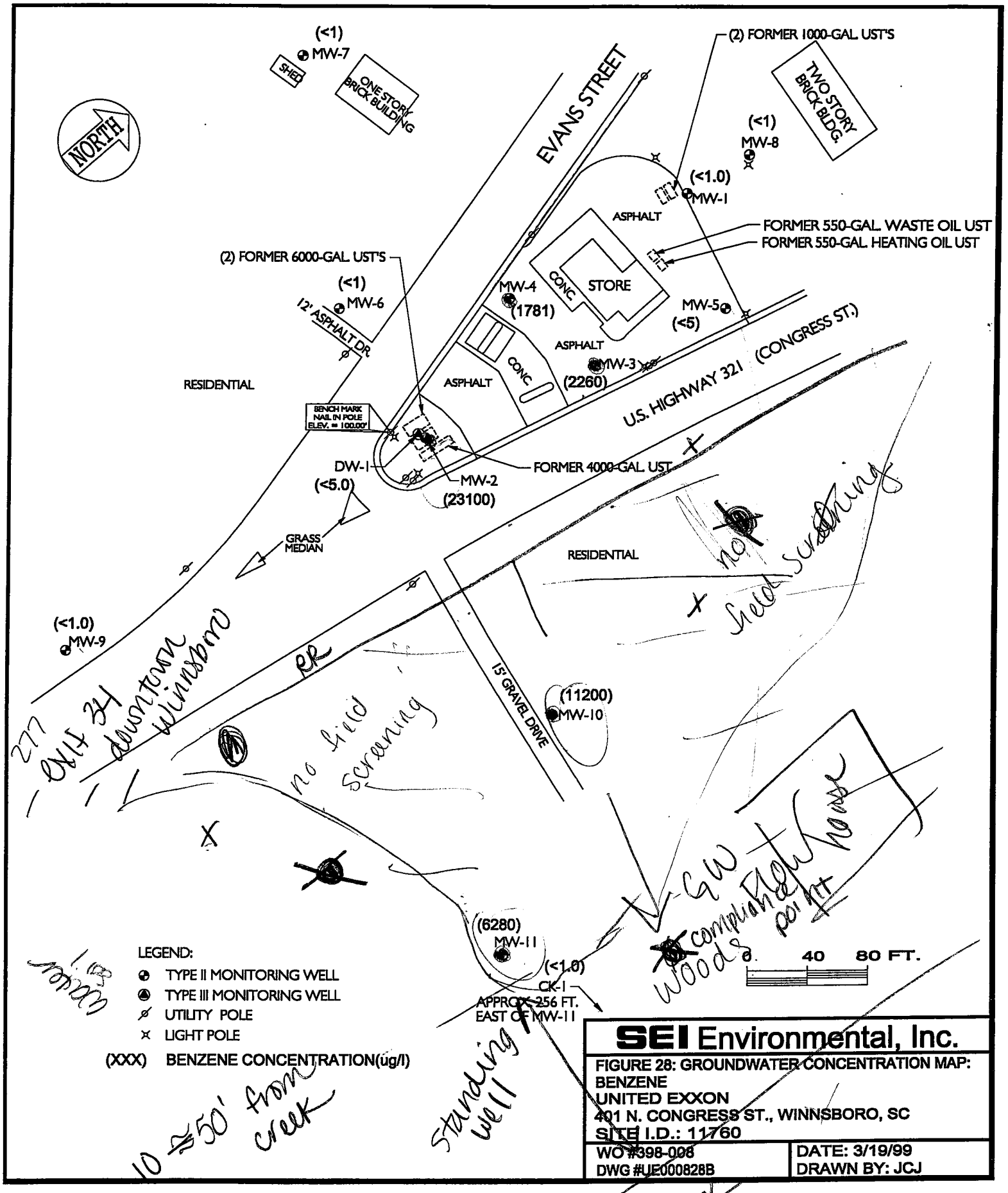
LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- OHE — OVERHEAD ELECTRIC LINE
- SOIL BORING LOCATION
- (XXX) SILVER CONCENTRATION(mg/kg)
- NA = NOT ANALYZED

SEI Environmental, Inc.

FIGURE 27: SOIL CONCENTRATION MAP:
SILVER
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

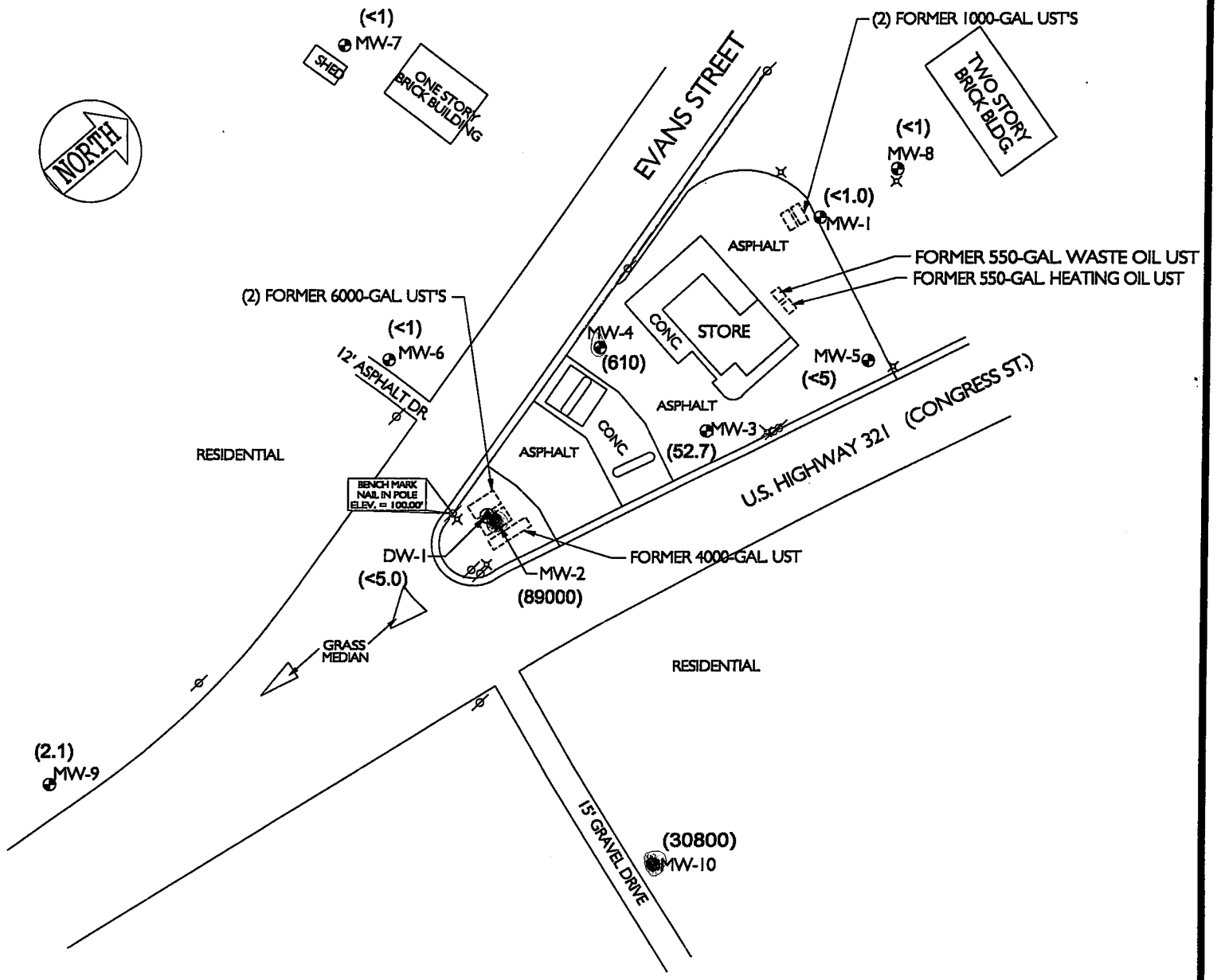
WO #398-008	DATE: 3/19/99
DWG #UE000827B	DRAWN BY: JCJ

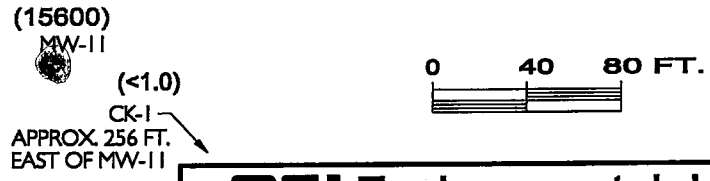


SEI Environmental, Inc.

FIGURE 28: GROUNDWATER CONCENTRATION MAP: BENZENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008 DWG #UE000828B	DATE: 3/19/99 DRAWN BY: JCJ





LEGEND:

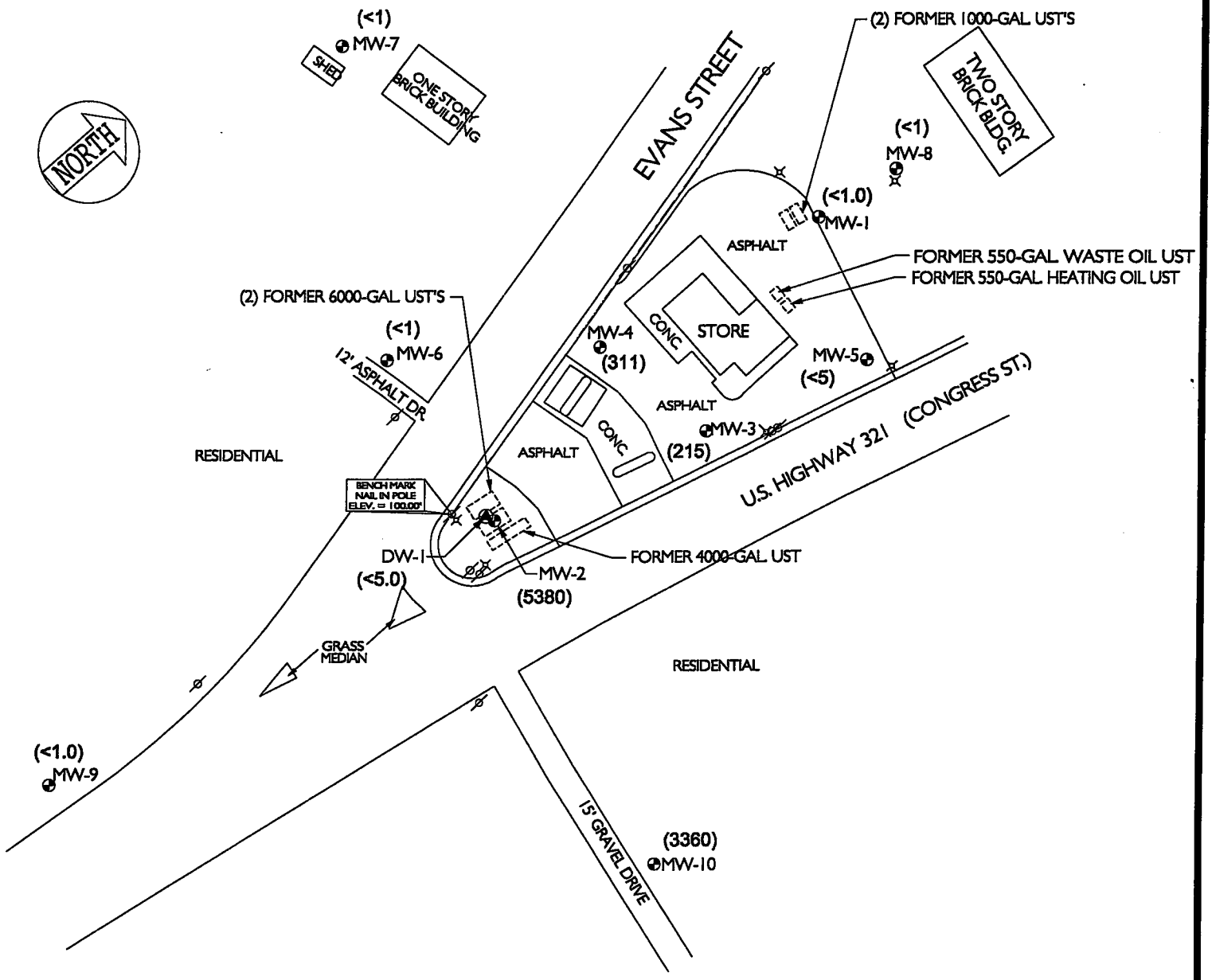
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

(XXX) TOLUENE CONCENTRATION(ug/l)

SEI Environmental, Inc.

FIGURE 29: GROUNDWATER CONCENTRATION MAP: TOLUENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000829B	DRAWN BY: JCJ



(2390)
MW-11
(<1.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

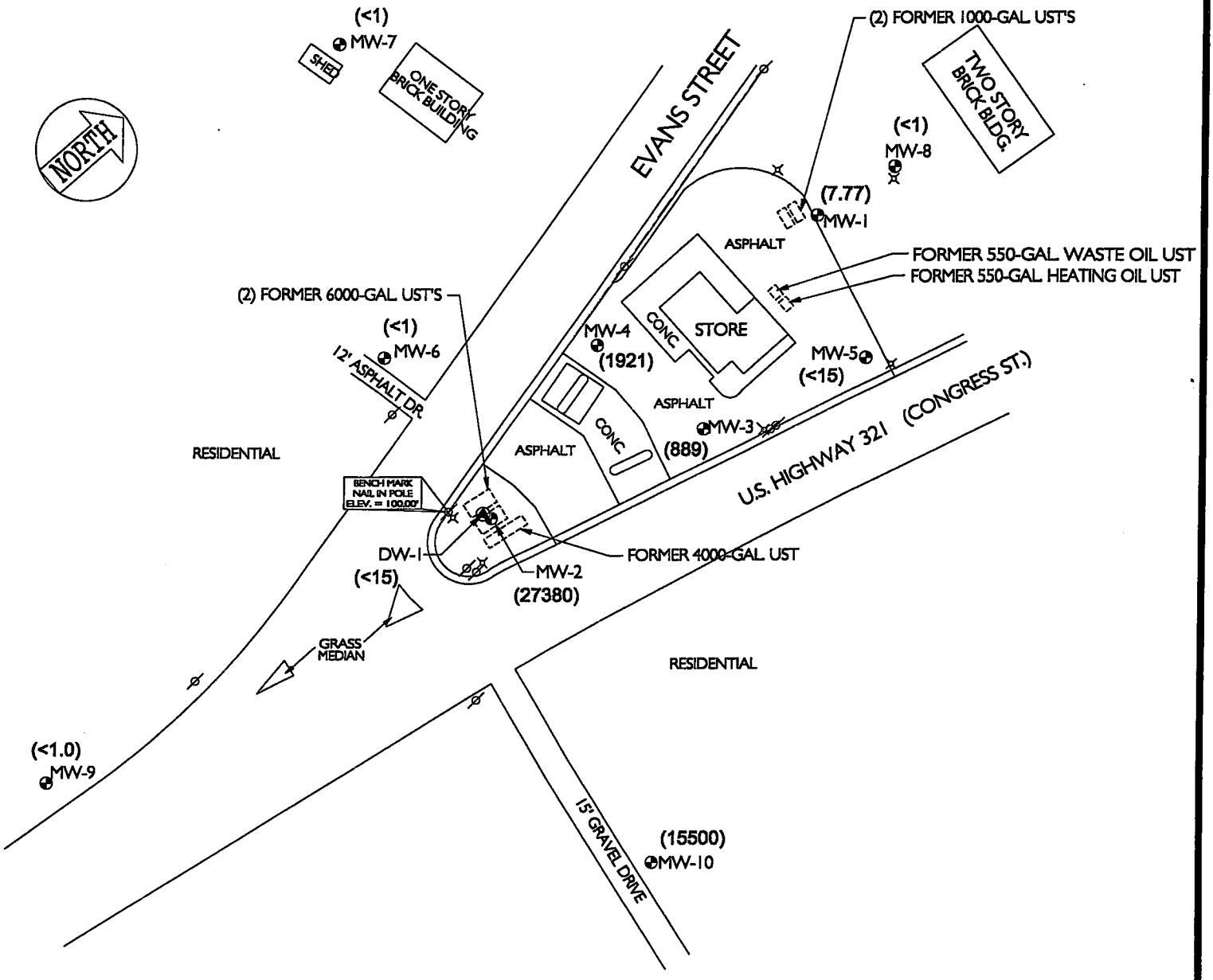
(XXX) ETHYLBENZENE CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 30: GROUNDWATER CONCENTRATION MAP: ETHYLBENZENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000830B	DRAWN BY: JCJ



(10800)
MW-11
(<1.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

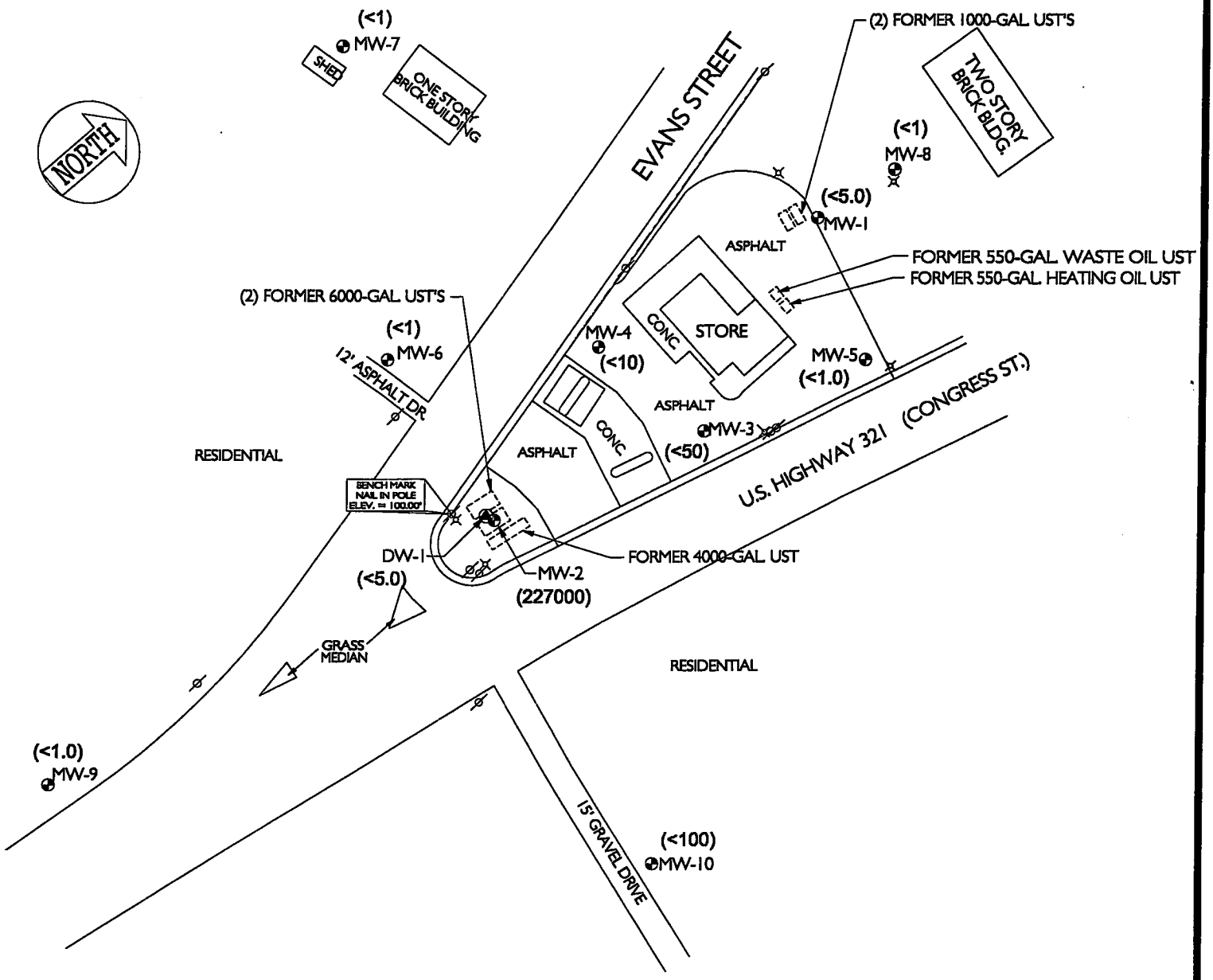
(XXX) XYLENES CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 31: GROUNDWATER CONCENTRATION MAP: XYLENES
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000831B	DRAWN BY: JCJ



LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

(XXX) MTBE CONCENTRATION(ug/l)

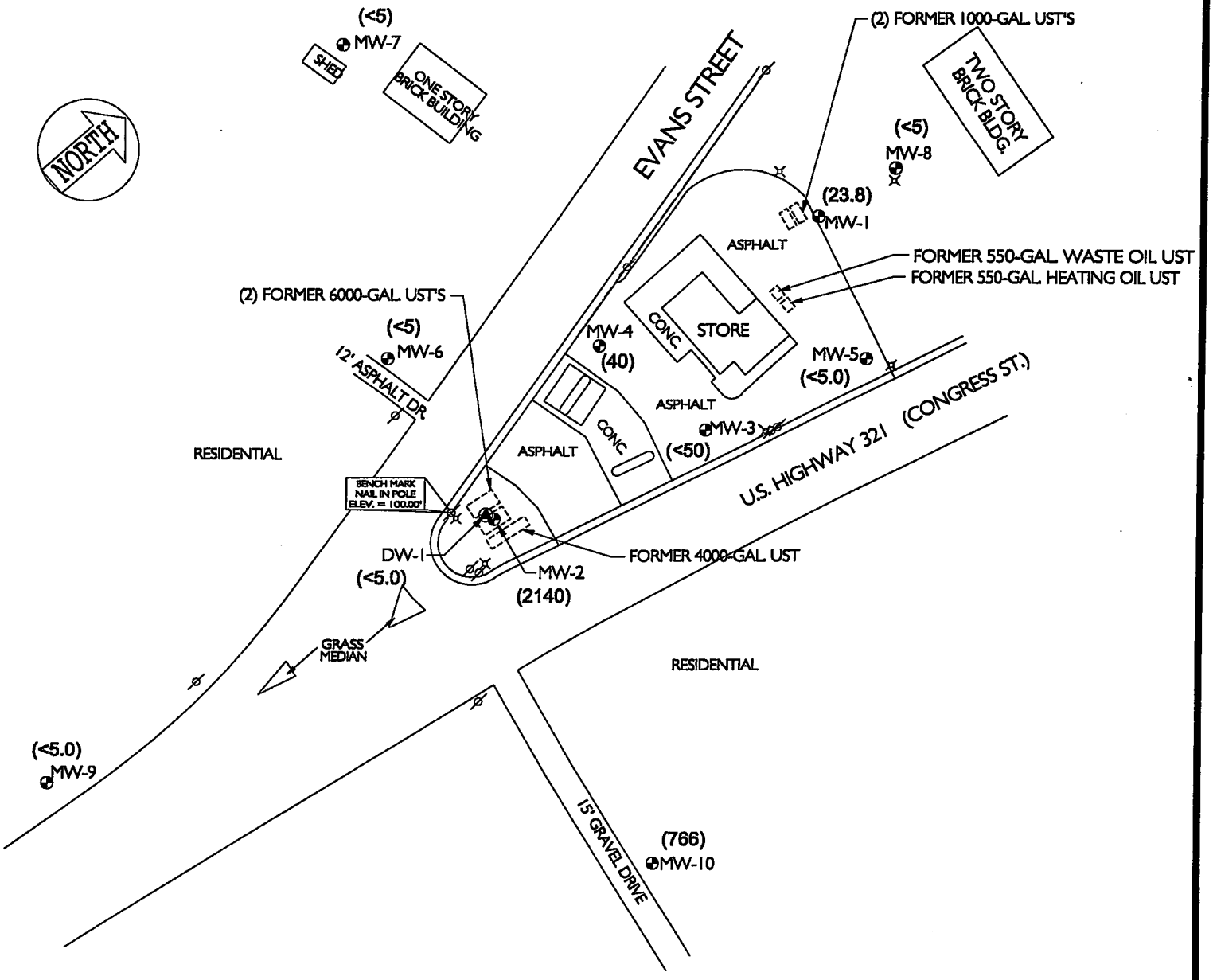
(<100)
MW-11
(<1.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 32: GROUNDWATER CONCENTRATION MAP: MTBE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000832B	DRAWN BY: JCJ



(617)
MW-11
(<5.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

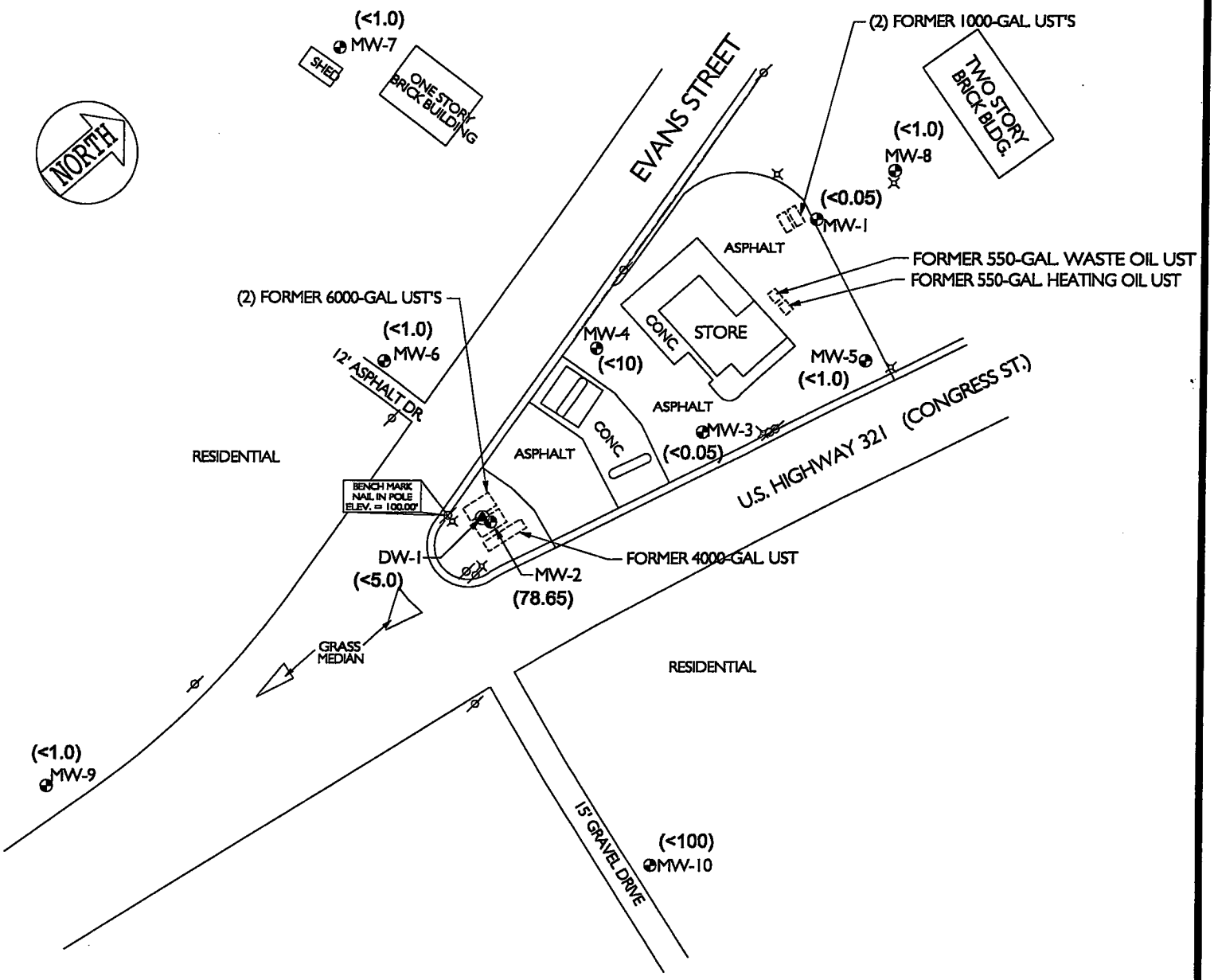
(XXX) NAPHTHALENE CONCENTRATION(ug/l)

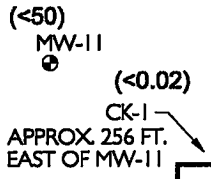
0 40 80 FT.

SEI Environmental, Inc.

FIGURE 33: GROUNDWATER CONCENTRATION MAP: NAPHTHALENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000833B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

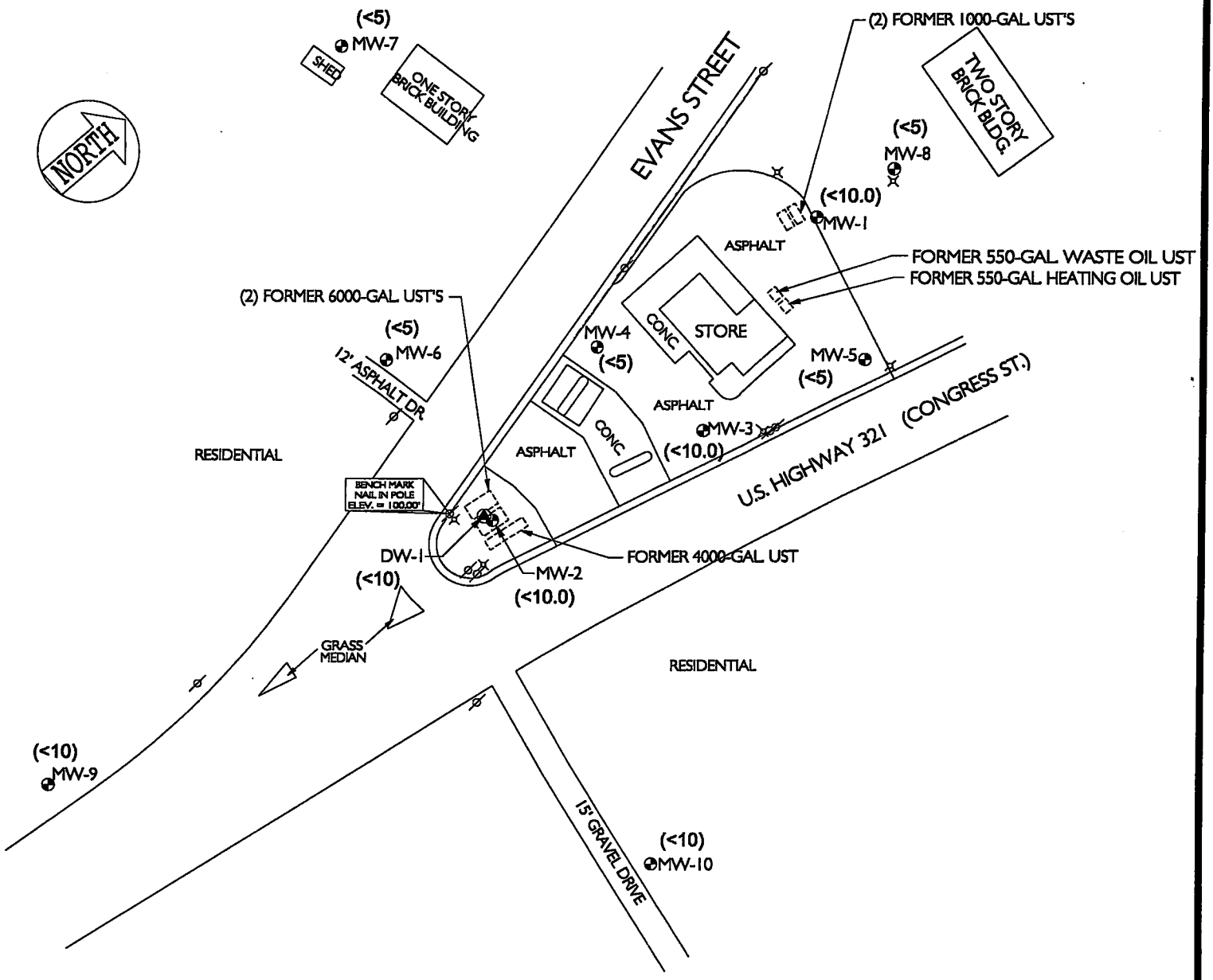
(XXX) EDB CONCENTRATION(ug/l)

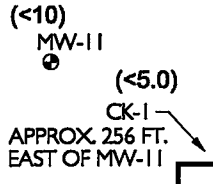
0 40 80 FT.

SEI Environmental, Inc.

FIGURE 34: GROUNDWATER CONCENTRATION MAP: EDB
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000834B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

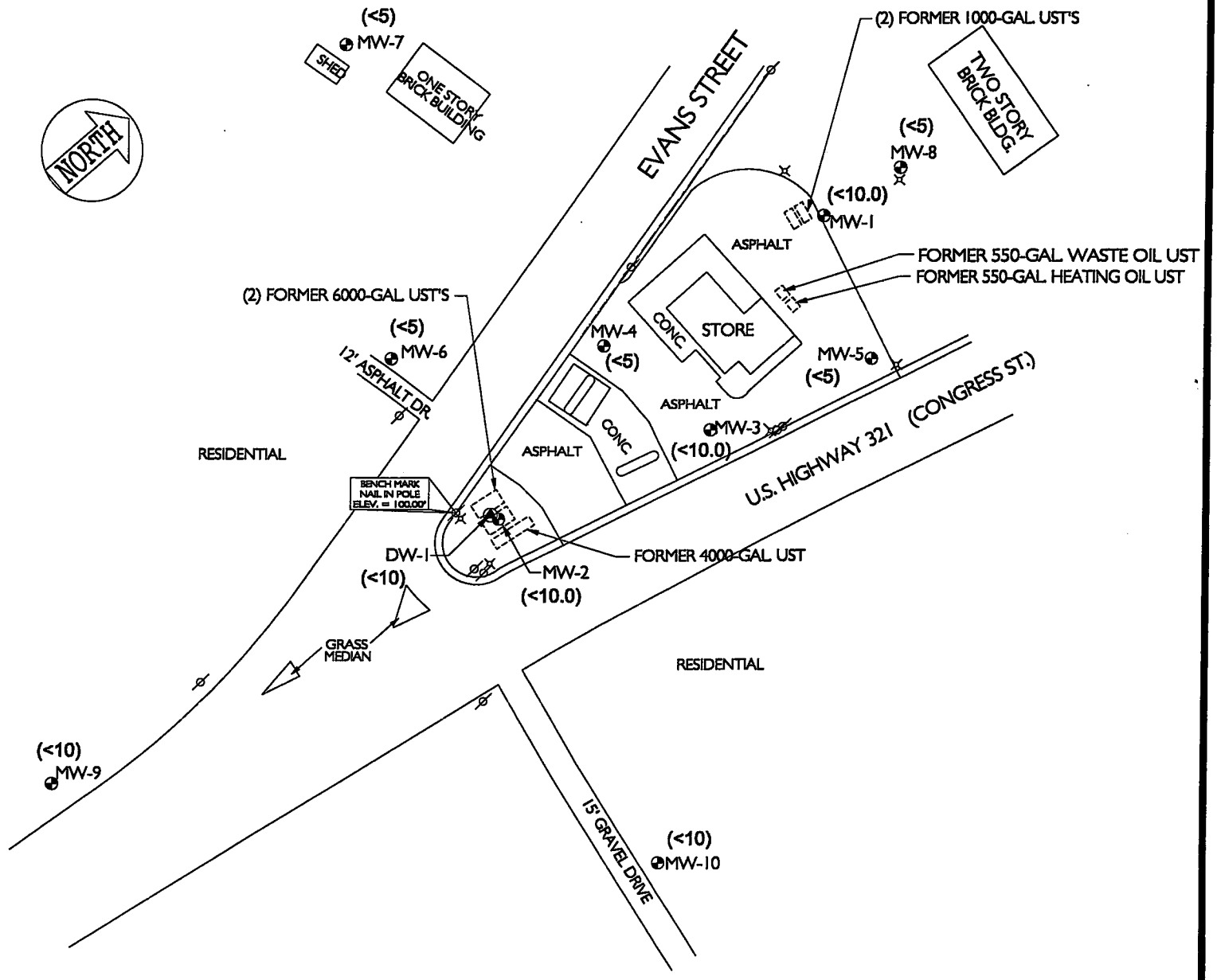
(XXX) BENZO(a)ANTHRACENE CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 35: GROUNDWATER CONCENTRATION MAP: BENZO(a)ANTHRACENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000835B	DRAWN BY: JCJ



(<10)
MW-11
(<5.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

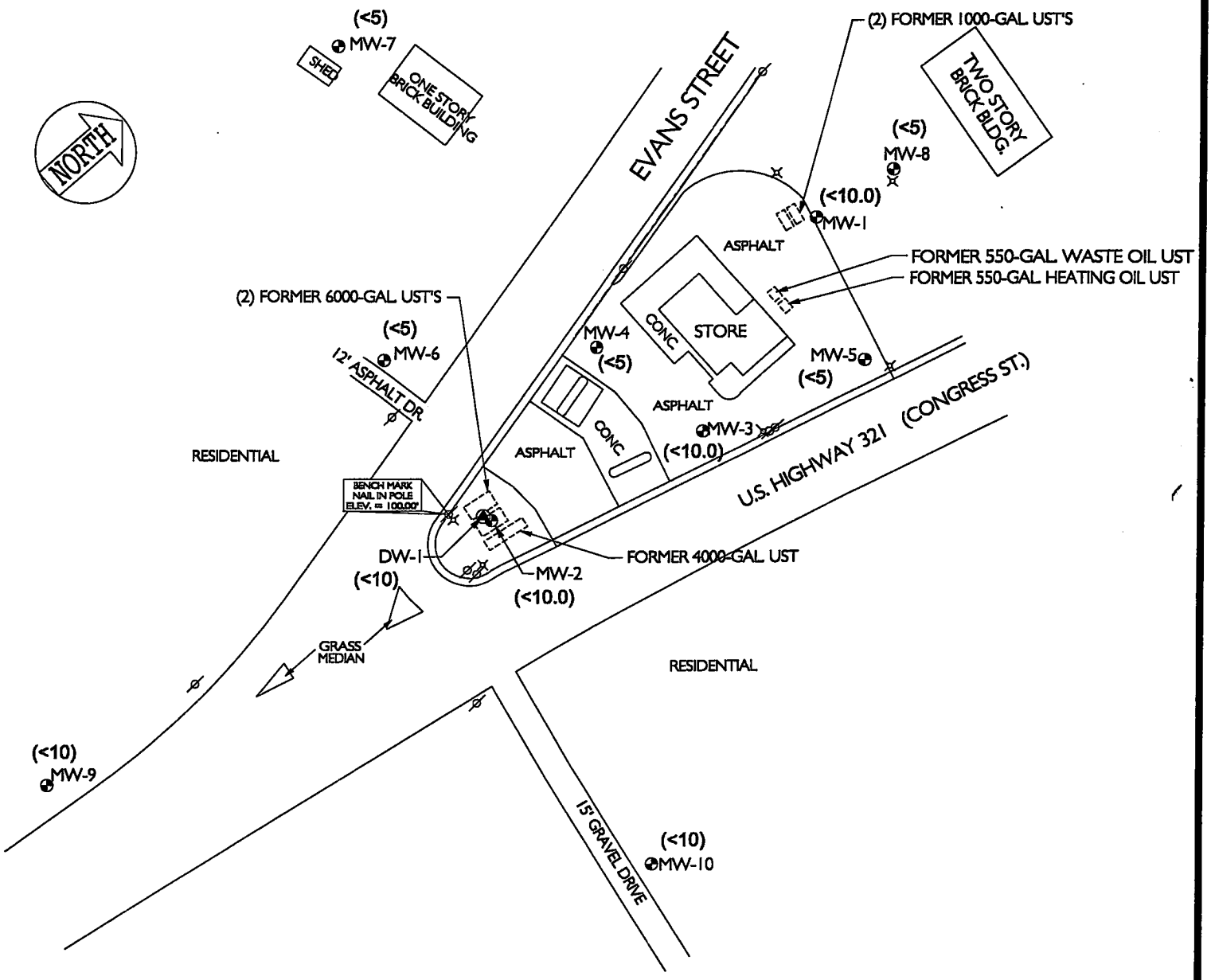
(XXX) BENZO(b)FLUORANTHENE CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 36: GROUNDWATER CONCENTRATION MAP: BENZO(b)FLUORANTHENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000836B	DRAWN BY: JCJ



LEGEND:

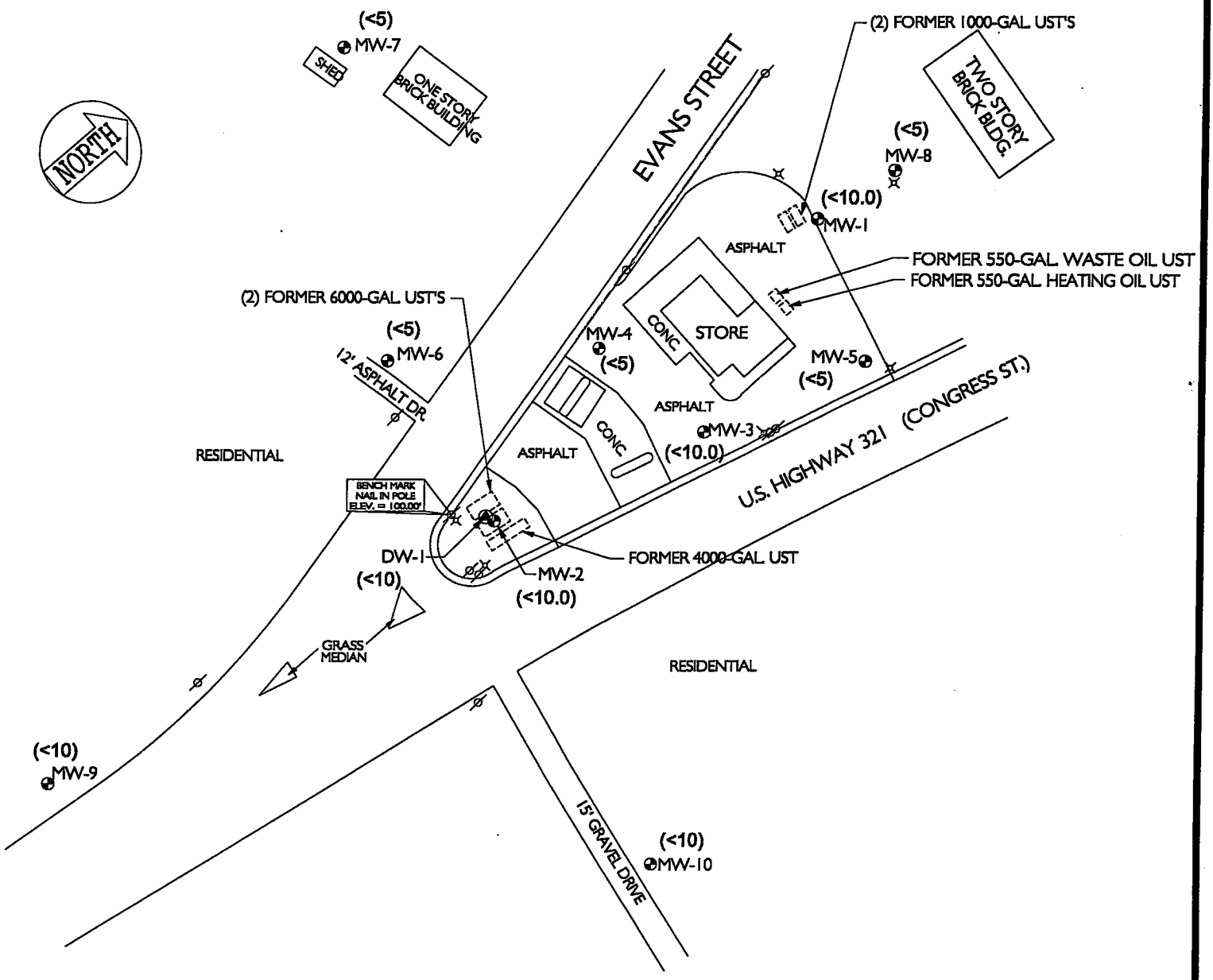
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

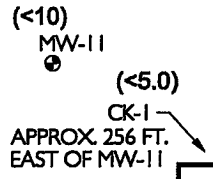
(XXX) BENZO(k)FLUORANTHENE CONCENTRATION(ug/l)

SEI Environmental, Inc.

FIGURE 37: GROUNDWATER CONCENTRATION MAP: BENZO(k)FLUORANTHENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000837B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

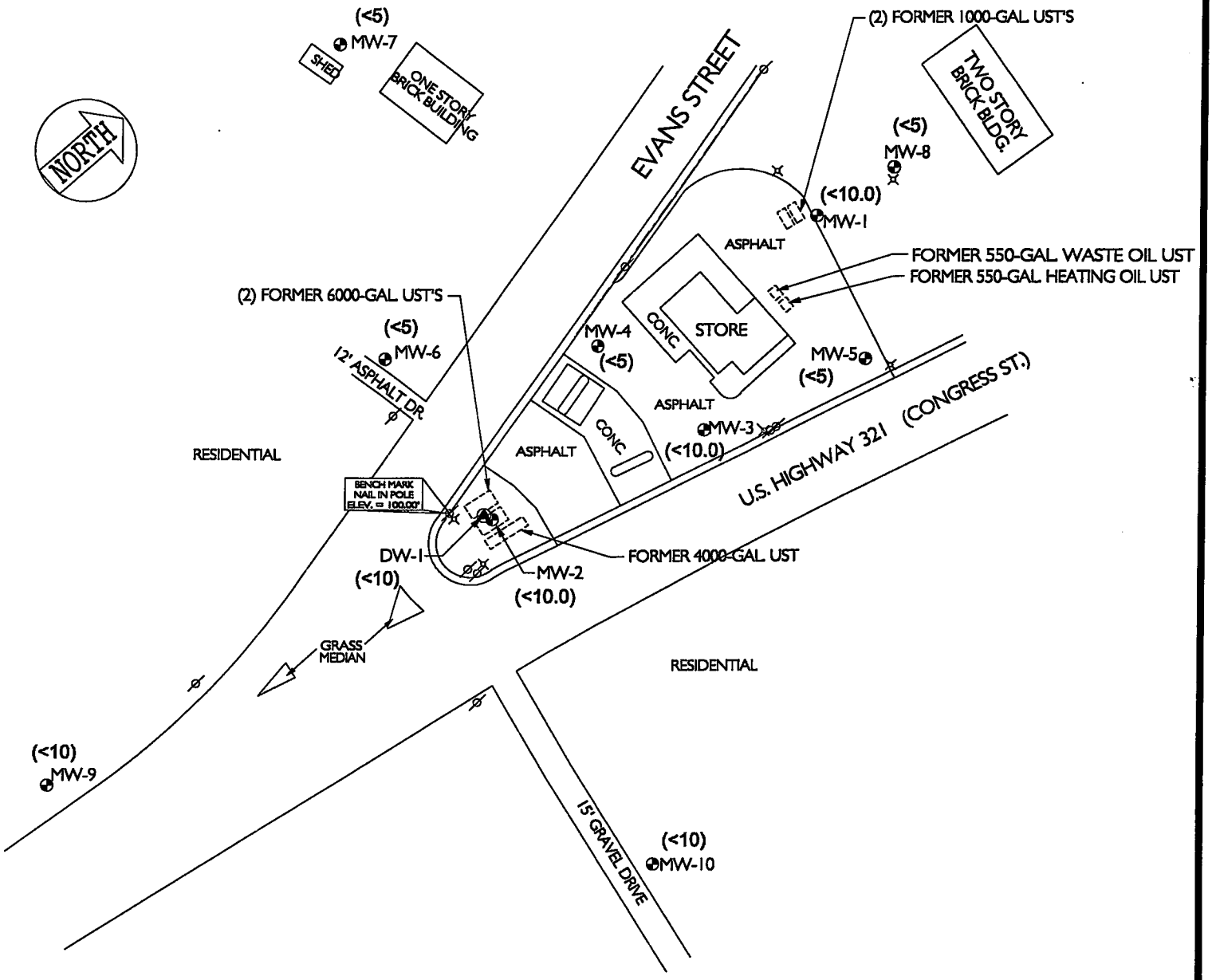
(XXX) CHRYSENE CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 38: GROUNDWATER CONCENTRATION MAP: CHRYSENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000838B	DRAWN BY: JCJ



(<10)
MW-11
(<5.0)
CK-1
APPROX. 256 FT. EAST OF MW-11

LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

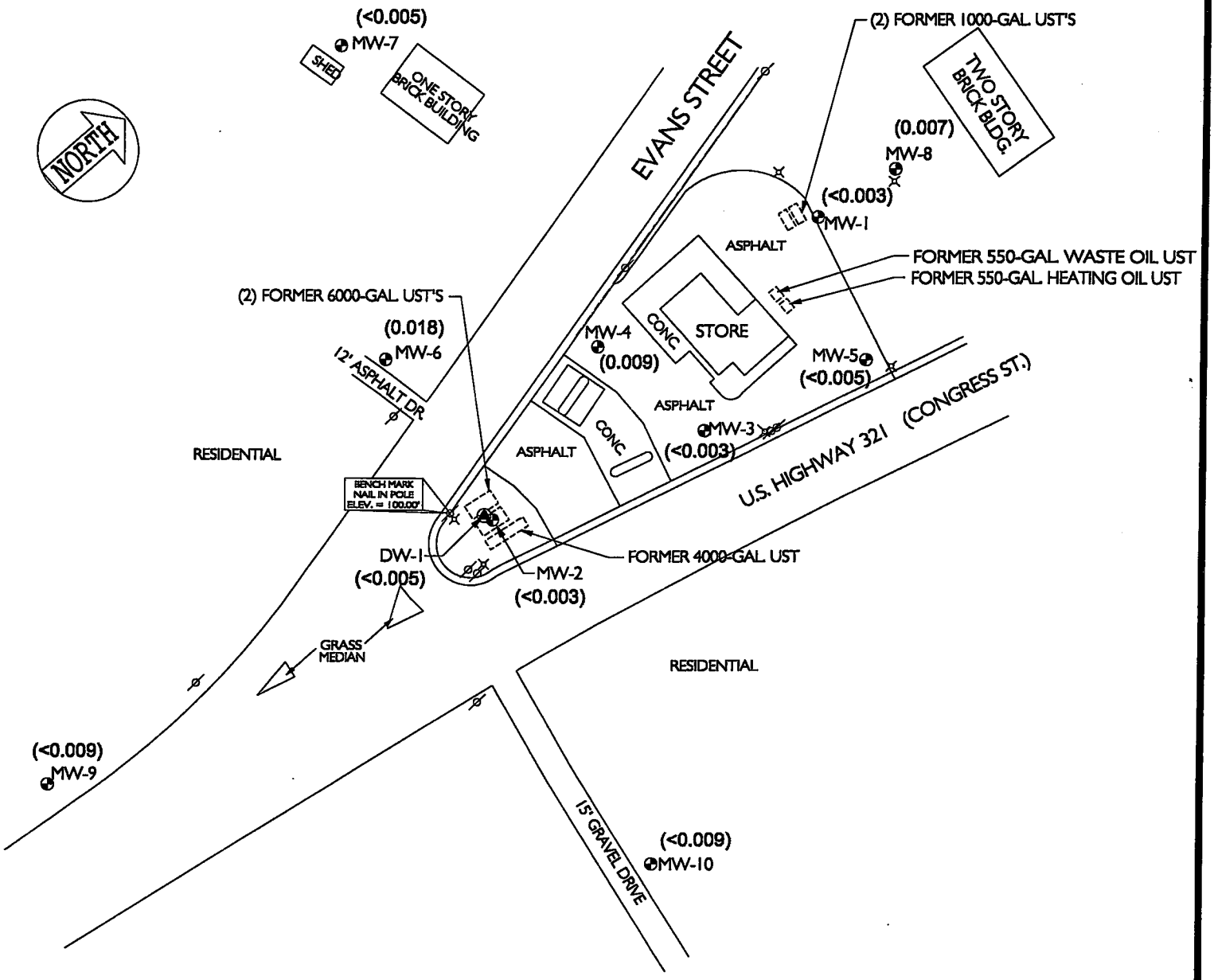
(XXX) DIBENZO(a,h)ANTHRACENE CONCENTRATION(ug/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 39: GROUNDWATER CONCENTRATION MAP: DIBENZO(a,h)ANTHRACENE
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000839B	DRAWN BY: JCJ



LEGEND:

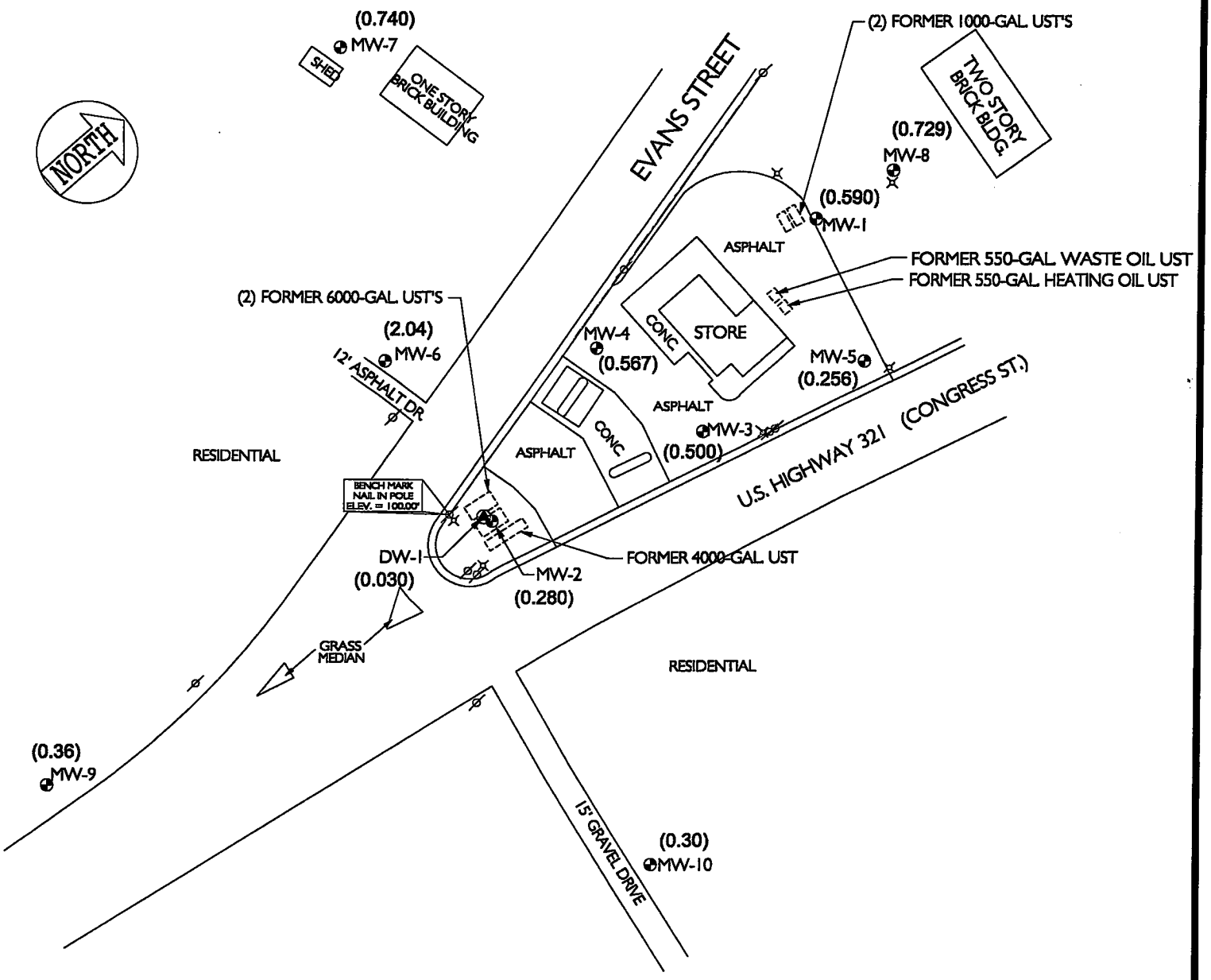
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

(XXX) ARSENIC CONCENTRATION(mg/l)

SEI Environmental, Inc.

FIGURE 40: GROUNDWATER CONCENTRATION MAP: ARSENIC
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000840B	DRAWN BY: JCJ



LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

(XXX) BARIUM CONCENTRATION(mg/l)

(<0.006)
MW-11

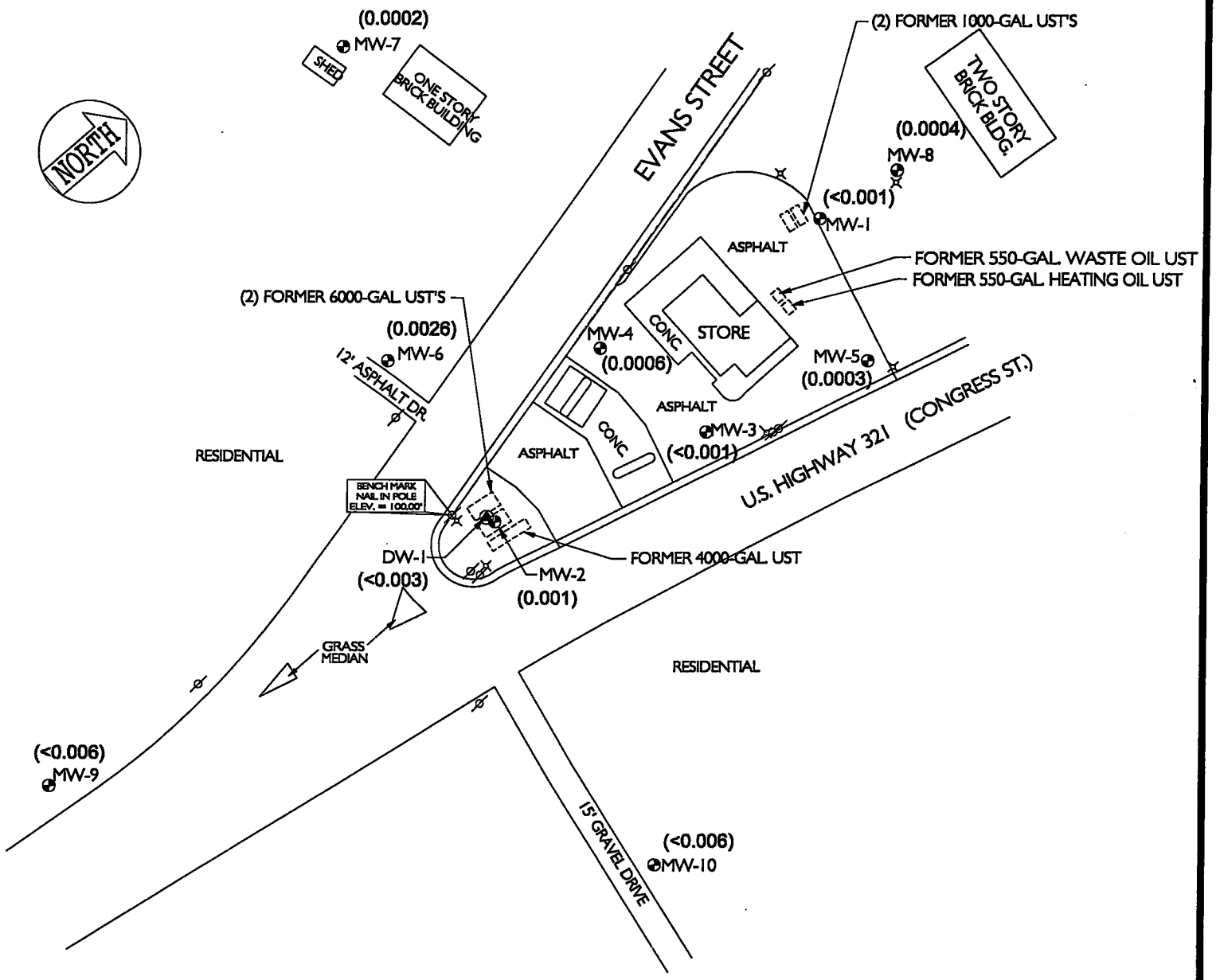
(0.070)
CK-1
APPROX. 256 FT. EAST OF MW-11

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 41: GROUNDWATER CONCENTRATION MAP: BARIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000841B	DRAWN BY: JCJ



LEGEND:

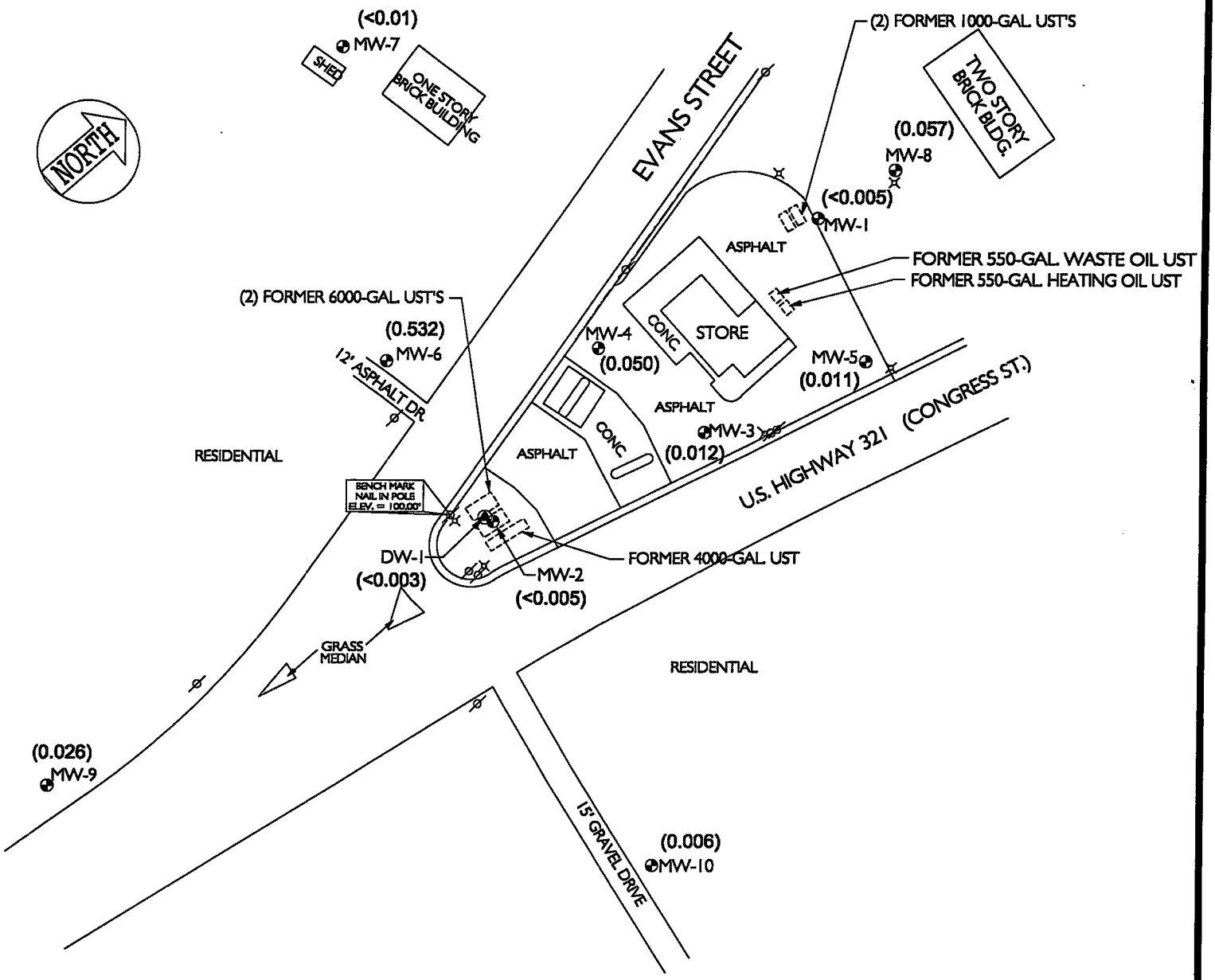
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

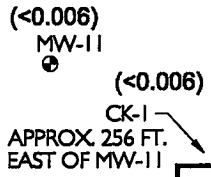
(XXX) CADMIUM CONCENTRATION(mg/l)

SEI Environmental, Inc.

FIGURE 42: GROUNDWATER CONCENTRATION MAP: CADMIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000842B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

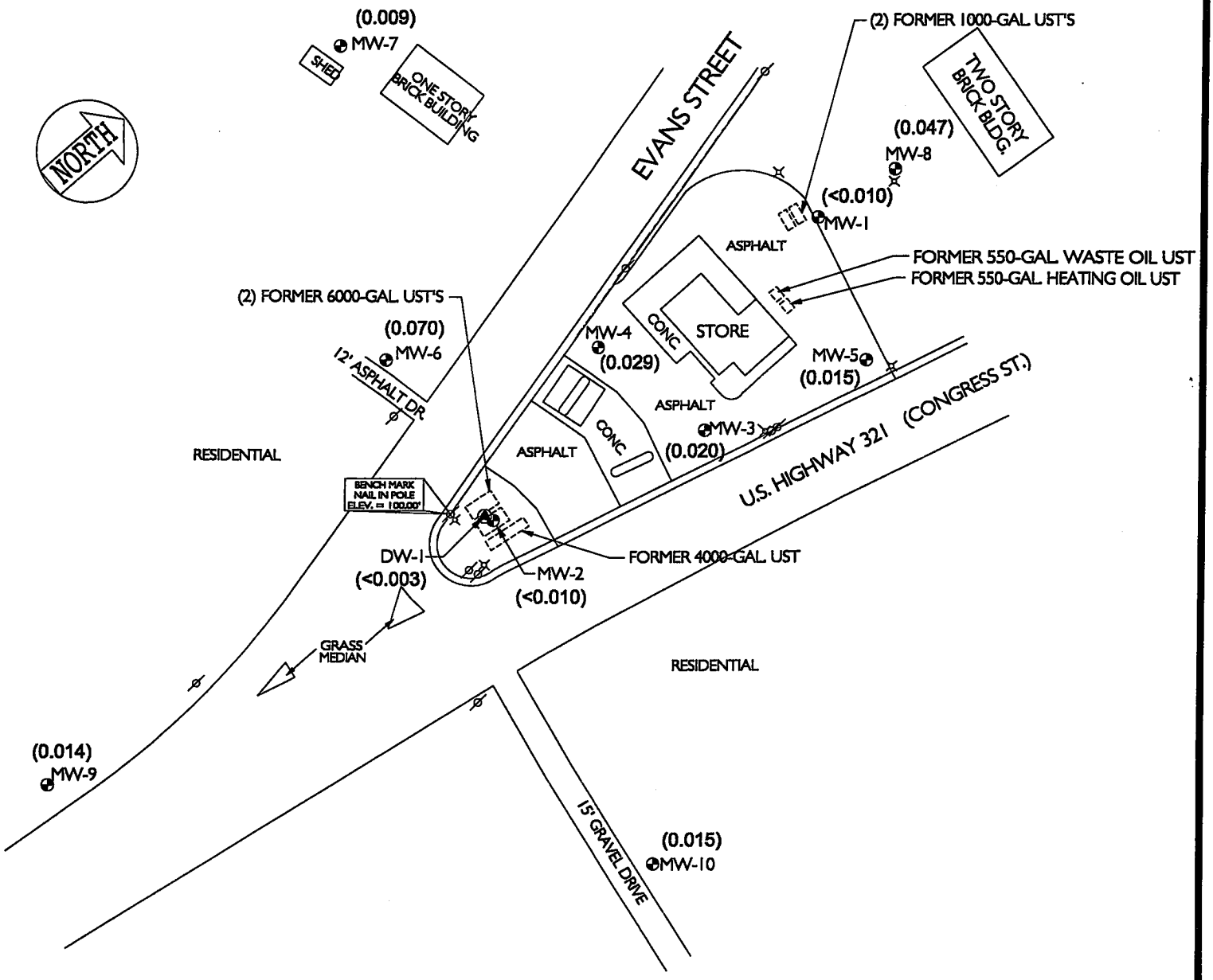
(XXX) CHROMIUM CONCENTRATION(mg/l)

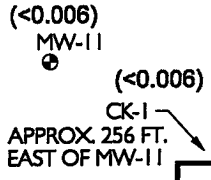
0 40 80 FT.

SEI Environmental, Inc.

FIGURE 43: GROUNDWATER CONCENTRATION MAP: CHROMIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000843B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

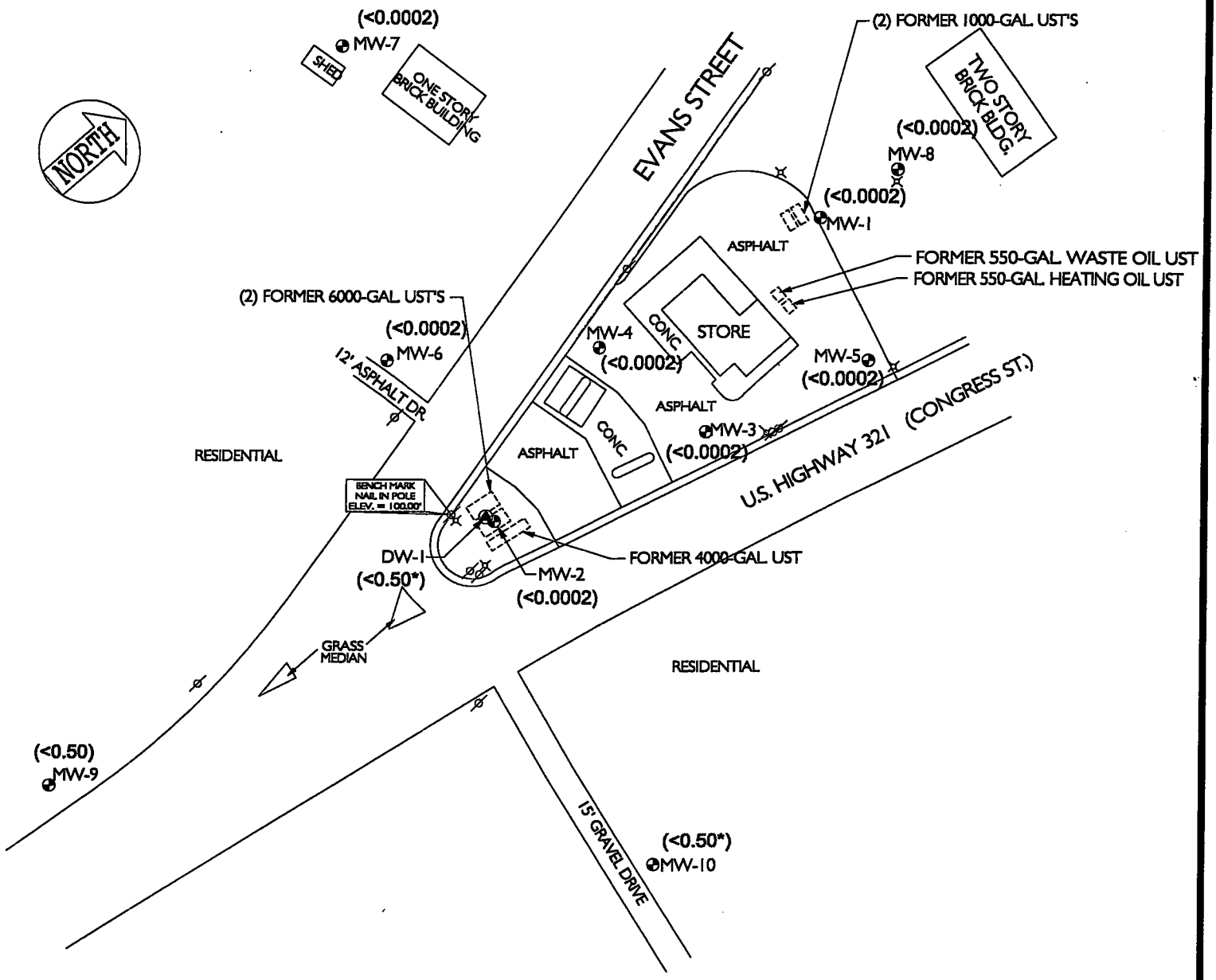
(XXX) LEAD CONCENTRATION(mg/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 44: GROUNDWATER CONCENTRATION MAP: LEAD
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000844B	DRAWN BY: JCJ



LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

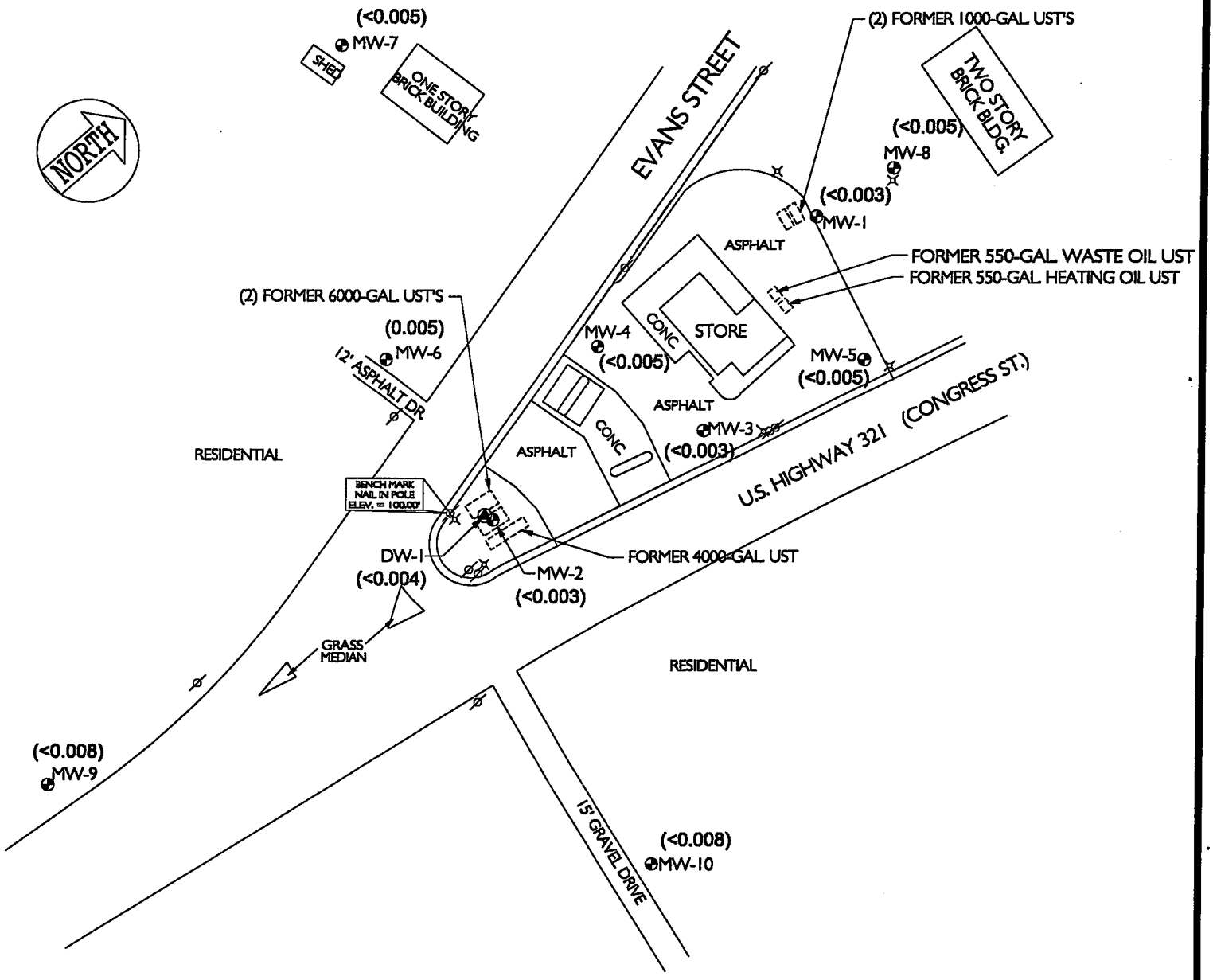
(XXX) MERCURY CONCENTRATION(mg/l)

* MW-10, MW-11, CK-1 AND DW-1 CONCENTRATIONS GIVEN IN ug/l.

SEI Environmental, Inc.

FIGURE 45: GROUNDWATER CONCENTRATION MAP: MERCURY
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000845B	DRAWN BY: JCJ



LEGEND:

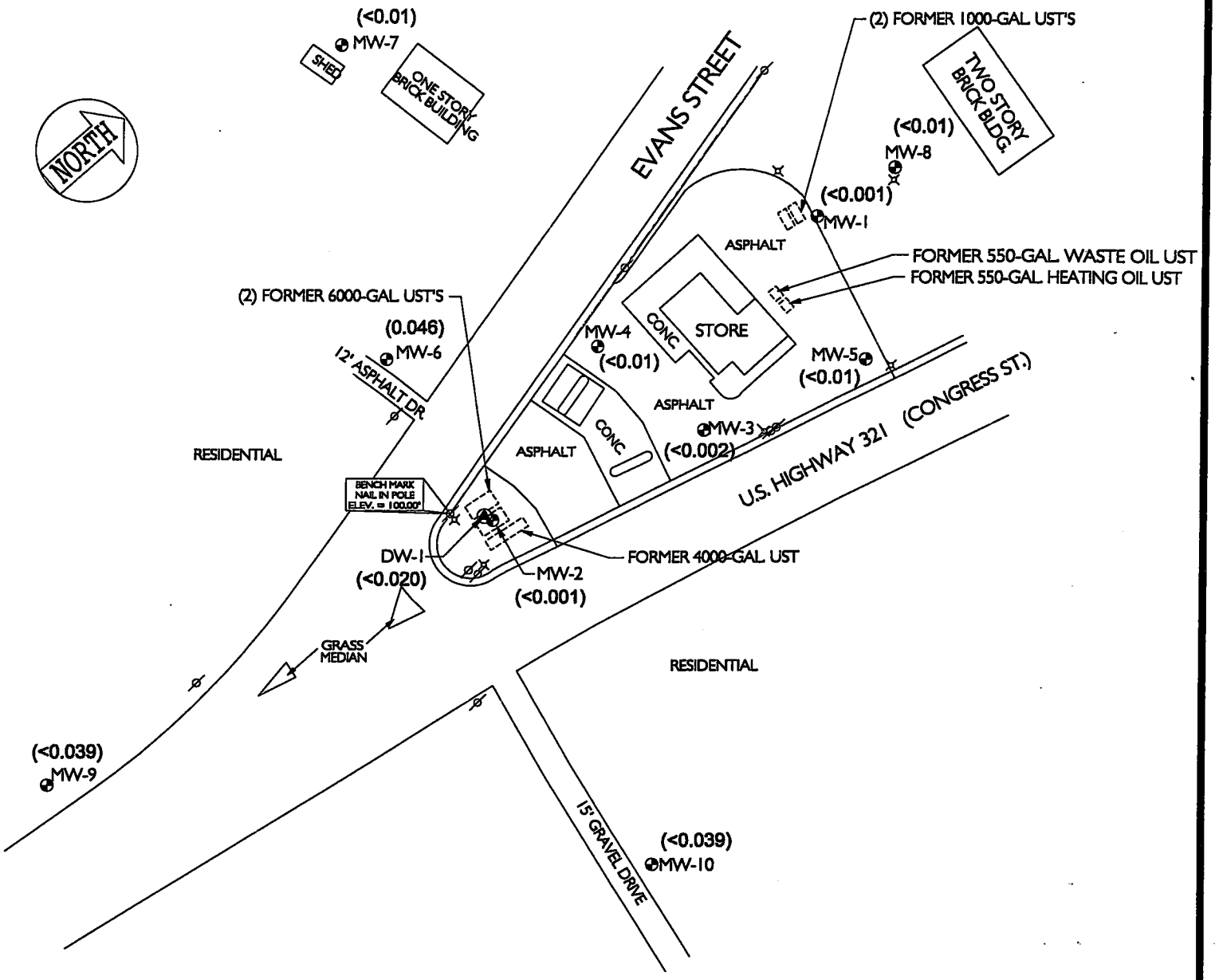
- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE

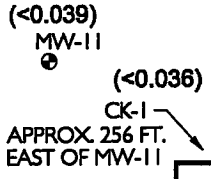
(XXX) SELENIUM CONCENTRATION(mg/l)

SEI Environmental, Inc.

FIGURE 46: GROUNDWATER CONCENTRATION MAP: SELENIUM
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000846B	DRAWN BY: JCJ





LEGEND:

- TYPE II MONITORING WELL
- TYPE III MONITORING WELL
- UTILITY POLE
- LIGHT POLE
- (XXX) SILVER CONCENTRATION(mg/l)

0 40 80 FT.

SEI Environmental, Inc.

FIGURE 47: GROUNDWATER CONCENTRATION MAP: SILVER
UNITED EXXON
401 N. CONGRESS ST., WINNSBORO, SC
SITE I.D.: 11760

WO #398-008	DATE: 3/19/99
DWG #UE000847B	DRAWN BY: JCJ

APPENDIX A

Borehole GP-1 **Sampling Date: 05/20/98** **Sample Depth: 8-10'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
3-5	0.0	Dusky red clay, medium stiff, trace dusky brown mottled	Dry; no petroleum odor
8-10	0.0	Dusky orange clay, soft, trace mica, trace silt, trace very fine subrounded to subangular sand	Dry; no petroleum odor

Borehole GP-2 **Sampling Date: 05/20/98** **Sample Depth: 23-25'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
3-5	0.0	Dusky red clay, soft to medium stiff, trace mica, trace silt, trace very fine sand	Dry; no petroleum odor
8-10	0.0	Dusky red clay, soft to very soft, trace to common silt, trace to common mica, trace very fine sand	Dry; no petroleum odor
13-15	0.0	Very pale orange sand, very fine subangular to subrounded, trace to common silt, trace mica	Dry; no petroleum odor
18-20	0.0	White sand, fine to very fine subrounded to subangular, trace silt, trace biotite mica	Dry; no petroleum odor
23-25	0.0	Moderate orange saprolite, trace black mottling, abundant silt, trace mica	Dry; no petroleum odor

Borehole GP-3 **Sampling Date: 05/20/98** **Sample Depth: 18-20'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
3-5	0.0	Dusky orange clay, soft to very soft, trace light brown mottling, trace medium to coarse subrounded to subangular quartz	Dry; no petroleum odor
8-10	0.0	Dusky orange clay, moderate, stiff, trace medium to very fine subrounded to subangular sand, trace silt	Dry; no petroleum odor
13-15	9	Moderate orange clay, soft, trace mica, trace medium to very fine subrounded to subangular, trace silt, trace pale orange mottling	Dry; no petroleum odor
18-20	17	Pale orange saprolite, abundant silt, trace very fine sand, trace black mottling	Dry; no petroleum odor
23-25	8	Pale brown sand, very fine, abundant silt, trace common subrounded to subangular sand	Dry; no petroleum odor

Borehole GP-4 **Sampling Date: 05/20/98** **Sample Depth: NA**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
3-5	7	Dusky orange clay, soft to medium stiff, abundant silt, trace to common very fine sand	Dry; no petroleum odor
8-10	95	Moderate orange sand, fine to very fine subrounded to subangular, abundant silt, trace very coarse subrounded quartz, trace pale red mottling	Dry; no petroleum odor
13-15	170	Pale red clay, soft to very soft, abundant silt, trace black mottling, trace very fine sand	Dry; strong petroleum odor
18-20	210	Pale orange sand, very fine subrounded to subangular, abundant silt, trace clay, trace mica	Dry; moderate petroleum odor
23-25	300	Pale orange sand, very fine subrounded to subangular, abundant silt, trace black mottling, trace white mottling	Dry; strong petroleum odor

Borehole SB-1 **Sampling Date: 10/29/98** **Sample Depth: 10'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
0-1	Not Applicable	Asphalt and Road Base	Not Applicable
1-6	0.0	Dusky red clay, stiff, trace medium to very fine sand	Dry; no petroleum odor
6-13	100	Moderate orange clay, stiff, trace to common fine to very fine sand	Dry; no petroleum odor
13-15	75	Very pale reddish brown clay, stiff, trace medium to very fine sand	Damp; no petroleum odor
20	50	Very pale reddish brown clay, stiff, trace medium to very fine sand	Damp; no petroleum odor
25	10	Very pale reddish brown clay, stiff, trace medium to very fine sand	Damp; no petroleum odor

Borehole SB-2 **Sampling Date: 10/29/98** **Sample Depth: 25'**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
0-4	Not Determined	Moderate orange clay, stiff, trace mica, trace medium to very fine sand	Moist; no petroleum odor
4-5	0.0	Dusky red clay, stiff, trace silt, trace mica, trace medium to very fine sand	Moist; no petroleum odor
10	0.0	Dusky red clay, stiff, trace silt, trace mica, trace medium to very fine sand	Moist; no petroleum odor
15	0.0	Dusky red clay, stiff, trace silt, trace mica, trace medium to very fine sand	Moist; no petroleum odor
20	0.0	Dusky red clay, stiff, trace silt, trace mica, trace medium to very fine sand	Moist; no petroleum odor
25	0.0	Dusky red clay, stiff, trace silt, trace mica, trace medium to very fine sand	Moist; no petroleum odor

Borehole SB-3 **Sampling Date: 10/29/98** **Sample Depth: 25'**

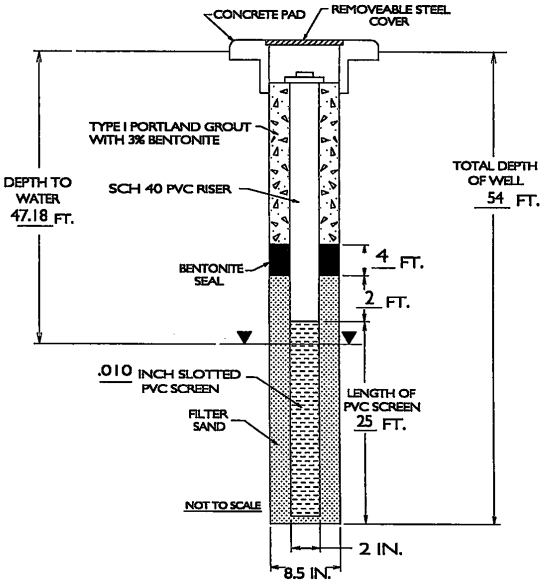
Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
0-3	Not Determined	Moderate gray sand, very coarse to very fine, subrounded to subangular	Dry; no petroleum odor
3-5	0.0	Dusky red clay, stiff, trace medium to very fine sand	Moist; no petroleum odor
7-10	0.0	Dusky orange clay, stiff, trace medium to very fine sand	Moist; no petroleum odor
15	0.0	Moderate orange sand, fine to very fine, subrounded to subangular, trace to common mica, trace silt	Moist; no petroleum odor
20	0.0	Moderate orange sand, fine to very fine, subrounded to subangular, trace to common mica, trace silt	Moist; no petroleum odor
25	10	Moderate orange sand, fine to very fine, subrounded to subangular, trace to common mica, trace silt	Moist; no petroleum odor

Borehole SB-4 **Sampling Date: 08/21/98** **Sample Depth: NA**

Split Spoon Interval (ft)	Field Screening Results (mg/kg)	Lithology (soil type, color, rocks/minerals present)	Soil Conditions (dry, moist, etc; petroleum odor)
5-7	10	Orange-red medium to medium stiff clay loam	Dry; no petroleum odor
10-12	4.2	Brown-orange medium silty clay loam	Dry; no petroleum odor
15-17	7.0	Tan-orange medium soft silt loam	Dry; no petroleum odor
20-22	12	Tan-orange medium soft silt loam	Dry; no petroleum odor
25-27	14	Tan-orange medium soft silt clay loam	Dry; no petroleum odor
30-32	18	Tan-orange medium soft silt clay loam	Dry; no petroleum odor
35-37	20	Whitish medium silty rock flour with black deposits	Dry; no petroleum odor
40-42	15	Orange-tan medium silty clay with black deposits	Damp; no petroleum odor
45-47	20	Tan medium stiff rock flour	Damp; no petroleum odor
50-52	22	Tan medium rock flour	Damp to moist; no petroleum odor

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-2 DATE DRILLED: 5/12/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 98.17' LAND SURFACE ELEV.: N/D

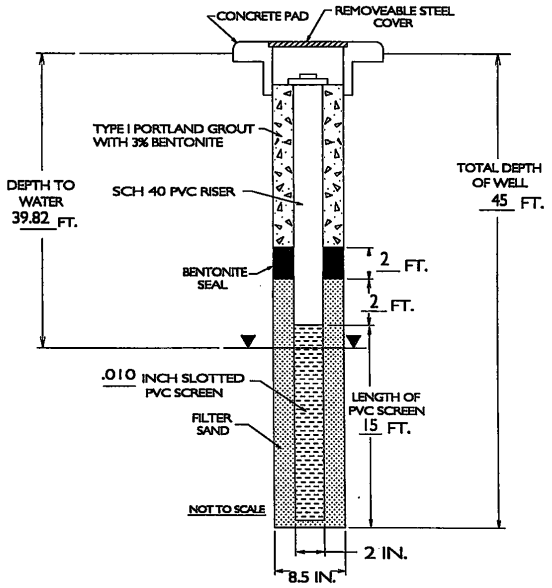


DRILLING METHOD: 4-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0-5		N/D	N/D	N/D	SP	PALE GRAY SAND, FINE TO VERY FINE SUB-ROUNDED TO SUB-ANGULAR
5-13		N/D	N/D	N/D	N/D	MODERATE ORANGE CLAY SOFT TO VERY TRACE MICA; TRACE MED. TO FINE SAND
13-23		N/D	N/D	N/D	CL	MODERATE ORANGE CLAY, VERY SOFT DAMP TRACE TO COMMON SILT; TRACE MED. SUB-ROUNDED SAND
23-25		3,4,6,9	24/24	94	CL	MODERATE ORANGE CLAY, SOFT TO MODERATE STIFF TRACE PALE YELLOW-ORANGE MOTTLED; TRACE TO COMMON SILT; TRACE VERY FINE SAND; TRACE BLACK MOTTLED
28-40		N/D	N/D	N/D	CL	MODERATE BROWN CLAY, SOFT TO VERY SOFT; TRACE VERY FINE SAND; TRACE SILT; INCREASING MICA AND VERY COARSE SUB-ANGULAR TO SUB-ROUNDED SAND WITH DEPTH
40-55		N/D	N/D	N/D	CL	PALE GRAY-BROWN CLAY, SOFT TO VERY SOFT; TRACE VERY COARSE SUB-ROUNDED TO SUB-ANGULAR SAND; TRACE TO COMMON SILT; TRACE TO COMMON MED. TO VERY FINE SUB-ROUNDED TO SUB-ANGULAR SAND; TRACE FELDSPAR NODULES

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-3 DATE DRILLED: 5/12/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 95.81' LAND SURFACE ELEV.: N/D

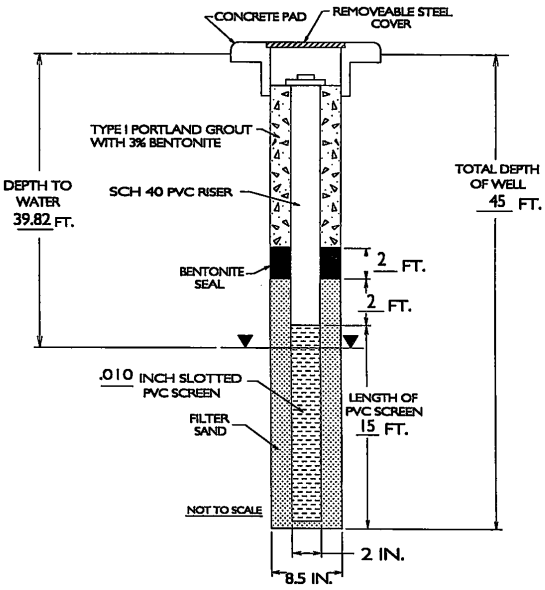


DRILLING METHOD: 4-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0-0.3						ASPHALT
0.3-0.9						ROAD BASE
0.9-2		N/D	N/D	N/D	CL	DUSKY BROWN CLAY, SOFT, MOIST; TRACE MED. TO VERY COARSE SAND
2-5		N/D	N/D	N/D	CL	DUSKY RED-BROWN CLAY, SOFT; TRACE MICA; TRACE TO COMMON MED. TO VERY FINE SAND; TRACE SUB-ROUNDED QUARTZ
5-7	1	3,4,5,8	24/24	N/D	CL	DUSKY ORANGE CLAY, STIFF; TRACE BLACK MOTTLED; TRACE VERY COARSE SUB-ROUNDED TO SUB-ANGULAR SAND; TRACE PALE YELLOW MOTTLED
10-12	2	3,4,6,8	24/24	N/D	CL	DUSKY ORANGE CLAY, STIFF; TRACE BLACK MOTTLED; TRACE VERY COARSE SUB-ROUNDED TO SUB-ANGULAR SAND; TRACE PALE YELLOW MOTTLED TRACE WHITE MOTTLED
15-17		4,7,10,14	24/24	70	CL	DUSKY ORANGE CLAY, STIFF, DAMP; COMMON MICA; COMMON SILT; TRACE MED. TO COARSE SUB-ROUNDED TO SUB-ANGULAR SAND; INCREASING FINE SAND WITH DEPTH
20-22		2,4,6,8	24/24	420	CL	VERY PALE RED-ORANGE CLAY, SOFT TO STIFF; COMMON MICA; TRACE SILT; COMMON TO ABUNDANT FINE TO VERY FINE SAND
25-27		4,6,9,10	24/24	100	SC	PALE YELLOW SAND, DRY, FINE TO VERY FINE SUB-ROUNDED TO SUB-ANGULAR; TRACE TO COMMON SILT; TRACE MICA; TRACE WHITE MOTTLED; TRACE CLAY; TRACE COARSE SAND

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-3 DATE DRILLED: 5/12/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 95.81' LAND SURFACE ELEV.: N/D

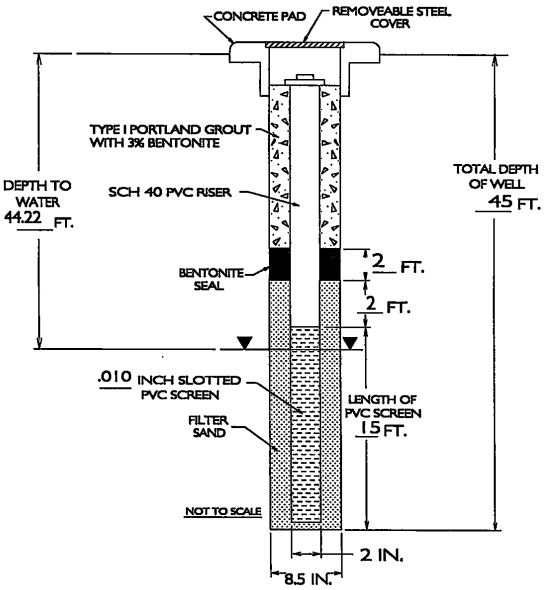


DRILLING METHOD: 4-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
30-32		12,22,24,24	24/24	18	SC	PALE YELLOW-ORANGE SAND, FINE TO VERY FINE
						SUB-ROUNDED TO SUB-ANGULAR; TRACE WHITE
						CLAY LENSES; TRACE TO COMMON SILT; TRACE
						COARSE SUB-ROUNDED TO SUB-ANGULAR QUARTZ
35-37		11,15,23,22	24/24	24	SC	PALE YELLOW-ORANGE SAND, FINE TO VERY FINE
						SUB-ROUNDED TO SUB-ANGULAR; TRACE WHITE
						CLAY LENSES; TRACE TO COMMON SILT; TRACE
						COARSE SUB-ROUNDED TO SUB-ANGULAR QUARTZ
40-42		8,9,11,16	24/24	N/D	SC	PALE GRAY-BROWN SAND, FINE TO VERY FINE,
						SUB-ROUNDED TO SUB-ANGULAR ABUNDANT
						MICA; COMMON TO ABUNDANT SILT; TRACE
						WHITE CLAY LENSES
45-47		10,14,22,28	N/D	N/D	SC	PALE GRAY-BROWN SAND, FINE TO VERY FINE,
						SUB-ROUNDED TO SUB-ANGULAR ABUNDANT
						MICA; COMMON TO ABUNDANT SILT; TRACE
						WHITE CLAY LENSES

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-4 DATE DRILLED: 7/10/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 98.52' LAND SURFACE ELEV.: N/D

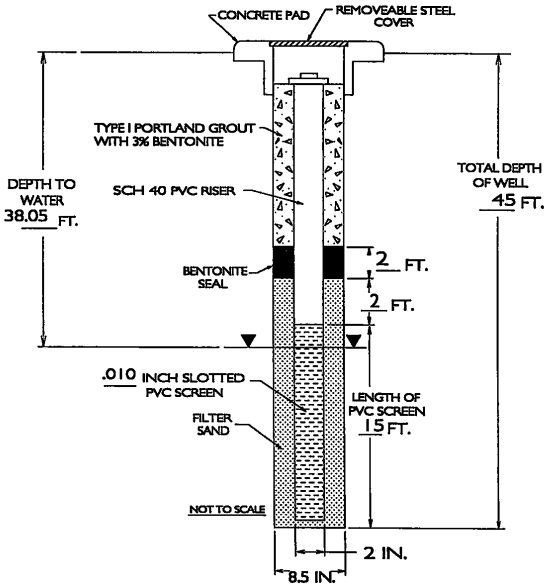


DRILLING METHOD: 4-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0		N/D	N/D	N/D	CL	DUSKY ORANGE-BROWN CLAY, MOIST, SOFT; COMMON SAND
4					CL	ORANGE SOFT CLAY, DRY; TRACE VERY FINE SAND
5		3,4,6,11	N/D	N/D	CL	YELLOW ORANGE SOFT CLAY, DRY; TRACE SILT
10		4,5,8,10	N/D	N/D	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT
15		4,7,8,13	N/D	5	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT
20		4,6,7,13	N/D	15	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT
25		4,5,8,10	N/D	95	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT
30		3,5,5,9	N/D	90	CL	ORANGE SOFT CLAY, DAMP; TRACE BLACK ORGANIC MOTTLED; TRACE SAND
35		3,5,6,8	N/D	110	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT
40		1,4,6,6	N/D	110	CL	ORANGE-YELLOW STIFF CLAY, DRY; TRACE MICA; TRACE SAND; TRACE SILT

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-5 DATE DRILLED: 7/10/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 94.41' LAND SURFACE ELEV.: N/D

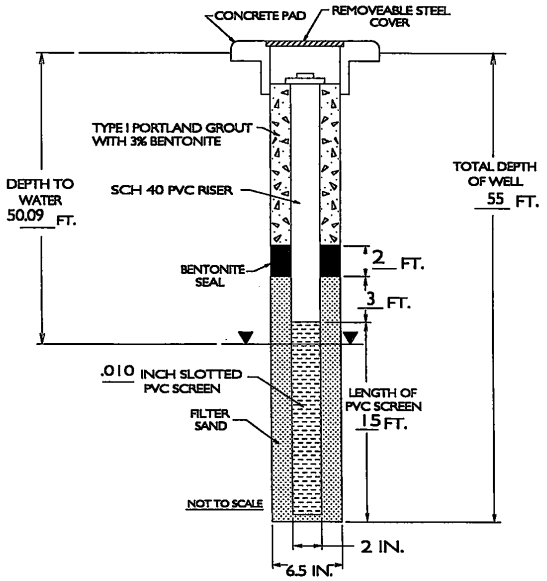


DRILLING METHOD: 4-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0						ASPHALT
0.5						ROAD BASE
1		N/D	N/D	0.0	CL	DUSKY RED STIFF CLAY, DRY; TRACE DUSKY BROWN
						MOTTLED; TRACE COARSE CLEAR QUARTZ
5		N/D	N/D	0.0	CL	DUSKY ORANGE SOFT CLAY, DRY; TRAC E MICA;
						TRACE SILT; TRACE VERY FINE SAND; TRACE PALE
						BROWN MOTTLED
10		N/D	N/D	0.0	SM	PALE ORANGE VERY FINE SAND, SUB-ROUNDED TO
						SUB-ANGULAR; TRACE 4mm SUB-ANGULAR QUARTZ;
						TRACE TO COMMON SILT; TRACE MICA
15		N/D	N/D	0.0	SM	WHITE FINE SAND; SUB-ROUNDED TO SUB-ANGUKAR;
						TRACE BIOTITE MICA; TRACE SILT; TRACE COARSE
						SUB-ROUNDED SAND
20		N/D	N/D	0.0		MODERATE ORANGE SAPROLITE; TRACE BLACK
						MOTTLED; ABUNDANT SILT; TRACE WHITE MOTTLED
25		N/D	N/D	0.0		
30		4,3,5,9		0.0	CL	MODERATE YELLOW-ORANGE SOFT CLAY, DAMP;
						COMMON SILT; TRACE MICA; TRACE BLACK
						MOTTLED
35		3,4,15,18		0.0	SM	PALE WHITE SAND, VERY COARSE TO VERY FINE,
						SUB-ROUNDED TO SUB-ANGULAR; TRACE TO
						COMMON CLAY; TRACE MICA
40		4,7,11,17		0.0	CL	DUSKY BROWN SOFT CLAY, DAMP; COMMON
						MICA; COOMON DARK MINERALS; COMMON SILT
45				0.0	CL	DUSKY BROWN SOFT CLAY, DAMP; COMMON
						MICA; COOMON DARK MINERALS; COMMON SILT

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-6 DATE DRILLED: 8/13/98
STATE PERMIT #: 9543 WORK ORDER #: 398-008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 103.40' LAND SURFACE ELEV.: N/D

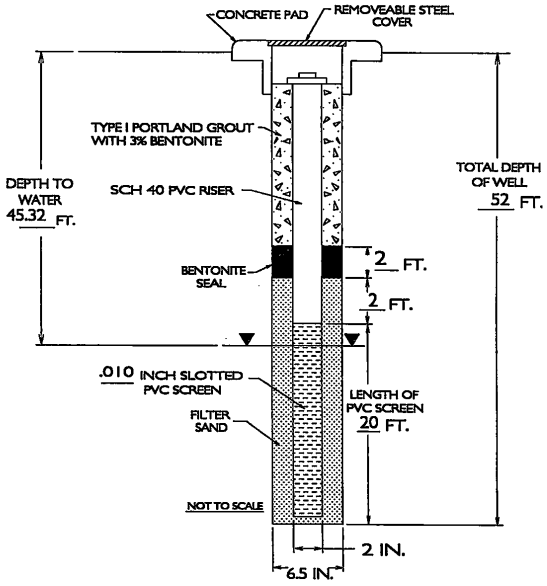


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
5-7	MW6A	N/D	24/24	0.9	CL	ORANGE MEDIUM-SOFT CLAY LOAM WITH SOME MICA
10-12	MW6B	N/D	18/24	0.8	CL	RED-ORANGE TO TAN MEDIUM-SOFT SILTY CLAY LOAM
15-17	MW6C	N/D	18/24	0.6	ML	TAN MEDIUM TO MEDIUM-FINE SOFT SILTY LOAM WITH SOME SILICA AND BLACK DEPOSITS
20-22	MW6D	N/D	18/24	1.4	ML	RED-TAN MEDIUM-SOFT SILT WITH SILICA; SLIGHTLY DAMP WITH BLACK DEPOSITS
25-27	MW6E	N/D	16/24	0.6	ML	WHITISH-PINK MEDIUM-SOFT ROCK FLUOR; SLIGHTLY DAMP
30-32	MW6F	N/D	12/24	0.8	ML	BROWN FINE SOFT SILT WITH BLACK DEPOSITS
35-37	MW6G	N/D	12/24	0.7	ML	BROWN MEDIUM-SOFT SILTY SOIL WITH SOME SILICA AND FINE GRAVEL
40-42	MW6H	N/D	8/24	5.0	ML	GRAY-TAN MEDIUM ROCK FLUOR WITH COARSE ROCK FRAGMENTS
45-47	MW6I	N/D	20/24	4.7	ML	TAN MEDIUM ROCK FLUOR
50-52	MW6J	N/D	12/24	6.0	ML	TAN MEDIUM ROCK FLUOR
55-57	MW6K	N/D	18/24	2.8	ML	TAN MEDIUM ROCK FLUOR

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-7 DATE DRILLED: 8/14/98
STATE PERMIT #: 9543 WORK ORDER #: 398-005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 102.34' LAND SURFACE ELEV.: N/D

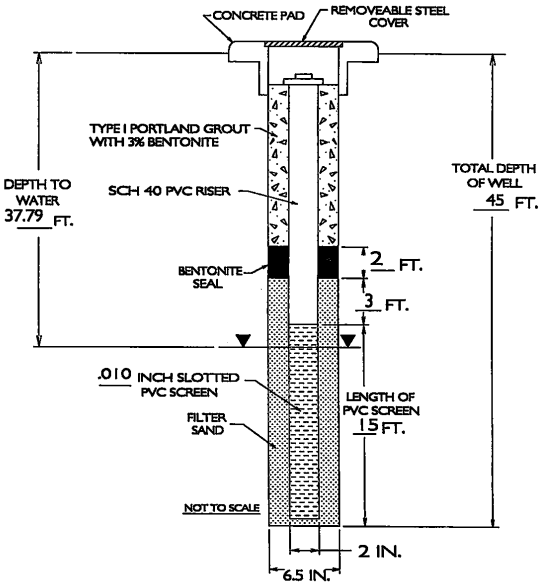


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: GRAB
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
5	MW7A	N/D	N/D	3.0	CL	RED-BROWN MEDIUM CLAY LOAM
10	MW7B	N/D	N/D	11.0	CL	RED-BROWN MEDIUM CLAY LOAM
15	MW7C	N/D	N/D	4.6	CL	RED-ORANGE MEDIUM SILTY CLAY
20	MW7D	N/D	N/D	10	ML	RED-ORANGE MEDIUM SILTY CLAY
25	MW7E	N/D	N/D	11	ML	RED-ORANGE MEDIUM SILTY CLAY
30	MW7F	N/D	N/D	8.2	ML	RED-ORANGE MEDIUM SILTY CLAY
35	MW7G	N/D	N/D	12	ML	BROWN-TAN MEDIUM SILT
40	MW7H	N/D	N/D	44	ML	RED-BROWN AND TAN MEDIUM SILT; DAMP
45	MW7I	N/D	N/D	40	ML	BROWN-TAN MEDIUM SOFT SILT, DAMP
50	MW7J	N/D	N/D	8.1	CL	TAN STICKY SILTY CLAY, MOIST

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-8 DATE DRILLED: 8/14/98
STATE PERMIT #: 9543 WORK ORDER #: 398-005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 97.63' LAND SURFACE ELEV.: N/D

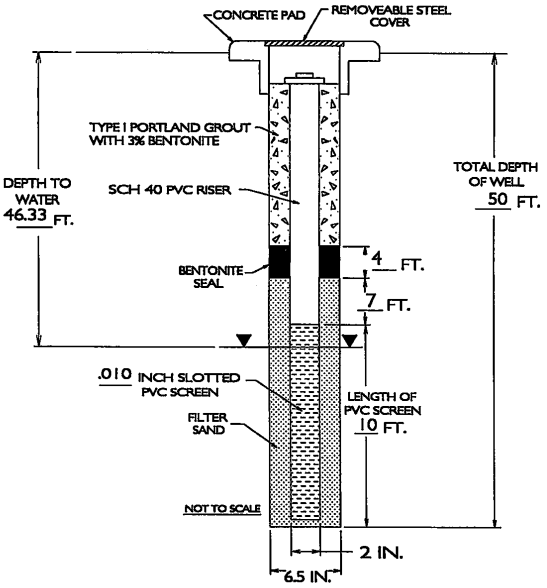


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
5-7	MW8A	N/D	18/24		CL	RED-ORANGE MEDIUM CLAY LOAM
10-12	MW8B	N/D	20/24		ML	WHITE SOFT SILT LOAM WITH SILICA
15-17	MW8C	N/D	20/24		MH	GRAY SOFT MEDIUM SILT WITH MICA
20-22	MW8D	N/D	20/24		MH	GRAY SOFT MEDIUM SILT WITH MICA
25-27	MW8E	N/D	20/24		MH	TAN FINE SOFT SILT WITH MICA
30-32	MW8F	N/D	16/24		ML	WHITISH MEDIUM-SOFT ROCK FLUOR WITH SILICA, DAMP
35-37	MW8G	N/D	8/24		ML	WHITISH MEDIUM ROCK FLUOR WITH MEDIUM QUARTZ, MOIST
40-42	MW8H	N/D	16/24		ML	WHITISH MEDIUM ROCK FLUOR WITH MEDIUM QUARTZ, MOIST

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-9 DATE DRILLED: 10/28/98
STATE PERMIT #: 9543 WORK ORDER #: 398-008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 100.62' LAND SURFACE ELEV.: N/D

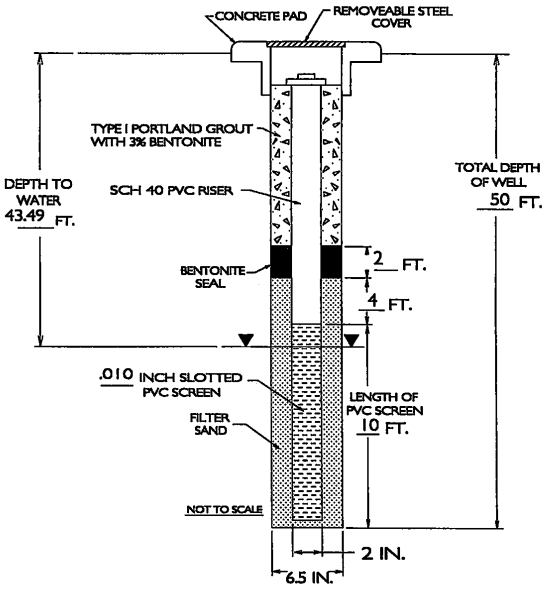


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: GRAB
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0						GRASS
0.3		ND	ND	0.0	CL	DUSKY RED CLAY, DRY, STIFF; TRACE FINE TO VERY FINE SAND; TRACE MICA; TRACE SILT
12		ND	ND	0.0	CL	MODERATE ORANGE-BROWN CLAY, SOFT TO MEDIUM-STIFF, DRY; COMMON SILT; TRACE MEDIUM TO VERY FINE SAND
50						BORING TERMINATED AT 50 FT.

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-10 DATE DRILLED: 10/28/98
STATE PERMIT #: 9543 WORK ORDER #: 398-008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 88.26' LAND SURFACE ELEV.: N/D

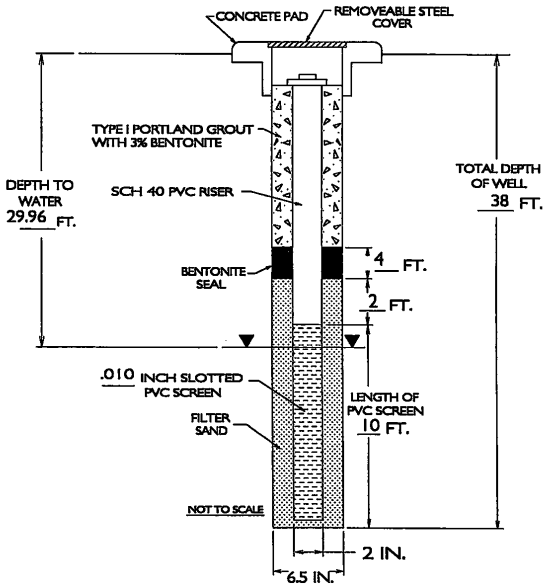


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0		ND	ND	ND	CL	DUSKY RED CLAY, STIFF, DRY; TRACE MEDIUM TO VERY FINE SAND; TRACE SILT
5		9,15,17,24	16/24	80	CL	DUSKY RED CLAY, HARD, DRY; TRACE WHITE MOTTLED; TRACE SILT; TRACE MEDIUM TO VERY COARSE SAND
10		4,6,7,8	18/24	10	CL	DUSKY RED CLAY, STIFF TO HARD, DRY; TRACE SILT; TRACE WHITE MOTTLED; TRACE TO COMMON FINE SAND
15		2,3,5,5	18/24	60	CL	VERY PALE YELLOW-RED CLAY, DAMP, STIFF; TRACE TO COMMON SILT; TRACE TO COMMON MEDIUM TO VERY FINE SAND
20		3,5,6,8	14/24	60	CL	MODERATE YELLO-ORANGE CLAY, SOFT TO STIFF, DRY; COMMON VERY COARSE TO VERY FINE SAND; TRACE TO COMMON SILT; TRACE BLACK MOTTLED
25		3,4,7,10	22/24	10	CL	MODERATE ORANGE SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; TRACE VERY COARSE SAND; TRACE TO COMMON CLAY
30		ND	ND	ND	CL	MODERATE ORANGE-BROWN CLAY, SOFT TO MEDIUM-STIFF, DRY; COMMON SILT; TRACE MEDIUM TO FINE SAND
50						BORING TERMINATED AT 50 FT.

Boring Log and Type II Well Construction Details

WELL IDENTIFICATION: MW-11 DATE DRILLED: 10/29/98
STATE PERMIT #: 9543 WORK ORDER #: 398-008
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 70.63' LAND SURFACE ELEV.: N/D

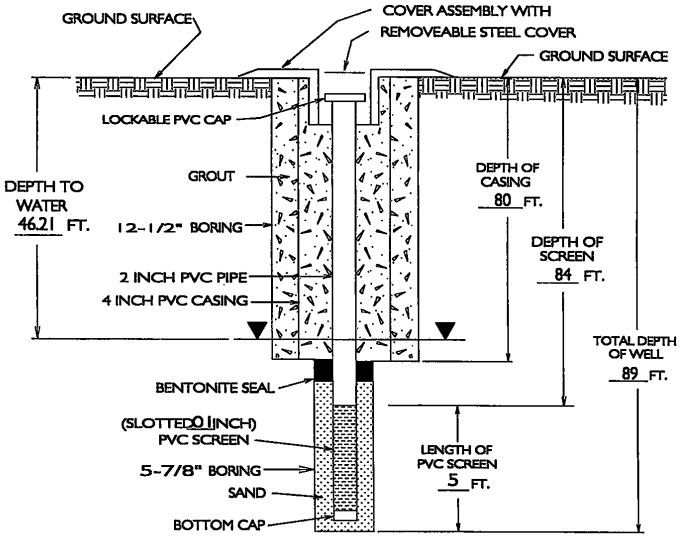


DRILLING METHOD: 2-1/4" HOLLOW STEM AUGER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS:
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.
N/D = NOT DETERMINED
N/A = NOT APPLICABLE

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOV-ERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0						GRASS
0.3		ND	ND	ND	CL	DUSKY RED CLAY, HARD, DRY
2		ND	ND	ND	CL	MODERATE ORANGE CLAY, MOIST, STIFF; TRACE SILT; TRACE LIGHT BROWN MOTTLED; TRACE FINE SAND
5		4,6,6,9	24/24	0.0	CL	MODERATE ORANGE CLAY, MOIST, STIFF; TRACE SILT; TRACE LIGHT BROWN MOTTLED; TRACE FINE SAND
10		4,6,7,7	24/24	0.0	SM	MODERATE BROWN-ORANGE SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; COMMON TO ABUNDANT CLAY; COMMON MICA; COMMON SILT
15		5,7,9,9	20/24	10	SM	PALE YELLOW SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; TRACE MICA; TRACE DARK MINERALS; TRACE TO COMMON CLAY
20		3,7,8,10	22/24	50	SM	PALE ORANGE SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; TRACE TO COMMON CLAY; TRACE MICA
25		11,10,10,12	24/24	65	SM	VERY PALE GREEN-BROWN SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; TRACE CLAY; TRACE MICA; COMMON SILT; TRACE DARK MINERALS
30		ND	ND	ND	SM	VERY PALE GREEN-BROWN SAND, MEDIUM TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR; TRACE CLAY; TRACE MICA; COMMON SILT; TRACE DARK MINERALS
38						TERMINATION OF BORING AT 38 FT.

Boring Log and Type III Well Construction Details

WELL IDENTIFICATION: DW-1 DATE DRILLED: 7/9-10/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 98.62' LAND SURFACE ELEV.: N/D

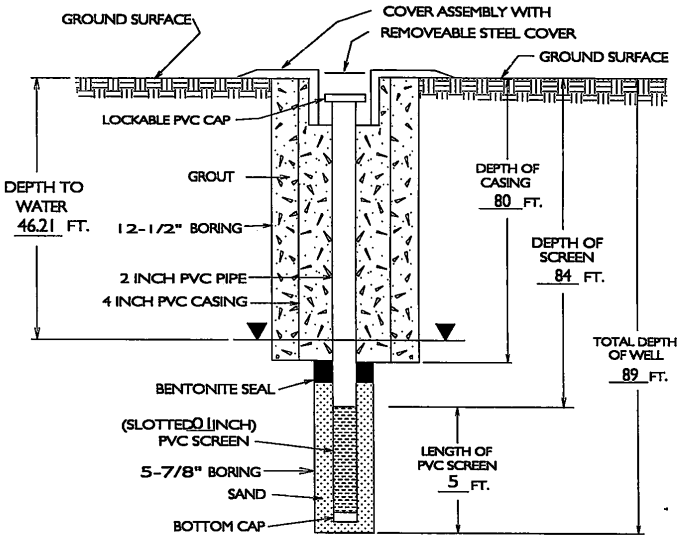


DRILLING METHOD: 8-1/4" HSA; 5-7/8" AIR HAMMER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS: SAND TO 82
BENTONITE TO 75
N/D= NOT DETERMINED
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOVERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
0		N/D	N/D	N/D	SM	PALE GRAY SAND, FINE TO VERY FINE, SUB-ROUNDED TO SUB-ANGULAR;
5		N/D	N/D	N/D	CL	ORANGE CLAY, SOFT TO VERY SOFT; TRACE MICA; TRACE MEDIUM TO FINE SAND
13		N/D	N/D	N/D	CL	MODERATE ORANGE CLAY, VERY SOFT, DAMP; TRACE TO COMMON SILT; TRACE MEDIUM SUB-ROUNDED SAND
23		N/D	N/D	N/D	CL	MODERATE ORANGE CLAY, SOFT TO MED. STIFF; TRACE PALE YELLOW-ORANGE MOTTLED; SILT; TRACE VERY FINE SAND; TRACE BLACK MOTTLED
28		N/D	N/D	N/D	CL	MODERATE BROWN CLAY, SOFT TO VERY SOFT; TRACE VERY FINE SAND; TRACE SILT; INCREASING MICA AND VERY COARSE SAND WITH DEPTH
40		N/D	N/D	N/D	CL	PALE GRAY-BROWN CLAY, SOFT TO VERY SOFT; TRACE VERY COARSE SAND; SILT

Boring Log and Type III Well Construction Details

WELL IDENTIFICATION: DW-1 DATE DRILLED: 7/9-10/98
STATE PERMIT #: 9543 WORK ORDER #: 197-1005
PROJECT NAME: UNITED EXXON
SITE ADDRESS: 401 N. CONGRESS ST., WINNSBORO, SC
LATITUDE: N/D LONGITUDE: N/D
TOP OF CASING ELEV.: 98.62' LAND SURFACE ELEV.: N/D



DRILLING METHOD: 8-1/4" HSA; 5-7/8" AIR HAMMER
SAMPLING METHOD: SPLIT SPOON
GRAVEL PACK SIZE: #1A
SLOT SIZE: 0.010"
COMMENTS: SAND TO 82
BENTONITE TO 75
N/D= NOT DETERMINED
TOP OF CASING ELEVATION IS REFERENCED TO AN ASSUMED ELEVATION.

DEPTH	SAMPLE NUMBER	BLOW COUNT	RECOV-ERY	OVA (ppm)	UNIFIED METHOD	DESCRIPTIVE LOG
60		3,9,23,40	N/D	310	CL	WHITE STIFF CLAY, DRY; TRACE PALE YELLOW MOTTLED; TRACE PALE GREEN-BLACK MOTTLED
65		16,33,46,50	N/D	150	CL	MODERATE ORANGE-BROWN STIFF CLAY, MOIST; TRACE SILT; TRACE DARK MINERALS; VERY COARSE SAND
70		31,38,38,40	N/D	5	CL	DUSKY ORANGE-BROWN STIFF CLAY, MOIST; COARSE TO FINE SAND
75		50	N/D	9	CL	DUSKY ORANGE-BROWN STIFF CLAY, MOIST; COARSE TO FINE SAND
80		50	N/D	N/D		PINK GRANITE
						T.O.B. AT 89 FT.

Soil Analytical Results (10/27/98) United Exxon / Winnsboro, South Carolina									
Chemical of Concern	RBSL (µg/kg)	GP-1 (µg/kg)	GP-2 (µg/kg)	GP-3 (µg/kg)	MW-2 (µg/kg)	MW-3 (µg/kg)	MW-4 (µg/kg)	MW-6 (µg/kg)	MW-8 (µg/kg)
Benzene	5	NA	<5.0	<5.0	~~264100~~	<5.0	<1.0	<1.0	<1.0
Toluene	1622	NA	<5.0	<5.0	**2890000**	<5.0	<1.0	<1.0	<1.0
Ethylbenzene	1260	NA	<5.0	<5.0	**779300**	<5.0	<1.0	<1.0	<1.0
Xylenes	42471	NA	<10.0	<10.0	**4547000**	<10.0	<2.0	<2.0	<2.0
Total BTEX	N/A	N/A	<25.0	<25.0	8480400	<25.0	<5.0	<5.0	<5.0
Naphthalene	210	NA	<5.0	<5.0	**986900**	<5.0	<5.0	<5.0	<5.0
Benzo(a)anthracene	73084	NA	<660	<660	<2070000	<660	<330	<165	<165
Benzo(b)fluoranthene	29097	NA	<660	<660	<2070000	<660	<330	<165	<165
Benzo(k)fluoranthene	231109	NA	<660	<660	<2070000	<660	<330	<165	<165
Chrysene	12998	NA	<660	<660	<2070000	<660	<330	<165	<165
Dibenzo(a,h)anthracene	87866	NA	<660	<660	<2070000	<660	<330	<165	<165
Total Organic Carbon	N/A	696*	NA	NA	NA	NA	NA	NA	NA
TPH	N/A	NA	NA	NA	19.7*	NA	NA	NA	NA

N/A = Not Applicable
NA = Not Analyzed
* denotes results in mg/kg
RBSLs are based on sandy soil where the depth to groundwater is less than 5 feet below the worst case soil sample.
Analytical results, with the exception of TPH, for MW-2 were obtained during IGWA activities.
Bold concentrations represent those greater than the respective RBSL.

Soil Analytical Results continued (10/29/98 United Exxon / Winnsboro, South Carolina							
Chemical of Concern	RBSL (µg/kg)	MW-9 (µg/kg)	MW-10 (µg/kg)	MW-11 (µg/kg)	SB-1 (µg/kg)	SB-2 (µg/kg)	SB-3 (µg/kg)
Benzene	5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	1622	<1.0	<1.0	1.3	10	1.2	1.2
Ethylbenzene	1260	<1.0	<1.0	<1.0	37	1.0	5.4
Xylenes	42471	<3.0	<3.0	<3.0	5.4	4.2	31
Total BTEX	N/A	<6.0	<6.0	<6.3	<53.4	<7.4	<38.6
Naphthalene	210	<2.0	<2.0	<2.0	2.4	<2.0	190
Benzo(a)anthracene	73084	<330	<330	<330	<330	<330	<330
Benzo(b)fluoranthene	29097	<330	<330	<330	<330	<330	<330
Benzo(k)fluoranthene	231109	<330	<330	<330	<330	<330	<330
Chrysene	12998	<330	<330	<330	<330	<330	<330
Dibenzo(a,h)anthracene	87866	<330	<330	<330	<330	<330	<330
Total Organic Carbon	N/A	NA	NA	NA	NA	NA	NA
TPH	N/A	NA	NA	NA	NA	NA	NA

N/A = Not Applicable
NA = Not Analyzed
* denotes results in mg/kg
RBSLs are based on sandy soil where the depth to groundwater is less than 5 feet below the worst case soil sample.

Soil Analytical Results continued (10/29/98 United Exxon / Winnsboro, South Carolina									
Chemical of Concern	RBSL (mg/kg)	GP-1 (mg/kg)	GP-2 (mg/kg)	GP-3 (mg/kg)	MW-2 (mg/kg)	MW-3 (mg/kg)	MW-4 (mg/kg)	MW-6 (mg/kg)	MW-8 (mg/kg)
Arsenic	N/A	NA	<0.25	<0.25	NA	<0.15	2.9	<5	<5
Barium	N/A	NA	68.00	120.00	NA	89.20	59	29.7	161
Cadmiun	N/A	NA	0.27	1.20	NA	1.80	<0.30	1.10	0.600
Chromium	N/A	NA	0.62	17.00	NA	19.90	1.6	2.70	191
Lead	N/A	NA	26.00	9.60	NA	6.80	7.8	8.31	5.74
Mercury	N/A	NA	0.03	0.06	NA	0.54	<0.10	<0.1	<0.1
Selenium	N/A	NA	<0.15	<0.15	NA	<0.15	1.1	<5	<5
Silver	N/A	NA	<0.25	<0.25	NA	<0.05	<2.0	<0.5	<0.5

N/A = Not Applicable
NA = Not Analyzed

Soil Analytical Results continued United Exxon / Winnsboro, South Carolina							
Chemical of Concern	RBSL (µg/kg)	MW-9 (mg/kg)	MW-10 (mg/kg)	MW-11 (mg/kg)	SB-1 (mg/kg)	SB-2 (mg/kg)	SB-3 (mg/kg)
Arsenic	N/A	0.85	<0.45	<0.45	1.8	0.46	0.91
Barium	N/A	110	63	34	62	67	91
Cadmiun	N/A	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Chromium	N/A	62	12	51	15	27	25
Lead	N/A	5.3	9.6	1.5	9.6	12	8.5
Mercury	N/A	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Selenium	N/A	5.4	3.2	2.7	3.4	7.1	7.1
Silver	N/A	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0

N/A = Not Applicable

Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05-14-98
Field Personnel McNab
General Weather Conditions Cloudy
Ambient Air Temperature 60s °C

Facility Name UNITED EXXON SEI ~~Site~~ ID# 197-1005

Quality Assurance:

pH Meter:	Conductivity Meter	O_2
serial no.	serial no.	
pH=4.0 4.0	Standard	
pH=7.0 7.0	Standard 1413	0.0
pH=10.0 10.0	Standard	

Chain of Custody

Relinquished by	Date /Time	Received by	Date/Time
McNab			

Well # MW-1 24.76 / 8.254

Well Diameter(D) 4 inch or ____ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 48 ft.
Depth to GW (DGW) 36.76 ft.

Length of Water Column(LWC=TWD-DGW) 11.24 ft.

1 Csg. Volume(LWC * C) = ____ X ____ = 1.8343 gals.
3 Csg. Volumes = 3 X ____ = 5.503 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5.5 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling time
Volume Purged (gallons)								
Time (military)								10:56
pH (s.u.)	6.28	6.09	6.06	6.03			6.00	
Specific Cond. (umhos/cm)	338						499	
Water Temp (°C)	20.4	19.7	19.4	19.7			19.8	
Turbidity (*)	1	4	4	4			4	
~~PID Readings~~ O_2	0						0	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks replaced well cap

Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05-14-98
Field Personnel McNab
General Weather Conditions Clear
Ambient Air Temperature 70.5 °C

Facility Name UNITED EXXON ~~Site~~ ID# 197-1008

Quality Assurance:

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413
Standard

O_2
0.0

Chain of Custody

McNab			
Relinquished by	Date /Time	Received by	Date/Time

Well # MW-2

19.63
6.54 35

Well Diameter(D) 2 inch or ___ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 54 ft.
Depth to GW (DGW) 45.09 ft.

Length of Water Column(LWC=TWD-DGW) 8.91 ft.

1 Csg. Volume(LWC * C) = ___ X ___ = 1.451 gals.
3 Csg. Volumes = 3 X ___ = 4.353 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.5 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time ~~(military)~~								time
pH (s.u.)								12:26
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
~~PID Readings~~ O_2								

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks Strong gas odor, rust, metered; replaced well cap

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 05-14-98
Field Personnel McNab
General Weather Conditions Clear
Ambient Air Temperature 70s °C

Facility Name United Exxon ~~Site ID#~~ SET 197-1005

Well # MW-3

14.1886
4.7295

Well Diameter(D) 2 inch or ____ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 45 ft.
Depth to GW (DGW) 38.56 ft.

Length of Water Column(LWC=TWD-DGW) 6.44 ft.

1 Csg. Volume(LWC * C) = ____ X ____ = 1.0510 gals.
3 Csg. Volumes = 3 X ____ = 3.153 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.5 gals.

Quality Assurance:

pH Meter:
serial no. ____
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no. ____
Standard ____
Standard 1413
Standard ____

Chain of Custody

Relinquished by	Date / Time	Received by	Date/Time
McNab			

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling time
Volume Purged (gallons)								
Time (~~military~~)								11:36
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
~~PID Readings~~ O_2	1	4	4	4			4	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks slight gas odor, not metered; replaced well cap

Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page _ of _

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 07-11-98
Field Personnel McNAB
General Weather Conditions clear / sunny
Ambient Air Temperature 90.5° C

Facility Name United Exxon ~~Site~~ Set ID# 197-1008

Quality Assurance: 07-10 O_2

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413 0.0
Standard

Chain of Custody

McNab	07/13/8:00		
Relinquished by	Date / Time	Received by	Date/Time

Well # MW-4

Well Diameter(D) 2 inch or ___ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 45 ft.
Depth to GW (DGW) 42.99 ft.

Length of Water Column(LWC=TWD-DGW) 2.01 ft.

1 Csg. Volume(LWC * C) = ___ X ___ = 0.3280 gals.
3 Csg. Volumes = 3 X ___ = 0.984 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								time
Time (military)								1:13
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
~~PID Readings~~ O_2 mg/l	1	4	4	4			4	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks Gas odor, not metered

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 07-11-98
Field Personnel McNab
General Weather Conditions Cloudy
Ambient Air Temperature 90.5 °C

Facility Name United Exxon SEF Site ID# 197-1008

Quality Assurance: 07-10

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413
Standard

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time
McNab	07/13/8:00		

Well # MW-5

Well Diameter(D) 2 inch or ____ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 45 ft.
Depth to GW (DGW) 36.94 ft.

Length of Water Column(LWC=TWD-DGW) 8.02 ft.

1 Csg. Volume(LWC * C) = ____ X ____ = 1.3088 gals.
3 Csg. Volumes = 3 X ____ = 3.9265 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								time
Time (~~military~~)								2:18
pH (s.u.)	6.31	6.08	6.07	6.08			6.04	
Specific Cond. (umhos/cm) µS	168.2						182.8	
Water Temp (°C)	23.1	21.7	21.7	21.7			21.8	
Turbidity (*)	1	4	4	4			4	
~~PID Readings~~ mg/l	0.7						0.6	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 08-27-98
Field Personnel MCNAB, Reed
General Weather Conditions Clear/sunny
Ambient Air Temperature 90.5 °C

Facility Name United Exxon ~~Site~~ SEE ID# 398005

Quality Assurance: 08-24

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413
Standard

O_2 0.0

Chain of Custody

Relinquished by	Date /Time	Received by	Date/Time

Well # MW-6

Well Diameter(D) 2 inch or ___ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 55 ft.
Depth to GW (DGW) 49.49 ft.

Length of Water Column(LWC=TWD-DGW) 5.51 ft.

1 Csg. Volume(LWC * C) = ___ X ___ = 0.8992 gals.
3 Csg. Volumes = 3 X ___ = 2.697 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.7 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time ~~(military)~~								12:20
pH (s.u.)	7.11	7.07	6.67	6.67			6.96	
Specific Cond. (umhos/cm)	173.9						148.2	
Water Temp (°C)	21.1	21.0	20.4	20.7			20.7	
Turbidity (*)	2	3	4	4			4	
~~PID Readings~~ O_2 mg/l	0.0						0.0	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 08-27-98
Field Personnel MCNAB, Reed
General Weather Conditions (Clear, sunny)
Ambient Air Temperature 90s °C

Facility Name United Exxon ~~Site ID#~~ SEI 398008

Quality Assurance: 08-26

pH Meter:		Conductivity Meter serial no.	
serial no.			02
pH=4.0	4.0	Standard	
pH=7.0	7.0	Standard	1413
pH=10.0	10.0	Standard	0.0

Chain of Custody

Relinquished by	Date /Time	Received by	Date/Time

Well # MW-7

Well Diameter(D) 2 inch or ___ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 52 ft.
Depth to GW (DGW) 44.71 ft.

Length of Water Column(LWC=TWD-DGW) 7.29 ft.

1 Csg. Volume(LWC * C) = ___ X ___ = 1.189 gals.
3 Csg. Volumes = 3 X ___ = 3.569 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.6 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time ~~(military)~~								11:45
pH (s.u.)	6.30	5.73	5.72	6.10			6.09	
Specific Cond. (umhos/cm)	120.1						98.7	
Water Temp (°C)	19.9	19.5	19.2	18.9			19.2	
Turbidity (*)	2	3	3	3			3	
~~PID Readings~~ O2 mg/l	0.0						0.0	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 08-27-98
Field Personnel MCNAB, Reed
General Weather Conditions Clear, ~~[illegible]~~ Sunny
Ambient Air Temperature 90's °C

Facility Name UNITED Exxon ~~Site~~ SET ID# 398008

Quality Assurance: 08-26 O_2

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413 0.0
Standard

Chain of Custody

Relinquished by	Date /Time	Received by	Date/Time

Well # MW-8

Well Diameter(D) 2 inch or ___ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 45 ft.
Depth to GW (DGW) 37.28 ft.

Length of Water Column(LWC=TWD-DGW) 7.72 ft.

1 Csg. Volume(LWC * C) = ___ X ___ = 1.259 gals.
3 Csg. Volumes = 3 X ___ = 3.779 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.8 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time ~~(military)~~								
pH (s.u.)	6.46	6.13	6.06	6.03			6.09	11:30
Specific Cond. (umhos/cm)	358						383	
Water Temp (°C)	20.8	20.4	20.3	19.6			19.6	
Turbidity (*)	2	3	3	3			3	
~~PID Readings~~ O_2 mg/l	0.3						0.2	

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 11-2-98
Field Personnel: S. REED
General Weather Conditions: OVERCAST - MILD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: 398008 **Monitoring Well #** MW9

Well Diameter (D): 2" feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 46.33 feet
Total Well Depth (TWD) 50 feet
Length of the water column (LWC = TWD- DGW) 3.67 feet

1 casing volume (CV = LWC X C) = _____ X _____ = .598 gals
3 casing volume 3 X CV = 1.794 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)	1200	1204	1207				1215	1210
pH (s.u.)	6.3	6.2	6.3				6.2	
Specific Cond. (µmhos/cm)	100	100	110				100	
Water Temperature (°C)	20	19	19				19	
Turbidity (subjective : clear, slightly cloudy, cloudy)	-1	99	99				99	
Dissolved Oxygen	-0.8	-1.0	-1.0				-0.9	
PID readings, if required								

Remarks : BALSO DAY

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 11-2-98
Field Personnel: J. REED
General Weather Conditions: OVERCAST - MILD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter
serial no. _____
pH=4.0 _____
pH=7.0 _____
pH=10.0 _____

Conductivity Meter
serial no. _____
standard _____
standard _____
standard _____

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: 398008 **Monitoring Well #** MW-10

Well Diameter (D): 2" feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 43.49 feet
Total Well Depth (TWD) 50 feet
Length of the water column (LWC = TWD- DGW) 6.51 feet

1 casing volume (CV = LWC X C) = ____ X ____ = 1.06 gals
3 casing volume 3 X CV = 3.18 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								1320
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : STRONG ODOR - DID NOT METER

Field Data Information Sheet for Ground-Water Sampling

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Date (mm/dd/yy): 11-2-98
Field Personnel: S. REED
General Weather Conditions: OVERCAST - MILD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON
Site ID#: 398006 **Monitoring Well #** MW-11

Well Diameter (D): 2" feet

Conversion factor (C): 3.14 X $(D/2)^2$ for a 2 inch well C = 0.163
for a 4 inch well C = 0.652

* Free Product Thickness: _____ feet
Depth to Ground Water (DGW) 29.96 feet
Total Well Depth (TWD) 38 feet
Length of the water column (LWC = TWD- DGW) 8.04 feet

1 casing volume (CV = LWC X C) = ____ X ____ = 1.31 gals
3 casing volume 3 X CV = 3.93 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

* If free product is present over ⅛ inch, sampling will not be required.

	Initial	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post sampling	
Cumulative Volume Purged (gallons)								
Time (military)								1250
pH (s.u.)								
Specific Cond. (µmhos/cm)								
Water Temperature (°C)								
Turbidity (subjective : clear, slightly cloudy, cloudy)								
Dissolved Oxygen								
PID readings, if required								

Remarks : DID NOT METER — MODERATE PETROL ODOR

Information Sheet for Ground Water Sampling

Date(mm/dd/yy) 07-27-98
Field Personnel MCNAB
General Weather Conditions Cloudy/RAIN
Ambient Air Temperature 80s °C

Facility Name UNITED EXXON SEI Site ID# 197-1005

Quality Assurance: 07-27

pH Meter:
serial no.
pH=4.0 4.0
pH=7.0 7.0
pH=10.0 10.0

Conductivity Meter
serial no.
Standard
Standard 1413
Standard

O_2
0.0

Chain of Custody

Relinquished by	Date /Time	Received by	Date/Time

Well # DMW-1

Well Diameter(D) 2 inch or ____ feet
conversion factor(C): 3.143*(D/2)^2
for a 2 inch well C=0.163
4 inch well C=0.652
Total Well Depth(TWD) 89 ft.
Depth to GW (DGW) 45.28 ft.

Length of Water Column(LWC=TWD-DGW) 43.72 ft.

1 Csg. Volume(LWC * C) = ____ X ____ = 7.139 gals.
3 Csg. Volumes = 3 X ____ = 21.40 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 21.5 gals.

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								time
Time (~~military~~)								12:32
pH (s.u.)	7.60	7.42	7.17	6.96			7.00	
Specific Cond. (umhos/cm)	158.1						125.4	
Water Temp (°C)	24.2	23.2	22.2	21.1			23.1	
Turbidity (*)	1	1	1	1			1	
~~PID Readings~~ O_2	0.0							

* subjective (1) None (2) Faint (3) Moderate (4) Strong

Remarks

Groundwater Analytical Results (10/29/98) United Exxon / Winnsboro, South Carolina										
Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-5 (µg/l)	MW-6 (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9 (µg/l)
Free Product Thickness	None	None	None	None	None	None	None	None	None	None
Benzene	5	<1.0	**23100**	**2260**	**1781**	<5	<1	<1	<1	<1.0
Toluene	1000	<1.0	**89000**	52.7	610	<5	<1	<1	<1	2.1
Ethylbenzene	700	<1.0	**5380**	215	311	<5	<1	<1	<1	<1.0
Xylenes	10000	7.77	**27380**	889	1921	<15	<1	<1	<1	<1.0
Total BTEX	N/A	<10.77	144860	3416.7	4623	<30	<4	<4	<4	<5.1
MTBE	40	<5.0	**227000**	**<50**	<10	<1.0	<1	<1	<1	<1.0
Naphthalene	10	23.8	**2140**	**<50**	**40**	<5.0	<5	<5	<5	<5.0
EDB	5	<0.05	**78.65**	<0.05	<10	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Benzo(b)fluoranthene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Benzo(k)fluoranthene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Chrysene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10
Dibenzo(a,h)anthracene	10	<10.0	<10.0	<10.0	<5	<5	<5	<5	<5	<10

Bold concentrations represent those greater than the respective RBSL.
N/A = Not Applicable

Groundwater Analytical Results (continued) (10/29/98) United Exxon / Winnsboro, South Carolina					
Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	DW-1 (µg/l)	CK-1 (µg/l)
Free Product Thickness	None	None	None	None	None
Benzene	5	**11200**	**6280**	<5.0	<1.0
Toluene	1000	**30800**	**15600**	<5.0	<1.0
Ethylbenzene	700	**3360**	**2390**	<5.0	<1.0
Xylenes	10000	**15500**	**10800**	<15	<1.0
Total BTEX	N/A	60860	35070	<30.0	<4.0
MTBE	40	**<100**	**<100**	<5.0	<1.0
Naphthalene	10	**766**	**617**	<5.0	<5.0
EDB	5	**<100**	**<50**	<5.0	<0.02
Benzo(a)anthracene	10	<10	<10	<10	<5.0
Benzo(b)fluoranthene	10	<10	<10	<10	<5.0
Benzo(k)fluoranthene	10	<10	<10	<10	<5.0
Chrysene	10	<10	<10	<10	<5.0
Dibenzo(a,h)anthracene	10	<10	<10	<10	<5.0

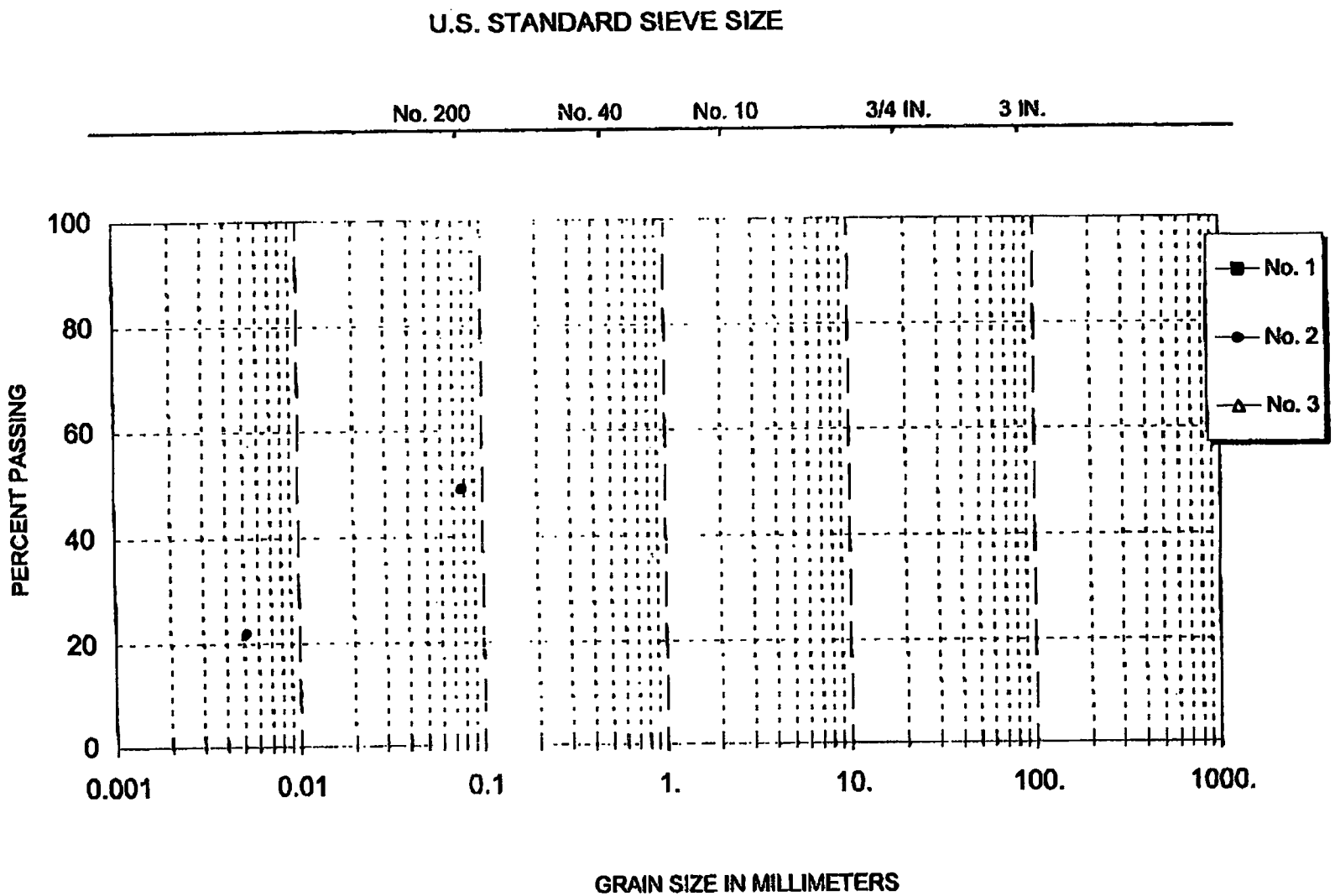
Bold concentrations represent those greater than the respective RBSL.
N/A= Not Applicable

Groundwater Analytical Results continued (10/2/98) United Exxon / Winnsboro, South Carolina										
Chemical of Concern	RBSL (µg/l)	MW-1 (mg/l)	MW-2 (mg/l)	MW-3 (mg/l)	MW-4 (mg/l)	MW-5 (mg/l)	MW-6 (mg/l)	MW-7 (mg/l)	MW-8 (mg/l)	MW-9 (mg/l)
Arsenic	N/A	<0.003	<0.003	<0.003	0.009	<0.005	0.018	<0.005	0.007	<0.009
Barium	N/A	0.590	0.280	0.500	0.567	0.256	2.04	0.740	0.729	0.36
Cadmiun	N/A	<0.001	0.001	<0.001	0.0006	0.0003	0.0026	0.0002	0.0004	<0.006
Chromium	N/A	<0.005	<0.005	0.012	0.050	0.011	0.532	<0.01	0.057	0.026
Lead	N/A	<0.010	<0.010	0.020	0.029	0.015	0.070	0.009	0.047	0.014
Mercury	N/A	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.50
Selenium	N/A	<0.003	<0.003	<0.003	<0.005	<0.005	0.005	<0.005	<0.005	<0.008
Silver	N/A	<0.001	<0.001	<0.002	<0.01	<0.01	0.046	<0.01	<0.01	<0.039

N/A = Not Applicable

Groundwater Analytical Results (continued) (10/12/98) United Exxon / Winnsboro, South Carolina					
Chemical of Concern	RBSL (mg/l)	MW-10 (mg/l)	MW-11 (mg/l)	DW-1 (mg/l)	CK-1 (mg/l)
Arsenic	N/A	<0.009	<0.009	<0.005	<0.009
Barium	N/A	0.30	<0.006	0.030	0.070
Cadmiun	N/A	<0.006	<0.006	<0.003	<0.006
Chromium	N/A	0.006	<0.006	<0.003	<0.006
Lead	N/A	0.015	<0.006	<0.003	<0.006
Mercury	N/A	<0.50*	<0.50*	<0.50*	<0.50*
Selenium	N/A	<0.008	<0.008	<0.004	<0.008
Silver	N/A	<0.039	<0.039	<0.020	<0.036

N/A = Not Applicable
*Results in µg/l



CLAY	SILT	SAND			GRAVEL		COBBLES
		Fine	Medium	Coarse	Fine	Coarse	

KEY	NO.	DEPTH	DESCRIPTION OF SOIL SAMPLE TESTED	CLASS.
No. 1		23-25'	SAND = 49% SILT = 29% CLAY = 22%	
No. 2				
No. 3				

SCHNABEL ENGINEERING ASSOCIATES

GRADATION CURVES

UNITED EXXON
SEI PROJECT 398/008

CONTRACT NO.	DATE
989073.08	9-17-98

APPENDIX D

Utility	On-site or Distance / Direction from site	Depth to Utility
Electric	On-site	2 to 3 feet
Sanitary Sewer	On-site and along Evans Street and North Congress Street	2 to 3 feet
Water	On-site and along Evans Street and North Congress Street	2 to 3 feet

Description of Receptor	Distance / Direction from site
McCulley Creek	Approximately 600 feet east of the site
Water meter	On western side of the site

A. CURRENT LAND USE - Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1000-foot radius for current land use. Complete the table below. Additional sheets may be attached if necessary.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation? (Yes or No)	Exposure point or Reason for Non-Selection	Data Requirements (IF pathway selected)
Air	Inhalation	Yes <u>No</u>	Odors not detected	
	Explosion Hazard	Yes <u>No</u>	Odors not detected	
Ground-Water	Ingestion	Yes <u>No</u>	Potable wells are not located within 1000 feet of the subject property.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
Surface Water	Ingestion	<u>Yes</u> No	The headwaters of McCulley Creek are located approximately 600 feet east of the subject property.	Sampling of McCulley Creek failed to detect petroleum hydrocarbons greater than their respective RBSLs
	Dermal Contact	<u>Yes</u> No		
	Volatile Inhalation	<u>Yes</u> No		
Surficial Soil	Ingestion	Yes <u>No</u>	The surface is not completely paved with asphalt and/or concrete; however, no surface staining of soils is evident.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
	Leaching to Ground-Water	Yes <u>No</u>		
Subsurface Soil	Ingestion	Yes <u>No</u>	The surface is not completely paved with asphalt and/or concrete; however, no surface staining of soils is evident.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
	Leaching to Ground-Water	<u>Yes</u> No		

B. FUTURE LAND USE - Identify any potential receptors or human exposure pathways (e.g. basements, contaminated soils from UST closures, etc.) within a 1000-foot radius for current land use. Complete the table below. Additional sheets may be attached if necessary.

Media (for exposure)	Exposure Route	Pathway Selected for Evaluation? (Yes or No)	Exposure point or Reason for Non-Selection	Data Requirements (IF pathway selected)
Air	Inhalation	Yes <u>No</u>	Odors not detected	
	Explosion Hazard	Yes <u>No</u>	Odors not detected	
Ground-Water	Ingestion	Yes <u>No</u>	Potable wells are not located within 1000 feet of the subject property.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
Surface Water	Ingestion	<u>Yes</u> No	The headwaters of McCulley Creek are located approximately 600 feet east of the subject property.	Sampling of McCulley Creek failed to detect petroleum hydrocarbons greater than their respective RBSLs
	Dermal Contact	<u>Yes</u> No		
	Volatile Inhalation	<u>Yes</u> No		
Surficial Soil	Ingestion	Yes <u>No</u>	The surface is not completely paved with asphalt and/or concrete; however, no surface staining of soils is evident.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
	Leaching to Ground-Water	Yes <u>No</u>		
Subsurface Soil	Ingestion	Yes <u>No</u>	The surface is not paved with asphalt and/or concrete; however, no surface staining of soils is evident.	
	Dermal Contact	Yes <u>No</u>		
	Volatile Inhalation	Yes <u>No</u>		
	Leaching to Ground-Water	<u>Yes</u> No		

APPENDIX E

Leachability Input Parameters

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Input Parameters

Percent Sand in soil		49	%	5% < sand < 70%	
Percent Clay in soil		22	%	5% < clay < 60%	
DAF		8			
Worst Case Soil Analyses	Benzene	264.1	mg/Kg	C_s	
	Toluene	2890	mg/Kg	C_s	
	Ethylbenzene	779.3	mg/Kg	C_s	
	Xylenes	4547	mg/Kg	C_s	
	Naphthalene	986.9	mg/Kg	C_s	
	Other CoC		mg/Kg	C_s	
					Figure
Natural organic carbon content		696	mg/Kg	f_{oc}	
TPH		19.7	mg/Kg	TPH	
Porosity		.47	decimal %	ϕ	C1
Residual water content		0.075	decimal %	W_r	C2
Bulk density of soil		1.53	g/cc	B_d	C3
Soil hydraulic conductivity		2.8×10^{-4}	cm/sec	K_f	C4
Average annual recharge		25	cm	H_w	
Wetting front suction (negative number)		-18	cm	H_f	C5
Distance from highest soil contamination to water table		1	cm	L	
Groundwater SSTL (or RBSL if appropriate)			mg/L	C_{GWsstl}	

List possible human exposure pathways from soil:

Leachability Results and Conclusions

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Chemical of Concern (Benzene, Naphthalene, etc.) : Benzene

(Please use a separate form for each Chemical of Concern that exceeds the RBSL in soil.)

Chemical Specific Data

Biodegradation half-life period	16	days	$t_{1/2}$	**Refer to**
Soil/water partitioning coefficient	81	mg/L	K_{oc}	**Table**
Henry's law constant	0.226		H'	**C2**

Results

				Equation Set	Step
Total organic carbon content	7.074×10^{-4}	decimal %	f_{cs}	I	1
Air filled porosity	0.3950	decimal %	f	I	2
Infiltration time	16.154	seconds	t	II	1
Velocity of water	63977	ft/yr	V_w	II	2
Soil/water distribution coefficient	0.056	mL/g	K_d	III	1
CoC percolation rate	54056.46	ft/yr	V_c	III	2
Time to reach groundwater	2.215×10^{-4}	days	T_c	IV	1
Concentration to protect groundwater	0.005	mg/L	C_p	IV	2
Site specific target level	0.002	mg/Kg	C_{Ssstl}	V	

Conclusions

Does concentration of CoC in soil exceed SSTL? Yes ✓ No ____

Risk of human exposure due to contaminated soil Yes ____ No ✓

Leachability Results and Conclusions

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Chemical of Concern (Benzene, Naphthalene, etc.) : Toluene

(Please use a separate form for each Chemical of Concern that exceeds the RBSL in soil.)

Chemical Specific Data

Biodegradation half-life period	22	days	$t_{1/2}$	Refer to
Soil/water partitioning coefficient	133	mg/L	K_{oc}	Table
Henry's law constant	0.301		H'	C2

Results

				Equation Set	Step
Total organic carbon content	7.074×10^{-4}	decimal %	f_{cs}	I	1
Air filled porosity	0.3950	decimal %	f	I	2
Infiltration time	16.154	seconds	t	II	1
Velocity of water	63977	ft/yr	V_w	II	2
Soil/water distribution coefficient	0.093	mL/g	K_d	III	1
CoC percolation rate	49162.46	ft/yr	V_c	III	2
Time to reach groundwater	2.436×10^{-4}	days	T_c	IV	1
Concentration to protect groundwater	1.00	mg/L	C_p	IV	2
Site specific target level	0.753	mg/Kg	C_{Ssstl}	V	

Conclusions

Does concentration of CoC in soil exceed SSTL? Yes ✓ No ____

Risk of human exposure due to contaminated soil Yes ____ No ✓

Leachability Results and Conclusions

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Chemical of Concern (Benzene, Naphthalene, etc.) : Ethylbenzene

(Please use a separate form for each Chemical of Concern that exceeds the RBSL in soil.)

Chemical Specific Data

Biodegradation half-life period	10	days	$t_{1/2}$	Refer to
Soil/water partitioning coefficient	176	mg/L	K_{oc}	Table
Henry's law constant	0.280		H'	C2

Results

				Equation Set	Step
Total organic carbon content	7.074×10^{-4}	decimal %	f_{cs}	I	1
Air filled porosity	0.3950	decimal %	f	I	2
Infiltration time	16.154	seconds	t	II	1
Velocity of water	63977	ft/yr	V_w	II	2
Soil/water distribution coefficient	0.122	mL/g	K_d	III	1
CoC percolation rate	45738.25	ft/yr	V_c	III	2
Time to reach groundwater	2.618×10^{-4}	days	T_c	IV	1
Concentration to protect groundwater	0.700	mg/L	C_p	IV	2
Site specific target level	0.697	mg/Kg	C_{Ssstl}	V	

Conclusions

Does concentration of CoC in soil exceed SSTL? Yes ✓ No ____

Risk of human exposure due to contaminated soil Yes ____ No ✓

Leachability Results and Conclusions

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Chemical of Concern (Benzene, Naphthalene, etc.) : Xylenes

(Please use a separate form for each Chemical of Concern that exceeds the RBSL in soil.)

Chemical Specific Data

Biodegradation half-life period	28	days	$t_{1/2}$	**Refer to**
Soil/water partitioning coefficient	639	mg/L	K_{oc}	**Table**
Henry's law constant	0.278		H'	**C2**

Results

				Equation Set	Step
Total organic carbon content	7.074×10^{-4}	decimal %	f_{cs}	I	1
Air filled porosity	0.3950	decimal %	f	I	2
Infiltration time	16.154	seconds	t	II	1
Velocity of water	63977	ft/yr	V_w	II	2
Soil/water distribution coefficient	0.445	mL/g	K_d	III	1
CoC percolation rate	26136.71	ft/yr	V_c	III	2
Time to reach groundwater	4.582×10^{-4}	days	T_c	IV	1
Concentration to protect groundwater	10.000	mg/L	C_p	IV	2
Site specific target level	36.164	mg/Kg	C_{Ssstl}	V	

Conclusions

Does concentration of CoC in soil exceed SSTL? Yes ✓ No _____

Risk of human exposure due to contaminated soil Yes _____ No ✓

Leachability Results and Conclusions

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Site Data

Facility Name: United Exxon Site ID # 11760

Chemical of Concern (Benzene, Naphthalene, etc.) : Naphthalene

(Please use a separate form for each Chemical of Concern that exceeds the RBSL in soil.)

Chemical Specific Data

Biodegradation half-life period	48	days	$t_{1/2}$	**Refer to**
Soil/water partitioning coefficient	1543	mg/L	K_{oc}	**Table**
Henry's law constant	0.002		H'	**C2**

Results

				Equation Set	Step
Total organic carbon content	7.074×10^{-4}	decimal %	f_{cs}	I	1
Air filled porosity	0.3950	decimal %	f	I	2
Infiltration time	16.154	seconds	t	II	1
Velocity of water	63977	ft/yr	V_w	II	2
Soil/water distribution coefficient	1.07	mL/g	K_d	III	1
CoC percolation rate	14229.83	ft/yr	V_c	III	2
Time to reach groundwater	8.415×10^{-4}	days	T_c	IV	1
Concentration to protect groundwater	0.010	mg/L	C_p	IV	2
Site specific target level	0.087	mg/Kg	C_{Ssstl}	V	

Conclusions

Does concentration of CoC in soil exceed SSTL? Yes ✓ No _____

Risk of human exposure due to contaminated soil Yes _____ No ✓

APPENDIX F

SUMMARY of SLUG TEST

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 11760 COUNTY FAIRFIELD

FACILITY NAME United Exxon

Slug Data

See Appendix ____ Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by manually w/ H_2O level indicator.
(Hermit Data Logger, Manually with Water Level Indicator, etc.) (List Method).

Complete the following table for each well tested.
COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED

Slug Test Conducted in well(s) number	MW-8	MW-11	DW-1	
Initial Rise/Drawdown in well (feet)	2.49	2.52	2.23	
Radius of Well Casing (feet)	0.083	0.083	0.083	
Effective Radius of Well (feet)	0.271	0.271	0.271	
Static Saturated Aquifer Thickness (feet)	5.92	7.85	43.72	
Length of Well Screen (feet)	15	10	5	
Static Height of Water Column in Well (ft)	5.92	7.85	43.72	

Calculations

See Appendix ____ Table_____ Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer-Rice (i.e. Bouwer-Rice, Cooper, etc.

Calculated values by well were as follows:

Slug Test Conducted in well(s) number	MW-8	MW-11	DW-1
Hydraulic Conductivity FT/DAY	0.115	0.302	0.465

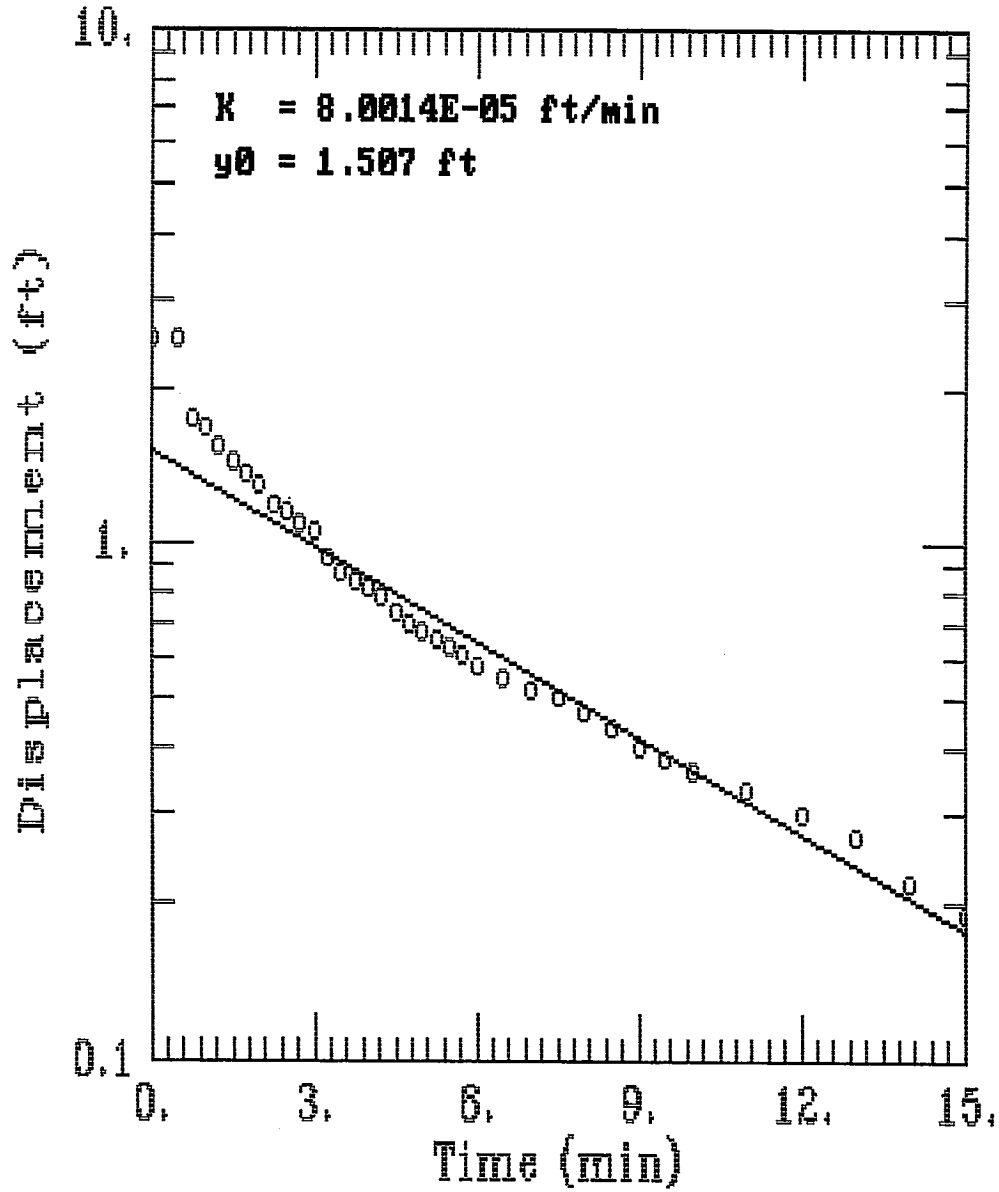
Thickness of the aquifer used to calculate hydraulic conductivity was 6.89 feet.

The aquifer is _____ confined _____ semi-confined ✓ water table (Check as appropriate).

The estimated seepage velocity is 7.15 feet per year based on a hydraulic conductivity of 76.101 FT/YR (AVG), a hydraulic gradient of 0.0329 ft/ft, and a porosity of 35 per cent for loam soil (list type i.e., silty sand ,clay, etc).

SUMMARY of SLUG TEST

United Exxon - Monitor Well MW-8



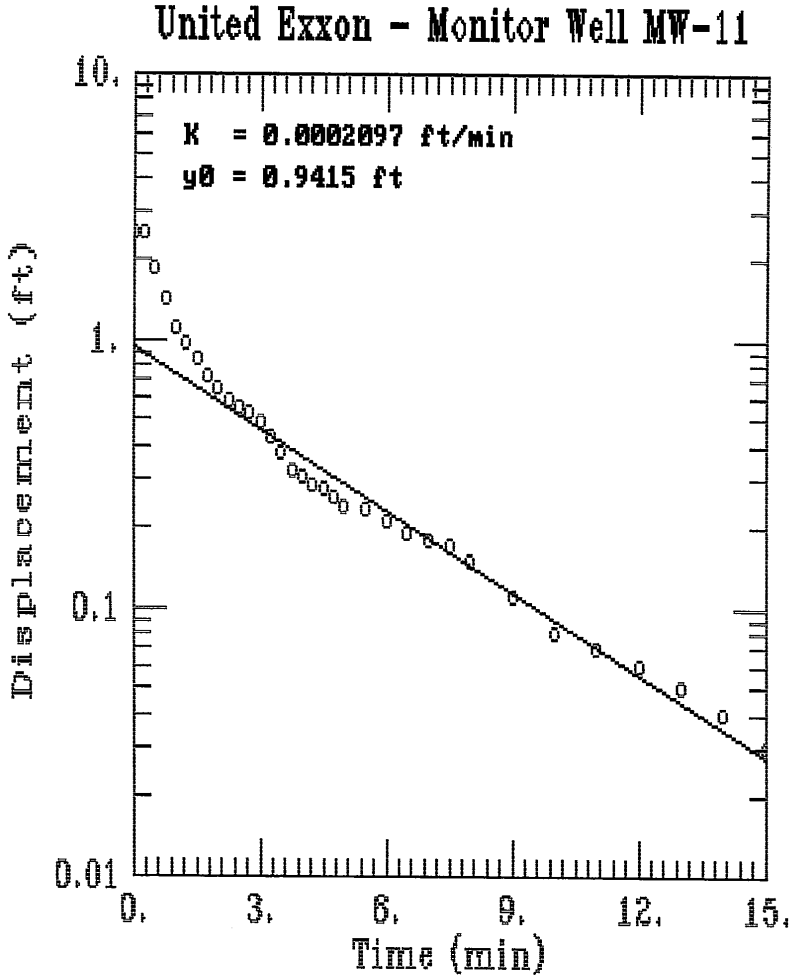
AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

United Exxon
Slug Test Data
MW-8

Time (minute)	Depth to water (feet)	Drawdown (feet)
0.00	39.08	0.00
0.50	41.57	2.49
0.75	40.81	1.73
1.00	40.76	1.68
1.25	40.63	1.55
1.50	40.53	1.45
1.75	40.45	1.37
2.00	40.37	1.29
2.25	40.28	1.20
2.50	40.23	1.15
2.75	40.17	1.09
3.00	40.14	1.06
3.25	40.02	0.94
3.50	39.96	0.88
3.75	39.93	0.85
4.00	39.89	0.81
4.25	39.87	0.79
4.50	39.81	0.73
4.75	39.78	0.70
5.00	39.75	0.67
5.25	39.73	0.65
5.50	39.71	0.63
5.75	39.69	0.61
6.00	39.66	0.58
6.50	39.63	0.55
7.00	39.60	0.52
7.50	39.58	0.50
8.00	39.55	0.47
8.50	39.52	0.44
9.00	39.48	0.40
9.50	39.46	0.38
10.00	39.44	0.36
11.00	39.41	0.33
12.00	39.38	0.30
13.00	39.35	0.27
14.00	39.33	0.22
15.00	39.30	0.19



AQTESOLV

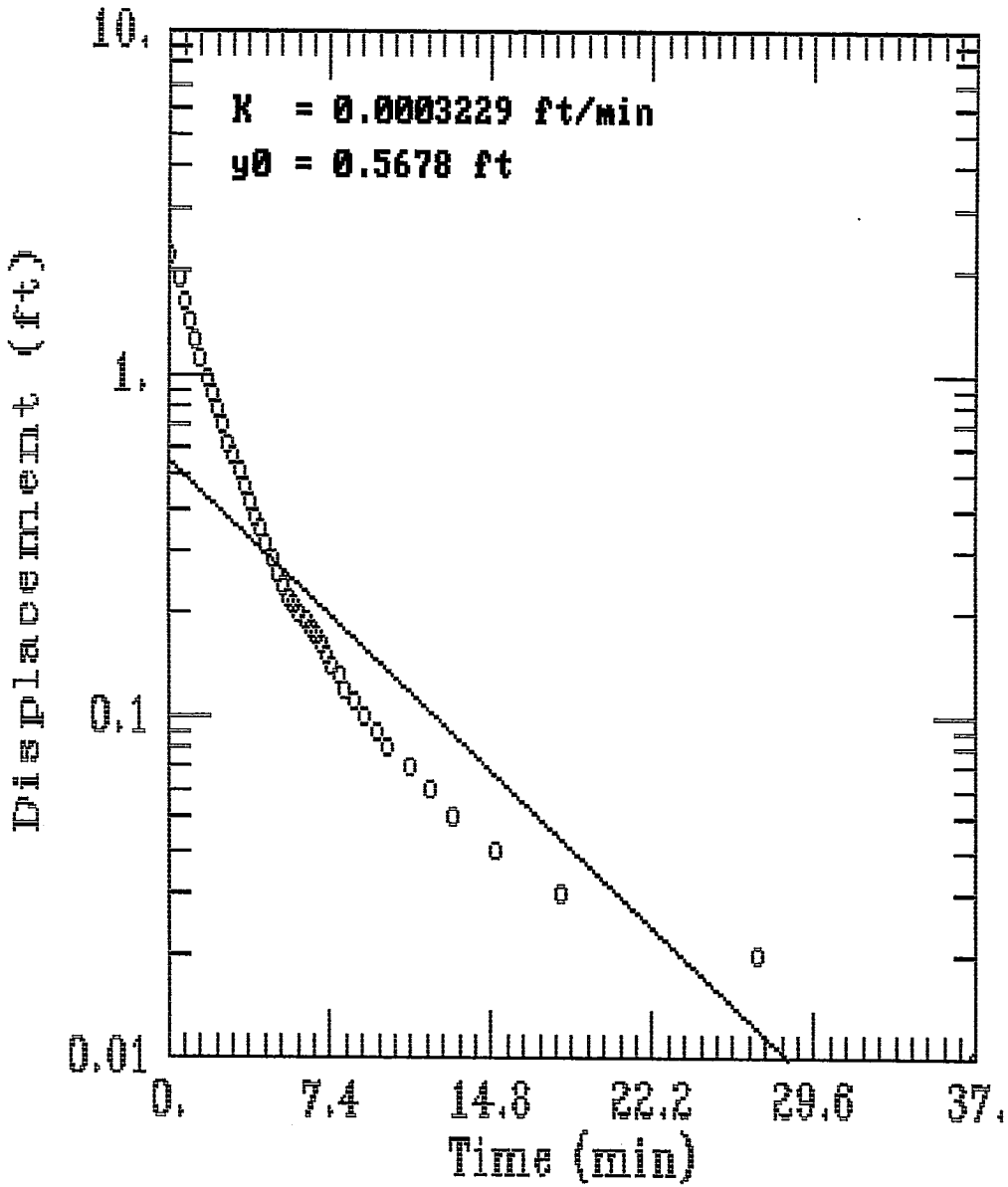
GERAGHTY & MILLER, INC.

Modeling Group

United Exxon
Slug Test Data
MW-11

Time (minute)	Depth to water (feet)	Drawdown (feet)
0.00	39.08	0.00
0.25	32.67	2.52
0.50	31.98	1.83
0.75	31.56	1.41
1.00	31.26	1.11
1.25	31.11	0.96
1.50	30.99	0.84
1.75	30.88	0.73
2.00	30.81	0.66
2.25	30.74	0.59
2.50	30.71	0.56
2.75	30.68	0.53
3.00	30.64	0.49
3.25	30.58	0.43
3.50	30.53	0.38
3.75	30.48	0.33
4.00	30.46	0.31
4.25	30.44	0.29
4.50	30.43	0.28
4.75	30.41	0.26
5.00	30.39	0.24
5.50	30.38	0.23
6.00	30.36	0.21
6.50	30.34	0.19
7.00	30.33	0.18
7.50	30.32	0.17
8.00	30.30	0.15
9.00	30.26	0.11
10.00	30.23	0.08
11.00	30.22	0.07
12.00	30.21	0.06
13.00	30.20	0.05
14.00	30.19	0.04
15.00	30.18	0.03

United Exxon - Monitor Well DW-1



AQTESOLV

GERAGHTY & MILLER, INC.

Modeling Group

United Exxon
Slug Test Data
DW-1

Time (minute)	Depth to water (feet)	Drawdown (feet)
0.00	45.28	0.00
0.50	47.51	1.91
0.75	47.19	1.61
1.00	46.89	1.43
1.25	46.71	1.24
1.50	46.52	1.11
1.75	46.39	0.98
2.00	46.26	0.87
2.25	46.15	0.78
2.50	46.06	0.70
2.75	45.98	0.63
3.00	45.91	0.57
3.25	45.85	0.52
3.50	45.80	0.47
3.75	45.75	0.42
4.00	45.70	0.38
4.25	45.66	0.35
4.50	45.63	0.32
4.75	45.60	0.29
5.00	45.57	0.26
5.25	45.54	0.24
5.50	45.52	0.22
5.75	45.50	0.21
6.00	45.49	0.20
6.25	45.48	0.19
6.50	45.47	0.18
6.75	45.46	0.17
7.00	45.45	0.16
7.25	45.44	0.15
7.50	45.43	0.14
7.75	45.42	0.13
8.00	45.41	0.12
8.50	45.39	0.11
9.00	45.38	0.10
9.50	45.37	0.09
10.00	45.36	0.08
11.00	45.35	0.07
12.00	45.34	0.06
13.00	45.33	0.05
15.00	45.32	0.04
18.00	45.31	0.03

United Exxon
Slug Test Data (continued)
DW-1

Time (minute)	Depth to water (feet)	Drawdown (feet)
27.00	45.30	0.02
37.00	45.29	0.01

APPENDIX G

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.3*

United Exxon Benzene — Run Name

Data Input Instructions:

115 or 0.02 — 1. Enter value directly....or 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.

20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	7.2	(ft/yr)
or		or	
Hydraulic Conductivity	K		(cm/sec)
Hydraulic Gradient	i		(ft/ft)
Porosity	n	0.35	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	19.5	(ft)
Transverse Dispersivity*	alpha y	2.0	(ft)
Vertical Dispersivity*	alpha z	0.0	(ft)
or		or	
Estimated Plume Length	Lp	600	(ft)

3. ADSORPTION

Retardation Factor*	R	1.2	(-)
or		or	
Soil Bulk Density	rho	1.53	(kg/l)
Partition Coefficient	Koc	81	(L/kg)
FractionOrganicCarbon	foc	6.96E-04	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	3.5E-1	(per yr)
or		or	
Solute Half-Life	t-half	2.00	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	900	(ft)
Modeled Area Width*	440	(ft)
Simulation Time*	2	(yr)

L, W

6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

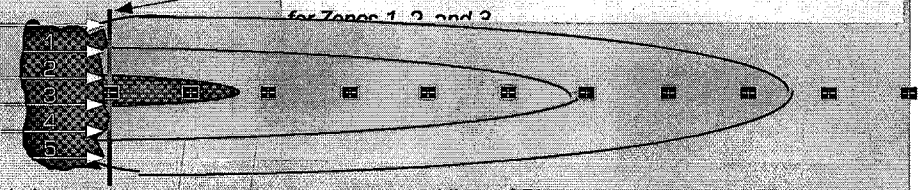
Source Zones:

Width* (ft)	Conc. (mg/L)*
55	0.005
85	2.26
160	23.1
85	2.26
55	0.005

Source Decay [see Help]:

SourceHalflife*	Infinite	(yr)
Soluble Mass	or	
In NAPL, Soil	Infinite	(Kg)

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	23.1		11.2		6.28						
Dist. from Source (ft)	0	90	180	270	360	450	540	630	720	810	900

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

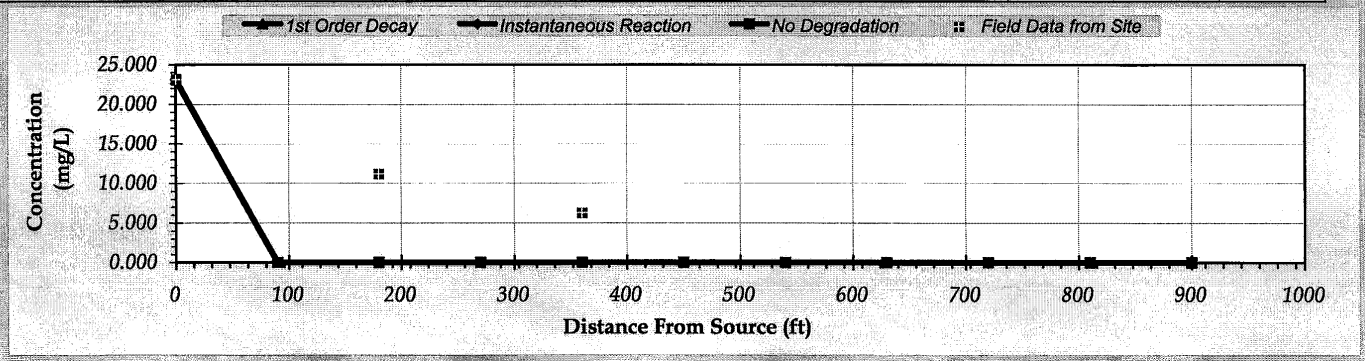
Restore Formulas for Vs, Dispersivities, R, lambda, other

Figure 1a: BIOSCREEN Input Screen

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	23.100	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	23.100	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	23.100	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	23.100		11.200		6.280						



Calculate Animation

Time:
2 Years

Return to Input

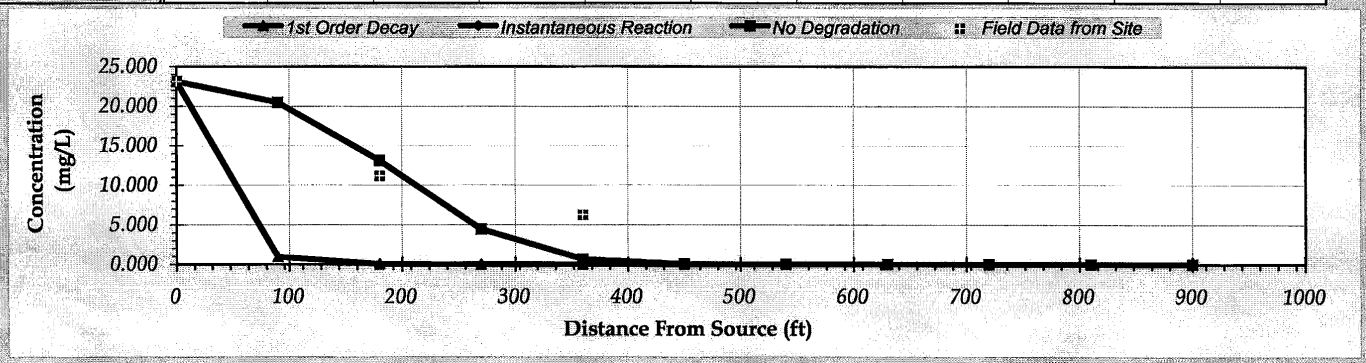
Recalculate This Sheet

Figure 1b: Centerline Output

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	23.100	20.456	13.099	4.454	0.659	0.038	0.001	0.000	0.000	0.000	0.000
1st Order Decay	23.100	0.936	0.038	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	23.100	20.456	13.099	4.454	0.659	0.038	0.001	0.000	0.000	0.000	0.000
Field Data from Site	23.100		11.200		6.280						



Calculate Animation

Time:
34 Years

Return to Input

Recalculate This Sheet

Figure 1c: Centerline Output

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.3*

United Exxon
Toluene
Run Name

Data Input Instructions:

115 — 1. Enter value directly....or
or — 2. Calculate by filling in grey
0.02 — cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	7.2	*(ft/yr)*
or		or	
Hydraulic Conductivity	*K*		*(cm/sec)*
Hydraulic Gradient	*I*		*(ft/ft)*
Porosity	*n*	0.35	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	19.5	*(ft)*
Transverse Dispersivity*	*alpha y*	2.0	*(ft)*
Vertical Dispersivity*	*alpha z*	0.0	*(ft)*
or		or	
Estimated Plume Length	*Lp*	600	*(ft)*

3. ADSORPTION

Retardation Factor*	*R*	1.4	*(-)*
or		or	
Soil Bulk Density	*rho*	1.53	*(kg/l)*
Partition Coefficient	*Koc*	133	*(L/kg)*
FractionOrganicCarbon	*foc*	6.96E-04	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	9.0E+0	*(per yr)*
or		or	
Solute Half-Life	*t-half*	0.08	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*		*(mg/L)*
Delta Nitrate*	*NO3*		*(mg/L)*
Observed Ferrous Iron*	*Fe2+*		*(mg/L)*
Delta Sulfate*	*SO4*		*(mg/L)*
Observed Methane*	*CH4*		*(mg/L)*

5. GENERAL

Modeled Area Length*	900	*(ft)*
Modeled Area Width*	440	*(ft)*
Simulation Time*	2	*(yr)*

6. SOURCE DATA

Source Thickness in Sat.Zone* 10 *(ft)*

Source Zones:

Width* (ft)	Conc. (mg/L)*
55	0.005
85	0.0527
160	89
85	0.0527
55	0.005

Source Decay (see Help):

SourceHalflife*	Infinite	*(yr)*
Soluble Mass	or	
In NAPL, Soil	Infinite	*(Kg)*

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3

View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	89.0		30.8		15.6						
Dist. from Source (ft)	0	90	180	270	360	450	540	630	720	810	900

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

Recalculate This Sheet

Paste Example Dataset

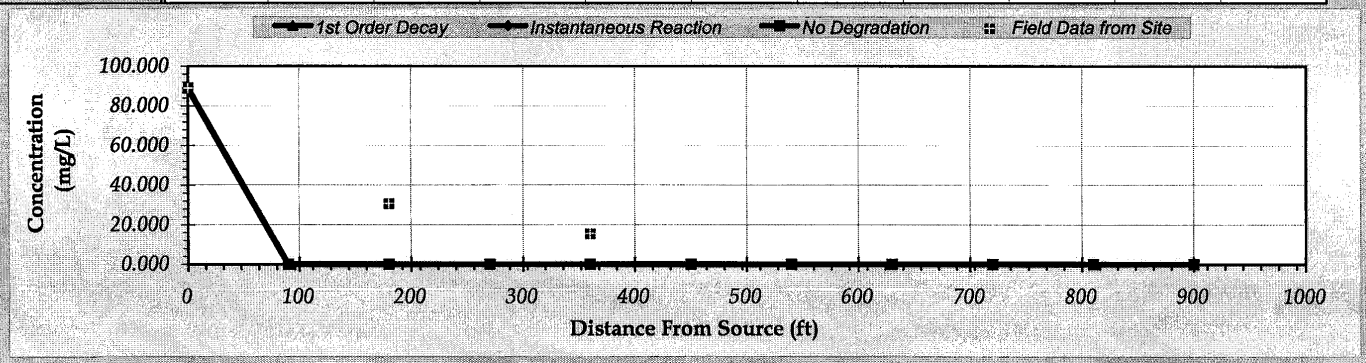
Restore Formulas for Vs, Dispersivities, R, lambda, other

Figure 2a: BIOSCREEN Input Screen

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	89.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	89.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	89.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	89.000		30.800		15.600						



Calculate Animation

Time:
2 Years

Return to Input

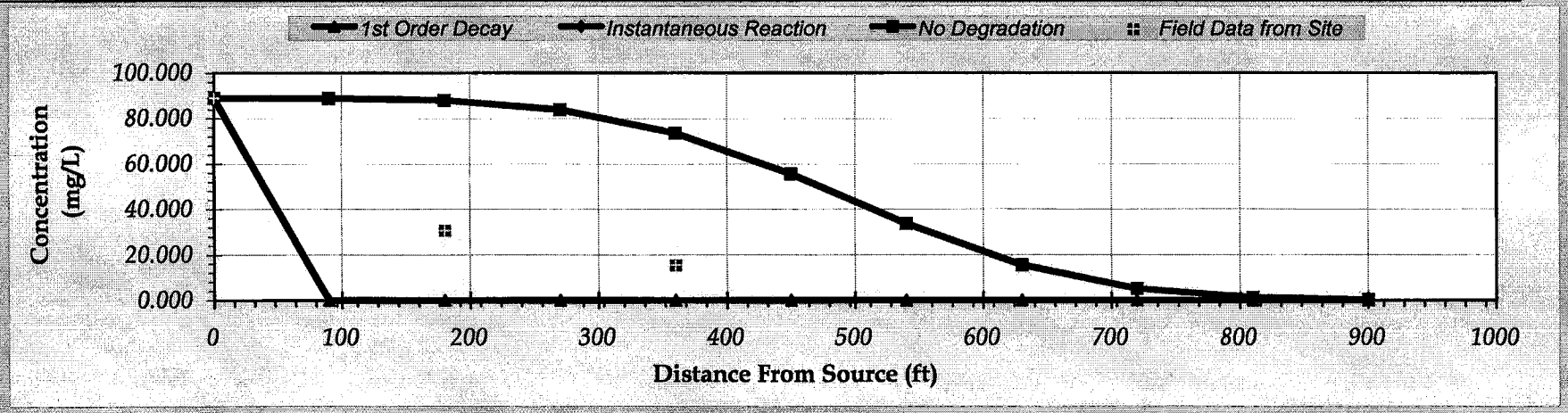
Recalculate This Sheet

Figure 2b: Centerline Output

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	89.000	88.866	87.901	83.821	73.564	55.615	33.766	15.540	5.204	1.234	0.204
1st Order Decay	89.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	89.000	88.866	87.901	83.821	73.564	55.615	33.766	15.540	5.204	1.234	0.204
Field Data from Site	89.000		30.800		15.600						



Calculate Animation

Time:
100 Years

Return to Input

Recalculate This Sheet

Figure 2c: Centerline Output

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.3*

United Exxon
Ethylbenzene
Run Name

Data Input Instructions:

115 ↑ or 0.02
1. Enter value directly...or
2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	7.2	(ft/yr)
or		↑ or	
Hydraulic Conductivity	K		(cm/sec)
Hydraulic Gradient	i		(ft/ft)
Porosity	n	0.35	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	19.5	(ft)
Transverse Dispersivity*	alpha y	2.0	(ft)
Vertical Dispersivity*	alpha z	0.0	(ft)
or		↑ or	
Estimated Plume Length	Lp	600	(ft)

3. ADSORPTION

Retardation Factor*	R	1.5	(-)
or		↑ or	
Soil Bulk Density	rho	1.53	(kg/l)
Partition Coefficient	Koc	176	(L/kg)
FractionOrganicCarbon	foc	6.96E-04	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	1.1E+0	(per yr)
or		↑ or	
Solute Half-Life	t-half	0.63	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	900	(ft)
Modeled Area Width*	440	(ft)
Simulation Time*	2	(yr)

6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

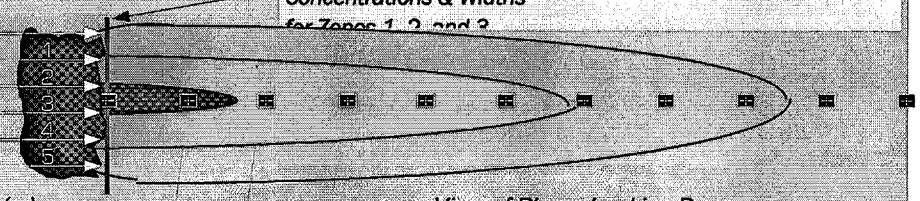
Source Zones:

Width* (ft)	Conc. (mg/L)*
55	0.005
85	0.215
160	5.38
85	0.215
55	0.005

Source Decay (see Help):

SourceHalflife*	Infinite	(yr)
Soluble Mass	↑ or	
In NAPL, Soil	Infinite	(Kg)

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	5.38		3.36		2.39						
Dist. from Source (ft)	0	90	180	270	360	450	540	630	720	810	900

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

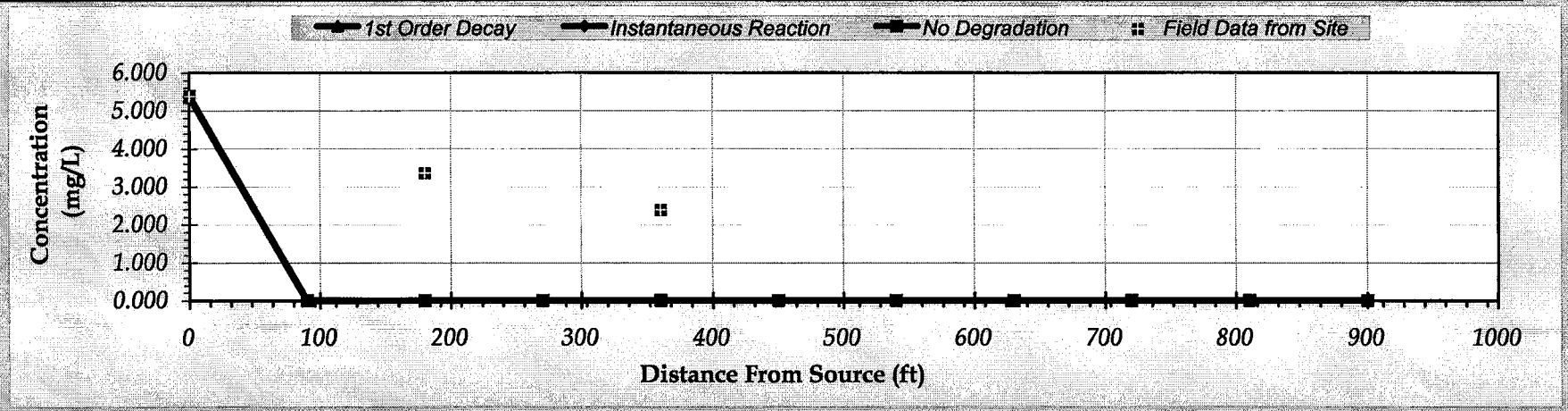
Restore Formulas for Vs, Dispersivities, R, lambda, other

Figure 3a: BIOSCREEN Input Screen

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	5.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	5.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	5.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	5.380		3.360		2.390						



Calculate Animation

Time:
2 Years

Return to Input

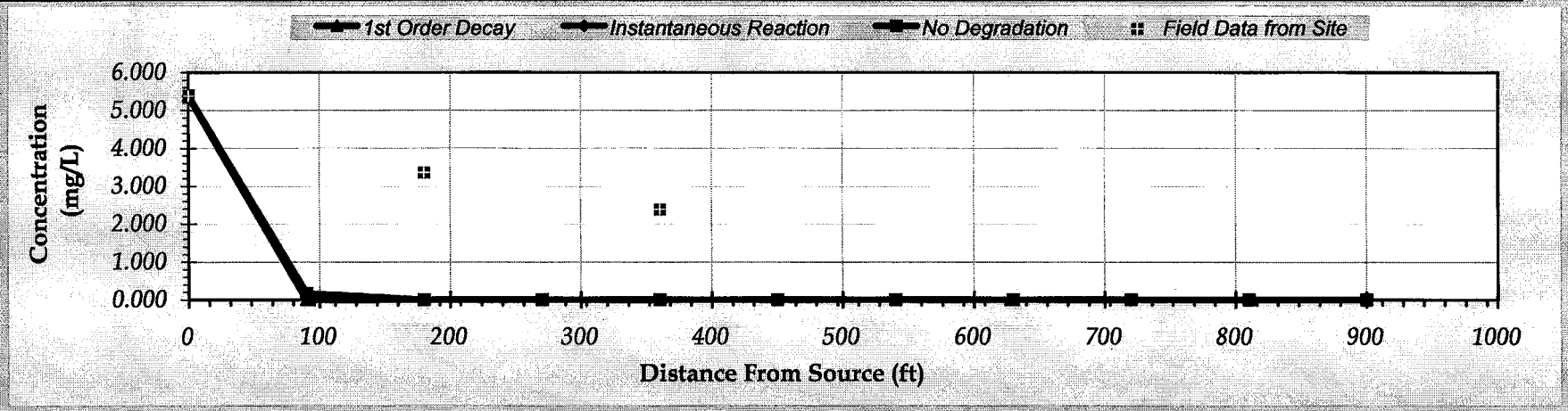
Recalculate This Sheet

Figure 3b: Centerline Output

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	5.380	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	5.380	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	5.380	0.162	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	5.380		3.360		2.390						



Calculate Animation

Time:

6 Years

Return to Input

Recalculate This Sheet

Figure 3c: Centerline Output

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.3*

Run Name: United Exxon Xylenes

Data Input Instructions:

115 — 1. Enter value directly....or
or
0.02 — 2. Calculate by filling in grey cells below. (To restore formulas, hit button below).

Variable* — Data used directly in model.
20 — Value calculated by model. (Don't enter any data).

1. HYDROGEOLOGY

Seepage Velocity*	Vs	7.2	(ft/yr)
or		or	
Hydraulic Conductivity	K		(cm/sec)
Hydraulic Gradient	i		(ft/ft)
Porosity	n	0.35	(-)

2. DISPERSION

Longitudinal Dispersivity*	alpha x	19.5	(ft)
Transverse Dispersivity*	alpha y	2.0	(ft)
Vertical Dispersivity*	alpha z	0.0	(ft)
or		or	
Estimated Plume Length	Lp	600	(ft)

3. ADSORPTION

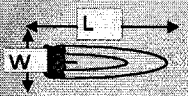
Retardation Factor*	R	2.9	(-)
or		or	
Soil Bulk Density	rho	1.53	(kg/l)
Partition Coefficient	Koc	639	(L/kg)
FractionOrganicCarbon	foc	6.96E-04	(-)

4. BIODEGRADATION

1st Order Decay Coeff*	lambda	4.5E+0	(per yr)
or		or	
Solute Half-Life	t-half	0.15	(year)
or Instantaneous Reaction Model			
Delta Oxygen*	DO		(mg/L)
Delta Nitrate*	NO3		(mg/L)
Observed Ferrous Iron*	Fe2+		(mg/L)
Delta Sulfate*	SO4		(mg/L)
Observed Methane*	CH4		(mg/L)

5. GENERAL

Modeled Area Length*	900	(ft)
Modeled Area Width*	440	(ft)
Simulation Time*	2	(yr)



6. SOURCE DATA

Source Thickness in Sat.Zone* 10 (ft)

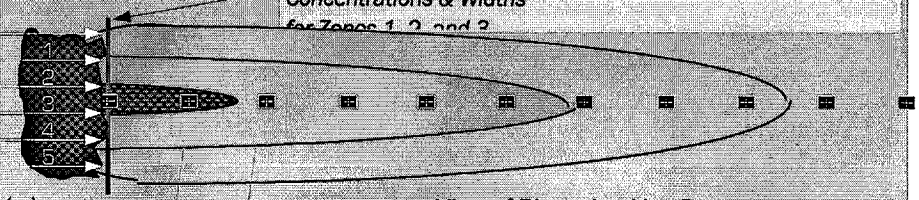
Source Zones:

Width* (ft)	Conc. (mg/L)*
55	0.015
85	0.889
160	27.38
85	0.889
55	0.015

Source Decay (see Help):

SourceHalflife*	Infinite	(yr)
Soluble Mass	or	
In NAPL, Soil	Infinite	(Kg)

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2, and 3



View of Plume Looking Down

7. FIELD DATA FOR COMPARISON

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

Dist. from Source (ft)	0	90	180	270	360	450	540	630	720	810	900
Concentration (mg/L)	27.38		15.5		10.8						

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — View Output

RUN ARRAY — View Output

Help

Recalculate This Sheet

Paste Example Dataset

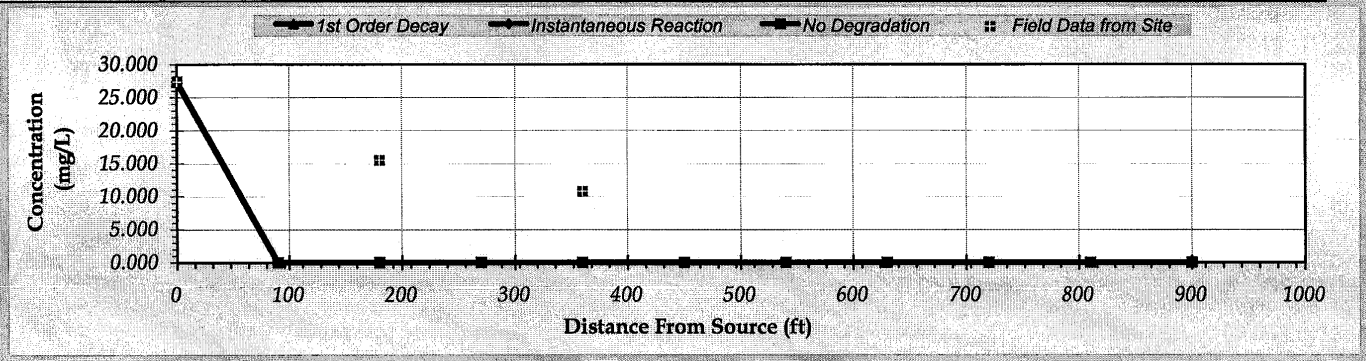
Restore Formulas for Vs, Dispersivities, R, lambda, other

Figure 4a: BIOSCREEN Input Screen

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	27.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	27.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	27.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	27.380		15.500		10.800						



Calculate Animation

Time:
2 Years

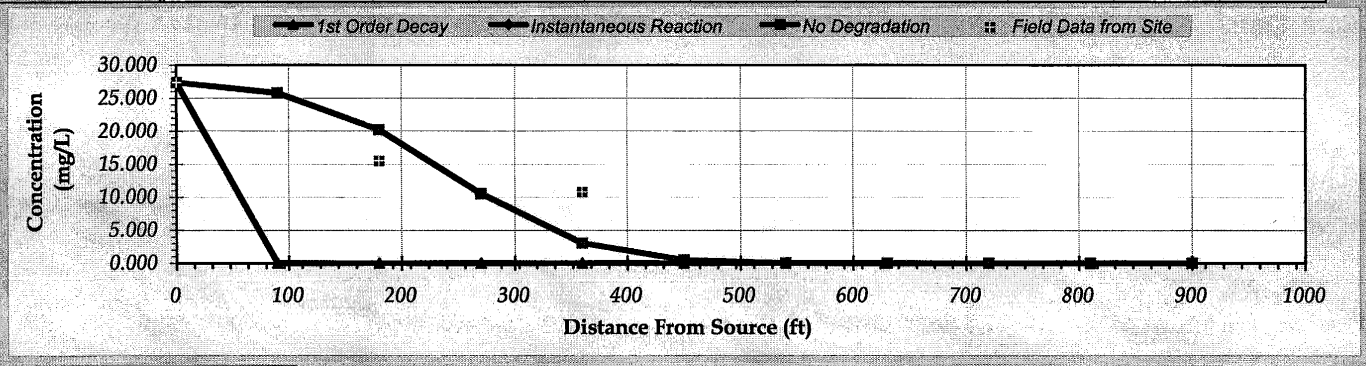
Return to Input

Recalculate This Sheet

Figure 4b: Centerline Output

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	27.380	25.783	20.228	10.542	3.037	0.433	0.029	0.001	0.000	0.000	0.000
1st Order Decay	27.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	27.380	25.783	20.228	10.542	3.037	0.433	0.029	0.001	0.000	0.000	0.000
Field Data from Site	27.380		15.500		10.800						



Calculate Animation

Time: 100 Years

Return to Input

Recalculate This Sheet

Figure 4c: Centerline Output

BIOSCREEN Natural Attenuation Decision Support System

Air Force Center for Environmental Excellence — *Version 1.3*

United Exxon / *Naphthalene* — *Run Name*

Data Input Instructions:

115 — *1. Enter value directly....or*

or — *2. Calculate by filling in grey cells below. (To restore formulas, hit button below).*

0.02

Variable* — *Data used directly in model.*

20 — *Value calculated by model. (Don't enter any data).*

1. HYDROGEOLOGY

Seepage Velocity*	*Vs*	7.2	*(ft/yr)*
or		or	
Hydraulic Conductivity	*K*		*(cm/sec)*
Hydraulic Gradient	*i*		*(ft/ft)*
Porosity	*n*	0.35	*(-)*

2. DISPERSION

Longitudinal Dispersivity*	*alpha x*	19.5	*(ft)*
Transverse Dispersivity*	*alpha y*	2.0	*(ft)*
Vertical Dispersivity*	*alpha z*	0.0	*(ft)*
or		or	
Estimated Plume Length	*Lp*	600	*(ft)*

3. ADSORPTION

Retardation Factor*	*R*	5.7	*(-)*
or		or	
Soil Bulk Density	*rho*	1.53	*(kg/l)*
Partition Coefficient	*Koc*	1543	*(L/kg)*
FractionOrganicCarbon	*foc*	6.96E-04	*(-)*

4. BIODEGRADATION

1st Order Decay Coeff*	*lambda*	9.8E-1	*(per yr)*
or		or	
Solute Half-Life	*t-half*	0.71	*(year)*
or Instantaneous Reaction Model			
Delta Oxygen*	*DO*		*(mg/L)*
Delta Nitrate*	*NO3*		*(mg/L)*
Observed Ferrous Iron*	*Fe2+*		*(mg/L)*
Delta Sulfate*	*SO4*		*(mg/L)*
Observed Methane*	*CH4*		*(mg/L)*

5. GENERAL

Modeled Area Length*	900	*(ft)*
Modeled Area Width*	440	*(ft)*
Simulation Time*	2	*(yr)*

6. SOURCE DATA

Source Thickness in Sat.Zone* 10 *(ft)*

Source Zones:

Width* (ft)	Conc. (mg/L)*
55	0.04
85	0.05
160	2.14
85	0.05
55	0.04

Source Decay (see Help):

SourceHalflife*	Infinite	*(yr)*
Soluble Mass	or	
In NAPL, Soil	Infinite	*(Kg)*

Vertical Plane Source: Look at Plume Cross-Section and Input Concentrations & Widths for Zones 1, 2 and 3

View of Plume Looking Down

Observed Centerline Concentrations at Monitoring Wells
If No Data Leave Blank or Enter "0"

7. FIELD DATA FOR COMPARISON

Concentration (mg/L)	2.14		.766		.617						
Dist. from Source (ft)	0	90	180	270	360	450	540	630	720	810	900

8. CHOOSE TYPE OF OUTPUT TO SEE:

RUN CENTERLINE — **View Output**

RUN ARRAY — **View Output**

Help

Recalculate This Sheet

Paste Example Dataset

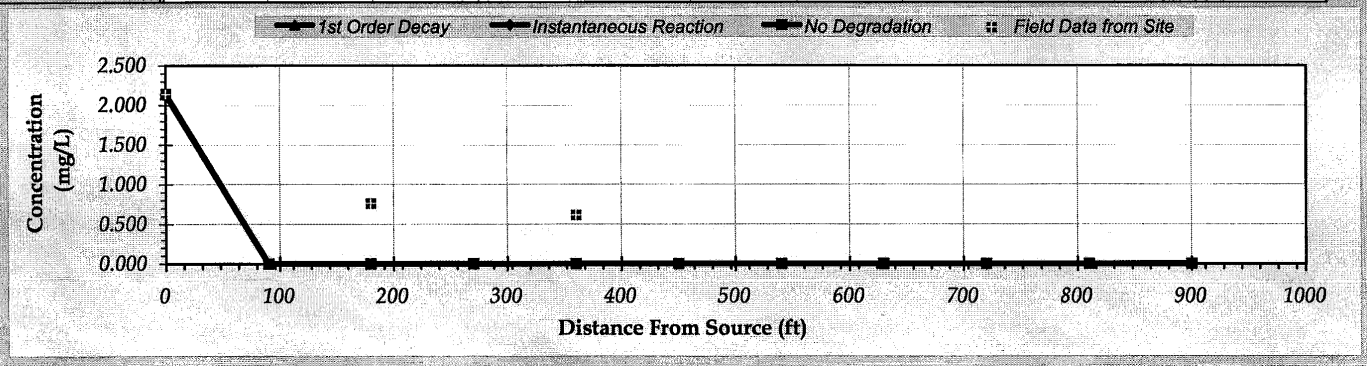
Restore Formulas for Vs, Dispersivities, R, lambda, other

Figure 5a: BIOSCREEN Input Screen

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

Distance from Source (ft)

TYPE OF MODEL	0	90	180	270	360	450	540	630	720	810	900
No Degradation	2.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	2.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	2.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	2.140		0.766		0.617						



Calculate Animation

Time: 2 Years

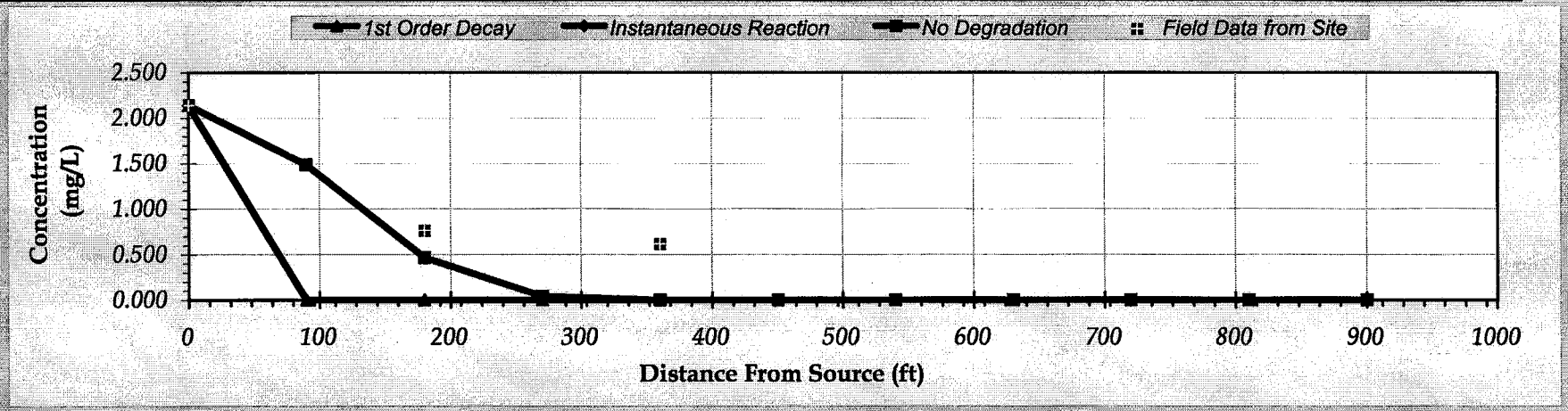
Return to Input

Recalculate This Sheet

Figure 5b: Centerline Output

DISSOLVED HYDROCARBON CONCENTRATION ALONG PLUME CENTERLINE (mg/L at Z=0)

TYPE OF MODEL	Distance from Source (ft) 0	90	180	270	360	450	540	630	720	810	900
No Degradation	2.140	1.485	0.466	0.041	0.001	0.000	0.000	0.000	0.000	0.000	0.000
1st Order Decay	2.140	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Inst. Reaction	2.140	1.485	0.466	0.041	0.001	0.000	0.000	0.000	0.000	0.000	0.000
Field Data from Site	2.140		0.766		0.617						



Calculate Animation

Time:
100 Years

Return to Input

Recalculate This Sheet

Figure 5c: Centerline Output

APPENDIX H

APPENDIX I

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. 5/14/98
Manifest Document No. GK1102
2. Page 1 of

3. Generator's Name and Mailing Address
SEI
3021 McNAUGHTON DR STE 9
COLUMBIA, SC

4. Generator's Phone 803-788-2535

5. Transporter 1 Company Name: SPATCO ENVIRONMENTAL
6. US EPA ID Number
A. Transporter's Phone

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
G&K TANK SERVICES
PO BOX 1384
SUMTER, SC
10. US EPA ID Number: SCD987573557
C. Facility's Phone: 803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS SOIL UNITED EXXON WINNSBORO SC	2	DM		
b. NON-HAZARDOUS 1) SOIL 1) Liquid PANTRY #619 FOUNTAIN INN, SC	2	DM		
c. NON-HAZARDOUS LIQUID MORRIS MINI MART 6 SALLEY, SC	1	DM		
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: Bob Bolton
Signature: Bob Bolton
Month 05 Day 14 Year 98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Bob Bolton
Signature: Bob Bolton
Month 05 Day 14 Year 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JOAN GARN
Signature: Joan Garn
Month 5 Day 14 Year 98

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # (2) TWO SOIL Size 55 GALLON
UNITED EXXON WINNSBORO SC

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas O. Kelly Jr. Date MAY 14, 1998

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. 5/15/98	Manifest Document No. GK1103	2. Page 1 of

GENERATOR

3. Generator's Name and Mailing Address
SEI
3021 McNAUGHTON DR STE 9
COLUMBIA, SC

4. Generator's Phone (803-788-2535

5. Transporter 1 Company Name	6. US EPA ID Number	A. Transporter's Phone
SPATCO ENVIRONMENTAL		
7. Transporter 2 Company Name	**8. US EPA ID Number**	**B. Transporter's Phone**
9. Designated Facility Name and Site Address	**10. US EPA ID Number**	**C. Facility's Phone**
G&K TANK SERVICES PO BOX 1384 SUMTER, SC	SCD987573557	803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS (2) SOIL (1) LIQUID UNITED EXXON WINNSBORO SC	3	DM		
b. NON-HAZARDOUS SOIL KEN AN TRANS. SWEETWATER RD N. AUGUSTA SC	2	DM		
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
Oliver D. Jones	[signature]	05	15	98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
Oliver D. Jones	[signature]	05	15	98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year
JOAN GARN	[signature]	5	15	98

ORIGINAL - RETURN TO GENERATOR

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # (2) TWO SOIL
(1) ONE WATER
UNITED EXXON
WINNSBORO, SC

Size 55 GALLON
55 GALLON

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas Q. Kelly Jr.

Date MAY 15, 1998

Please print or type.
(Form designed for use on elite (12 pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. GK1169

2. Page 1 of

07/09/98

GENERATOR

3. Generator's Name and Mailing Address
SEI ENVIRONMENTAL
3021 MCNAUGHTON DR
COLUMBIA, SC 29223

4. Generator's Phone (803-) 788-3535

5. Transporter 1 Company Name: SEI ENVIRONMENTAL

6. US EPA ID Number

A. Transporter's Phone: 803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
G&K TANK SERVICES, INC
5070 BROAD ST EXT
SUMTER, SC 29154

10. US EPA ID Number

C. Facility's Phone: 803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL	13	DR		
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

11. a. UNITED EXXON, WINNSBORO, SC

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: FRANCIS J. FOX | Signature | Month 07 Day 09 Year 98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: FRANCIS J. FOX | Signature | Month 07 Day 09 Year 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: Lee Blackmon | Signature: Lee Blackmon | Month 07 Day 09 Year 98

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

12-BLC-M5

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # 13) THIRTEEN Size 55 GALLON
WINNSBORO, SC - UNITED EXXON

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas D. Kolp. Date JULY 9, 1998

Please print or type
(Form designed for use on elite (12-pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. GK1175

2. Page 1 of

3. Generator's Name and Mailing Address

SEI ENVIRONMENTAL
3021 MCNAUGHTON DR
COLUMBIA, SC 29223

07/13/98

4. Generator's Phone ( ) 803- 788-3535

5. Transporter 1 Company Name: SEI ENVIRONMENTAL

6. US EPA ID Number

A. Transporter's Phone: 803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

G&K TANK SERVICES, INC
5070 BROAD ST EXT
SUMTER, SC 29154

10. US EPA ID Number

C. Facility's Phone: 803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL	6	DR		
b. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	2	DR		
c. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL	2	DR		
d. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	DR		

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

11. a. UNITED EXXON, WINNSBORO 197-005
11. b. UNITED EXXON, WINNSBORO 197-005
11. c. CYPRESS PARK MART, SOCASTEE, 197-446
11. d. KEENAN ENERGY, COLUMBIA, 397-970

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: FRANCIS J. FOX — Signature — Month Day Year: 7/13/98

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: FRANCIS J. FOX — Signature — Month Day Year: 7/13/98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: ~~Lee Blackmon~~ Joan Garn — Signature — Month Day Year: 7/13/98

Printed by J.J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # 6) SIX - SOIL
2) TWO - WATER

Size 55 GALLON
55 GALLON

UNITED EXXON, WINNSBORO 197-005

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas Q. Keels Jr.

Date JULY 13, 1998

Manifest

TPS Technologies Soil Recycling
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transporter Truck #:	Facility #:	Given by TPS:	Load #
8/16/98	Consultant		A05	01400	001

Generator and/or Consultant

Generator's Name and Billing Address:	Generator's Phone #:	Generator's US EPA ID No.
Keenan Energy P.O. Box 3218 Columbia, SC 29230 USA	(803) 256-0667 Person to Contact: Mr. Billy Keenan FAX#: (803) 252-1460	Customer Account Number with TPS: 52KEENA
Consultant's Name and Billing Address:	**Consultant's Phone #:**	
SEI Environmental, Inc./BB 3021 McNaughton Drive Suite 9 Columbia, SC 29223 USA	(803) 788-2535 Person to Contact: Mr. Bob Bolton FAX#: (803) 788-2399	Customer Account Number with TPS: 1000074
Generation Site (Transport from): *(name & address)*	**Site Phone #:**	BTEX Levels
United Exxon 401 North Congress Street Winnsboro, SC 29180 USA	Person to Contact: FAX#:	TPH Levels AVG. Levels
Designated Facility (Transport to): *(name & address)*	**Facility Phone #:**	Facility Permit Numbers
TPS Technologies-G'vil-SC 415 Blackberry Valley Road Greenville, SC 29617-5740 USA	800-492-4451 Person to Contact: Mr. Brad Smith FAX#: 800-492-4452	
Transporter Name and Mailing Address:	**Transporter's Phone #:**	Transporter's US EPA ID No.:
John Drake 38 Drake Road Travelers Rest, SC 29690-9752 USA	(864) 834-4711 Person to Contact: Mr. John Drake FAX#:	Transporter's DOT No.: Customer Account Number with TPS: 55DRAKE

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐		TONS	5.47	3.58	1.89
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above:

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils described in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐ | Signature and date: | Month | Day | Year

Transporter

Transporter's certification: I/We acknowledge receipt of the soil described above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that this soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name: JOHN DRAKE | Signature and date: John Drake | Month: 8 | Day: 15 | Year: 98

Recycling Facility

Discrepancies:

6 - SOIL DRUMS
1 - H2O DRUM

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above.

Print or Type Name: Mr. Brad Smith | Signature and date: 8/16/98

Please print or type.

TPS INVOICING COPY

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. GK1266

2. Page 1 of

09/03/98

3. Generator's Name and Mailing Address
SEI ENVIRONMENTAL
3021 MCNAUGHTON DR
COLUMBIA, SC 29223

4. Generator's Phone (803-) 788-3535

5. Transporter 1 Company Name: SEI ENVIRONMENTAL

6. US EPA ID Number

A. Transporter's Phone: 803-788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address
G&K TANK SERVICES, INC
5070 BROAD ST EXT
SUMTER, SC 29154

10. US EPA ID Number

C. Facility's Phone: 803-494-4593

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	DR		
b. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL	1	DR		
c. ~~NON-HAZARDOUS PETROLEUM~~ CONTAMINATED WATER	1	DR		
d. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	DR		

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

11. a. & b. SITE #398-161 ORANGEBURG, SC
11. c. SITE #398-160 SUMMERVILLE, SC
11. d. SITE #398-1008 WINDSBORO, SC

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: FRANCIS J. FOX — Signature — Month 9 Day 3 Year 98

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: FRANCIS J. FOX — Signature — Month 9 Day 3 Year 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: JOAN GARN — Signature — Month 9 Day 3 Year 98

GENERATOR

TRANSPORTER

FACILITY

ORIGINAL - RETURN TO GENERATOR

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # 1) Water
398-1008
Winnsboro, SC.

Size 55 gallon

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas D. Kelly Jr.

Date Sept. 3, 1998

Please print or type
(Form designed for use on elite (12-pitch) typewriter.)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. GK1364

2. Page 1 of 10/30/98

3. Generator's Name and Mailing Address

SEI ENVIRONMENTAL
3021 MCNAUGHTON DR.
COLUMBIA, SC. 29223-3021

4. Generator's Phone (803)788-2535

5. Transporter 1 Company Name: SEI ENVIRONMENTAL

6. US EPA ID Number

A. Transporter's Phone: (803)788-2535

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

G&K TANK SERVICES
P.O. BOX 1384
SUMTER, SC. 29151

10. US EPA ID Number

C. Facility's Phone: (803)494-4583

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL	5	DR		
b. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	DR		
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

11. a.& b. UNIRO EXXON, WINDSBORO, SC.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name: FRANCIS J. FOX — Signature — Month 10 Day 30 Year 98

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: FRANCIS J. FOX — Signature — Month 10 Day 30 Year 98

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: MANDY NISSEN — Signature — Month 10 Day 30 Year 98

GENERATOR — TRANSPORTER — FACILITY

Printed by J. J. KELLER & ASSOCIATES, INC.
Neenah, WI 54957-0368

ORIGINAL - RETURN TO GENERATOR

B.C.M5

G & K
TANK SERVICES, INC.

Broad St. Extension • PO Box 1384 • Sumter, SC 29151
(803) 494-2694 • 1-800-800-6840 • FAX: (803) 494-8598

Certificate of Disposal

Tank # 5) SOIL
1) WATER
UNIRO EXXON
WINDSBORO, SC.

Size 55 GALLON

This is to certify that the above tank has been disposed of by G&K Tank Services, Inc., in accordance with and exceeding EPA regulations on Petroleum Tank Disposal.

Certified by Thomas Q. Keep

Date 10-30-98

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

RECEIVED
FEB 12 2008
UNDERGROUND STORAGE
TANK PROGRAM

February 12, 2008

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Sampling Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Shrader:

Attached is the Groundwater Sampling Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST PROGRAM
DOCKETING # 4

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

GROUNDWATER SAMPLING REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Environmental Division Manager

Frederick P. Lyke, P.G. #1055

February 12, 2008

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1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater sampling activities at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater sampling activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated December 14, 2007. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 Site Hydrogeology

During the January 14, 2008, gauging event, approximately 0.27 feet, 0.02 feet, and 0.23 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2, MW-11, and MW-13, respectively. Groundwater flow direction is toward the south and east-southeast with a hydraulic gradient of 0.0275 feet per foot, as measured between Monitor Wells MW-8 and MW-26. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.2 Groundwater Sampling and Analysis

On January 14-15, 2008, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-4R, MW-5, MW-6R, MW-8, MW-9R, MW-10, MW-12, MW-14 through MW-26, DW-1, and DW-2. A surface water sample, identified as CK-1, was collected from the headwaters of McCulley Creek. Specifically, this sample was collected near Monitor Well MW-25. Samples were not collected from Monitor Wells MW-3, MW-4, and MW-7 since these wells were dry. A new, disposable polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells DW-1 and DW-2 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample

was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since each well's screen properly bracketed the water table. All purge water was drummed for proper disposal at a permitted treatment facility. Field measurements are presented in Appendix B. New, disposable nitrile gloves were used to maintain sample integrity during the sampling process. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), naphthalene, eight oxygenates, and 1,2-dichloroethane (1,2-DCA) by EPA method 8260B; ethylene dibromide (EDB) by EPA method 504.1; lead by EPA method 6010B; ferrous iron by HACH method 8146; nitrates by method M4500-NO3; sulfates by ASTM method D516-90; and methane by EPA method RSK147. Groundwater samples were not analyzed for ferrous iron, nitrate, and sulfate concentrations at Monitor Wells MW-2, MW-5, and MW-8 due to a lack of water at these locations.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected the presence of benzene concentrations at Monitor Wells MW-2, MW-4R, MW-10 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene concentrations were detected at Monitor Wells MW-2, MW-3, MW-5, MW-10, MW-11, MW-13, MW-14, MW-16, MW-18, MW-21, and DW-1. Toluene concentrations may exist at Monitor Wells MW-12, MW-15, MW-22, MW-23, and MW-25; however, high dilution factors yielded results less than detection limits at these wells. Ethylbenzene concentrations were detected at Monitor Wells MW-2, MW-4R, MW-10, MW-11, MW-13, MW-16, MW-18, MW-21, and DW-1. It should be noted that ethylbenzene concentrations may exist at Monitor Wells MW-12, MW-14, MW-15, MW-22, MW-23, and MW-25; however, high dilution factors at these wells yielded results less than detection limits. Xylenes concentrations were detected at Monitor Wells MW-2, MW-4R, MW-10 through MW-14, MW-16, MW-18, MW-21, and DW-1. Xylenes concentrations may

exist at Monitor Wells MW-15, MW-22, MW-23, and MW-25; however, high dilution factors at these wells yielded results less than detection limits. MTBE concentrations were detected at Monitor Wells MW-2, MW-18, MW-21, and DW-2. In addition, MTBE concentrations were detected at Sample CK-1. MTBE concentrations may exist at Monitor Wells MW-10 through MW-16, MW-22, MW-23, and MW-25; however, high dilution factors caused results to be less than detection limits at these locations. Naphthalene concentrations were detected at Monitor Wells MW-14, MW-15, MW-21, MW-24, and DW-1. Naphthalene concentrations may exist at Monitor Wells MW-2, MW-10 through MW-13, MW-16, MW-18, MW-22, MW-23, and MW-25; however, high dilution factors caused results to be less than detection limits at these locations. 1,2-DCA concentrations were detected at Monitor Well MW-21, and eight oxygenate constituents were detected at Monitor Wells MW-2, MW-4R, MW-10, MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, MW-19, and MW-21 through MW-24. In addition, eight oxygenate constituents were detected at Sample CK-1. EDB concentrations were detected at Monitor Wells MW-2, MW-13, MW-18, and DW-1. Lead concentrations were detected at Monitor Wells MW-5, MW-10, MW-13, and MW-18. Ferrous iron concentrations were detected at Monitor Wells MW-1, MW-10, MW-13, MW-18, MW-21, and MW-23. Nitrate concentrations were detected at all sampled monitor wells except MW-23 and DW-2. Sulfate concentrations were detected at Monitor Wells MW-1, MW-25, and MW-26. In addition, sulfate concentrations were detected at Sample CK-1.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Monitor Wells MW-2, MW-4R, MW-10 through MW-16, MW-18, MW-21 through MW-25, and DW-2. Toluene concentrations were detected greater than its RBSL of 1000 μg/l at Monitor Wells MW-2, MW-10, MW-11, MW-13, MW-16, and MW-18. Ethylbenzene concentrations were detected greater than its RBSL of 700 μg/l at Monitor Wells MW-2, MW-10, MW-11, MW-12, MW-13, and MW-16. Xylenes concentrations were detected greater than its RBSL of 10000 μg/l at Monitor Wells MW-2, MW-10, MW-11, MW-13, and MW-16. MTBE concentrations were detected greater than its RBSL of 40 μg/l at Monitor Wells MW-2, MW-18, and MW-21. It is probable that MTBE concentrations exist greater than its RBSL at Monitor Wells MW-10 through MW-16, MW-18, MW-22, and MW-23 due to high dilution

factors that yielded results ranging from less than 50 μg/l to less than 2000 μg/l at these wells. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Monitor Wells MW-14, MW-15, MW-21, and DW-1. It is probable that naphthalene concentrations may exist greater than its RBSL at Monitor Wells MW-2, MW-10 through MW-13, MW-16, MW-18, MW-22, MW-23, and MW-25 due to high dilution factors that yielded results ranging from less than 50 μg/l to less than 10000 μg/l at these locations. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Wells MW-2, MW-13, and DW-1. Lead concentrations were detected greater than its RBSL of 15 μg/l at Monitor Wells MW-5 and MW-13. Groundwater laboratory analytical results are summarized in Table II and Figures 4A-4C. Laboratory analytical results and chain-of-custody are presented in Appendix C.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- Groundwater flow at the site is in a southern to east-southeastern direction with a hydraulic gradient of 0.0275 feet per foot, as measured between Monitor Wells MW-8 and MW-26.
- Approximately 0.27 feet, 0.02 feet, and 0.23 feet of liquid phase hydrocarbons were detected at Monitor Wells MW-2, MW-11, and MW-13, respectively during the January 14, 2008, gauging event.
- During the current assessment activities, a groundwater sample (identified as CK-1) was collected from the headwaters of McCulley Creek located hydraulically down-gradient from the site. Analytical results for this sample detected MTBE concentrations of 16 μg/l and diisopropyl ether concentrations of 35 μg/l.
- Total BTEX concentrations have increased at Monitor Wells MW-2, MW-4R, MW-10, MW-11, MW-13, MW-16, MW-22, MW-23, MW-24, and DW-1 since the previous sampling event of April 2007. Total BTEX concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. MTBE concentrations have increased at Monitor Wells MW-2 and MW-21 since the previous sampling event; however, MTBE concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. In addition, MTBE

concentrations have increased at Sample CK-1 since the previous sampling event. Naphthalene concentrations have increased at Monitor Wells MW-15 and DW-1 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled wells for the same period. It should be noted that the monitor wells with high dilution factors that yielded results less than detection limits could not be included in the comparison regarding MTBE or naphthalene concentrations. EDB concentrations have increased at Monitor Wells MW-2, MW-13, and DW-1 since the previous sampling event; however EDB concentrations have decreased or remained below detection limits at the remaining sampled monitor wells for the same period. Comparisons can not be made regarding monitor wells that were not sampled during the current or previous sampling event.

Due to the continued presence of liquid phase hydrocarbons at Monitor Wells MW-2, MW-11, and MW-13, additional free product removal events are recommended at these wells.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., May 15, 2007, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I
Groundwater Elevation Data
Former United Exxon / Winnsboro, South Carolina

Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	01/14/2008	96.54	43.59	0	48	15	52.95
MW-2	01/14/2008	98.17	51.81*	0.27	54	15	46.36
MW-3	01/14/2008	95.81	Dry	0	45	15	Not Applicable
MW-4	01/14/2008	98.52	Dry	0	45	15	Not Applicable
MW-4R	01/14/2008	98.14	49.18	0	60	20	48.96
MW-5	01/14/2008	94.41	43.23	0	45	15	51.18
MW-6R	01/14/2008	103.91	57.44	0	65	20	46.47
MW-7	01/14/2008	102.34	Dry	0	52	15	Not Applicable
MW-8	01/14/2008	97.63	43.30	0	45	15	54.33
MW-9R	01/14/2008	101.13	53.54	0	65	20	47.59
MW-10	01/14/2008	88.26	47.23	0	50	15	41.03
MW-11	01/14/2008	70.63	33.01*	0.02	38	15	37.62
MW-12	01/14/2008	81.21	40.04	0	50	15	41.17
MW-13	01/14/2008	81.02	42.15*	0.23	50	15	38.87
MW-14	01/14/2008	69.55	34.55	0	40	20	35.00
MW-15	01/14/2008	72.06	36.21	0	40	20	35.85
MW-16	01/14/2008	85.19	43.60	0	50	20	41.59
MW-17	01/14/2008	85.66	38.39	0	50	15	47.27
MW-18	01/14/2008	80.83	40.03	0	50	15	40.80

LPH = Liquid Phase Hydrocarbons
* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE I (continued) Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-19	01/14/2008	82.27	41.14	0	46	15	41.13
MW-20	01/14/2008	81.44	41.08	0	46	15	40.36
MW-21	01/14/2008	67.40	27.11	0	40	15	40.29
MW-22	01/14/2008	65.12	32.29	0	40	20	32.83
MW-23	01/14/2008	62.15	31.11	0	40	20	31.04
MW-24	01/14/2008	49.50	18.89	0	25	15	30.61
MW-25	01/14/2008	41.63	14.29	0	23	15	27.34
MW-26	01/14/2008	43.83	18.36	0	35	20	25.47
DW-1	01/14/2008	98.62	52.10	0	80	5	46.52
DW-2	01/14/2008	65.10	32.96	0	80	5	32.14

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II
Groundwater Analytical Results, dated January 14-15, 2008
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
Free Product Thickness	NA	None	0.27'	NA	NA	None	None	None	NA	None	None
Benzene	5	<1	**14000**	NS	NS	**9.8**	<1	<1	NS	<1	<1
Toluene	1000	<1	**48000**	NS	NS	<1	<1	<1	NS	<1	<1
Ethylbenzene	700	<1	**5900**	NS	NS	1.4	<1	<1	NS	<1	<1
Xylenes	10000	<1	**33000**	NS	NS	1.8	<1	<1	NS	<1	<1
Total BTEX	NA	<4	100900	NA	NA	<14.0	<4	<4	NA	<4	<4
MTBE	40	<1	**43000**	NS	NS	<1	<1	<1	NS	<1	<1
Naphthalene	25	<5	**<2500**	NS	NS	<5	<5	<5	NS	<5	<5
EDB	0.05	<0.02	**54**	NS	NS	<0.02	<0.02	<0.02	NS	<0.02	<0.02
Lead	15	<10	<10	NS	NS	<10	**26.5**	<10	NS	<10	<10
1,2-DCA	NA	<5	<2500	NS	NS	<5	<5	<5	NS	<5	<5
Methane	NA	<1.2	<1.2	NS	NS	<1.2	<1.2	<1.2	NS	<1.2	<1.2
Ferrous Iron	NA	0.523*	NS	NS	NS	<0.05*	NS	<0.05*	NS	NS	<0.05*
Nitrate	NA	1.92*	NS	NS	NS	0.57*	NS	2.12*	NS	NS	0.99*
Sulfate	NA	7.17*	NS	NS	NS	<5*	NS	<5*	NS	NS	<5*

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l

TABLE II (continued)
Groundwater Analytical Results, dated January 14-15, 2008
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
3,3-Dimethyl-1-butanol	NA	<10	<5000	NS	NS	<10	<10	<10	NS	<10	<10
Diisopropyl ether	NA	<5	15000	NS	NS	20	<5	<5	NS	<5	<5
Ethanol	NA	<100	<50000	NS	NS	<100	<100	<100	NS	<100	<100
t-Butyl alcohol	NA	<10	21000	NS	NS	<10	<10	<10	NS	<10	<10
tert-Amyl-alcohol	NA	<10	<5000	NS	NS	<10	<10	<10	NS	<10	<10
tert-Amyl methyl ether	NA	<5	<2500	NS	NS	<5	<5	<5	NS	<5	<5
tert-Butyl ethyl ether	NA	<5	<2500	NS	NS	<5	<5	<5	NS	<5	<5
tert-Butyl formate	NA	<1	<500	NS	NS	<1	<1	<1	NS	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

TABLE II (continued)
Groundwater Analytical Results, dated January 14-15, 2008
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
Free Product Thickness	NA	None	0.02'	None	0.23'	None	None	None	None	None	None
Benzene	5	**8400**	**8700**	**5700**	**9900**	**4500**	**2900**	**8100**	<1	**630**	<1
Toluene	1000	**9000**	**21000**	<100	**27000**	74	<50	**14000**	<1	**1800**	<1
Ethylbenzene	700	**3300**	**4600**	<100	**3500**	<50	<50	**4400**	<1	270	<1
Xylenes	10000	**10100**	**24600**	140	**24800**	51	<50	**27100**	<1	1440	<1
Total BTEX	NA	30800	58900	<6040	65200	<4675	<3050	53600	<4	4140	<4
MTBE	40	**<500**	**<500**	**<100**	**<2000**	**<50**	**<50**	**<1000**	<1	**2700**	<1
Naphthalene	25	**<2500**	**<2500**	**<500**	**<10000**	**300**	**250**	**<5000**	<5	**<500**	<5
EDB	0.05	<0.02	<0.02	<0.02	**0.073**	<0.02	<0.02	<0.02	<0.02	0.033	<0.02
Lead	15	13.6	<10	<10	**26.4**	<10	<10	<10	<10	14.1	<10
1,2-DCA	NA	<2500	<2500	<500	<10000	<250	<250	<5000	<5	<500	<5
Methane	NA	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	7	<1.2
Ferrous Iron	NA	2.04*	<0.05*	<0.05*	0.261*	<0.05*	<0.05*	<0.05*	<0.05*	17.5*	<0.05*
Nitrate	NA	0.046*	0.023*	0.096*	0.116*	0.045*	0.058*	0.036*	0.618*	0.022*	2.65*
Sulfate	NA	<5*	<5*	<5*	<5*	<5*	<5*	<5*	<5*	<5*	<5

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE II (continued)
Groundwater Analytical Results, dated January 14-15, 2008
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
3,3-Dimethyl-1-butanol	NA	<5000	<5000	<1000	<20000	<500	<500	<10000	<10	<1000	<10
Diisopropyl ether	NA	3300	7500	4100	<10000	3800	2700	5900	<5	1900	<5
Ethanol	NA	<50000	<50000	<10000	<200000	<5000	<5000	<100000	<100	<10000	<100
t-Butyl alcohol	NA	<5000	<5000	2000	<20000	<500	<500	<10000	<10	<1000	<10
tert-Amyl-alcohol	NA	<5000	<5000	8700	<20000	<500	<500	<10000	<10	<1000	20
tert-Amyl methyl ether	NA	<2500	<2500	<500	<10000	<250	<250	<5000	<5	<500	<5
tert-Butyl ethyl ether	NA	<2500	<2500	<500	<10000	<250	<250	<5000	<5	<500	<5
tert-Butyl formate	NA	<500	<500	<100	<2000	<50	<50	<1000	<1	<100	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

TABLE II (continued)
Groundwater Analytical Results, dated January 14-15, 2008
Former United Exxon / Winnsboro, South Carolina

Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	MW-26 (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None	None
Benzene	5	<1	**210**	**1700**	**3100**	**400**	**400**	<1	<1	**34**	<1
Toluene	1000	<1	14	<50	<50	<1	<10	<1	140	<1	<1
Ethylbenzene	700	<1	3	<50	<50	<1	<10	<1	130	<1	<1
Xylenes	10000	<1	10.8	<50	<50	<1	<10	<1	720	<1	<1
Total BTEX	NA	<4	237.8	<1850	<3250	<403	<430	<4	<991	<37	<4
MTBE	40	<1	**1100**	**<50**	**<50**	<1	<10	<1	<1	7.7	16
Naphthalene	25	<5	**77**	**<250**	**<250**	21	**<50**	<5	**110**	<5	<5
EDB	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	**0.086**	<0.02	<0.02
Lead	15	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
1,2-DCA	NA	<5	18	<250	<250	<5	<50	<5	<5	<5	<5
Methane	NA	<1.2	<1.2	<1.2	8.8	<1.2	<1.2	<1.2	<1.2	94	<1.2
Ferrous Iron	NA	<0.05*	0.814*	<0.05*	3.41*	<0.05*	<0.05*	<0.05*	<0.05*	<0.05*	<0.05*
Nitrate	NA	0.968*	0.153*	0.108*	<0.01*	4.12*	1.63*	0.633*	2.89*	<0.01*	3.51*
Sulfate	NA	<5*	<5*	<5*	<5*	<5*	26.2*	35.9*	<5*	<5*	7.08*

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled; *denotes results in mg/l.

TABLE II (continued) Groundwater Analytical Results, dated January 14-15, 2008 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	MW-26 (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
3,3-Dimethyl-1-butanol	NA	<10	<10	<500	<500	<10	<100	<10	<10	<10	<10
Diisopropyl ether	NA	<5	<5	2300	3000	250	<50	<5	<5	<5	35
Ethanol	NA	<100	<100	<5000	<5000	<100	<1000	<100	<100	<100	<100
t-Butyl alcohol	NA	<10	<10	<500	<500	<10	<100	<10	<10	130	<10
tert-Amyl-alcohol	NA	<10	<10	<500	<500	<10	<100	<10	<10	<10	<10
tert-Amyl methyl ether	NA	<5	85	<250	<250	<5	<50	<5	<5	<5	<5
tert-Butyl ethyl ether	NA	<5	<5	<250	<250	<5	<50	<5	<5	<5	<5
tert-Butyl formate	NA	<1	<1	<50	<50	<1	<10	<1	<1	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled

TABLE III
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-1	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	15	<30	<5	**42**	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	<1.0
	11/02/1998	0.00	<1.0	<1.0	<1.0	7.77	<10.77	<5.0	23.8	<0.05
MW-2	01/15/2008	0.27	**14000**	**48000**	**5900**	**33000**	100900	**43000**	**<2500**	**54**
	04/19/2007	0.03	**11000**	**31000**	**4400**	**24400**	70800	**34000**	**1400**	**52**
	08/21/2006	0.30	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.20	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**15900**	**90700**	**4800**	**26700**	138100	**82000**	**840**	**127**
	11/02/1998	0.00	**23100**	**89000**	**5380**	**27380**	144860	**227000**	**2140**	**78.65**
MW-3	01/15/2008	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	04/20/2007	0.00	**28**	1.3	<1	2.11	<32.41	<1	<5	<0.02
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**110**	<5	<5	<5	<125	<5	<5	<0.019
	03/08/2005	0.00	**123**	10	18	16	167	<5	<5	<0.02
	08/20/2003	0.00	**385**	<25	<25	<25	<460	<25	<25	<0.02
	01/11/2001	0.00	**434**	288	182	146	1050	**89.9**	12.9	**<1.0**
	11/02/1998	0.00	**2260**	52.7	215	889	3416.7	**<50**	<50	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-4	01/15/2008	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	04/20/2007	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	**1781**	610	311	1921	4623	<10	**40**	**<10**
MW-4R	01/15/2008	0.00	**9.8**	<1	1.4	1.8	<14.0	<1	<5	<0.02
	04/19/2007	0.00	2.4	<1	1.2	2	<6.6	4.4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-5	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	1.8	<1	1.43	<5.23	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5	<5	<5	<15	<30	<1.0	<5.0	**<1.0**
MW-6	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	2.4	19.3	2.6	8.3	32.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-6R	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-7	01/15/2008	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.4	13.0	3.1	5.0	22.5	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-8	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.2	1.9	3.5	15.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-9	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	<1.0	2.1	<1.0	<1.0	<5.1	<1.0	<5.0	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-9R	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-10	01/14/2008	0.00	**8400**	**9000**	**3300**	**10100**	30800	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**5400**	22	<20	238	<5680	**170**	**350**	<0.02
	08/21/2006	0.00	**5800**	**3700**	**1700**	3620	14820	**<100**	**410**	<0.02
	06/27/2005	0.00	**6000**	**2400**	**1900**	3300	13600	**<1000**	**<1000**	<0.019
	03/08/2005	0.42	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	Sheen	**8010**	**8770**	**2310**	7200	26290	**<250**	**774**	<0.02
	01/11/2001	0.00	**8950**	**49000**	**8550**	**49000**	115500	22	**3300**	**<500**
	11/02/1998	0.00	**11200**	**30800**	**3360**	**15500**	60860	**<100**	**766**	**<100**
MW-11	01/14/2008	0.02	**8700**	**21000**	**4600**	**24600**	58900	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**6500**	**13000**	**2800**	**16100**	38400	**790**	**1700**	<0.02
	08/21/2006	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**5900**	**25000**	**5100**	**31400**	67400	**<2500**	**3000**	**0.34**
	03/08/2005	0.15	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	1.95	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**8000**	**11800**	**3470**	**16400**	39670	**31**	**1440**	**<100**
	11/02/1998	0.00	**6280**	**15600**	**2390**	**10800**	35070	**<100**	**617**	**<50**
MW-12	01/14/2008	0.00	**5700**	<100	<100	140	<6040	**<100**	**<500**	<0.02
	04/19/2007	0.00	**6600**	**4800**	**2500**	7800	21700	<20	**970**	<0.02
	08/21/2006	0.00	**5800**	<100	<100	<100	<6100	**<100**	**250**	<0.02
	06/27/2005	0.00	**8200**	7.7	6.9	52.2	8266.8	**210**	**410**	<0.019
	03/08/2005	0.00	**7680**	264	52	315	8311	**195**	**173**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-13	01/14/2008	0.23	**9900**	**27000**	**3500**	**24800**	65200	**<2000**	**<10000**	**0.073**
	04/19/2007	0.00	**8300**	**23000**	**3200**	**22100**	56600	**410**	**1500**	<0.02
	08/21/2006	0.00	**7300**	**36000**	**3400**	**20600**	67300	**<100**	**1200**	**0.19**
	06/27/2005	0.00	**8600**	**61000**	**2100**	**13000**	84700	**<250**	**620**	<0.019
	03/08/2005	0.00	**13300**	**33600**	**2880**	**16600**	66380	**<100**	**700**	**0.08**
MW-14	01/14/2008	0.00	**4500**	74	<50	51	<4675	**<50**	**300**	<0.02
	04/19/2007	0.00	**5100**	100	<20	74	<5294	<20	**300**	<0.019
	08/21/2006	0.00	**6100**	<100	<100	<100	<6400	**<100**	**260**	<0.02
	06/27/2005	0.00	**4500**	<100	<100	<100	<4800	**<100**	**170**	**0.11**
	03/08/2005	0.00	**6390**	<125	<125	<125	<6765	**<125**	**234**	<0.02
MW-15	01/14/2008	0.00	**2900**	<50	<50	<50	<3050	**<50**	**250**	<0.02
	04/19/2007	0.00	**3300**	52	3.5	29.5	3385	<1	**240**	<0.02
	08/21/2006	0.00	**2400**	49	5.2	63	2517.2	<5	**120**	<0.02
	06/27/2005	0.00	**680**	13	<5	9.4	<707.4	<5	**63**	<0.019
	03/08/2005	0.00	**11400**	182	<50	96	<11728	**<50**	**485**	<0.02
MW-16	01/14/2008	0.00	**8100**	**14000**	**4400**	**27100**	53600	**<1000**	**<5000**	<0.02
	04/19/2007	0.00	**7200**	**14000**	**4000**	**23000**	48200	**410**	**2300**	<0.02
	08/21/2006	0.00	**6700**	<100	<100	<100	<7000	**<100**	**230**	<0.02
	06/27/2005	0.00	**9400**	**28000**	**4800**	**31700**	73900	**<2500**	**3200**	<0.019
	03/08/2005	0.04	NS	NS	NS	NS	NA	NS	NS	NS
MW-17	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	5.7	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-18	01/14/2008	0.00	**630**	**1800**	270	1440	4140	**2700**	**<500**	0.033
	04/19/2007	0.00	**1700**	**1800**	470	2750	6720	**3200**	**250**	**0.055**
	08/21/2006	0.00	**550**	610	49	570	1779	**1200**	**66**	**0.1**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-19	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	1.3	<4.3	5.1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-20	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	4.2	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-21	01/14/2008	0.00	**210**	14	3	10.8	237.8	**1100**	**77**	<0.02
	04/20/2007	0.00	**70**	<50	<50	177	<347	**440**	**<250**	<0.02
	08/21/2006	0.00	**240**	19	<5	26.2	<290.2	**910**	**110**	<0.02
MW-22	01/14/2008	0.00	**1700**	<50	<50	<50	<1850	**<50**	**<250**	<0.02
	04/20/2007	0.00	**1400**	5.6	1.2	17.5	1424.3	9.7	**68**	<0.02
	08/21/2006	0.00	**5000**	<100	<100	<100	<5300	**<100**	**180**	<0.02
MW-23	01/14/2008	0.00	**3100**	<50	<50	<50	<3250	**<50**	**<250**	<0.02
	04/20/2007	0.00	**3100**	<1	1	7.17	<3109.17	12	**110**	<0.02
	08/21/2006	0.00	**230**	<5	<5	<5	<245	<5	<5	<0.02
MW-24	01/14/2008	0.00	**400**	<1	<1	<1	<403	<1	21	<0.02
	04/20/2007	0.00	**240**	<1	<1	1.7	<243.7	<1	**31**	<0.02
	08/21/2006	0.00	**390**	<5	<5	<5	<405	<5	**26**	<0.02
MW-25	01/14/2008	0.00	**400**	<10	<10	<10	<430	<10	**<50**	<0.02
	04/20/2007	0.00	**430**	<1	<1	1	<433	<1	**26**	<0.02
	08/21/2006	0.00	**700**	<5	<5	7.7	<717.7	<5	**35**	<0.02
MW-26	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

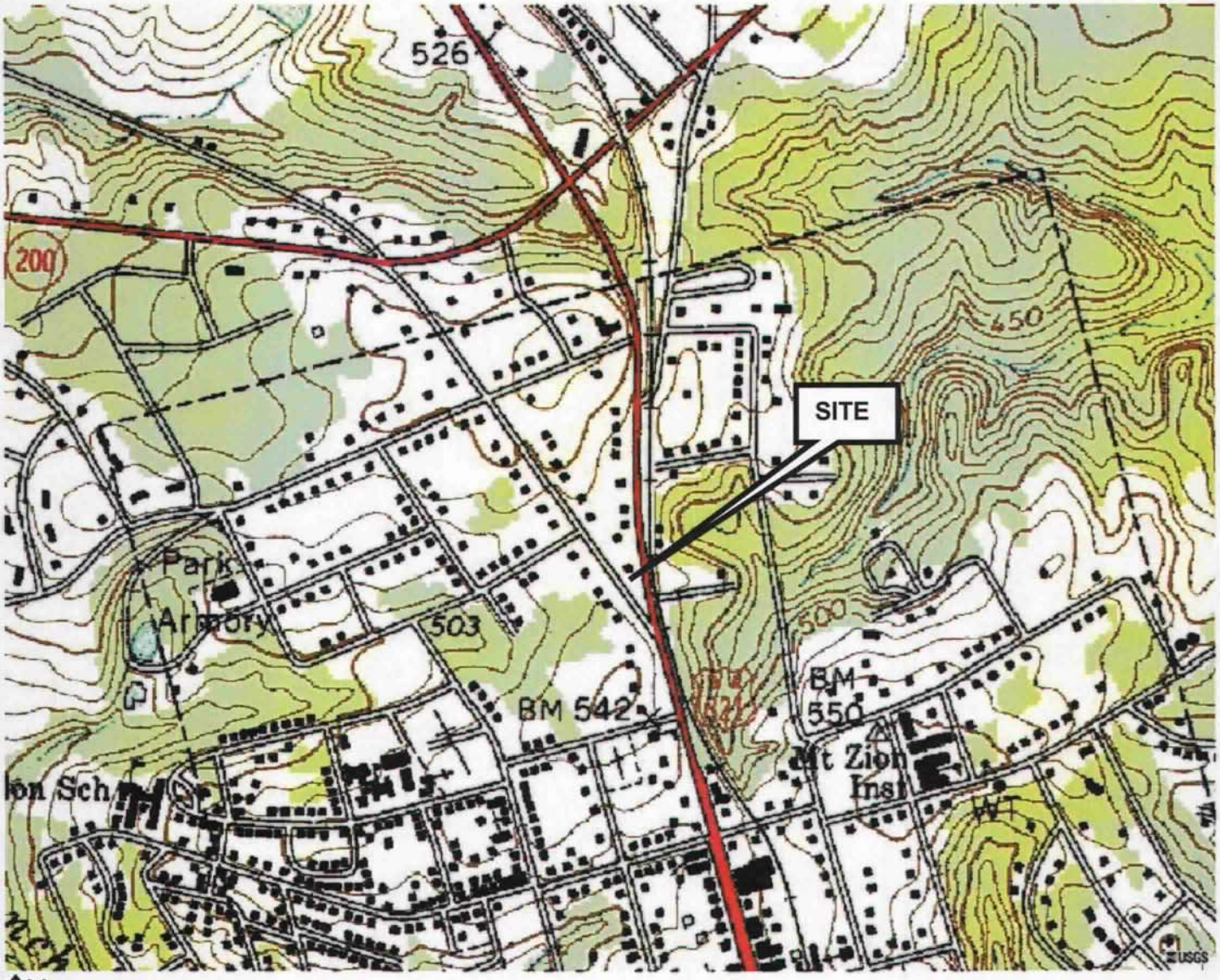
RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
DW-1	01/15/2008	0.00	<1	140	130	720	<991	<1	**110**	**0.086**
	04/19/2007	0.00	<1	<1	<1	<1	<4	4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	8	<5	<5	<23	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.9	<1.0	3.1	<15.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5.0	<5.0	<5.0	<15	<30.0	<5.0	<5.0	**<5.0**
DW-2	01/15/2008	0.00	**34**	<1	<1	<1	<37	7.7	<5	<0.02
	04/20/2007	0.00	**440**	<1	<1	<1	<443	11	**27**	<0.02
	08/21/2006	0.00	**450**	<5	<5	<5	<465	5.9	25	<0.02
CK-1	01/14/2008	0.00	<1	<1	<1	<1	<4	16	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	15	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	<5	<5	<5	<5	<20	8	<5	<0.02
	08/20/2003	0.00	**15**	<5	<5	<5	<30	**295**	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	1.2	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<5.0	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

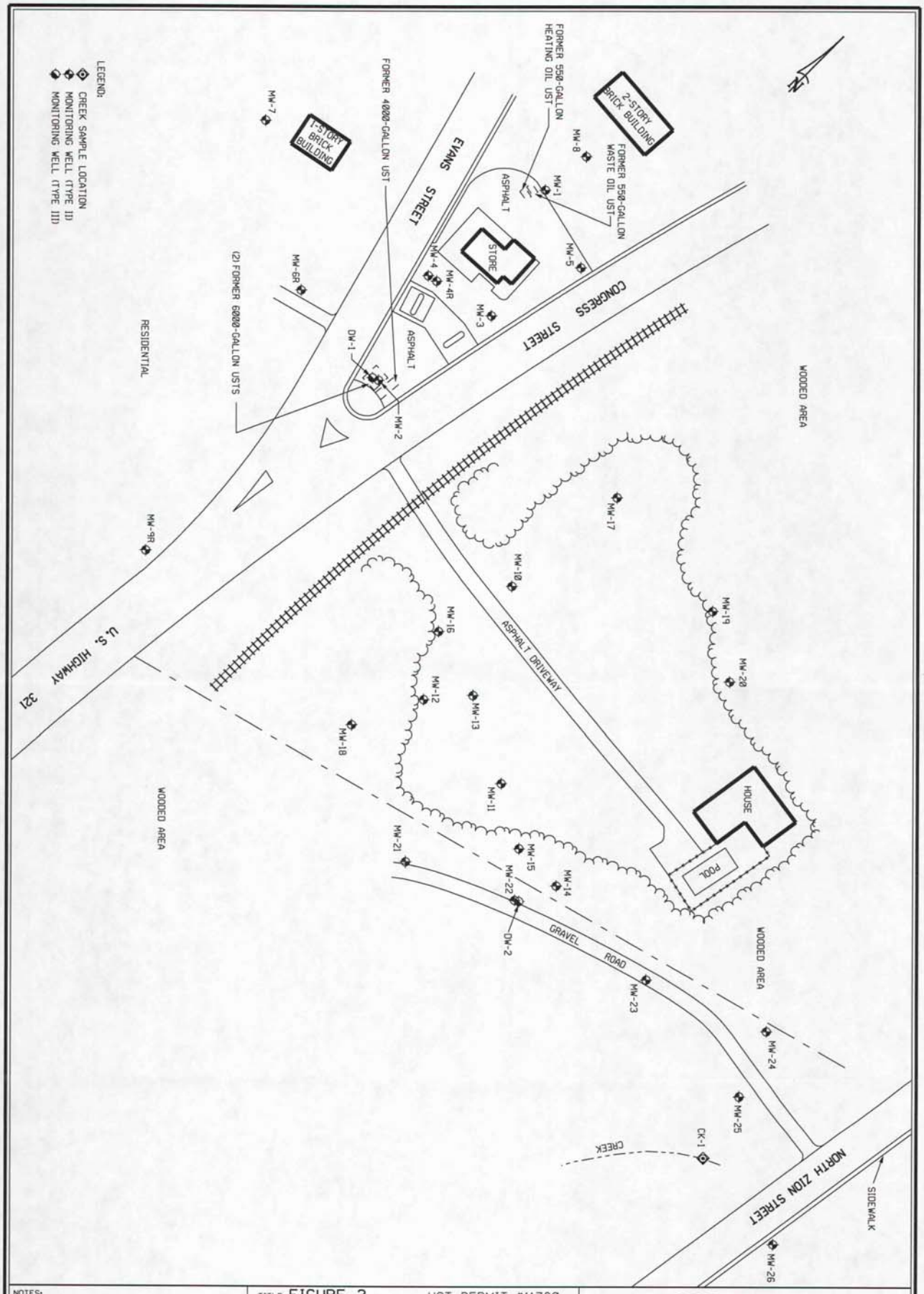
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



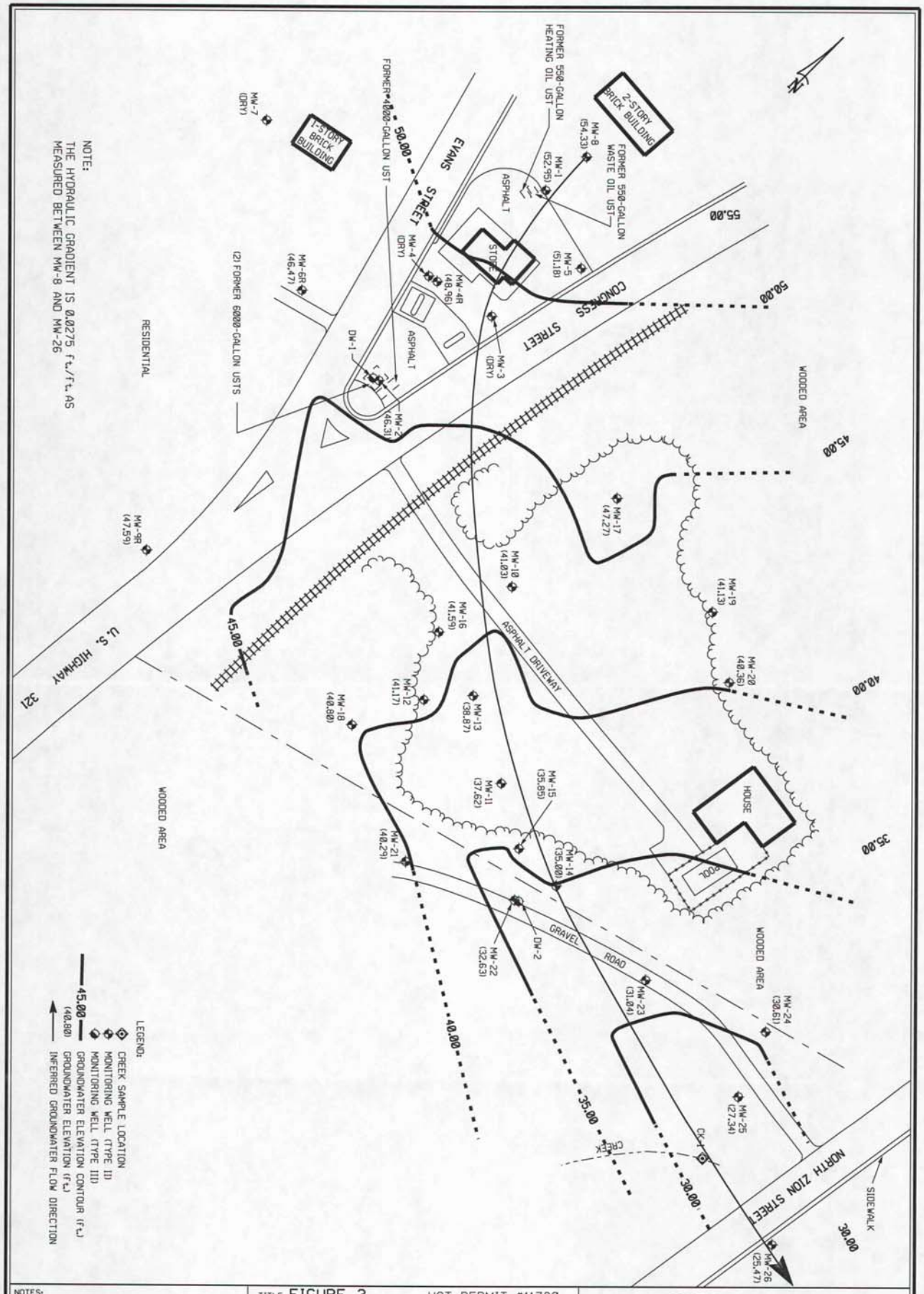
NOTES:

TITLE FIGURE 2 UST PERMIT #11760

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012

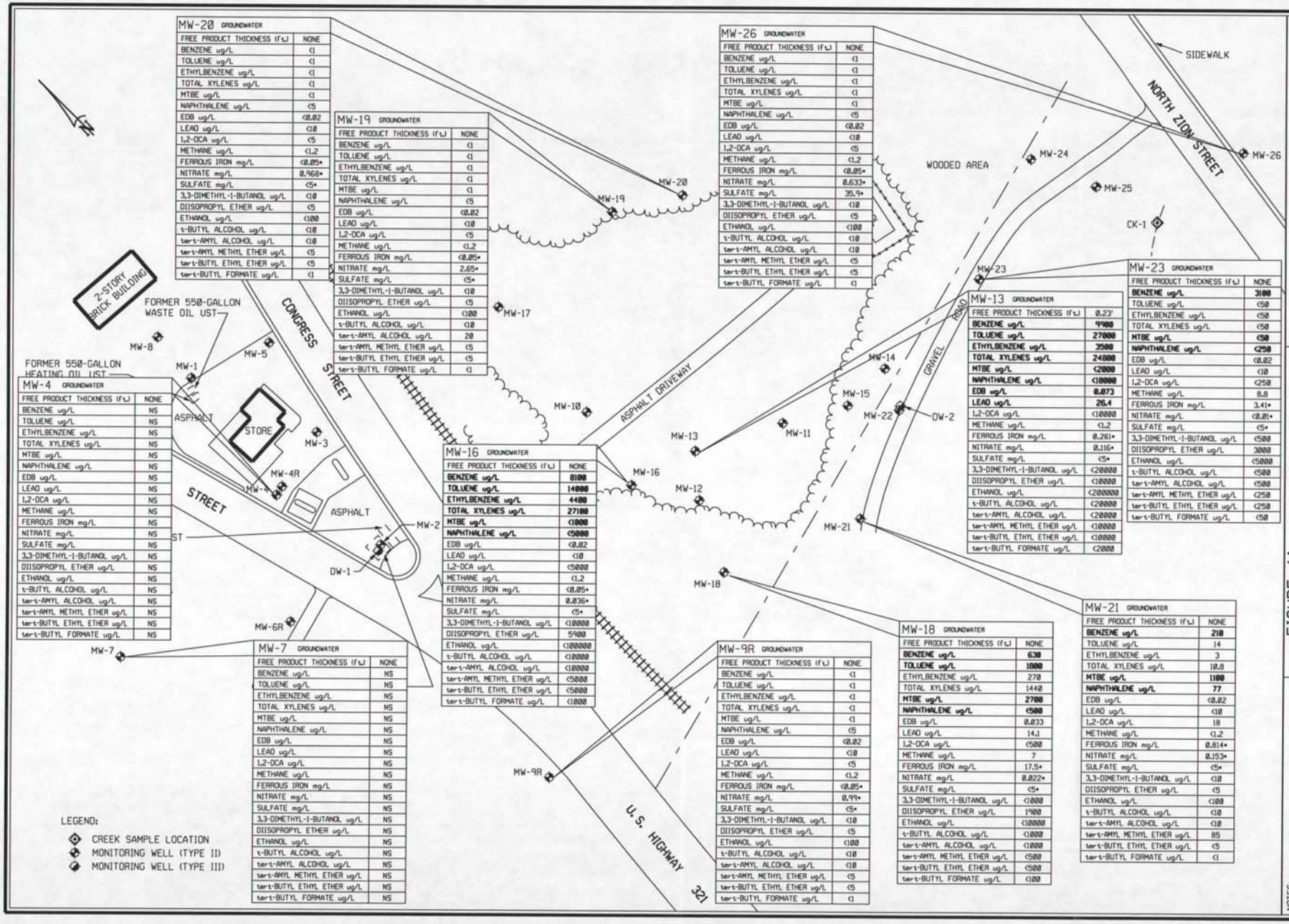


NOTES:

TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012



MW-20 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.968*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-19 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.65*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	20
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-26 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.633*
SULFATE mg/L	35.9*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	0.23'
BENZENE ug/L	**9900**
TOLUENE ug/L	**27000**
ETHYLBENZENE ug/L	**3500**
TOTAL XYLENES ug/L	**24000**
MTBE ug/L	**<2000**
NAPHTHALENE ug/L	**<10000**
EDB ug/L	**0.073**
LEAD ug/L	**26.4**
1,2-DCA ug/L	<10000
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.261*
NITRATE mg/L	0.116*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<20000
DIISOPROPYL ETHER ug/L	<10000
ETHANOL ug/L	<200000
t-BUTYL ALCOHOL ug/L	<20000
tert-AMYL ALCOHOL ug/L	<20000
tert-AMYL METHYL ETHER ug/L	<10000
tert-BUTYL ETHYL ETHER ug/L	<10000
tert-BUTYL FORMATE ug/L	<2000

MW-23 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**3100**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**<250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	8.8
FERROUS IRON mg/L	3.41*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	3000
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

MW-4 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**8100**
TOLUENE ug/L	**14000**
ETHYLBENZENE ug/L	**4400**
TOTAL XYLENES ug/L	**27100**
MTBE ug/L	**<1000**
NAPHTHALENE ug/L	**<5000**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5000
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.036*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10000
DIISOPROPYL ETHER ug/L	5900
ETHANOL ug/L	<100000
t-BUTYL ALCOHOL ug/L	<10000
tert-AMYL ALCOHOL ug/L	<10000
tert-AMYL METHYL ETHER ug/L	<5000
tert-BUTYL ETHYL ETHER ug/L	<5000
tert-BUTYL FORMATE ug/L	<1000

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-9R GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.99*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-18 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**630**
TOLUENE ug/L	**1800**
ETHYLBENZENE ug/L	270
TOTAL XYLENES ug/L	1440
MTBE ug/L	**2700**
NAPHTHALENE ug/L	**<500**
EDB ug/L	0.033
LEAD ug/L	14.1
1,2-DCA ug/L	<500
METHANE ug/L	7
FERROUS IRON mg/L	17.5*
NITRATE mg/L	0.022*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<1000
DIISOPROPYL ETHER ug/L	1900
ETHANOL ug/L	<10000
t-BUTYL ALCOHOL ug/L	<1000
tert-AMYL ALCOHOL ug/L	<1000
tert-AMYL METHYL ETHER ug/L	<500
tert-BUTYL ETHYL ETHER ug/L	<500
tert-BUTYL FORMATE ug/L	<100

MW-21 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**210**
TOLUENE ug/L	14
ETHYLBENZENE ug/L	3
TOTAL XYLENES ug/L	10.8
MTBE ug/L	**1100**
NAPHTHALENE ug/L	**77**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	18
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.814*
NITRATE mg/L	0.153*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	85
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

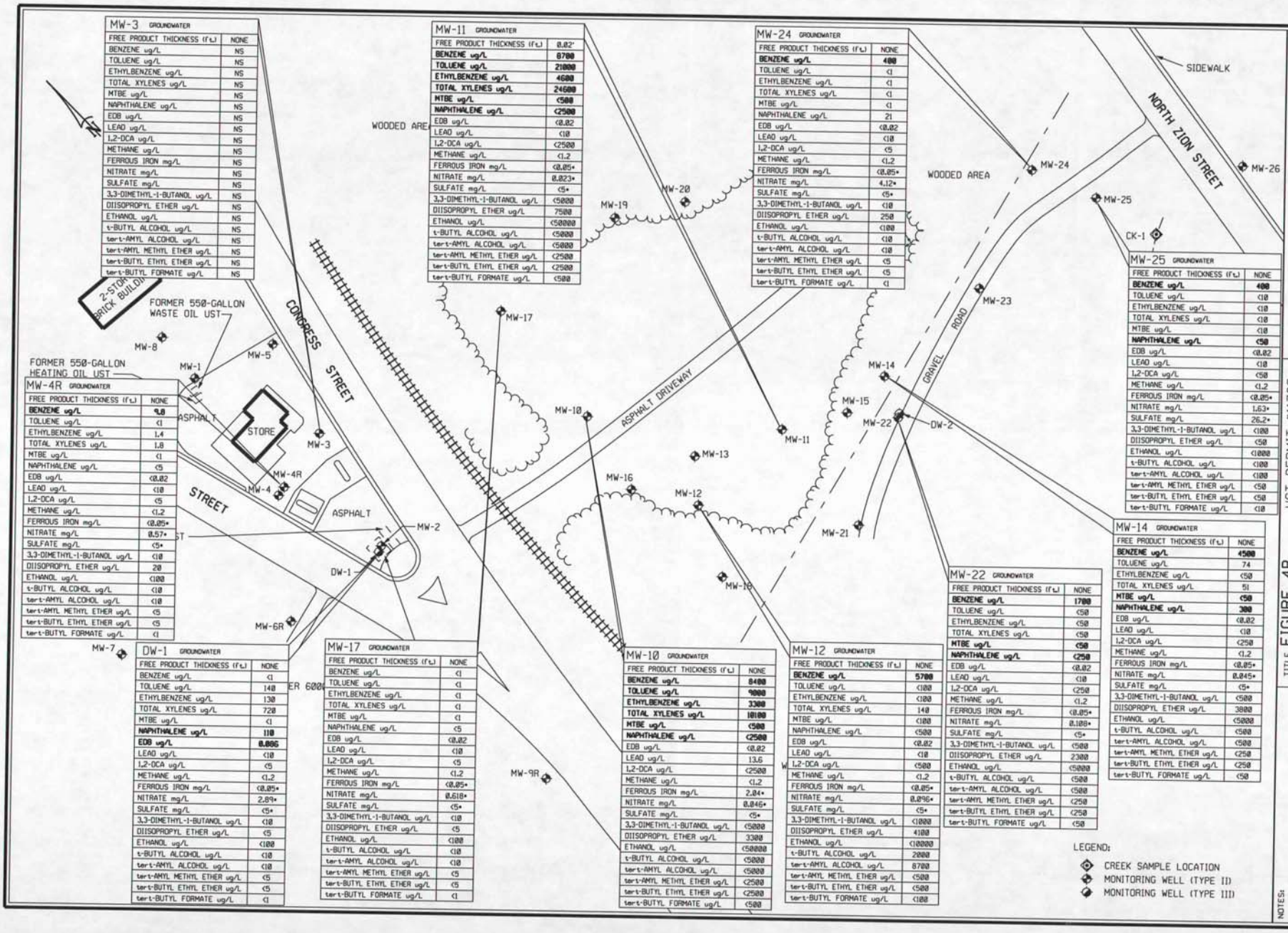
NOTES:

ATC ASSOCIATES INC.
Columbia, South Carolina 29203
(803)735-0003 FAX (803)735-0443

TITLE FIGURE 4A
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012



MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS
LEAD ug/L	NS
1,2-DCA ug/L	NS
METHANE ug/L	NS
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	NS
DIISOPROPYL ETHER ug/L	NS
ETHANOL ug/L	NS
t-BUTYL ALCOHOL ug/L	NS
tert-AMYL ALCOHOL ug/L	NS
tert-AMYL METHYL ETHER ug/L	NS
tert-BUTYL ETHYL ETHER ug/L	NS
tert-BUTYL FORMATE ug/L	NS

MW-4R GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**9.8**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	1.4
TOTAL XYLENES ug/L	1.8
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.57*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	20
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	140
ETHYLBENZENE ug/L	130
TOTAL XYLENES ug/L	720
MTBE ug/L	<1
NAPHTHALENE ug/L	**110**
EDB ug/L	**0.006**
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.89*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	0.02'
BENZENE ug/L	**8700**
TOLUENE ug/L	**21000**
ETHYLBENZENE ug/L	**4600**
TOTAL XYLENES ug/L	**24600**
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.023*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	7500
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	<5000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-17 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.618*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**8400**
TOLUENE ug/L	**9000**
ETHYLBENZENE ug/L	**3300**
TOTAL XYLENES ug/L	**10100**
MTBE ug/L	**<500**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	<0.02
LEAD ug/L	13.6
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	2.04*
NITRATE mg/L	0.046*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	3300
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	<5000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**5700**
TOLUENE ug/L	<100
ETHYLBENZENE ug/L	<100
TOTAL XYLENES ug/L	140
MTBE ug/L	<100
NAPHTHALENE ug/L	<500
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<500
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.096*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<1000
DIISOPROPYL ETHER ug/L	4100
ETHANOL ug/L	<10000
t-BUTYL ALCOHOL ug/L	2000
tert-AMYL ALCOHOL ug/L	8700
tert-AMYL METHYL ETHER ug/L	<500
tert-BUTYL ETHYL ETHER ug/L	<500
tert-BUTYL FORMATE ug/L	<100

MW-24 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**400**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	21
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	4.12*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	250
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-25 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**400**
TOLUENE ug/L	<10
ETHYLBENZENE ug/L	<10
TOTAL XYLENES ug/L	<10
MTBE ug/L	<10
NAPHTHALENE ug/L	**<50**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<50
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	1.63*
SULFATE mg/L	26.2*
3,3-DIMETHYL-1-BUTANOL ug/L	<100
DIISOPROPYL ETHER ug/L	<50
ETHANOL ug/L	<1000
t-BUTYL ALCOHOL ug/L	<100
tert-AMYL ALCOHOL ug/L	<100
tert-AMYL METHYL ETHER ug/L	<50
tert-BUTYL ETHYL ETHER ug/L	<50
tert-BUTYL FORMATE ug/L	<10

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**4500**
TOLUENE ug/L	74
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	51
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**300**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.045*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	3800
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

MW-22 GROUNDWATER	
FREE PRODUCT THICKNESS (ft)	NONE
BENZENE ug/L	**1700**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**<250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.108*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	2300
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

LEGEND:

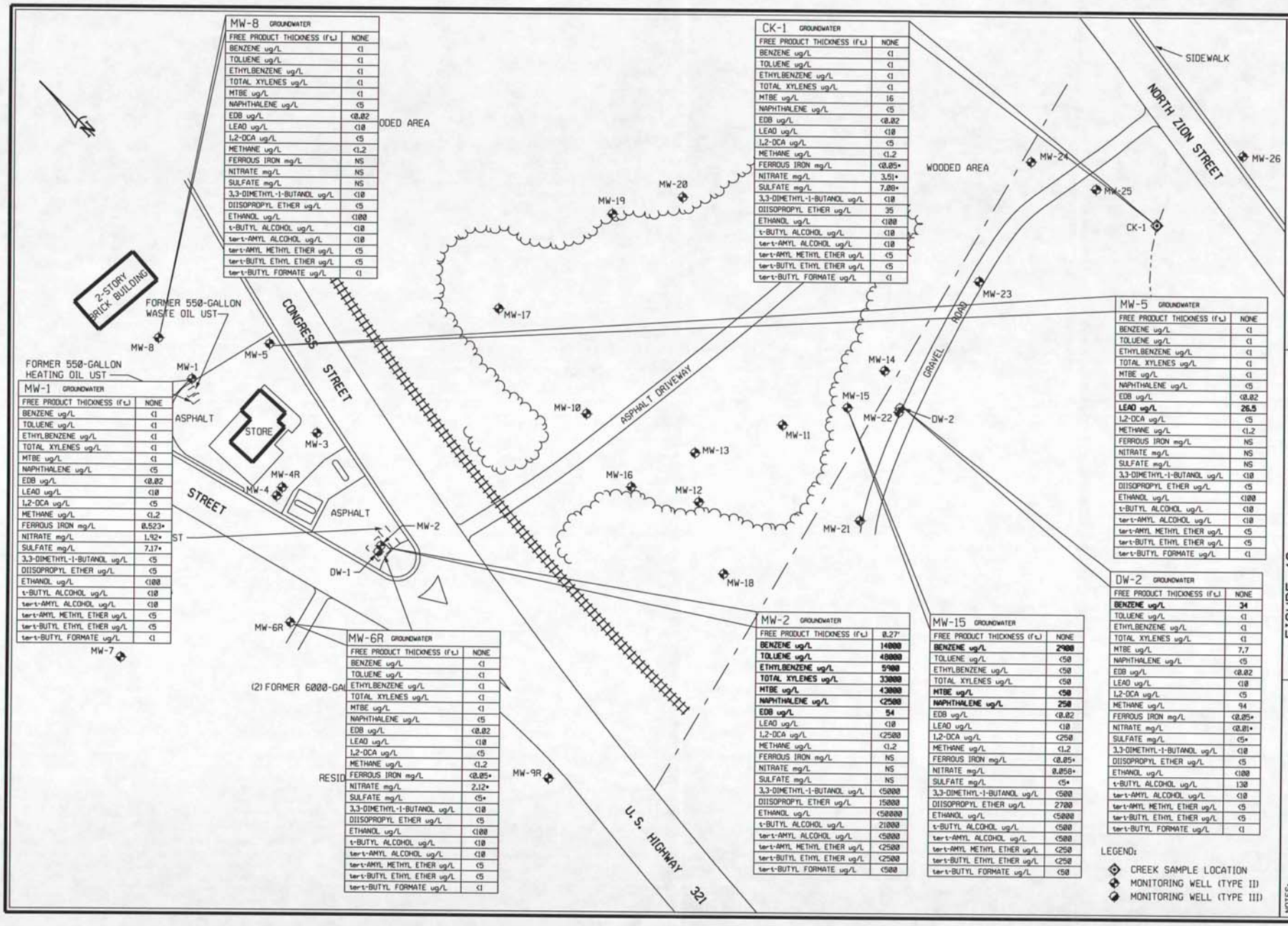
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0883 FAX (803)735-8443

TITLE FIGURE 4B
GROUNDWATER CONCENTRATIONS MAP
UST PERMIT #11760
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012



MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	16
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	3.51*
SULFATE mg/L	7.00*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	35
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	**26.5**
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	0.523*
NITRATE mg/L	1.92*
SULFATE mg/L	7.17*
3,3-DIMETHYL-1-BUTANOL ug/L	<5
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

DW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**34**
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	7.7
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	94
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	<0.01*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	130
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-6R GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<1
TOLUENE ug/L	<1
ETHYLBENZENE ug/L	<1
TOTAL XYLENES ug/L	<1
MTBE ug/L	<1
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<5
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	2.12*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<10
DIISOPROPYL ETHER ug/L	<5
ETHANOL ug/L	<100
t-BUTYL ALCOHOL ug/L	<10
tert-AMYL ALCOHOL ug/L	<10
tert-AMYL METHYL ETHER ug/L	<5
tert-BUTYL ETHYL ETHER ug/L	<5
tert-BUTYL FORMATE ug/L	<1

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.27'
BENZENE ug/L	**14000**
TOLUENE ug/L	**40000**
ETHYLBENZENE ug/L	**5900**
TOTAL XYLENES ug/L	**33000**
MTBE ug/L	**43000**
NAPHTHALENE ug/L	**<2500**
EDB ug/L	**54**
LEAD ug/L	<10
1,2-DCA ug/L	<2500
METHANE ug/L	<1.2
FERROUS IRON mg/L	NS
NITRATE mg/L	NS
SULFATE mg/L	NS
3,3-DIMETHYL-1-BUTANOL ug/L	<5000
DIISOPROPYL ETHER ug/L	15000
ETHANOL ug/L	<50000
t-BUTYL ALCOHOL ug/L	21000
tert-AMYL ALCOHOL ug/L	<5000
tert-AMYL METHYL ETHER ug/L	<2500
tert-BUTYL ETHYL ETHER ug/L	<2500
tert-BUTYL FORMATE ug/L	<500

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**2900**
TOLUENE ug/L	<50
ETHYLBENZENE ug/L	<50
TOTAL XYLENES ug/L	<50
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**250**
EDB ug/L	<0.02
LEAD ug/L	<10
1,2-DCA ug/L	<250
METHANE ug/L	<1.2
FERROUS IRON mg/L	<0.05*
NITRATE mg/L	0.058*
SULFATE mg/L	<5*
3,3-DIMETHYL-1-BUTANOL ug/L	<500
DIISOPROPYL ETHER ug/L	2700
ETHANOL ug/L	<5000
t-BUTYL ALCOHOL ug/L	<500
tert-AMYL ALCOHOL ug/L	<500
tert-AMYL METHYL ETHER ug/L	<250
tert-BUTYL ETHYL ETHER ug/L	<250
tert-BUTYL FORMATE ug/L	<50

LEGEND:

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

ATC ASSOCIATES INC.
Columbia, South Carolina 29203
(803)735-8003 FAX (803)735-8443

TITLE FIGURE 4C UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	02-11-2008	14.25384.0012

APPENDIX A

SCDHEC Correspondence

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

DEC 14 2007

Re: Monitoring Report Directive
United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #31315 and 31316
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Free Product Removal Report received December 4, 2007
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced report submitted by ATC Associates, Incorporated on your behalf. To determine if levels of petroleum Chemicals of Concern (CoC) are increasing, decreasing, or remain, the same the UST Program requests that all monitoring wells and the stream be sampled at this time.

Assessment activities at the site should begin immediately upon receipt of this letter. Existing groundwater monitoring wells with screens that bracket the water table do no need to be purged before sampling. A sample should be collected from the stream and analyzed for BTEX, naphthalene, MtBE. Groundwater samples should be collected from all monitoring wells associated with the release and analyzed for BTEX, naphthalene, MtBE, lead, EDB, 8 oxygenates, and 1,2 DCA in accordance with *Analytical Methodology for Petroleum Releases* dated August 24, 2005. A copy of this publication is available on line at http://www.scdhec.gov/lwm/forms/analmet.pdf. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. The monitoring report (a signed .pdf copy on a CD is preferred) and associated invoice should be submitted on or before 60 days from the date of this letter should include the following:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable), levels of dissolved oxygen, and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for the specified monitoring wells associated with the site. Unless otherwise directed by the Program, all data shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall also be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.

- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated groundwater removed from the site for treatment and/or disposal.

Cost agreement numbers 31315 and 31316 have been approved for the amount shown on the enclosed cost agreement form. ATC Associates, Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. If the invoice and the completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please be advised if the time frame exceeds 45 days between the date when the groundwater samples are collected and the date the report of findings is received, the analytical data will not be considered current and ATC Associates, Incorporated will not be reimbursed for a personnel mobilization to collect the groundwater samples, sample collection costs, laboratory analyses, or associated disposal costs.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum-contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on-site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence regarding this site, please reference UST Permit number 11760. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6669, fax me at (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Bureau of land and Waste Management

enc: Approved Cost Agreement (ACA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical File (with enc.)

APPENDIX B

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW1

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	43.59	feet
Total Well Depth (TWD)	48.0	feet
Length of the water column (LWC=TWD-DGW)	4.41	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1020	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOW, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW2

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)	51.75	feet
Depth to Ground Water (DGW)	52.02	feet
Total Well Depth (TWD)	54.0	feet
Length of the water column (LWC=TWD-DGW)	1.98	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1245	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW3

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW4R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 49.18 feet
Total Well Depth (TWD) 60.0 feet
Length of the water column (LWC=TWD-DGW) 10.82 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1120	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW5

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	43.23	feet
Total Well Depth (TWD)	45.0	feet
Length of the water column (LWC=TWD-DGW)	1.77	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1045	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW6R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	57.44	feet
Total Well Depth (TWD)	65.0	feet
Length of the water column (LWC=TWD-DGW)	7.56	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1220	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW7

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW8

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	43.30	feet
Total Well Depth (TWD)	45.0	feet
Length of the water column (LWC=TWD-DGW)	1.70	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0950	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW9R

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	53.54	feet
Total Well Depth (TWD)	65.0	feet
Length of the water column (LWC=TWD-DGW)	11.46	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1150	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW10

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	47.23	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	2.77	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1300	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW-11

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	.02	feet
Depth to Free Product (DFP)	33.01	feet
Depth to Ground Water (DGW)	33.03	feet
Total Well Depth (TWD)	38.00	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C) = _____ X _____ = _____ gals

3 casing volume (3 X CV) = _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							14:00	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOW, JOHN MONEGHA

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW-12

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	–	feet
Depth to Free Product (DFP)	–	feet
Depth to Ground Water (DGW)	40.04	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	9.96	feet

1 casing volume (CV=LWC X C)= – X – = – gals

3 casing volume (3 X CV)= – gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							10:30	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No Purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWS, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by	Date/Time	Received by	Date/Time

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW-B

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	(.13)	feet
Depth to Free Product (DFP)	42.20	feet
Depth to Ground Water (DGW)	42.33	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C)= — X — = — gals

3 casing volume (3 X CV)= — gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)							11:00	
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No purge, FP present

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWS, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW14

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 34.55 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 5.45 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1330	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW15

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	36.21	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	3.79	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1405	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW-16

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	–	feet
Depth to Free Product (DFP)	–	feet
Depth to Ground Water (DGW)	43.60	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	6.40	feet

1 casing volume (CV=LWC X C)= – X – = – gals

3 casing volume (3 X CV)= – gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)							10:00	
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No Purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWS, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW17

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	38.39	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	11.61	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1235	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWS, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW-18

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	–	feet
Depth to Free Product (DFP)	–	feet
Depth to Ground Water (DGW)	40.03	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	9.97	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							11:30	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No Purge

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWS, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW19

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 41.14 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 4.86 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1135	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW20

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	41.08	feet
Total Well Depth (TWD)	46.0	feet
Length of the water column (LWC=TWD-DGW)	4.92	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1205	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOW, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW21

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 27.11 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 12.89 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1010	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW22

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	32.29	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	7.71	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1035	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW23

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	31.11	feet
Total Well Depth (TWD)	40.0	feet
Length of the water column (LWC=TWD-DGW)	8.89	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0820	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW24

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	18.89	feet
Total Well Depth (TWD)	25.0	feet
Length of the water column (LWC=TWD-DGW)	6.11	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0840	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW25

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	14.29	feet
Total Well Depth (TWD)	23.0	feet
Length of the water column (LWC=TWD-DGW)	8.71	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0900	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOW, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # MW2B

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	18.36	feet
Total Well Depth (TWD)	35.0	feet
Length of the water column (LWC=TWD-DGW)	16.64	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals

3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1100	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # DW1

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 52.10 feet
Total Well Depth (TWD) 80 feet
Length of the water column (LWC=TWD-DGW) 27.90 feet
1 casing volume (CV=LWC X C)= _____ X _____ = 4.50 gals
3 casing volume (3 X CV)= 13.5 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 60 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1340	
pH (s.u.)	6.13	5.61					5.42	
Specific Conductivity (µmhos/cm)	117.	110					110.	
Water Temperature (°C)	18.56	19.88					19.12	
Dissolved Oxygen	4.63	7.36					8.66	
PID readings, if required								

Remarks: BOTTOM DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 1/14/08

Field Personnel: JOHNNY HOWE, JOHN MONEGHAN

General Weather Conditions: CLOUDY, COLD

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON

Site ID#: _____ Monitoring Well # DW2

Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	32.96	feet
Total Well Depth (TWD)	80.0	feet
Length of the water column (LWC=TWD-DGW)	47.04	feet

1 casing volume (CV=LWC X C)= _____ X _____ = 7.50 gals

3 casing volume (3 X CV)= 22.50 gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.

*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0855	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

APPENDIX C

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

08010433

Report To:		Project Name:	14.25384.00012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:		
ph: (803) 735-0003	fax:			

The samples submitted for Methane analysis were subcontracted to SPL-Houston. The data as submitted by the sub-contract laboratory is included in its entirety as an attachment to this report.

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

EXCEPTION:
Volatile Organics-Method 8260B: The RPD for tert-Butyl formate was outside of SPLs derived advisory limits for the LCS/LCSD sample, Lab Batch id R170353.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: 75 PAGES

1/25/2008

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

08010433

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.00012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported:

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
CK-1	08010433-01	Water	1/14/2008 9:30:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-10	08010433-02	Water	1/14/2008 1:00:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-11	08010433-03	Water	1/14/2008 2:10:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-12	08010433-04	Water	1/14/2008 10:30:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-13	08010433-05	Water	1/14/2008 11:00:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-14	08010433-06	Water	1/14/2008 1:30:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-15	08010433-07	Water	1/14/2008 2:05:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-16	08010433-08	Water	1/14/2008 10:00:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-17	08010433-09	Water	1/14/2008 12:35:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-18	08010433-10	Water	1/14/2008 11:30:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-19	08010433-11	Water	1/14/2008 11:35:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-20	08010433-12	Water	1/14/2008 12:05:00 PM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-21	08010433-13	Water	1/14/2008 10:10:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-22	08010433-14	Water	1/14/2008 10:35:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-23	08010433-15	Water	1/14/2008 8:20:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-24	08010433-16	Water	1/14/2008 8:40:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-25	08010433-17	Water	1/14/2008 9:00:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐
MW-26	08010433-18	Water	1/14/2008 11:00:00 AM	1/15/2008 9:45:00 AM	289341,289340	☐

1/25/2008
Date

Alberto E. Granados
Project Manager

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 01/14/2008 9:30 **SPL Sample ID:** 08010433-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:50	CJD	2497203
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 21:44	MAR	2500556
Surr: 1-Chloro-2-fluorobenzene	97.7		% 33-151	1	01/17/08 21:44	MAR	2500556

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	3.51		0.1	10	01/16/08 10:00	KRR	2497393
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	7.08		5	1	01/17/08 9:00	SRA	2498679
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 21:54	RJD	2498476

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 15:28	SNV	2502011
Diisopropyl ether	35		5	1	01/19/08 15:28	SNV	2502011
Ethanol	ND		100	1	01/19/08 15:28	SNV	2502011
t-Butyl alcohol	ND		10	1	01/19/08 15:28	SNV	2502011
tert-Amyl alcohol	ND		10	1	01/19/08 15:28	SNV	2502011
tert-Amyl methyl ether	ND		5	1	01/19/08 15:28	SNV	2502011
tert-Butyl ethyl ether	ND		5	1	01/19/08 15:28	SNV	2502011
tert-Butyl formate	ND		1	1	01/19/08 15:28	SNV	2502011
1,2-Dichloroethane	ND		5	1	01/19/08 15:28	SNV	2502011
Benzene	ND		1	1	01/19/08 15:28	SNV	2502011
Ethylbenzene	ND		1	1	01/19/08 15:28	SNV	2502011
Methyl tert-butyl ether	16		1	1	01/19/08 15:28	SNV	2502011
Naphthalene	ND		5	1	01/19/08 15:28	SNV	2502011
Toluene	ND		1	1	01/19/08 15:28	SNV	2502011
m,p-Xylene	ND		1	1	01/19/08 15:28	SNV	2502011
o-Xylene	ND		1	1	01/19/08 15:28	SNV	2502011
Xylenes,Total	ND		1	1	01/19/08 15:28	SNV	2502011
Surr: 1,2-Dichloroethane-d4	89.6		% 74-133	1	01/19/08 15:28	SNV	2502011
Surr: 4-Bromofluorobenzene	96.4		% 74-116	1	01/19/08 15:28	SNV	2502011
Surr: Toluene-d8	98.7		% 84-112	1	01/19/08 15:28	SNV	2502011

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-10 **Collected:** 01/14/2008 13:00 **SPL Sample ID:** 08010433-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	2.04		0.05	1	01/15/08 14:50	CJD	2497198
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 22:04	MAR	2500557
Surr: 1-Chloro-2-fluorobenzene	102		% 33-151	1	01/17/08 22:04	MAR	2500557

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.046		0.01	1	01/16/08 10:00	KRR	2497390
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498682
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0136		0.01	1	01/16/08 22:37	RJD	2498484

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		5000	500	01/19/08 15:57	SNV	2502012
Diisopropyl ether	3300		2500	500	01/19/08 15:57	SNV	2502012
Ethanol	ND		50000	500	01/19/08 15:57	SNV	2502012
t-Butyl alcohol	ND		5000	500	01/19/08 15:57	SNV	2502012
tert-Amyl alcohol	ND		5000	500	01/19/08 15:57	SNV	2502012
tert-Amyl methyl ether	ND		2500	500	01/19/08 15:57	SNV	2502012
tert-Butyl ethyl ether	ND		2500	500	01/19/08 15:57	SNV	2502012
tert-Butyl formate	ND		500	500	01/19/08 15:57	SNV	2502012
1,2-Dichloroethane	ND		2500	500	01/19/08 15:57	SNV	2502012
Benzene	8400		500	500	01/19/08 15:57	SNV	2502012
Ethylbenzene	3300		500	500	01/19/08 15:57	SNV	2502012
Methyl tert-butyl ether	ND		500	500	01/19/08 15:57	SNV	2502012
Naphthalene	ND		2500	500	01/19/08 15:57	SNV	2502012
Toluene	9000		500	500	01/19/08 15:57	SNV	2502012
m,p-Xylene	7600		500	500	01/19/08 15:57	SNV	2502012
o-Xylene	2500		500	500	01/19/08 15:57	SNV	2502012
Xylenes,Total	10100		500	500	01/19/08 15:57	SNV	2502012
Surr: 1,2-Dichloroethane-d4	91.4		% 74-133	500	01/19/08 15:57	SNV	2502012
Surr: 4-Bromofluorobenzene	98.3		% 74-116	500	01/19/08 15:57	SNV	2502012
Surr: Toluene-d8	98.9		% 84-112	500	01/19/08 15:57	SNV	2502012

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-11 **Collected:** 01/14/2008 14:10 **SPL Sample ID:** 08010433-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:50	CJD	2497200
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 22:25	MAR	2500558
Surr: 1-Chloro-2-fluorobenzene	112	%	33-151	1	01/17/08 22:25	MAR	2500558

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.023		0.01	1	01/16/08 10:00	KRR	2497394
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498683
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 22:42	RJD	2498485

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		5000	500	01/19/08 16:26	SNV	2502013
Diisopropyl ether	7500		2500	500	01/19/08 16:26	SNV	2502013
Ethanol	ND		50000	500	01/19/08 16:26	SNV	2502013
t-Butyl alcohol	ND		5000	500	01/19/08 16:26	SNV	2502013
tert-Amyl alcohol	ND		5000	500	01/19/08 16:26	SNV	2502013
tert-Amyl methyl ether	ND		2500	500	01/19/08 16:26	SNV	2502013
tert-Butyl ethyl ether	ND		2500	500	01/19/08 16:26	SNV	2502013
tert-Butyl formate	ND		500	500	01/19/08 16:26	SNV	2502013
1,2-Dichloroethane	ND		2500	500	01/19/08 16:26	SNV	2502013
Benzene	8700		500	500	01/19/08 16:26	SNV	2502013
Ethylbenzene	4600		500	500	01/19/08 16:26	SNV	2502013
Methyl tert-butyl ether	ND		500	500	01/19/08 16:26	SNV	2502013
Naphthalene	ND		2500	500	01/19/08 16:26	SNV	2502013
Toluene	21000		500	500	01/19/08 16:26	SNV	2502013
m,p-Xylene	17000		500	500	01/19/08 16:26	SNV	2502013
o-Xylene	7600		500	500	01/19/08 16:26	SNV	2502013
Xylenes,Total	24600		500	500	01/19/08 16:26	SNV	2502013
Surr: 1,2-Dichloroethane-d4	93.6	%	74-133	500	01/19/08 16:26	SNV	2502013
Surr: 4-Bromofluorobenzene	96.3	%	74-116	500	01/19/08 16:26	SNV	2502013
Surr: Toluene-d8	98.5	%	84-112	500	01/19/08 16:26	SNV	2502013

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 01/14/2008 10:30 **SPL Sample ID:** 08010433-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:50	CJD	2497204
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 22:46	MAR	2500559
Surr: 1-Chloro-2-fluorobenzene	108		% 33-151	1	01/17/08 22:46	MAR	2500559

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.096		0.01	1	01/16/08 10:00	KRR	2497395
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498684
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 22:48	RJD	2498486

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		1000	100	01/22/08 6:50	SNV	2503182
Diisopropyl ether	4100		500	100	01/22/08 6:50	SNV	2503182
Ethanol	ND		10000	100	01/22/08 6:50	SNV	2503182
t-Butyl alcohol	2000		1000	100	01/22/08 6:50	SNV	2503182
tert-Amyl alcohol	8700		1000	100	01/22/08 6:50	SNV	2503182
tert-Amyl methyl ether	ND		500	100	01/22/08 6:50	SNV	2503182
tert-Butyl ethyl ether	ND		500	100	01/22/08 6:50	SNV	2503182
tert-Butyl formate	ND		100	100	01/22/08 6:50	SNV	2503182
1,2-Dichloroethane	ND		500	100	01/22/08 6:50	SNV	2503182
Benzene	5700		100	100	01/22/08 6:50	SNV	2503182
Ethylbenzene	ND		100	100	01/22/08 6:50	SNV	2503182
Methyl tert-butyl ether	ND		100	100	01/22/08 6:50	SNV	2503182
Naphthalene	ND		500	100	01/22/08 6:50	SNV	2503182
Toluene	ND		100	100	01/22/08 6:50	SNV	2503182
m,p-Xylene	140		100	100	01/22/08 6:50	SNV	2503182
o-Xylene	ND		100	100	01/22/08 6:50	SNV	2503182
Xylenes,Total	140		100	100	01/22/08 6:50	SNV	2503182
Surr: 1,2-Dichloroethane-d4	94.0		% 74-133	100	01/22/08 6:50	SNV	2503182
Surr: 4-Bromofluorobenzene	101		% 74-116	100	01/22/08 6:50	SNV	2503182
Surr: Toluene-d8	101		% 84-112	100	01/22/08 6:50	SNV	2503182

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-13 **Collected:** 01/14/2008 11:00 **SPL Sample ID:** 08010433-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.261		0.05	1	01/15/08 14:50	CJD	2497199
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.073		0.02	1	01/17/08 23:07	MAR	2500560
Surr: 1-Chloro-2-fluorobenzene	109		% 33-151	1	01/17/08 23:07	MAR	2500560

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.116		0.01	1	01/16/08 10:00	KRR	2497396
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498685
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0264		0.01	1	01/16/08 22:53	RJD	2498487

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		20000	2000	01/19/08 17:23	SNV	2502014
Diisopropyl ether	ND		10000	2000	01/19/08 17:23	SNV	2502014
Ethanol	ND		200000	2000	01/19/08 17:23	SNV	2502014
t-Butyl alcohol	ND		20000	2000	01/19/08 17:23	SNV	2502014
tert-Amyl alcohol	ND		20000	2000	01/19/08 17:23	SNV	2502014
tert-Amyl methyl ether	ND		10000	2000	01/19/08 17:23	SNV	2502014
tert-Butyl ethyl ether	ND		10000	2000	01/19/08 17:23	SNV	2502014
tert-Butyl formate	ND		2000	2000	01/19/08 17:23	SNV	2502014
1,2-Dichloroethane	ND		10000	2000	01/19/08 17:23	SNV	2502014
Benzene	9900		2000	2000	01/19/08 17:23	SNV	2502014
Ethylbenzene	3500		2000	2000	01/19/08 17:23	SNV	2502014
Methyl tert-butyl ether	ND		2000	2000	01/19/08 17:23	SNV	2502014
Naphthalene	ND		10000	2000	01/19/08 17:23	SNV	2502014
Toluene	27000		2000	2000	01/19/08 17:23	SNV	2502014
m,p-Xylene	17000		2000	2000	01/19/08 17:23	SNV	2502014
o-Xylene	7800		2000	2000	01/19/08 17:23	SNV	2502014
Xylenes,Total	24800		2000	2000	01/19/08 17:23	SNV	2502014
Surr: 1,2-Dichloroethane-d4	91.9		% 74-133	2000	01/19/08 17:23	SNV	2502014
Surr: 4-Bromofluorobenzene	95.5		% 74-116	2000	01/19/08 17:23	SNV	2502014
Surr: Toluene-d8	101		% 84-112	2000	01/19/08 17:23	SNV	2502014

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-14 **Collected:** 01/14/2008 13:30 **SPL Sample ID:** 08010433-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:50	CJD	2497205
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 23:28	MAR	2500561
Surr: 1-Chloro-2-fluorobenzene	103		% 33-151	1	01/17/08 23:28	MAR	2500561

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.045		0.01	1	01/16/08 10:00	KRR	2497397
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498686
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 22:58	RJD	2498488

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		500	50	01/19/08 17:52	SNV	2502015
Diisopropyl ether	3800		250	50	01/19/08 17:52	SNV	2502015
Ethanol	ND		5000	50	01/19/08 17:52	SNV	2502015
t-Butyl alcohol	ND		500	50	01/19/08 17:52	SNV	2502015
tert-Amyl alcohol	ND		500	50	01/19/08 17:52	SNV	2502015
tert-Amyl methyl ether	ND		250	50	01/19/08 17:52	SNV	2502015
tert-Butyl ethyl ether	ND		250	50	01/19/08 17:52	SNV	2502015
tert-Butyl formate	ND		50	50	01/19/08 17:52	SNV	2502015
1,2-Dichloroethane	ND		250	50	01/19/08 17:52	SNV	2502015
Benzene	4500		50	50	01/19/08 17:52	SNV	2502015
Ethylbenzene	ND		50	50	01/19/08 17:52	SNV	2502015
Methyl tert-butyl ether	ND		50	50	01/19/08 17:52	SNV	2502015
Naphthalene	300		250	50	01/19/08 17:52	SNV	2502015
Toluene	74		50	50	01/19/08 17:52	SNV	2502015
m,p-Xylene	51		50	50	01/19/08 17:52	SNV	2502015
o-Xylene	ND		50	50	01/19/08 17:52	SNV	2502015
Xylenes,Total	51		50	50	01/19/08 17:52	SNV	2502015
Surr: 1,2-Dichloroethane-d4	90.5		% 74-133	50	01/19/08 17:52	SNV	2502015
Surr: 4-Bromofluorobenzene	97.6		% 74-116	50	01/19/08 17:52	SNV	2502015
Surr: Toluene-d8	98.5		% 84-112	50	01/19/08 17:52	SNV	2502015

Qualifiers:

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
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LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-15 **Collected:** 01/14/2008 14:05 **SPL Sample ID:** 08010433-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:50	CJD	2497206
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/17/08 23:49	MAR	2500562
Surr: 1-Chloro-2-fluorobenzene	70.3		% 33-151	1	01/17/08 23:49	MAR	2500562

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.058		0.01	1	01/16/08 10:00	KRR	2497400
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498689
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:04	RJD	2498489

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		500	50	01/19/08 18:20	SNV	2502016
Diisopropyl ether	2700		250	50	01/19/08 18:20	SNV	2502016
Ethanol	ND		5000	50	01/19/08 18:20	SNV	2502016
t-Butyl alcohol	ND		500	50	01/19/08 18:20	SNV	2502016
tert-Amyl alcohol	ND		500	50	01/19/08 18:20	SNV	2502016
tert-Amyl methyl ether	ND		250	50	01/19/08 18:20	SNV	2502016
tert-Butyl ethyl ether	ND		250	50	01/19/08 18:20	SNV	2502016
tert-Butyl formate	ND		50	50	01/19/08 18:20	SNV	2502016
1,2-Dichloroethane	ND		250	50	01/19/08 18:20	SNV	2502016
Benzene	2900		50	50	01/19/08 18:20	SNV	2502016
Ethylbenzene	ND		50	50	01/19/08 18:20	SNV	2502016
Methyl tert-butyl ether	ND		50	50	01/19/08 18:20	SNV	2502016
Naphthalene	250		250	50	01/19/08 18:20	SNV	2502016
Toluene	ND		50	50	01/19/08 18:20	SNV	2502016
m,p-Xylene	ND		50	50	01/19/08 18:20	SNV	2502016
o-Xylene	ND		50	50	01/19/08 18:20	SNV	2502016
Xylenes,Total	ND		50	50	01/19/08 18:20	SNV	2502016
Surr: 1,2-Dichloroethane-d4	91.3		% 74-133	50	01/19/08 18:20	SNV	2502016
Surr: 4-Bromofluorobenzene	97.5		% 74-116	50	01/19/08 18:20	SNV	2502016
Surr: Toluene-d8	99.2		% 84-112	50	01/19/08 18:20	SNV	2502016

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-16 **Collected:** 01/14/2008 10:00 **SPL Sample ID:** 08010433-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497265
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 0:30	MAR	2500564
Surr: 1-Chloro-2-fluorobenzene	83.8		% 33-151	1	01/18/08 0:30	MAR	2500564

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.036		0.01	1	01/16/08 10:00	KRR	2497401
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498690
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:09	RJD	2498490

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10000	1000	01/22/08 7:20	SNV	2503183
Diisopropyl ether	5900		5000	1000	01/22/08 7:20	SNV	2503183
Ethanol	ND		100000	1000	01/22/08 7:20	SNV	2503183
t-Butyl alcohol	ND		10000	1000	01/22/08 7:20	SNV	2503183
tert-Amyl alcohol	ND		10000	1000	01/22/08 7:20	SNV	2503183
tert-Amyl methyl ether	ND		5000	1000	01/22/08 7:20	SNV	2503183
tert-Butyl ethyl ether	ND		5000	1000	01/22/08 7:20	SNV	2503183
tert-Butyl formate	ND		1000	1000	01/22/08 7:20	SNV	2503183
1,2-Dichloroethane	ND		5000	1000	01/22/08 7:20	SNV	2503183
Benzene	8100		1000	1000	01/22/08 7:20	SNV	2503183
Ethylbenzene	4400		1000	1000	01/22/08 7:20	SNV	2503183
Methyl tert-butyl ether	ND		1000	1000	01/22/08 7:20	SNV	2503183
Naphthalene	ND		5000	1000	01/22/08 7:20	SNV	2503183
Toluene	14000		1000	1000	01/22/08 7:20	SNV	2503183
m,p-Xylene	19000		1000	1000	01/22/08 7:20	SNV	2503183
o-Xylene	8100		1000	1000	01/22/08 7:20	SNV	2503183
Xylenes,Total	27100		1000	1000	01/22/08 7:20	SNV	2503183
Surr: 1,2-Dichloroethane-d4	93.1		% 74-133	1000	01/22/08 7:20	SNV	2503183
Surr: 4-Bromofluorobenzene	101		% 74-116	1000	01/22/08 7:20	SNV	2503183
Surr: Toluene-d8	103		% 84-112	1000	01/22/08 7:20	SNV	2503183

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-17 **Collected:** 01/14/2008 12:35 **SPL Sample ID:** 08010433-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497268
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 0:51	MAR	2500565
Surr: 1-Chloro-2-fluorobenzene	74.2		% 33-151	1	01/18/08 0:51	MAR	2500565

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.618		0.05	5	01/16/08 10:00	KRR	2497402
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 9:00	SRA	2498691
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:14	RJD	2498491

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/22/08 7:49	SNV	2503184
Diisopropyl ether	ND		5	1	01/22/08 7:49	SNV	2503184
Ethanol	ND		100	1	01/22/08 7:49	SNV	2503184
t-Butyl alcohol	ND		10	1	01/22/08 7:49	SNV	2503184
tert-Amyl alcohol	ND		10	1	01/22/08 7:49	SNV	2503184
tert-Amyl methyl ether	ND		5	1	01/22/08 7:49	SNV	2503184
tert-Butyl ethyl ether	ND		5	1	01/22/08 7:49	SNV	2503184
tert-Butyl formate	ND		1	1	01/22/08 7:49	SNV	2503184
1,2-Dichloroethane	ND		5	1	01/22/08 7:49	SNV	2503184
Benzene	ND		1	1	01/22/08 7:49	SNV	2503184
Ethylbenzene	ND		1	1	01/22/08 7:49	SNV	2503184
Methyl tert-butyl ether	ND		1	1	01/22/08 7:49	SNV	2503184
Naphthalene	ND		5	1	01/22/08 7:49	SNV	2503184
Toluene	ND		1	1	01/22/08 7:49	SNV	2503184
m,p-Xylene	ND		1	1	01/22/08 7:49	SNV	2503184
o-Xylene	ND		1	1	01/22/08 7:49	SNV	2503184
Xylenes,Total	ND		1	1	01/22/08 7:49	SNV	2503184
Surr: 1,2-Dichloroethane-d4	95.8		% 74-133	1	01/22/08 7:49	SNV	2503184
Surr: 4-Bromofluorobenzene	99.9		% 74-116	1	01/22/08 7:49	SNV	2503184
Surr: Toluene-d8	103		% 84-112	1	01/22/08 7:49	SNV	2503184

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-18 **Collected:** 01/14/2008 11:30 **SPL Sample ID:** 08010433-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**		**Units: mg/L**	
Iron, Ferrous	17.5		0.5		10	01/15/08 14:55	KDS	2497269
METHOD 504.1				**MCL**	**E504.1**		**Units: ug/L**	
1,2-Dibromoethane	0.033		0.02		1	01/18/08 1:12	MAR	2500566
Surr: 1-Chloro-2-fluorobenzene	82.3		% 33-151		1	01/18/08 1:12	MAR	2500566

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**		**Units: mg/L**	
Nitrate (As N)	0.022		0.01		1	01/16/08 10:00	KRR	2497403
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**		**Units: mg/L**	
Sulfate	ND		5		1	01/17/08 9:00	SRA	2498692
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**		**Units: mg/L**	
Lead	0.0141		0.01		1	01/16/08 23:30	RJD	2498494

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**		**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		1000		100	01/19/08 19:45	SNV	2502017
Diisopropyl ether	1900		500		100	01/19/08 19:45	SNV	2502017
Ethanol	ND		10000		100	01/19/08 19:45	SNV	2502017
t-Butyl alcohol	ND		1000		100	01/19/08 19:45	SNV	2502017
tert-Amyl alcohol	ND		1000		100	01/19/08 19:45	SNV	2502017
tert-Amyl methyl ether	ND		500		100	01/19/08 19:45	SNV	2502017
tert-Butyl ethyl ether	ND		500		100	01/19/08 19:45	SNV	2502017
tert-Butyl formate	ND		100		100	01/19/08 19:45	SNV	2502017
1,2-Dichloroethane	ND		500		100	01/19/08 19:45	SNV	2502017
Benzene	630		100		100	01/19/08 19:45	SNV	2502017
Ethylbenzene	270		100		100	01/19/08 19:45	SNV	2502017
Methyl tert-butyl ether	2700		100		100	01/19/08 19:45	SNV	2502017
Naphthalene	ND		500		100	01/19/08 19:45	SNV	2502017
Toluene	1800		100		100	01/19/08 19:45	SNV	2502017
m,p-Xylene	940		100		100	01/19/08 19:45	SNV	2502017
o-Xylene	500		100		100	01/19/08 19:45	SNV	2502017
Xylenes,Total	1440		100		100	01/19/08 19:45	SNV	2502017
Surr: 1,2-Dichloroethane-d4	90.3		% 74-133		100	01/19/08 19:45	SNV	2502017
Surr: 4-Bromofluorobenzene	95.3		% 74-116		100	01/19/08 19:45	SNV	2502017
Surr: Toluene-d8	99.8		% 84-112		100	01/19/08 19:45	SNV	2502017

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-19 **Collected:** 01/14/2008 11:35 **SPL Sample ID:** 08010433-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS			MCL	HACH 8146	Units: mg/L		
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497270
METHOD 504.1			MCL	E504.1	Units: ug/L		
1,2-Dibromoethane	ND		0.02	1	01/18/08 1:33	MAR	2500567
Surr: 1-Chloro-2-fluorobenzene	77.3		% 33-151	1	01/18/08 1:33	MAR	2500567

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)			MCL	M4500-NO3 E	Units: mg/L		
Nitrate (As N)	2.65		0.1	10	01/21/08 9:00	KRR	2501686
SULFATE BY ASTM D516-90			MCL	ASTM D516-90	Units: mg/L		
Sulfate	ND		5	1	01/17/08 10:00	SRA	2498701
TOTAL METALS BY METHOD 6010B - WATER			MCL	SW6010B	Units: mg/L		
Lead	ND		0.01	1	01/16/08 23:36	RJD	2498495

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B			MCL	SW8260B	Units: ug/L		
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 20:14	SNV	2502018
Diisopropyl ether	ND		5	1	01/19/08 20:14	SNV	2502018
Ethanol	ND		100	1	01/19/08 20:14	SNV	2502018
t-Butyl alcohol	ND		10	1	01/19/08 20:14	SNV	2502018
tert-Amyl alcohol	20		10	1	01/19/08 20:14	SNV	2502018
tert-Amyl methyl ether	ND		5	1	01/19/08 20:14	SNV	2502018
tert-Butyl ethyl ether	ND		5	1	01/19/08 20:14	SNV	2502018
tert-Butyl formate	ND		1	1	01/19/08 20:14	SNV	2502018
1,2-Dichloroethane	ND		5	1	01/19/08 20:14	SNV	2502018
Benzene	ND		1	1	01/19/08 20:14	SNV	2502018
Ethylbenzene	ND		1	1	01/19/08 20:14	SNV	2502018
Methyl tert-butyl ether	ND		1	1	01/19/08 20:14	SNV	2502018
Naphthalene	ND		5	1	01/19/08 20:14	SNV	2502018
Toluene	ND		1	1	01/19/08 20:14	SNV	2502018
m,p-Xylene	ND		1	1	01/19/08 20:14	SNV	2502018
o-Xylene	ND		1	1	01/19/08 20:14	SNV	2502018
Xylenes,Total	ND		1	1	01/19/08 20:14	SNV	2502018
Surr: 1,2-Dichloroethane-d4	90.8		% 74-133	1	01/19/08 20:14	SNV	2502018
Surr: 4-Bromofluorobenzene	95.9		% 74-116	1	01/19/08 20:14	SNV	2502018
Surr: Toluene-d8	99.1		% 84-112	1	01/19/08 20:14	SNV	2502018

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-20 **Collected:** 01/14/2008 12:05 **SPL Sample ID:** 08010433-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497271
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 1:54	MAR	2500568
Surr: 1-Chloro-2-fluorobenzene	85.7		% 33-151	1	01/18/08 1:54	MAR	2500568

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.968		0.05	5	01/21/08 9:00	KRR	2501688
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 10:00	SRA	2498706
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:41	RJD	2498496

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/22/08 8:18	SNV	2503185
Diisopropyl ether	ND		5	1	01/22/08 8:18	SNV	2503185
Ethanol	ND		100	1	01/22/08 8:18	SNV	2503185
t-Butyl alcohol	ND		10	1	01/22/08 8:18	SNV	2503185
tert-Amyl alcohol	ND		10	1	01/22/08 8:18	SNV	2503185
tert-Amyl methyl ether	ND		5	1	01/22/08 8:18	SNV	2503185
tert-Butyl ethyl ether	ND		5	1	01/22/08 8:18	SNV	2503185
tert-Butyl formate	ND		1	1	01/22/08 8:18	SNV	2503185
1,2-Dichloroethane	ND		5	1	01/22/08 8:18	SNV	2503185
Benzene	ND		1	1	01/22/08 8:18	SNV	2503185
Ethylbenzene	ND		1	1	01/22/08 8:18	SNV	2503185
Methyl tert-butyl ether	ND		1	1	01/22/08 8:18	SNV	2503185
Naphthalene	ND		5	1	01/22/08 8:18	SNV	2503185
Toluene	ND		1	1	01/22/08 8:18	SNV	2503185
m,p-Xylene	ND		1	1	01/22/08 8:18	SNV	2503185
o-Xylene	ND		1	1	01/22/08 8:18	SNV	2503185
Xylenes,Total	ND		1	1	01/22/08 8:18	SNV	2503185
Surr: 1,2-Dichloroethane-d4	93.7		% 74-133	1	01/22/08 8:18	SNV	2503185
Surr: 4-Bromofluorobenzene	99.2		% 74-116	1	01/22/08 8:18	SNV	2503185
Surr: Toluene-d8	99.8		% 84-112	1	01/22/08 8:18	SNV	2503185

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 01/14/2008 10:10 **SPL Sample ID:** 08010433-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.814		0.05	1	01/15/08 14:55	KDS	2497272
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 2:14	MAR	2500569
Surr: 1-Chloro-2-fluorobenzene	86.8		% 33-151	1	01/18/08 2:14	MAR	2500569

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.153		0.01	1	01/21/08 9:00	KRR	2501689
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 10:00	SRA	2498707
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:46	RJD	2498497

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 01/14/2008 10:10 **SPL Sample ID:** 08010433-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS:METHOD 8260B			**MCL**	**SW8260B**	**Units: ug/L**		
3,3-Dimethyl-1-butanol	ND		10	1	01/22/08 8:47	SNV	2503186
Diisopropyl ether	ND		5	1	01/22/08 8:47	SNV	2503186
Ethanol	ND		100	1	01/22/08 8:47	SNV	2503186
t-Butyl alcohol	ND		10	1	01/22/08 8:47	SNV	2503186
tert-Amyl alcohol	ND		10	1	01/22/08 8:47	SNV	2503186
tert-Amyl methyl ether	85		5	1	01/22/08 8:47	SNV	2503186
tert-Butyl ethyl ether	ND		5	1	01/22/08 8:47	SNV	2503186
tert-Butyl formate	ND		1	1	01/22/08 8:47	SNV	2503186
1,2-Dichloroethane	18		5	1	01/22/08 8:47	SNV	2503186
Benzene	210		1	1	01/22/08 8:47	SNV	2503186
Ethylbenzene	3		1	1	01/22/08 8:47	SNV	2503186
Methyl tert-butyl ether	1100		10	10	01/23/08 14:30	HJL	2505188
Naphthalene	77		5	1	01/22/08 8:47	SNV	2503186
Toluene	14		1	1	01/22/08 8:47	SNV	2503186
m,p-Xylene	5.3		1	1	01/22/08 8:47	SNV	2503186
o-Xylene	5.5		1	1	01/22/08 8:47	SNV	2503186
Xylenes,Total	10.8		1	1	01/22/08 8:47	SNV	2503186
Surr: 1,2-Dichloroethane-d4	102		% 74-133	1	01/22/08 8:47	SNV	2503186
Surr: 1,2-Dichloroethane-d4	96.1		% 74-133	10	01/23/08 14:30	HJL	2505188
Surr: 4-Bromofluorobenzene	98.3		% 74-116	1	01/22/08 8:47	SNV	2503186
Surr: 4-Bromofluorobenzene	99.4		% 74-116	10	01/23/08 14:30	HJL	2505188
Surr: Toluene-d8	100		% 84-112	10	01/23/08 14:30	HJL	2505188
Surr: Toluene-d8	98.0		% 84-112	1	01/22/08 8:47	SNV	2503186

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 01/14/2008 10:35 **SPL Sample ID:** 08010433-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497275
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 2:35	MAR	2500570
Surr: 1-Chloro-2-fluorobenzene	92.1		% 33-151	1	01/18/08 2:35	MAR	2500570

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.108		0.01	1	01/21/08 9:00	KRR	2501690
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 10:00	SRA	2498708
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:52	RJD	2498498

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		500	50	01/22/08 9:14	SNV	2503187
Diisopropyl ether	2300		250	50	01/22/08 9:14	SNV	2503187
Ethanol	ND		5000	50	01/22/08 9:14	SNV	2503187
t-Butyl alcohol	ND		500	50	01/22/08 9:14	SNV	2503187
tert-Amyl alcohol	ND		500	50	01/22/08 9:14	SNV	2503187
tert-Amyl methyl ether	ND		250	50	01/22/08 9:14	SNV	2503187
tert-Butyl ethyl ether	ND		250	50	01/22/08 9:14	SNV	2503187
tert-Butyl formate	ND		50	50	01/22/08 9:14	SNV	2503187
1,2-Dichloroethane	ND		250	50	01/22/08 9:14	SNV	2503187
Benzene	1700		50	50	01/22/08 9:14	SNV	2503187
Ethylbenzene	ND		50	50	01/22/08 9:14	SNV	2503187
Methyl tert-butyl ether	ND		50	50	01/22/08 9:14	SNV	2503187
Naphthalene	ND		250	50	01/22/08 9:14	SNV	2503187
Toluene	ND		50	50	01/22/08 9:14	SNV	2503187
m,p-Xylene	ND		50	50	01/22/08 9:14	SNV	2503187
o-Xylene	ND		50	50	01/22/08 9:14	SNV	2503187
Xylenes,Total	ND		50	50	01/22/08 9:14	SNV	2503187
Surr: 1,2-Dichloroethane-d4	96.7		% 74-133	50	01/22/08 9:14	SNV	2503187
Surr: 4-Bromofluorobenzene	99.4		% 74-116	50	01/22/08 9:14	SNV	2503187
Surr: Toluene-d8	100		% 84-112	50	01/22/08 9:14	SNV	2503187

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 01/14/2008 8:20 **SPL Sample ID:** 08010433-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	3.41		0.5	10	01/15/08 14:55	KDS	2497276
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 2:56	MAR	2500571
Surr: 1-Chloro-2-fluorobenzene	83.1		% 33-151	1	01/18/08 2:56	MAR	2500571

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	ND		0.01	1	01/21/08 9:00	KRR	2501669
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 10:00	SRA	2498709
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/16/08 23:57	RJD	2498499

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		500	50	01/22/08 9:41	SNV	2503188
Diisopropyl ether	3000		250	50	01/22/08 9:41	SNV	2503188
Ethanol	ND		5000	50	01/22/08 9:41	SNV	2503188
t-Butyl alcohol	ND		500	50	01/22/08 9:41	SNV	2503188
tert-Amyl alcohol	ND		500	50	01/22/08 9:41	SNV	2503188
tert-Amyl methyl ether	ND		250	50	01/22/08 9:41	SNV	2503188
tert-Butyl ethyl ether	ND		250	50	01/22/08 9:41	SNV	2503188
tert-Butyl formate	ND		50	50	01/22/08 9:41	SNV	2503188
1,2-Dichloroethane	ND		250	50	01/22/08 9:41	SNV	2503188
Benzene	3100		50	50	01/22/08 9:41	SNV	2503188
Ethylbenzene	ND		50	50	01/22/08 9:41	SNV	2503188
Methyl tert-butyl ether	ND		50	50	01/22/08 9:41	SNV	2503188
Naphthalene	ND		250	50	01/22/08 9:41	SNV	2503188
Toluene	ND		50	50	01/22/08 9:41	SNV	2503188
m,p-Xylene	ND		50	50	01/22/08 9:41	SNV	2503188
o-Xylene	ND		50	50	01/22/08 9:41	SNV	2503188
Xylenes,Total	ND		50	50	01/22/08 9:41	SNV	2503188
Surr: 1,2-Dichloroethane-d4	96.3		% 74-133	50	01/22/08 9:41	SNV	2503188
Surr: 4-Bromofluorobenzene	98.5		% 74-116	50	01/22/08 9:41	SNV	2503188
Surr: Toluene-d8	100		% 84-112	50	01/22/08 9:41	SNV	2503188

Qualifiers:

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E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 01/14/2008 8:40 **SPL Sample ID:** 08010433-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**		**Units: mg/L**	
Iron, Ferrous	ND		0.05		1	01/15/08 14:55	KDS	2497277
METHOD 504.1				**MCL**	**E504.1**		**Units: ug/L**	
1,2-Dibromoethane	ND		0.02		1	01/18/08 3:17	MAR	2500572
Surr: 1-Chloro-2-fluorobenzene	101		% 33-151		1	01/18/08 3:17	MAR	2500572

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**		**Units: mg/L**	
Nitrate (As N)	4.12		0.1		10	01/21/08 9:00	KRR	2501691
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**		**Units: mg/L**	
Sulfate	22		5		1	01/17/08 10:00	SRA	2498710
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**		**Units: mg/L**	
Lead	ND		0.01		1	01/17/08 0:02	RJD	2498500

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
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MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 01/14/2008 8:40 **SPL Sample ID:** 08010433-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/22/08 10:08	SNV	2503189
Diisopropyl ether	250		5	1	01/22/08 10:08	SNV	2503189
Ethanol	ND		100	1	01/22/08 10:08	SNV	2503189
t-Butyl alcohol	ND		10	1	01/22/08 10:08	SNV	2503189
tert-Amyl alcohol	ND		10	1	01/22/08 10:08	SNV	2503189
tert-Amyl methyl ether	ND		5	1	01/22/08 10:08	SNV	2503189
tert-Butyl ethyl ether	ND		5	1	01/22/08 10:08	SNV	2503189
tert-Butyl formate	ND		1	1	01/22/08 10:08	SNV	2503189
1,2-Dichloroethane	ND		5	1	01/22/08 10:08	SNV	2503189
Benzene	400		5	5	01/22/08 18:42	HJL	2503777
Ethylbenzene	ND		1	1	01/22/08 10:08	SNV	2503189
Methyl tert-butyl ether	ND		1	1	01/22/08 10:08	SNV	2503189
Naphthalene	21		5	1	01/22/08 10:08	SNV	2503189
Toluene	ND		1	1	01/22/08 10:08	SNV	2503189
m,p-Xylene	ND		1	1	01/22/08 10:08	SNV	2503189
o-Xylene	ND		1	1	01/22/08 10:08	SNV	2503189
Xylenes,Total	ND		1	1	01/22/08 10:08	SNV	2503189
Surr: 1,2-Dichloroethane-d4	89.1		% 74-133	5	01/22/08 18:42	HJL	2503777
Surr: 1,2-Dichloroethane-d4	102		% 74-133	1	01/22/08 10:08	SNV	2503189
Surr: 4-Bromofluorobenzene	101		% 74-116	1	01/22/08 10:08	SNV	2503189
Surr: 4-Bromofluorobenzene	100		% 74-116	5	01/22/08 18:42	HJL	2503777
Surr: Toluene-d8	98.6		% 84-112	1	01/22/08 10:08	SNV	2503189
Surr: Toluene-d8	104		% 84-112	5	01/22/08 18:42	HJL	2503777

Qualifiers:

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J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 01/14/2008 9:00 **SPL Sample ID:** 08010433-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 14:55	KDS	2497278
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 3:38	MAR	2500573
Surr: 1-Chloro-2-fluorobenzene	102		% 33-151	1	01/18/08 3:38	MAR	2500573

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	1.63		0.05	5	01/21/08 9:00	KRR	2501694
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	26.2		5	1	01/17/08 10:00	SRA	2498713
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 0:07	RJD	2498501

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		100	10	01/22/08 10:35	SNV	2503190
Diisopropyl ether	ND		50	10	01/22/08 10:35	SNV	2503190
Ethanol	ND		1000	10	01/22/08 10:35	SNV	2503190
t-Butyl alcohol	ND		100	10	01/22/08 10:35	SNV	2503190
tert-Amyl alcohol	ND		100	10	01/22/08 10:35	SNV	2503190
tert-Amyl methyl ether	ND		50	10	01/22/08 10:35	SNV	2503190
tert-Butyl ethyl ether	ND		50	10	01/22/08 10:35	SNV	2503190
tert-Butyl formate	ND		10	10	01/22/08 10:35	SNV	2503190
1,2-Dichloroethane	ND		50	10	01/22/08 10:35	SNV	2503190
Benzene	400		10	10	01/22/08 10:35	SNV	2503190
Ethylbenzene	ND		10	10	01/22/08 10:35	SNV	2503190
Methyl tert-butyl ether	ND		10	10	01/22/08 10:35	SNV	2503190
Naphthalene	ND		50	10	01/22/08 10:35	SNV	2503190
Toluene	ND		10	10	01/22/08 10:35	SNV	2503190
m,p-Xylene	ND		10	10	01/22/08 10:35	SNV	2503190
o-Xylene	ND		10	10	01/22/08 10:35	SNV	2503190
Xylenes,Total	ND		10	10	01/22/08 10:35	SNV	2503190
Surr: 1,2-Dichloroethane-d4	97.7		% 74-133	10	01/22/08 10:35	SNV	2503190
Surr: 4-Bromofluorobenzene	98.0		% 74-116	10	01/22/08 10:35	SNV	2503190
Surr: Toluene-d8	99.3		% 84-112	10	01/22/08 10:35	SNV	2503190

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-26 **Collected:** 01/14/2008 11:00 **SPL Sample ID:** 08010433-18

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/15/08 15:00	KDS	2497285
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 4:19	MAR	2500575
Surr: 1-Chloro-2-fluorobenzene	77.4		% 33-151	1	01/18/08 4:19	MAR	2500575

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/15/2008 14:23	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.633		0.05	5	01/21/08 9:00	KRR	2501695
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	35.9		5	1	01/17/08 10:00	SRA	2498714
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 0:13	RJD	2498502

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/15/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/22/08 11:02	SNV	2503191
Diisopropyl ether	ND		5	1	01/22/08 11:02	SNV	2503191
Ethanol	ND		100	1	01/22/08 11:02	SNV	2503191
t-Butyl alcohol	ND		10	1	01/22/08 11:02	SNV	2503191
tert-Amyl alcohol	ND		10	1	01/22/08 11:02	SNV	2503191
tert-Amyl methyl ether	ND		5	1	01/22/08 11:02	SNV	2503191
tert-Butyl ethyl ether	ND		5	1	01/22/08 11:02	SNV	2503191
tert-Butyl formate	ND		1	1	01/22/08 11:02	SNV	2503191
1,2-Dichloroethane	ND		5	1	01/22/08 11:02	SNV	2503191
Benzene	ND		1	1	01/22/08 11:02	SNV	2503191
Ethylbenzene	ND		1	1	01/22/08 11:02	SNV	2503191
Methyl tert-butyl ether	ND		1	1	01/22/08 11:02	SNV	2503191
Naphthalene	ND		5	1	01/22/08 11:02	SNV	2503191
Toluene	ND		1	1	01/22/08 11:02	SNV	2503191
m,p-Xylene	ND		1	1	01/22/08 11:02	SNV	2503191
o-Xylene	ND		1	1	01/22/08 11:02	SNV	2503191
Xylenes,Total	ND		1	1	01/22/08 11:02	SNV	2503191
Surr: 1,2-Dichloroethane-d4	98.9		% 74-133	1	01/22/08 11:02	SNV	2503191
Surr: 4-Bromofluorobenzene	98.8		% 74-116	1	01/22/08 11:02	SNV	2503191
Surr: Toluene-d8	95.9		% 84-112	1	01/22/08 11:02	SNV	2503191

Qualifiers:

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* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 08010433
Lab Batch ID: 66329

Method Blank

RunID: PCBB_080117E-2500553 Units: ug/L
Analysis Date: 01/17/2008 20:41 Analyst: MAR
Preparation Date: 01/15/2008 14:23 Prep By: LDD Method: E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	133.1	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01B	CK-1
08010433-02B	MW-10
08010433-03B	MW-11
08010433-04B	MW-12
08010433-05B	MW-13
08010433-06B	MW-14
08010433-07B	MW-15
08010433-08B	MW-16
08010433-09B	MW-17
08010433-10B	MW-18
08010433-11B	MW-19
08010433-12B	MW-20
08010433-13B	MW-21
08010433-14B	MW-22
08010433-15B	MW-23
08010433-16B	MW-24
08010433-17B	MW-25
08010433-18B	MW-26

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_080117E-2500554 Units: ug/L
Analysis Date: 01/17/2008 21:02 Analyst: MAR
Preparation Date: 01/15/2008 14:23 Prep By: LDD Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.596	105	0.570	0.631	111	5.7	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	129	90.1	143	132	92.4	2.5	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B

WorkOrder: 08010433
Lab Batch ID: 66336

Method Blank

RunID: ICPDV_080116D-2498474 Units: mg/L
Analysis Date: 01/16/2008 21:43 Analyst: RJD
Preparation Date: 01/15/2008 17:00 Prep By: SA Method: SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01D	CK-1
08010433-02D	MW-10
08010433-03D	MW-11
08010433-04D	MW-12
08010433-05D	MW-13
08010433-06D	MW-14
08010433-07D	MW-15
08010433-08D	MW-16
08010433-09D	MW-17
08010433-10D	MW-18
08010433-11D	MW-19
08010433-12D	MW-20
08010433-13D	MW-21
08010433-14D	MW-22
08010433-15D	MW-23
08010433-16D	MW-24
08010433-17D	MW-25
08010433-18D	MW-26

Laboratory Control Sample (LCS)

RunID: ICPDV_080116D-2498475 Units: mg/L
Analysis Date: 01/16/2008 21:49 Analyst: RJD
Preparation Date: 01/15/2008 17:00 Prep By: SA Method: SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	0.9939	99.39	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-01
RunID: ICPDV_080116D-2498478 Units: mg/L
Analysis Date: 01/16/2008 22:05 Analyst: RJD
Preparation Date: 01/15/2008 17:00 Prep By: SA Method: SW3010A

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: **Total Metals by Method 6010B - water**
Method: **SW6010B**

WorkOrder: **08010433**
Lab Batch ID: **66336**

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1	0.9333	93.33	1	0.9243	92.43	0.9655	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: 08010433
Lab Batch ID: R170353

Method Blank

RunID: HB_080119A-2501739 Units: ug/L
Analysis Date: 01/19/2008 14:59 Analyst: SNV
Preparation Date: 01/19/2008 14:59 Prep By: Method: SW5035

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	92.3	74-133
Surr: 4-Bromofluorobenzene	94.4	74-116
Surr: Toluene-d8	99.3	84-112

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01A	CK-1
08010433-02A	MW-10
08010433-03A	MW-11
08010433-05A	MW-13
08010433-06A	MW-14
08010433-07A	MW-15
08010433-10A	MW-18
08010433-11A	MW-19

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HB_080119A-2501737 Units: ug/L
Analysis Date: 01/19/2008 13:33 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	48.4	96.7	50.0	48.7	97.4	0.7	21	73	134
3,3-Dimethyl-1-butanol	500	356	71.3	500	362	72.5	1.7	47	45	122
Benzene	50.0	50.2	100	50.0	51.5	103	2.5	23	79	124
Diisopropyl ether	50.0	53.8	108	50.0	55.4	111	2.9	21	79	127
Ethanol	1000	844	84.4	1000	787	78.7	7.0	66	46	175
Ethylbenzene	50.0	53.7	107	50.0	55.3	111	3.0	16	79	125
Methyl tert-butyl ether	50.0	49.4	98.8	50.0	50.4	101	2.0	23	77	125
Naphthalene	50.0	48.1	96.2	50.0	48.1	96.2	0.1	27	72	132
t-Butyl alcohol	500	372	74.3	500	373	74.7	0.5	54	11	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **08010433**
Method: **SW8260B** **Lab Batch ID:** **R170353**

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HB_080119A-2501737 Units: ug/L
Analysis Date: 01/19/2008 13:33 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
tert-Amyl alcohol	500	376	75.3	500	366	73.3	2.7	47	44	141
tert-Amyl methyl ether	50.0	45.4	90.8	50.0	46.9	93.7	3.2	21	73	123
tert-Butyl ethyl ether	50.0	50.2	100	50.0	51.5	103	2.5	24	75	125
tert-Butyl formate	50.0	32.5	65.0	50.0	22.9	45.9	34.4 *	34	38	172
Toluene	50.0	52.1	104	50.0	53.2	106	2.2	21	79	124
m,p-Xylene	100	108	108	100	110	110	1.9	20	77	132
o-Xylene	50.0	54.0	108	50.0	55.4	111	2.5	17	76	127
Xylenes,Total	150	162	108	150	165	110	2.1	20	76	130
Surr: 1,2-Dichloroethane-d4	50.0	46.8	93.7	50.0	46.5	93.0	0.7	30	74	133
Surr: 4-Bromofluorobenzene	50.0	50.1	100	50.0	51.1	102	2.1	30	74	116
Surr: Toluene-d8	50.0	49.5	99.0	50.0	49.4	98.8	0.1	30	84	112

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010433
Lab Batch ID: R170439

Method Blank

RunID: HA_080121B-2503176 Units: ug/L
Analysis Date: 01/22/2008 3:55 Analyst: SNV
Preparation Date: 01/22/2008 3:55 Prep By: Method: SW5035

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	89.6	74-133
Surr: 4-Bromofluorobenzene	97.7	74-116
Surr: Toluene-d8	102.6	84-112

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-04A	MW-12
08010433-08A	MW-16
08010433-09A	MW-17
08010433-12A	MW-20
08010433-13A	MW-21
08010433-14A	MW-22
08010433-15A	MW-23
08010433-16A	MW-24
08010433-17A	MW-25
08010433-18A	MW-26

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_080121B-2503173 Units: ug/L
Analysis Date: 01/22/2008 2:27 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	52.6	105	50.0	50.7	101	3.6	21	73	134
3,3-Dimethyl-1-butanol	500	456	91.1	500	438	87.7	3.8	47	45	122
Benzene	50.0	52.9	106	50.0	50.7	101	4.3	23	79	124
Diisopropyl ether	50.0	52.0	104	50.0	51.0	102	1.9	21	79	127
Ethanol	1000	1060	106	1000	925	92.5	13.4	66	46	175
Ethylbenzene	50.0	51.8	104	50.0	50.2	100	3.2	16	79	125
Methyl tert-butyl ether	50.0	50.3	101	50.0	49.8	99.7	0.9	23	77	125
Naphthalene	50.0	46.9	93.9	50.0	44.9	89.8	4.4	27	72	132
t-Butyl alcohol	500	469	93.8	500	438	87.7	6.8	54	11	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010433
Lab Batch ID: R170439

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_080121B-2503173 Units: ug/L
Analysis Date: 01/22/2008 2:27 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
tert-Amyl alcohol	500	476	95.2	500	444	88.9	6.9	47	44	141
tert-Amyl methyl ether	50.0	51.4	103	50.0	49.7	99.5	3.3	21	73	123
tert-Butyl ethyl ether	50.0	50.4	101	50.0	50.4	101	0.1	24	75	125
tert-Butyl formate	50.0	34.0	68.1	50.0	31.2	62.4	8.6	34	38	172
Toluene	50.0	52.3	105	50.0	50.8	102	2.9	21	79	124
m,p-Xylene	100	105	105	100	102	102	2.4	20	77	132
o-Xylene	50.0	51.9	104	50.0	51.5	103	0.7	17	76	127
Xylenes,Total	150.0	156.9	104.4	150.0	153.5	102.5	1.8	20	76	130
Surr: 1,2-Dichloroethane-d4	50.0	49.6	99.1	50.0	49.8	99.6	0.5	30	74	133
Surr: 4-Bromofluorobenzene	50.0	50.9	102	50.0	50.6	101	0.5	30	74	116
Surr: Toluene-d8	50.0	50.9	102	50.0	49.9	99.8	1.9	30	84	112

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010433
Lab Batch ID: R170476

Method Blank

RunID: HA_080122A-2503775 Units: ug/L
Analysis Date: 01/22/2008 17:44 Analyst: HJL

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-16A	MW-24

Analyte	Result	Rep Limit
Benzene	ND	1.0
Surr: 1,2-Dichloroethane-d4	91.6	74-133
Surr: 4-Bromofluorobenzene	101.0	74-116
Surr: Toluene-d8	102.2	84-112

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_080122A-2503772 Units: ug/Kg
Analysis Date: 01/22/2008 16:21 Analyst: HJL
Preparation Date: 01/22/2008 16:21 Prep By: Method: SW5035

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Benzene	50.0	50.2	100	50.0	50.6	101	0.7	23	73	136
Surr: 1,2-Dichloroethane-d4	50.0	49.1	98.2	50.0	48.9	97.9	0.4	30	58	165
Surr: 4-Bromofluorobenzene	50.0	50.5	101	50.0	49.9	99.7	1.3	30	47	145
Surr: Toluene-d8	50.0	49.8	99.6	50.0	49.9	99.8	0.2	30	51	147

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010433
Lab Batch ID: R170577

Method Blank

RunID: HA_080123A-2505426 Units: ug/L
Analysis Date: 01/23/2008 14:01 Analyst: HJL
Preparation Date: 01/23/2008 14:01 Prep By: Method: SW5035

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-13A	MW-21

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	1.0
Surr: 1,2-Dichloroethane-d4	90.6	74-133
Surr: 4-Bromofluorobenzene	98.3	74-116
Surr: Toluene-d8	101.8	84-112

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_080123A-2505185 Units: ug/L
Analysis Date: 01/23/2008 11:09 Analyst: HJL

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Methyl tert-butyl ether	50.0	42.8	85.6	50.0	42.2	84.4	1.4	23	77	125
Surr: 1,2-Dichloroethane-d4	50.0	48.9	97.9	50.0	48.6	97.3	0.6	30	74	133
Surr: 4-Bromofluorobenzene	50.0	50.2	100	50.0	49.5	99.0	1.4	30	74	116
Surr: Toluene-d8	50.0	49.9	99.9	50.0	49.2	98.4	1.5	30	84	112

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Iron, Ferrous
Method: HACH 8146

WorkOrder: 08010433
Lab Batch ID: R170057

Method Blank

RunID: WET_080115ZD-2497191 Units: mg/L
Analysis Date: 01/15/2008 14:50 Analyst: CJD

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01C	CK-1
08010433-02C	MW-10
08010433-03C	MW-11
08010433-04C	MW-12
08010433-05C	MW-13
08010433-06C	MW-14
08010433-07C	MW-15

Laboratory Control Sample (LCS)

RunID: WET_080115ZD-2497192 Units: mg/L
Analysis Date: 01/15/2008 14:50 Analyst: CJD

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	1.020	102.0	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010435-02
RunID: WET_080115ZD-2497194 Units: mg/L
Analysis Date: 01/15/2008 14:50 Analyst: CJD

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	1.160	116.0	1	1.080	108.0	7.143	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Iron, Ferrous
Method: HACH 8146
WorkOrder: 08010433
Lab Batch ID: R170062

Method Blank

RunID: WET_080115ZE-2497263 Units: mg/L
Analysis Date: 01/15/2008 14:55 Analyst: KDS

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-08C	MW-16
08010433-09C	MW-17
08010433-10C	MW-18
08010433-11C	MW-19
08010433-12C	MW-20
08010433-13C	MW-21
08010433-14C	MW-22
08010433-15C	MW-23
08010433-16C	MW-24
08010433-17C	MW-25

Laboratory Control Sample (LCS)

RunID: WET_080115ZE-2497264 Units: mg/L
Analysis Date: 01/15/2008 14:55 Analyst: KDS

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	1.030	103.0	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-08
RunID: WET_080115ZE-2497266 Units: mg/L
Analysis Date: 01/15/2008 14:55 Analyst: KDS

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	1.080	108.0	1	1.030	103.0	4.739	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Iron, Ferrous
Method: HACH 8146

WorkOrder: 08010433
Lab Batch ID: R170063

Method Blank

RunID: WET_080115ZF-2497283 Units: mg/L
Analysis Date: 01/15/2008 15:00 Analyst: KDS

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-18C	MW-26

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Laboratory Control Sample (LCS)

RunID: WET_080115ZF-2497284 Units: mg/L
Analysis Date: 01/15/2008 15:00 Analyst: KDS

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	0.9890	98.90	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-18
RunID: WET_080115ZF-2497286 Units: mg/L
Analysis Date: 01/15/2008 15:00 Analyst: KDS

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	1.000	100.0	1	1.030	103.0	2.956	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Nitrate (as N)
Method: M4500-NO3 E

WorkOrder: 08010433
Lab Batch ID: R170071

Method Blank

RunID: WET_080116O-2497387 Units: mg/L
Analysis Date: 01/16/2008 10:00 Analyst: KRR

Analyte	Result	Rep Limit
Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01C	CK-1
08010433-02C	MW-10
08010433-03C	MW-11
08010433-04C	MW-12
08010433-05C	MW-13
08010433-06C	MW-14
08010433-07C	MW-15
08010433-08C	MW-16
08010433-09C	MW-17
08010433-10C	MW-18

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_080116O-2497388 Units: mg/L
Analysis Date: 01/16/2008 10:00 Analyst: KRR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrate (As N)	0.1500	0.1470	98.00	0.1500	0.1560	104.0	5.9	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-02
RunID: WET_080116O-2497391 Units: mg/L
Analysis Date: 01/16/2008 10:00 Analyst: KRR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrate (As N)	0.04600	0.15	0.1990	102.0	0.15	0.2080	108.0	4.423	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Sulfate by ASTM D516-90
Method: ASTM D516-90

WorkOrder: 08010433
Lab Batch ID: R170140

Method Blank

RunID: WET_080117B-2498677 Units: mg/L
Analysis Date: 01/17/2008 9:00 Analyst: SRA

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-01C	CK-1
08010433-02C	MW-10
08010433-03C	MW-11
08010433-04C	MW-12
08010433-05C	MW-13
08010433-06C	MW-14
08010433-07C	MW-15
08010433-08C	MW-16
08010433-09C	MW-17
08010433-10C	MW-18

Laboratory Control Sample (LCS)

RunID: WET_080117B-2498678 Units: mg/L
Analysis Date: 01/17/2008 9:00 Analyst: SRA

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.890	98.90	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-01
RunID: WET_080117B-2498680 Units: mg/L
Analysis Date: 01/17/2008 9:00 Analyst: SRA

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	7.080	10	15.43	83.50	10	15.43	83.50	0	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Sulfate by ASTM D516-90
Method: ASTM D516-90

WorkOrder: 08010433
Lab Batch ID: R170141

Method Blank

RunID: WET_080117C-2498697 Units: mg/L
Analysis Date: 01/17/2008 10:00 Analyst: SRA

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-11C	MW-19
08010433-12C	MW-20
08010433-13C	MW-21
08010433-14C	MW-22
08010433-15C	MW-23
08010433-16C	MW-24
08010433-17C	MW-25
08010433-18C	MW-26

Laboratory Control Sample (LCS)

RunID: WET_080117C-2498698 Units: mg/L
Analysis Date: 01/17/2008 10:00 Analyst: SRA

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.710	97.10	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-11
RunID: WET_080117C-2498704 Units: mg/L
Analysis Date: 01/17/2008 10:00 Analyst: SRA

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	ND	10	8.080	80.80	10	8.170	81.70	1.108	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.00012

Analysis: Nitrate (as N) **WorkOrder:** 08010433
Method: M4500-NO3 E **Lab Batch ID:** R170349

Method Blank

RunID: WET_080121G-2501661 Units: mg/L
Analysis Date: 01/21/2008 9:00 Analyst: KRR

Analyte	Result	Rep Limit
Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010433-11C	MW-19
08010433-12C	MW-20
08010433-13C	MW-21
08010433-14C	MW-22
08010433-15C	MW-23
08010433-16C	MW-24
08010433-17C	MW-25
08010433-18C	MW-26

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_080121G-2501664 Units: mg/L
Analysis Date: 01/21/2008 9:00 Analyst: KRR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrate (As N)	0.1500	0.1510	100.7	0.1500	0.1540	102.7	2.0	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010433-15
RunID: WET_080121G-2501674 Units: mg/L
Analysis Date: 01/21/2008 9:00 Analyst: KRR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrate (As N)	ND	0.15	0.1660	110.7	0.15	0.1730	115.3	4.130	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**08010433**	Received By:	**JM**
Date and Time Received:	**1/15/2008 9:45:00 AM**	Carrier name:	**FedEx-Std 1 Day PM**
Temperature:	**2.5°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☐	No ☐	Not Present ☑
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?** 1 VIAL FOR MW11 REC'D BROKEN FOR EDB	Yes ☐	No ☑	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☑	No ☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: REC'D 2 SETS OF SAMPLES LABELED AS MW21, BUT ONE SET MATCHES TIME OF MW22. DID NOT RECEIVE ANY MW22 SAMPLES

Client Instructions:

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 289341

08010433

page ___ of ___

Client Name: ARC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: FMR UNITED EXPRESS
Site Location: WINNSBORO, SC
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix: W=water S=soil O=oil SL=sludge X=other	bottle: P=plastic A=amber glass G=glass V=vial X=other	size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other	pres.: 1=HCl 2=HNO3 3=H2SO4 X=other	Number of Containers	Benzene/Naphthalene	1,2 DCA	8 Oxygenates	EDB	Nitrate/Sulfate	Lead	Fe	Methane	
CK1	1/14/08	0930		✓	W	P/G/V		1/2/X	11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW10	↓	1300		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW11	↓	1410		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	10
MW12	↓	1030		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW13	↓	1100		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW14	↓	1330		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW15	↓	1405		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW16	↓	1000		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW17	↓	1235		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11
MW18	↓	1130		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	11

Requested Analysis

Client/Consultant Remarks:

Laboratory remarks: (Chlorides) 8 (E54) BW38 BW54 BW2 (3W) (1) NO3-S

Intact? Y N
Ice? Y N
Temp: 2-5

PM review (initial):

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

1. Relinquished by Sampler:	date 1/14/08	time	2. Received by:
3. Relinquished by:	date 1/15/2008	time 900	4. Received by:
5. Relinquished by:	date 1/15/08	time 945	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 289340

page ___ of ___

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR WEST COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BEB BOXTON Email:
Project Name/No.: 14-25384.0012
Site Name: FORMER UNITED EXXON
Site Location: WINNSBORO, SC
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil SL=sludge X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	BTEX, NAPH, MTBE	1,2 DCA	8 OXYGENATES	EDB	LEAD	NITRATE/SULFATE	FE+	METHANE	
MW19	1/14/08	1135		✓	W	P/G/V		1/2/X	11	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW20	↓	1205		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW21	↓	1010		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW22	↓	1035		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW23	↓	0820		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW24	↓	0840		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW25	↓	0900		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW26	↓	1100		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 2.8

PM review (initial):

Requested TAT
Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

1. Relinquished by: Sampler — date 1/14/08 time
2. Received by: Fedex
3. Relinquished by: Fedex — date 1/16/08 time 900
4. Received by:
5. Relinquished by: — date 1/15/08 time 945
6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx Express *US Airbill* 8641 5175 4212

Recipient's Copy

RECIPIENT: PEEL HERE

fedex.com 1.800.463.3339

1 From This portion can be removed for Recipient's records

Date _____ FedEx Tracking Number 864151754212

Sender's Name _____ Phone _____

Company _____

Address _____

City _____ State _____ ZIP _____

2 Your Internal Billing Reference _____

3 To

Recipient's Name _____ Phone _____

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

Address _____

City _____ State LA ZIP 70503-8000

8641 5175 4212

4a Express Package Service — Packages up to 150 lbs.

- FedEx Priority Overnight
- FedEx Standard Overnight
- FedEx First Overnight
- FedEx 2Day
- FedEx Express Saver

4b Express Freight Service — Packages over 150 lbs.

- FedEx 1Day Freight
- FedEx 2Day Freight
- FedEx 3Day Freight

5 Packaging

- FedEx Envelope
- FedEx Pak
- FedEx Box
- FedEx Tube
- Other

6 Special Handling

- SATURDAY Delivery
- HOLD Weekday at FedEx Location
- HOLD Saturday at FedEx Location

Does this shipment contain dangerous goods? No / Yes / Yes / Dry Ice — Cargo Aircraft Only

7 Payment Bill to: Sender / Recipient / Third Party / Credit Card / Cash/Check

Total Packages 1 Total Weight 66.60

8 Residential Delivery Signature Options

- No Signature Required
- Direct Signature
- Indirect Signature

519

AREA

FedEx Express — *US Airbill*

FedEx Express Tracking Number 8626 3214 0899

1 From This portion can be removed for Recipient's records.

Date

FedEx Tracking Number 8626321408 99

Sender's Name

Phone

Company

Address

City

State

ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name

Phone

Company

Recipient's Address

Address

City

State

ZIP

8626 3214 0899

RECIPIENT: PEEL HERE

fedex.com 1800.GoFedEx 1800.463.3339

4a Express Package Service — Packages up to 150 lbs.

- FedEx Priority Overnight
- FedEx Standard Overnight
- FedEx First Overnight
- FedEx 2Day
- FedEx Express Saver

4b Express Freight Service — Packages over 150 lbs.

- FedEx 1Day Freight*
- FedEx 2Day Freight
- FedEx 3Day Freight

5 Packaging

- FedEx Envelope*
- FedEx Pak*
- FedEx Box
- FedEx Tube
- Other

6 Special Handling

- SATURDAY Delivery
- HOLD Weekday at FedEx Location
- HOLD Saturday at FedEx Location

Does this shipment contain dangerous goods?

- No
- Yes
- Yes
- Yes Cargo Aircraft Only

7 Payment Bill to:

- Sender
- Recipient
- Third Party
- Credit Card
- Cash/Check

Total Packages

Total Weight 49.4

8 Residential Delivery Signature Options

- No Signature Required
- Direct Signature
- Indirect Signature

519

fedex.com 1800.GoFedEx 1800.463.3339

FedEx Express *US Airbill*

Fedex Tracking Number: 8625 9255 7670

1 From This section can be removed for Recipient's records

Date: FedEx Tracking Number: 862592557670

Sender's Name: Phone:

Company:

Address:

City: State: ZIP:

2 Your Internal Billing Reference 4 25 380 00/0

3 To

Recipient's Name: SHIPPING AND RECEIVING Phone: 337 237-4775

Company: SOUTHERN PETROLEUM LAB

Recipient's Address: 900 AMBASSADOR CAFFERY PKWY

Address:

City: LAFAYETTE State: LA ZIP: 70503-5203

03/400326

8625 9255 7670

RECIPIENT: PEEL HERE

fedex.com 1.800.Go FedEx 1.800.463.3339

4a Express Package Service — Packages up to 150 lbs.

- FedEx Priority Overnight
- FedEx Standard Overnight
- FedEx First Overnight
- FedEx 2Day
- FedEx Express Saver

4b Express Freight Service — Packages over 150 lbs.

- FedEx 1Day Freight
- FedEx 2Day Freight
- FedEx 3Day Freight

5 Packaging

- FedEx Envelope
- FedEx Pak
- FedEx Box
- FedEx Tube
- Other

6 Special Handling

- SATURDAY Delivery
- HOLD Weekday at FedEx Location
- HOLD Saturday at FedEx Location
- No
- Yes
- Yes
- Dry Ice
- Cargo Aircraft Only

7 Payment Bill to:

- Sender
- Recipient
- Third Party
- Credit Card
- Cash/Check

Total Packages: 1 Total Weight: 63.6

8 Residential Delivery Signature Options

- No Signature Required
- Direct Signature
- Indirect Signature

519

fedex.com 1.800.463.3339

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

SPL, Inc.

Certificate of Analysis Number:

08010616

Report To:		Project Name:	ATC, 14.25384.00012
SPL, Inc.		Site:	South Carolina
Kitty Davis Baudoin		Site Address:	
500 Ambassador Caffery Parkway			
Scott		PO Number:	08010433
LA		State:	South Carolina
70583-8544		State Cert. No.:	82008001
ph: (337) 237-4775	fax:	Date Reported:	1/23/2008

This Report Contains A Total Of 25 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

1/23/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

SPL, Inc.

Certificate of Analysis Number:

08010616

Report To:		Project Name:	ATC, 14.25384.00012
SPL, Inc.		Site:	South Carolina
Kitty Davis Baudoin		Site Address:	
500 Ambassador Caffery Parkway			
		PO Number:	08010433
Scott		State:	South Carolina
LA		State Cert. No.:	82008001
70583-8544			
ph: (337) 237-4775	fax:	Date Reported:	1/23/2008

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Bethany Agarwal

Bethany A. Agarwal
Senior Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

1/23/2008

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

SPL, Inc.

Certificate of Analysis Number:

08010616

Report To: SPL, Inc.
Kitty Davis Baudoin
500 Ambassador Caffery Parkway

Scott
LA
70583-8544
ph: (337) 237-4775 fax: (337) 237-8005

Fax To:

Project Name: ATC, 14.25384.00012
Site: South Carolina
Site Address:

PO Number: 08010433
State: South Carolina
State Cert. No.: 82008001
Date Reported: 1/23/2008

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
CK-1	08010616-01	Water	1/14/2008 9:30:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-10	08010616-02	Water	1/14/2008 1:00:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-11	08010616-03	Water	1/14/2008 2:10:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-12	08010616-04	Water	1/14/2008 10:30:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-13	08010616-05	Water	1/14/2008 11:00:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-14	08010616-06	Water	1/14/2008 1:30:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-15	08010616-07	Water	1/14/2008 2:05:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-16	08010616-08	Water	1/14/2008 10:00:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-17	08010616-09	Water	1/14/2008 12:35:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-18	08010616-10	Water	1/14/2008 11:30:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-19	08010616-11	Water	1/14/2008 11:35:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-20	08010616-12	Water	1/14/2008 12:05:00 PM	1/16/2008 10:00:00 AM	08010433	☐
MW-21	08010616-13	Water	1/14/2008 10:10:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-22	08010616-14	Water	1/14/2008 10:35:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-23	08010616-15	Water	1/14/2008 8:20:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-24	08010616-16	Water	1/14/2008 8:40:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-25	08010616-17	Water	1/14/2008 9:00:00 AM	1/16/2008 10:00:00 AM	08010433	☐
MW-26	08010616-18	Water	1/14/2008 11:00:00 AM	1/16/2008 10:00:00 AM	08010433	☐

Bethany Agarwal

Bethany A. Agarwal
Senior Project Manager

1/23/2008
Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
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Client Sample ID: CK-1 **Collected:** 01/14/2008 9:30 **SPL Sample ID:** 08010616-01

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 12:44	E_S1	4236167

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-10 **Collected:** 01/14/2008 13:00 **SPL Sample ID:** 08010616-02

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 12:57	E_S1	4236168

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-11 **Collected:** 01/14/2008 14:10 **SPL Sample ID:** 08010616-03

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 13:43	E_S1	4236171

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-12 **Collected:** 01/14/2008 10:30 **SPL Sample ID:** 08010616-04

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 13:22	E_S1	4236169

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-13 **Collected:** 01/14/2008 11:00 **SPL Sample ID:** 08010616-05

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 13:34	E_S1	4236170

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-14 **Collected:** 01/14/2008 13:30 **SPL Sample ID:** 08010616-06

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 13:29	E_S1	4239544

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-15 **Collected:** 01/14/2008 14:05 **SPL Sample ID:** 08010616-07

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 9:30	E_S1	4239529

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-16 **Collected:** 01/14/2008 10:00 **SPL Sample ID:** 08010616-08

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 9:56	E_S1	4239531

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-17 **Collected:** 01/14/2008 12:35 **SPL Sample ID:** 08010616-09

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 10:06	E_S1	4239532

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-18 **Collected:** 01/14/2008 11:30 **SPL Sample ID:** 08010616-10

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	0.007		0.0012	1	01/21/08 10:16	E_S1	4239533

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-19 **Collected:** 01/14/2008 11:35 **SPL Sample ID:** 08010616-11

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 10:26	E_S1	4239534

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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(713) 660-0901

Client Sample ID: MW-20 **Collected:** 01/14/2008 12:05 **SPL Sample ID:** 08010616-12

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 10:36	E_S1	4239535

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-21 **Collected:** 01/14/2008 10:10 **SPL Sample ID:** 08010616-13

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 10:49	E_S1	4239536

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-22 **Collected:** 01/14/2008 10:35 **SPL Sample ID:** 08010616-14

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 11:36	E_S1	4239538

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-23 **Collected:** 01/14/2008 8:20 **SPL Sample ID:** 08010616-15

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	0.0088		0.0012	1	01/21/08 11:50	E_S1	4239539

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-24 **Collected:** 01/14/2008 8:40 **SPL Sample ID:** 08010616-16

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 12:04	E_S1	4239540

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-25 **Collected:** 01/14/2008 9:00 **SPL Sample ID:** 08010616-17

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 12:14	E_S1	4239541

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-26 **Collected:** 01/14/2008 11:00 **SPL Sample ID:** 08010616-18

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/21/08 12:26	E_S1	4239542

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

SPL, Inc.

ATC, 14.25384.00012

Analysis: Headspace Gas Analysis
Method: RSK147
WorkOrder: 08010616
Lab Batch ID: R225198

Method Blank

RunID: VARC_080118A-4236165 Units: mg/L
Analysis Date: 01/18/2008 11:37 Analyst: E_S1

Analyte	Result	Rep Limit
Methane	ND	0.0012

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010616-01A	CK-1
08010616-02A	MW-10
08010616-03A	MW-11
08010616-04A	MW-12
08010616-05A	MW-13

Sample Duplicate

Original Sample: 08010711-03
RunID: VARC_080118A-4236156 Units: mg/L
Analysis Date: 01/18/2008 9:35 Analyst: E_S1

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

SPL, Inc.

ATC, 14.25384.00012

Analysis: Headspace Gas Analysis
Method: RSK147

WorkOrder: 08010616
Lab Batch ID: R225430

Method Blank

RunID: VARC_080121A-4239543 Units: mg/L
Analysis Date: 01/21/2008 13:18 Analyst: E_S1

Analyte	Result	Rep Limit
Methane	ND	0.0012

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010616-06A	MW-14
08010616-07A	MW-15
08010616-08A	MW-16
08010616-09A	MW-17
08010616-10A	MW-18
08010616-11A	MW-19
08010616-12A	MW-20
08010616-13A	MW-21
08010616-14A	MW-22
08010616-15A	MW-23
08010616-16A	MW-24
08010616-17A	MW-25
08010616-18A	MW-26

Sample Duplicate

Original Sample: 08010616-07
RunID: VARC_080121A-4239529 Units: mg/L
Analysis Date: 01/21/2008 9:30 Analyst: E_S1

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**08010616**	Received By:	**AE**
Date and Time Received:	**1/16/2008 10:00:00 AM**	Carrier name:	**Fedex-Standard Overnight**
Temperature:	**3.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☐	No ☐	Not Present ☑
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

08010616

SPL, Inc.
500 Ambassador Caffery Parkway

Scott, LA 70583-8544
(337) 237-4775

CHAIN-OF-CUSTODY RECORD

Company	ATC ASSOCIATES, INC.
Project Manager	Granados, Alberto E.
Project Name	14.25384.00012
QCLevel	LVL2
Requested State	South Carolina

Subcontractor:

SPL - Houston
8880 Interchange Dr

Houston, Texas 77054

TEL: (713) 660-0901
FAX: (713) 660-8975

Acct #: INTERCOMPANY

15-Jan-08

Sample ID	Client Sample	Matrix	Collection Date	Due Date	Requested Tests						
					RSK147						
08010433-01E	CK-1	Water	01/14/08 9:30	01/21/08	1						
08010433-02E	MW-10	Water	01/14/08 13:00	01/21/08	1						
08010433-03E	MW-11	Water	01/14/08 14:10	01/21/08	1						
08010433-04E	MW-12	Water	01/14/08 10:30	01/21/08	1						
08010433-05E	MW-13	Water	01/14/08 11:00	01/21/08	1						
08010433-06E	MW-14	Water	01/14/08 13:30	01/21/08	1						
08010433-07E	MW-15	Water	01/14/08 14:05	01/21/08	1						
08010433-08E	MW-16	Water	01/14/08 10:00	01/21/08	1						
08010433-09E	MW-17	Water	01/14/08 12:35	01/21/08	1						
08010433-10E	MW-18	Water	01/14/08 11:30	01/21/08	1						
08010433-11E	MW-19	Water	01/14/08 11:35	01/21/08	1						
08010433-12E	MW-20	Water	01/14/08 12:05	01/21/08	1						
08010433-13E	MW-21	Water	01/14/08 10:10	01/21/08	1						
08010433-14E	MW-22	Water	01/14/08 10:35	01/21/08	1						
08010433-15E	MW-23	Water	01/14/08 8:20	01/21/08	1						
08010433-16E	MW-24	Water	01/14/08 8:40	01/21/08	1						
08010433-17E	MW-25	Water	01/14/08 9:00	01/21/08	1						
08010433-18E	MW-26	Water	01/14/08 11:00	01/21/08	1						

Comments: METHANE

	Date/Time		Date/Time
Relinquished by:	1/15/07 1700	Received by:	1/16/8 1000
Relinquished by:		Received by:	

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 08010433

289341

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: FORMER UNITED EXPRESS
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, N-2-4, MTBE	1,2 DCA	8 OXYGENATES	EDB	NITRATE/SULFATE	LEAD	Fe	METHANE	
CK1	1/14/08	0930		✓	W	P/G/V		1/2/4	11									11
MW10		1300																11
MW11		1410																10
MW12		1030																11
MW13		1100																11
MW14		1330																11
MW15		1405																11
MW16		1000																11
MW17		1235																11
MW18		1130																11

Client/Consultant Remarks:

Laboratory remarks: Jason 8 FS4 BW38 BW54 BW2 3W NOCS-

Intact? ☐Y ☐N
Ice? ☐Y ☐N
Temp: 2-8

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 1/14/08	time	2. Received by:
3. Relinquished by:	date 1/15/2008	time 9:00	4. Received by:
5. Relinquished by:	date 1/15/08	time 9:45	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 289340

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR WITER COLUMBIA SC
Phone/Fax: (503) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: FORM UNITED EXXON
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NPH, MTBE	1,2 DCA	8 OXYGENATES	EDB	LEAD	NITRATE/SULFATE	Fe^{+}	METHANE	
MW19	1/14/08	1135		✓	W	P/G/V		1/2/X	11	↑	↑	↑	↑	↑	↑	↑	↑	11
MW20	↓	1205		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW21	↓	1010		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW22	↓	1035		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW23	↓	0820		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW24	↓	0840		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW25	↓	0900		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
MW26	↓	1100		↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

Client/Consultant Remarks:

Laboratory remarks:

Intact? ☑ Y ☐ N
Ice? ☑ Y ☐ N
Temp: 2.8

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 1/14/08	time	2. Received by:
3. Relinquished by:	date 1/15/08	time 900	4. Received by:
5. Relinquished by:	date 1/15/08	time 945	6. Received by Laboratory:

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

08010467

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	1/23/2008	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: _____ PAGES

1/23/2008

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

08010467

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 1/23/2008

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	08010467-01	Water	1/15/2008 10:20:00 AM	1/16/2008 9:45:00 AM	289335	☐
MW-2	08010467-02	Water	1/15/2008 12:45:00 PM	1/16/2008 9:45:00 AM	289335	☐
MW-4R	08010467-03	Water	1/15/2008 11:20:00 AM	1/16/2008 9:45:00 AM	289335	☐
MW-5	08010467-04	Water	1/15/2008 10:45:00 AM	1/16/2008 9:45:00 AM	289335	☐
MW-6R	08010467-05	Water	1/15/2008 12:20:00 PM	1/16/2008 9:45:00 AM	289335	☐
MW-8	08010467-06	Water	1/15/2008 9:50:00 AM	1/16/2008 9:45:00 AM	289335	☐
MW-9R	08010467-07	Water	1/15/2008 11:50:00 AM	1/16/2008 9:45:00 AM	289335	☐
DW-1	08010467-08	Water	1/15/2008 1:40:00 PM	1/16/2008 9:45:00 AM	289335	☐
DW-2	08010467-09	Water	1/15/2008 8:55:00 AM	1/16/2008 9:45:00 AM	289335	☐

1/23/2008

Alberto E. Granados
Project Manager

Date

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-1 **Collected:** 01/15/2008 10:20 **SPL Sample ID:** 08010467-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	0.523		0.05	1	01/16/08 10:30	CJD	2497887
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 6:04	MAR	2502070
Surr: 1-Chloro-2-fluorobenzene	100		% 33-151	1	01/18/08 6:04	MAR	2502070

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	1.92		0.05	5	01/22/08 8:00	KRR	2502624
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	7.17		5	1	01/17/08 15:40	SRA	2499382
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 19:14	RJD	2499660

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 16:49	SNV	2501107
Diisopropyl ether	ND		5	1	01/19/08 16:49	SNV	2501107
Ethanol	ND		100	1	01/19/08 16:49	SNV	2501107
t-Butyl alcohol	ND		10	1	01/19/08 16:49	SNV	2501107
tert-Amyl alcohol	ND		10	1	01/19/08 16:49	SNV	2501107
tert-Amyl methyl ether	ND		5	1	01/19/08 16:49	SNV	2501107
tert-Butyl ethyl ether	ND		5	1	01/19/08 16:49	SNV	2501107
tert-Butyl formate	ND		1	1	01/19/08 16:49	SNV	2501107
1,2-Dichloroethane	ND		5	1	01/19/08 16:49	SNV	2501107
Benzene	ND		1	1	01/19/08 16:49	SNV	2501107
Ethylbenzene	ND		1	1	01/19/08 16:49	SNV	2501107
Methyl tert-butyl ether	ND		1	1	01/19/08 16:49	SNV	2501107
Naphthalene	ND		5	1	01/19/08 16:49	SNV	2501107
Toluene	ND		1	1	01/19/08 16:49	SNV	2501107
m,p-Xylene	ND		1	1	01/19/08 16:49	SNV	2501107
o-Xylene	ND		1	1	01/19/08 16:49	SNV	2501107
Xylenes,Total	ND		1	1	01/19/08 16:49	SNV	2501107
Surr: 1,2-Dichloroethane-d4	97.9		% 74-133	1	01/19/08 16:49	SNV	2501107
Surr: 4-Bromofluorobenzene	98.9		% 74-116	1	01/19/08 16:49	SNV	2501107
Surr: Toluene-d8	93.0		% 84-112	1	01/19/08 16:49	SNV	2501107

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-2 **Collected:** 01/15/2008 12:45 **SPL Sample ID:** 08010467-02

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	54		1	50	01/21/08 14:42	MAR	2502082
Surr: 1-Chloro-2-fluorobenzene	96.7		% 33-151	50	01/21/08 14:42	MAR	2502082

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 19:20	RJD	2499661

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		5000	500	01/19/08 17:17	SNV	2501108
Diisopropyl ether	15000		2500	500	01/19/08 17:17	SNV	2501108
Ethanol	ND		50000	500	01/19/08 17:17	SNV	2501108
t-Butyl alcohol	21000		5000	500	01/19/08 17:17	SNV	2501108
tert-Amyl alcohol	ND		5000	500	01/19/08 17:17	SNV	2501108
tert-Amyl methyl ether	ND		2500	500	01/19/08 17:17	SNV	2501108
tert-Butyl ethyl ether	ND		2500	500	01/19/08 17:17	SNV	2501108
tert-Butyl formate	ND		500	500	01/19/08 17:17	SNV	2501108
1,2-Dichloroethane	ND		2500	500	01/19/08 17:17	SNV	2501108
Benzene	14000		500	500	01/19/08 17:17	SNV	2501108
Ethylbenzene	5900		500	500	01/19/08 17:17	SNV	2501108
Methyl tert-butyl ether	43000		500	500	01/19/08 17:17	SNV	2501108
Naphthalene	ND		2500	500	01/19/08 17:17	SNV	2501108
Toluene	48000		500	500	01/19/08 17:17	SNV	2501108
m,p-Xylene	23000		500	500	01/19/08 17:17	SNV	2501108
o-Xylene	10000		500	500	01/19/08 17:17	SNV	2501108
Xylenes,Total	33000		500	500	01/19/08 17:17	SNV	2501108
Surr: 1,2-Dichloroethane-d4	99.4		% 74-133	500	01/19/08 17:17	SNV	2501108
Surr: 4-Bromofluorobenzene	101		% 74-116	500	01/19/08 17:17	SNV	2501108
Surr: Toluene-d8	100		% 84-112	500	01/19/08 17:17	SNV	2501108

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-4R **Collected:** 01/15/2008 11:20 **SPL Sample ID:** 08010467-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/16/08 10:30	CJD	2497888
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 6:45	MAR	2502072
Surr: 1-Chloro-2-fluorobenzene	92.3		% 33-151	1	01/18/08 6:45	MAR	2502072

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.57		0.01	1	01/22/08 8:00	KRR	2502625
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 15:40	SRA	2499385
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 19:36	RJD	2499664

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 17:45	SNV	2501109
Diisopropyl ether	20		5	1	01/19/08 17:45	SNV	2501109
Ethanol	ND		100	1	01/19/08 17:45	SNV	2501109
t-Butyl alcohol	ND		10	1	01/19/08 17:45	SNV	2501109
tert-Amyl alcohol	ND		10	1	01/19/08 17:45	SNV	2501109
tert-Amyl methyl ether	ND		5	1	01/19/08 17:45	SNV	2501109
tert-Butyl ethyl ether	ND		5	1	01/19/08 17:45	SNV	2501109
tert-Butyl formate	ND		1	1	01/19/08 17:45	SNV	2501109
1,2-Dichloroethane	ND		5	1	01/19/08 17:45	SNV	2501109
Benzene	9.8		1	1	01/19/08 17:45	SNV	2501109
Ethylbenzene	1.4		1	1	01/19/08 17:45	SNV	2501109
Methyl tert-butyl ether	ND		1	1	01/19/08 17:45	SNV	2501109
Naphthalene	ND		5	1	01/19/08 17:45	SNV	2501109
Toluene	ND		1	1	01/19/08 17:45	SNV	2501109
m,p-Xylene	1.8		1	1	01/19/08 17:45	SNV	2501109
o-Xylene	ND		1	1	01/19/08 17:45	SNV	2501109
Xylenes,Total	1.8		1	1	01/19/08 17:45	SNV	2501109
Surr: 1,2-Dichloroethane-d4	98.5		% 74-133	1	01/19/08 17:45	SNV	2501109
Surr: 4-Bromofluorobenzene	100		% 74-116	1	01/19/08 17:45	SNV	2501109
Surr: Toluene-d8	96.2		% 84-112	1	01/19/08 17:45	SNV	2501109

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-5 **Collected:** 01/15/2008 10:45 **SPL Sample ID:** 08010467-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 7:06	MAR	2502073
Surr: 1-Chloro-2-fluorobenzene	86.1		% 33-151	1	01/18/08 7:06	MAR	2502073

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	0.0265		0.01	1	01/17/08 19:41	RJD	2499665

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 18:13	SNV	2501110
Diisopropyl ether	ND		5	1	01/19/08 18:13	SNV	2501110
Ethanol	ND		100	1	01/19/08 18:13	SNV	2501110
t-Butyl alcohol	ND		10	1	01/19/08 18:13	SNV	2501110
tert-Amyl alcohol	ND		10	1	01/19/08 18:13	SNV	2501110
tert-Amyl methyl ether	ND		5	1	01/19/08 18:13	SNV	2501110
tert-Butyl ethyl ether	ND		5	1	01/19/08 18:13	SNV	2501110
tert-Butyl formate	ND		1	1	01/19/08 18:13	SNV	2501110
1,2-Dichloroethane	ND		5	1	01/19/08 18:13	SNV	2501110
Benzene	ND		1	1	01/19/08 18:13	SNV	2501110
Ethylbenzene	ND		1	1	01/19/08 18:13	SNV	2501110
Methyl tert-butyl ether	ND		1	1	01/19/08 18:13	SNV	2501110
Naphthalene	ND		5	1	01/19/08 18:13	SNV	2501110
Toluene	ND		1	1	01/19/08 18:13	SNV	2501110
m,p-Xylene	ND		1	1	01/19/08 18:13	SNV	2501110
o-Xylene	ND		1	1	01/19/08 18:13	SNV	2501110
Xylenes,Total	ND		1	1	01/19/08 18:13	SNV	2501110
Surr: 1,2-Dichloroethane-d4	101		% 74-133	1	01/19/08 18:13	SNV	2501110
Surr: 4-Bromofluorobenzene	98.6		% 74-116	1	01/19/08 18:13	SNV	2501110
Surr: Toluene-d8	102		% 84-112	1	01/19/08 18:13	SNV	2501110

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-6R **Collected:** 01/15/2008 12:20 **SPL Sample ID:** 08010467-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/16/08 10:30	CJD	2497889
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 7:27	MAR	2502074
Surr: 1-Chloro-2-fluorobenzene	86.6		% 33-151	1	01/18/08 7:27	MAR	2502074

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	2.12		0.05	5	01/22/08 8:00	KRR	2502626
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 15:40	SRA	2499386
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 19:46	RJD	2499666

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 18:42	SNV	2501111
Diisopropyl ether	ND		5	1	01/19/08 18:42	SNV	2501111
Ethanol	ND		100	1	01/19/08 18:42	SNV	2501111
t-Butyl alcohol	ND		10	1	01/19/08 18:42	SNV	2501111
tert-Amyl alcohol	ND		10	1	01/19/08 18:42	SNV	2501111
tert-Amyl methyl ether	ND		5	1	01/19/08 18:42	SNV	2501111
tert-Butyl ethyl ether	ND		5	1	01/19/08 18:42	SNV	2501111
tert-Butyl formate	ND		1	1	01/19/08 18:42	SNV	2501111
1,2-Dichloroethane	ND		5	1	01/19/08 18:42	SNV	2501111
Benzene	ND		1	1	01/19/08 18:42	SNV	2501111
Ethylbenzene	ND		1	1	01/19/08 18:42	SNV	2501111
Methyl tert-butyl ether	ND		1	1	01/19/08 18:42	SNV	2501111
Naphthalene	ND		5	1	01/19/08 18:42	SNV	2501111
Toluene	ND		1	1	01/19/08 18:42	SNV	2501111
m,p-Xylene	ND		1	1	01/19/08 18:42	SNV	2501111
o-Xylene	ND		1	1	01/19/08 18:42	SNV	2501111
Xylenes,Total	ND		1	1	01/19/08 18:42	SNV	2501111
Surr: 1,2-Dichloroethane-d4	96.6		% 74-133	1	01/19/08 18:42	SNV	2501111
Surr: 4-Bromofluorobenzene	99.7		% 74-116	1	01/19/08 18:42	SNV	2501111
Surr: Toluene-d8	90.7		% 84-112	1	01/19/08 18:42	SNV	2501111

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-8 **Collected:** 01/15/2008 9:50 **SPL Sample ID:** 08010467-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	01/18/08 7:48	MAR	2502075
Surr: 1-Chloro-2-fluorobenzene	90.4		%	33-151	1	01/18/08 7:48	MAR	2502075

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	01/17/08 19:52	RJD	2499667

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND			10	1	01/19/08 19:10	SNV	2501112
Diisopropyl ether	ND			5	1	01/19/08 19:10	SNV	2501112
Ethanol	ND			100	1	01/19/08 19:10	SNV	2501112
t-Butyl alcohol	ND			10	1	01/19/08 19:10	SNV	2501112
tert-Amyl alcohol	ND			10	1	01/19/08 19:10	SNV	2501112
tert-Amyl methyl ether	ND			5	1	01/19/08 19:10	SNV	2501112
tert-Butyl ethyl ether	ND			5	1	01/19/08 19:10	SNV	2501112
tert-Butyl formate	ND			1	1	01/19/08 19:10	SNV	2501112
1,2-Dichloroethane	ND			5	1	01/19/08 19:10	SNV	2501112
Benzene	ND			1	1	01/19/08 19:10	SNV	2501112
Ethylbenzene	ND			1	1	01/19/08 19:10	SNV	2501112
Methyl tert-butyl ether	ND			1	1	01/19/08 19:10	SNV	2501112
Naphthalene	ND			5	1	01/19/08 19:10	SNV	2501112
Toluene	ND			1	1	01/19/08 19:10	SNV	2501112
m,p-Xylene	ND			1	1	01/19/08 19:10	SNV	2501112
o-Xylene	ND			1	1	01/19/08 19:10	SNV	2501112
Xylenes,Total	ND			1	1	01/19/08 19:10	SNV	2501112
Surr: 1,2-Dichloroethane-d4	102		%	74-133	1	01/19/08 19:10	SNV	2501112
Surr: 4-Bromofluorobenzene	93.5		%	74-116	1	01/19/08 19:10	SNV	2501112
Surr: Toluene-d8	101		%	84-112	1	01/19/08 19:10	SNV	2501112

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID MW-9R **Collected:** 01/15/2008 11:50 **SPL Sample ID:** 08010467-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS					**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND			0.05	1	01/16/08 10:30	CJD	2497890
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.02	1	01/18/08 8:09	MAR	2502076
Surr: 1-Chloro-2-fluorobenzene	87.9		%	33-151	1	01/18/08 8:09	MAR	2502076

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)					**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	0.99			0.05	5	01/22/08 8:00	KRR	2502627
SULFATE BY ASTM D516-90					**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND			5	1	01/17/08 15:40	SRA	2499387
TOTAL METALS BY METHOD 6010B - WATER					**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND			0.01	1	01/17/08 19:57	RJD	2499668

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND			10	1	01/19/08 19:38	SNV	2501113
Diisopropyl ether	ND			5	1	01/19/08 19:38	SNV	2501113
Ethanol	ND			100	1	01/19/08 19:38	SNV	2501113
t-Butyl alcohol	ND			10	1	01/19/08 19:38	SNV	2501113
tert-Amyl alcohol	ND			10	1	01/19/08 19:38	SNV	2501113
tert-Amyl methyl ether	ND			5	1	01/19/08 19:38	SNV	2501113
tert-Butyl ethyl ether	ND			5	1	01/19/08 19:38	SNV	2501113
tert-Butyl formate	ND			1	1	01/19/08 19:38	SNV	2501113
1,2-Dichloroethane	ND			5	1	01/19/08 19:38	SNV	2501113
Benzene	ND			1	1	01/19/08 19:38	SNV	2501113
Ethylbenzene	ND			1	1	01/19/08 19:38	SNV	2501113
Methyl tert-butyl ether	ND			1	1	01/19/08 19:38	SNV	2501113
Naphthalene	ND			5	1	01/19/08 19:38	SNV	2501113
Toluene	ND			1	1	01/19/08 19:38	SNV	2501113
m,p-Xylene	ND			1	1	01/19/08 19:38	SNV	2501113
o-Xylene	ND			1	1	01/19/08 19:38	SNV	2501113
Xylenes,Total	ND			1	1	01/19/08 19:38	SNV	2501113
Surr: 1,2-Dichloroethane-d4	103		%	74-133	1	01/19/08 19:38	SNV	2501113
Surr: 4-Bromofluorobenzene	96.7		%	74-116	1	01/19/08 19:38	SNV	2501113
Surr: Toluene-d8	94.3		%	84-112	1	01/19/08 19:38	SNV	2501113

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID DW-1 **Collected:** 01/15/2008 13:40 **SPL Sample ID:** 08010467-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/16/08 10:30	CJD	2497883
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.086		0.02	1	01/18/08 8:51	MAR	2502078
Surr: 1-Chloro-2-fluorobenzene	101		% 33-151	1	01/18/08 8:51	MAR	2502078

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	2.89		0.05	5	01/22/08 8:00	KRR	2502628
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 15:40	SRA	2499388
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 20:02	RJD	2499669

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 20:06	SNV	2501114
Diisopropyl ether	ND		5	1	01/19/08 20:06	SNV	2501114
Ethanol	ND		100	1	01/19/08 20:06	SNV	2501114
t-Butyl alcohol	ND		10	1	01/19/08 20:06	SNV	2501114
tert-Amyl alcohol	ND		10	1	01/19/08 20:06	SNV	2501114
tert-Amyl methyl ether	ND		5	1	01/19/08 20:06	SNV	2501114
tert-Butyl ethyl ether	ND		5	1	01/19/08 20:06	SNV	2501114
tert-Butyl formate	ND		1	1	01/19/08 20:06	SNV	2501114
1,2-Dichloroethane	ND		5	1	01/19/08 20:06	SNV	2501114
Benzene	ND		1	1	01/19/08 20:06	SNV	2501114
Ethylbenzene	130		1	1	01/19/08 20:06	SNV	2501114
Methyl tert-butyl ether	ND		1	1	01/19/08 20:06	SNV	2501114
Naphthalene	110		5	1	01/19/08 20:06	SNV	2501114
Toluene	140		1	1	01/19/08 20:06	SNV	2501114
m,p-Xylene	460		1	1	01/19/08 20:06	SNV	2501114
o-Xylene	260		1	1	01/19/08 20:06	SNV	2501114
Xylenes,Total	720		1	1	01/19/08 20:06	SNV	2501114
Surr: 1,2-Dichloroethane-d4	104		% 74-133	1	01/19/08 20:06	SNV	2501114
Surr: 4-Bromofluorobenzene	102		% 74-116	1	01/19/08 20:06	SNV	2501114
Surr: Toluene-d8	101		% 84-112	1	01/19/08 20:06	SNV	2501114

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID DW-2 **Collected:** 01/15/2008 8:55 **SPL Sample ID:** 08010467-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
IRON, FERROUS				**MCL**	**HACH 8146**	**Units: mg/L**	
Iron, Ferrous	ND		0.05	1	01/16/08 10:30	CJD	2497886
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.02	1	01/18/08 9:12	MAR	2502079
Surr: 1-Chloro-2-fluorobenzene	77.8		% 33-151	1	01/18/08 9:12	MAR	2502079

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	01/17/2008 9:56	LDD	1.00

NITRATE (AS N)				**MCL**	**M4500-NO3 E**	**Units: mg/L**	
Nitrate (As N)	ND		0.01	1	01/22/08 8:00	KRR	2502621
SULFATE BY ASTM D516-90				**MCL**	**ASTM D516-90**	**Units: mg/L**	
Sulfate	ND		5	1	01/17/08 15:40	SRA	2499389
TOTAL METALS BY METHOD 6010B - WATER				**MCL**	**SW6010B**	**Units: mg/L**	
Lead	ND		0.01	1	01/17/08 20:08	RJD	2499670

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	01/16/2008 17:00	SA	1.00

VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10	1	01/19/08 20:34	SNV	2501115
Diisopropyl ether	330		5	1	01/19/08 20:34	SNV	2501115
Ethanol	ND		100	1	01/19/08 20:34	SNV	2501115
t-Butyl alcohol	130		10	1	01/19/08 20:34	SNV	2501115
tert-Amyl alcohol	ND		10	1	01/19/08 20:34	SNV	2501115
tert-Amyl methyl ether	ND		5	1	01/19/08 20:34	SNV	2501115
tert-Butyl ethyl ether	ND		5	1	01/19/08 20:34	SNV	2501115
tert-Butyl formate	ND		1	1	01/19/08 20:34	SNV	2501115
1,2-Dichloroethane	ND		5	1	01/19/08 20:34	SNV	2501115
Benzene	34		1	1	01/19/08 20:34	SNV	2501115
Ethylbenzene	ND		1	1	01/19/08 20:34	SNV	2501115
Methyl tert-butyl ether	7.7		1	1	01/19/08 20:34	SNV	2501115
Naphthalene	ND		5	1	01/19/08 20:34	SNV	2501115
Toluene	ND		1	1	01/19/08 20:34	SNV	2501115
m,p-Xylene	ND		1	1	01/19/08 20:34	SNV	2501115
o-Xylene	ND		1	1	01/19/08 20:34	SNV	2501115
Xylenes,Total	ND		1	1	01/19/08 20:34	SNV	2501115
Surr: 1,2-Dichloroethane-d4	98.1		% 74-133	1	01/19/08 20:34	SNV	2501115
Surr: 4-Bromofluorobenzene	99.8		% 74-116	1	01/19/08 20:34	SNV	2501115
Surr: Toluene-d8	91.6		% 84-112	1	01/19/08 20:34	SNV	2501115

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 08010467
Lab Batch ID: 66399

Method Blank

RunID: PCBB_080118D-2502067 Units: ug/L
Analysis Date: 01/18/2008 5:01 Analyst: MAR
Preparation Date: 01/17/2008 9:56 Prep By: LDD Method E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	99.2	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01B	MW-1
08010467-02B	MW-2
08010467-03B	MW-4R
08010467-04B	MW-5
08010467-05B	MW-6R
08010467-06B	MW-8
08010467-07B	MW-9R
08010467-08B	DW-1
08010467-09B	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_080118D-2502068 Units: ug/L
Analysis Date: 01/18/2008 5:22 Analyst: MAR
Preparation Date: 01/17/2008 9:56 Prep By: LDD Method E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.604	106	0.570	0.607	106	0.5	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	145	101	143	151	105	3.7	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Total Metals by Method 6010B - water
Method: SW6010B

WorkOrder: 08010467
Lab Batch ID: 66383

Method Blank

RunID: ICPDV_080117C-2499644 Units: mg/L
Analysis Date: 01/17/2008 17:49 Analyst: RJD
Preparation Date: 01/16/2008 17:00 Prep By: SA Method SW3010A

Analyte	Result	Rep Limit
Lead	ND	0.01

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01D	MW-1
08010467-02C	MW-2
08010467-03D	MW-4R
08010467-04C	MW-5
08010467-05D	MW-6R
08010467-06C	MW-8
08010467-07D	MW-9R
08010467-08D	DW-1
08010467-09D	DW-2

Laboratory Control Sample (LCS)

RunID: ICPDV_080117C-2499645 Units: mg/L
Analysis Date: 01/17/2008 17:55 Analyst: RJD
Preparation Date: 01/16/2008 17:00 Prep By: SA Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Lead	1.000	0.9643	96.43	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010469-02
RunID: ICPDV_080117C-2499648 Units: ug/L
Analysis Date: 01/17/2008 18:10 Analyst: RJD
Preparation Date: 01/16/2008 17:00 Prep By: SA Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Lead	ND	1000	892.4	89.24	1000	880.6	88.06	1.334	20	75	125

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010467
Lab Batch ID: R170303

Method Blank

RunID: GA_080119A-2501105 Units: ug/L
Analysis Date: 01/19/2008 15:52 Analyst: SNV
Preparation Date: 01/19/2008 15:52 Prep By: Method SW5035

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	94.5	74-133
Surr: 4-Bromofluorobenzene	99.5	74-116
Surr: Toluene-d8	97.4	84-112

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01A	MW-1
08010467-02A	MW-2
08010467-03A	MW-4R
08010467-04A	MW-5
08010467-05A	MW-6R
08010467-06A	MW-8
08010467-07A	MW-9R
08010467-08A	DW-1
08010467-09A	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GA_080119A-2501103 Units: ug/L
Analysis Date: 01/19/2008 14:55 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	57.8	116	50.0	55.9	112	3.3	21	73	134
3,3-Dimethyl-1-butanol	500	459	91.7	500	487	97.3	5.9	47	45	122
Benzene	50.0	57.2	114	50.0	53.8	108	6.3	23	79	124
Diisopropyl ether	50.0	48.4	96.9	50.0	50.4	101	3.9	21	79	127
Ethanol	1000	805	80.5	1000	861	86.1	6.7	66	46	175
Ethylbenzene	50.0	56.8	114	50.0	53.9	108	5.1	16	79	125
Methyl tert-butyl ether	50.0	47.6	95.3	50.0	50.2	100	5.2	23	77	125
Naphthalene	50.0	51.6	103	50.0	50.4	101	2.5	27	72	132
t-Butyl alcohol	500	346	69.3	500	456	91.3	27.4	54	11	154

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: 08010467
Lab Batch ID: R170303

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GA_080119A-2501103 Units: ug/L
Analysis Date: 01/19/2008 14:55 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
tert-Amyl alcohol	500	516	103	500	520	104	0.8	47	44	141
tert-Amyl methyl ether	50.0	52.6	105	50.0	50.2	100	4.7	21	73	123
tert-Butyl ethyl ether	50.0	49.0	98.0	50.0	51.8	104	5.6	24	75	125
tert-Butyl formate	50.0	59.8	120	50.0	58.7	117	1.9	34	38	172
Toluene	50.0	54.2	108	50.0	53.8	108	0.8	21	79	124
m,p-Xylene	100	113	113	100	108	108	4.4	20	77	132
o-Xylene	50.0	56.3	113	50.0	53.5	107	5.2	17	76	127
Xylenes,Total	150.0	169.3	112.8	150.0	161.5	107.7	4.6	20	76	130
Surr: 1,2-Dichloroethane-d4	50.0	46.7	93.3	50.0	47.6	95.1	1.9	30	74	133
Surr: 4-Bromofluorobenzene	50.0	50.8	102	50.0	50.5	101	0.7	30	74	116
Surr: Toluene-d8	50.0	46.5	93.1	50.0	48.6	97.2	4.3	30	84	112

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Iron, Ferrous
Method: HACH 8146

WorkOrder: 08010467
Lab Batch ID: R170101

Method Blank

RunID: WET_080116W-2497881 Units: mg/L
Analysis Date: 01/16/2008 10:30 Analyst: CJD

Analyte	Result	Rep Limit
Iron, Ferrous	ND	0.050

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01C	MW-1
08010467-03C	MW-4R
08010467-05C	MW-6R
08010467-07C	MW-9R
08010467-08C	DW-1
08010467-09C	DW-2

Laboratory Control Sample (LCS)

RunID: WET_080116W-2497882 Units: mg/L
Analysis Date: 01/16/2008 10:30 Analyst: CJD

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Iron, Ferrous	1.000	0.9310	93.10	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010467-08
RunID: WET_080116W-2497884 Units: mg/L
Analysis Date: 01/16/2008 10:30 Analyst: CJD

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Iron, Ferrous	ND	1	0.9670	96.70	1	1.050	105.0	8.230	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Sulfate by ASTM D516-90 **WorkOrder:** 08010467
Method: ASTM D516-90 **Lab Batch ID:** R170195

Method Blank

RunID: WET_080117M-2499380 Units: mg/L
Analysis Date: 01/17/2008 15:40 Analyst: SRA

Analyte	Result	Rep Limit
Sulfate	ND	5.0

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01C	MW-1
08010467-03C	MW-4R
08010467-05C	MW-6R
08010467-07C	MW-9R
08010467-08C	DW-1
08010467-09C	DW-2

Laboratory Control Sample (LCS)

RunID: WET_080117M-2499381 Units: mg/L
Analysis Date: 01/17/2008 15:40 Analyst: SRA

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Sulfate	10.00	9.800	98.00	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010467-01
RunID: WET_080117M-2499383 Units: mg/L
Analysis Date: 01/17/2008 15:40 Analyst: SRA

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Sulfate	7.170	10	15.70	85.30	10	15.79	86.20	0.5716	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Nitrate (as N)
Method: M4500-NO3 E

WorkOrder: 08010467
Lab Batch ID: R170416

Method Blank

RunID: WET_080122D-2502618 Units: mg/L
Analysis Date: 01/22/2008 8:00 Analyst: KRR

Analyte	Result	Rep Limit
Nitrate (As N)	ND	0.010

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010467-01C	MW-1
08010467-03C	MW-4R
08010467-05C	MW-6R
08010467-07C	MW-9R
08010467-08C	DW-1
08010467-09C	DW-2

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: WET_080122D-2502619 Units: mg/L
Analysis Date: 01/22/2008 8:00 Analyst: KRR

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Nitrate (As N)	0.1500	0.1500	100.0	0.1500	0.1600	106.7	6.5	20	90	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 08010467-09
RunID: WET_080122D-2502622 Units: mg/L
Analysis Date: 01/22/2008 8:00 Analyst: KRR

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Nitrate (As N)	ND	0.15	0.1540	102.7	0.15	0.1620	108.0	5.063	20	80	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**08010467**	Received By:	**GAS**
Date and Time Received:	**1/16/2008 9:45:00 AM**	Carrier name:	**FedEx-Std 1 Day PM**
Temperature:	**4.5°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☐	No ☐	Not Present ☑
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☑	No ☐	Not Applicable ☐

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 08010467 — 289335 — page ___ of ___

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR UNIT Q COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: FORM UNITED EXXON
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NPH, MTBE	1,2 DCA	8 OXYGENATES	EDB	NITRATE / SULFATE	Fe^+	METHANE	LEAD	
MW1	1/15/08	1020		✓	W	P/G/V		1/2/X	11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW2		1245							10	✓	✓	✓	✓				✓	10
MW4R		1120							11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW5		1045							10	✓	✓	✓	✓				✓	10
MW6R		1220							11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW8		0950							10	✓	✓	✓	✓				✓	10
MW9R		1150							11									11
DW1		1340							11									11
DW2		0855							11									11
									11									

Client/Consultant Remarks:

Laboratory remarks: (1) BW-2 WS-54-(4) recd 5
W-72-(8) WS-9-(W-4)

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.5 C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [signature]	date 1/15/08	time	2. Received by: Fed ex
3. Relinquished by: Fed ex	date 1/16/8	time 9:00	4. Received by: [signature]
5. Relinquished by: [signature]	date 1/16/8	time 9:45	6. Received by Laboratory: [signature]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx Express **US Airbill**

FedEx Tracking Number 8625 9255 8910

0219

Recipient's Copy

1 From This portion can be removed for Recipient's records.

Date

FedEx Tracking Number 862592558910

Sender's Name

Phone

Company

Address

Dept./Floor/Suite/Room

City

State

ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name SHIPPING AND RECEIVING Phone 337 237-4775

Company SOUTHERN PETROLEUM LAB

Recipient's Address 500 AMBASSADOR CAFFERY PKWY

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City SCOTT State LA ZIP 70583-5300

0364303261

8625 9255 8910

RECIPIENT: PEEL HERE

fedex.com 1.800.GoFedEx 1.800.463.3339

4a Express Package Service — *Packages up to 150 lbs.*

- ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☒ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service — *Packages over 150 lbs.*

- ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

☐ FedEx Envelope* ☐ FedEx Pak* — includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. ☐ FedEx Box ☐ FedEx Tube ☐ Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- ☐ **SATURDAY Delivery** — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- ☐ **HOLD Weekday at FedEx Location** — Not available for FedEx First Overnight.
- ☐ **HOLD Saturday at FedEx Location** — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

☐ No ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. ☐ Dry Ice — Dry Ice, 9, UN 1845 _____ x _____ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

☐ Cargo Aircraft Only

7 Payment *Bill to:* Enter FedEx Acct. No. or Credit Card No. below.

☐ Sender — Acct. No. in Section 1 will be billed. ☒ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check ☐ Other Recip. Acct. No.

0705

Total Packages Total Weight

Credit Card Auth.

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

- ☐ No Signature Required — Package may be left without obtaining a signature for delivery.
- ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

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fedex.com 1.800.GoFedEx 1.800.463.3339

FedEx Express — *US Airbill*

FedEx Tracking Number 8626 3214 0855

Recipient's Copy

RECIPIENT: PEEL HERE

fedex.com 1800.GoFedEx 1800.463.3339

1 From This portion can be removed for Recipient's records.

Date

FedEx Tracking Number 862632140855

Sender's Name

Phone

Company

Address

Dept./Floor/Suite/Room

City

State

ZIP

2 Your Internal Billing Reference

3 To

Recipient's Name

Phone

Company

Recipient's Address

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City

State

ZIP

8626 3214 0855

4a Express Package Service — *Packages up to 150 lbs.*

- FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.
- FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.
- FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

* To most locations.

4b Express Freight Service — *Packages over 150 lbs.*

- FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
- FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

* Call for Confirmation:

** To most locations.

5 Packaging

- FedEx Envelope*
- FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak.
- FedEx Box
- FedEx Tube
- Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

- **SATURDAY Delivery** — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.
- **HOLD Weekday at FedEx Location** — Not available for FedEx First Overnight.
- **HOLD Saturday at FedEx Location** — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? (This box must be checked.)

- No
- Yes — As per attached Shipper's Declaration.
- Yes — Shipper's Declaration not required.
- Dry Ice — Dry Ice, 9, UN 1845 ____ x ____ kg
- Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment *Bill to:* — Enter FedEx Acct. No. or Credit Card No. below.

- Sender — Acct. No. in Section 1 will be billed.
- Recipient
- Third Party
- Credit Card
- Cash/Check

Total Packages

Total Weight

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details.

Credit Card Auth.

8 Residential Delivery Signature Options — If you require a signature, check Direct or Indirect.

- No Signature Required — Package may be left without obtaining a signature for delivery.
- Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*
- Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

519

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fedex.com 1800.GoFedEx 1800.463.3339

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

SPL, Inc.

Certificate of Analysis Number:

08010711

Report To:		Project Name:	Former United Exxon, 14.25384.0012
SPL, Inc.		Site:	South Carolina
Kitty Davis Baudoin		Site Address:	
500 Ambassador Caffery Parkway			
Scott		PO Number:	08010467
LA		State:	South Carolina
70583-8544		State Cert. No.:	82008001
ph: (337) 237-4775	fax:	Date Reported:	1/19/2008

This Report Contains A Total Of 15 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

1/21/2008

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:

SPL, Inc.

Certificate of Analysis Number:

08010711

Report To:		Project Name:	Former United Exxon, 14.25384.0012
SPL, Inc.		Site:	South Carolina
Kitty Davis Baudoin		Site Address:	
500 Ambassador Caffery Parkway			
Scott		PO Number:	08010467
LA		State:	South Carolina
70583-8544		State Cert. No.:	82008001
ph: (337) 237-4775	fax:	Date Reported:	1/19/2008

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Bethany Agarwal

Bethany A. Agarwal
Senior Project Manager

Test results meet all requirements of NELAC, unless specified in the narrative.

1/21/2008

Date

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

SPL, Inc.

Certificate of Analysis Number:

08010711

Report To: SPL, Inc.
Kitty Davis Baudoin
500 Ambassador Caffery Parkway

Scott
LA
70583-8544
ph: (337) 237-4775 fax: (337) 237-8005

Fax To:

Project Name: Former United Exxon, 14.25384.0012
Site: South Carolina
Site Address:

PO Number: 08010467
State: South Carolina
State Cert. No.: 82008001
Date Reported: 1/19/2008

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	08010711-01	Water	1/15/2008 10:20:00 AM	1/17/2008 10:00:00 AM	289335	☐
MW-2	08010711-02	Water	1/15/2008 12:45:00 PM	1/17/2008 10:00:00 AM	289335	☐
MW-4R	08010711-03	Water	1/15/2008 11:20:00 AM	1/17/2008 10:00:00 AM	289335	☐
MW-5	08010711-04	Water	1/15/2008 10:45:00 AM	1/17/2008 10:00:00 AM	289335	☐
MW-6R	08010711-05	Water	1/15/2008 12:20:00 PM	1/17/2008 10:00:00 AM	289335	☐
MW-8	08010711-06	Water	1/15/2008 9:50:00 AM	1/17/2008 10:00:00 AM	289335	☐
MW-9R	08010711-07	Water	1/15/2008 11:50:00 AM	1/17/2008 10:00:00 AM	289335	☐
DW-1	08010711-08	Water	1/15/2008 1:40:00 PM	1/17/2008 10:00:00 AM	289335	☐
DW-2	08010711-09	Water	1/15/2008 8:55:00 AM	1/17/2008 10:00:00 AM	289335	☐

Bethany Agarwal

Bethany A. Agarwal
Senior Project Manager

1/21/2008
Date

Richard R. Reed
Laboratory Director

Ted Yen
Quality Assurance Officer

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-1 **Collected:** 01/15/2008 10:20 **SPL Sample ID:** 08010711-01

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 9:17	E_S1	4236154

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-2 **Collected:** 01/15/2008 12:45 **SPL Sample ID:** 08010711-02

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 9:26	E_S1	4236155

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-4R **Collected:** 01/15/2008 11:20 **SPL Sample ID:** 08010711-03

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 9:35	E_S1	4236156

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-5 **Collected:** 01/15/2008 10:45 **SPL Sample ID:** 08010711-04

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 9:57	E_S1	4236158

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-6R **Collected:** 01/15/2008 12:20 **SPL Sample ID:** 08010711-05

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 10:07	E_S1	4236159

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-8 **Collected:** 01/15/2008 9:50 **SPL Sample ID:** 08010711-06

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 10:39	E_S1	4236161

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: MW-9R **Collected:** 01/15/2008 11:50 **SPL Sample ID:** 08010711-07

Site: **South Carolina**

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 10:53	E_S1	4236162

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: DW-1 **Collected:** 01/15/2008 13:40 **SPL Sample ID:** 08010711-08

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	ND		0.0012	1	01/18/08 11:07	E_S1	4236163

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: DW-2 **Collected:** 01/15/2008 8:55 **SPL Sample ID:** 08010711-09

Site: South Carolina

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
HEADSPACE GAS ANALYSIS				**MCL**	**RSK147**	**Units: mg/L**	
Methane	0.094		0.0012	1	01/18/08 11:23	E_S1	4236164

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Quality Control Report

SPL, Inc.

Former United Exxon, 14.25384.0012

Analysis: Headspace Gas Analysis
Method: RSK147

WorkOrder: 08010711
Lab Batch ID: R225198

Method Blank

RunID: VARC_080118A-4236165 Units: mg/L
Analysis Date: 01/18/2008 11:37 Analyst: E_S1

Analyte	Result	Rep Limit
Methane	ND	0.0012

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
08010711-01A	MW-1
08010711-02A	MW-2
08010711-03A	MW-4R
08010711-04A	MW-5
08010711-05A	MW-6R
08010711-06A	MW-8
08010711-07A	MW-9R
08010711-08A	DW-1
08010711-09A	DW-2

Sample Duplicate

Original Sample: 08010711-03
RunID: VARC_080118A-4236156 Units: mg/L
Analysis Date: 01/18/2008 9:35 Analyst: E_S1

Analyte	Sample Result	DUP Result	RPD	RPD Limit
Methane	ND	ND	0	50

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	**08010711**	Received By:	**ERH**
Date and Time Received:	**1/17/2008 10:00:00 AM**	Carrier name:	**Fedex-Standard Overnight**
Temperature:	**4.0°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.
500 Ambassador Caffery Parkway

Scott, LA 70583-8544
(337) 237-4775

CHAIN-OF-CUSTODY RECORD

Company	ATC ASSOCIATES, INC.
Project Manager	Granados, Alberto E.
Project Name	14.25384.0012
QCLevel	LVL2
Requested State	South Carolina

08010711

Subcontractor:

SPL - Houston
8880 Interchange Dr

Houston, Texas 77054

TEL: (713) 660-0901
FAX: (713) 660-8975

Acct #: INTERCOMPANY

16-Jan-08

Sample ID	Client Sample	Matrix	Collection Date	Due Date	Requested Tests						
					RSK147						
08010467-01E	MW-1	Water	01/15/08 10:20	01/22/08	1						
08010467-02D	MW-2	Water	01/15/08 12:45	01/22/08	1						
08010467-03E	MW-4R	Water	01/15/08 11:20	01/22/08	1						
08010467-04D	MW-5	Water	01/15/08 10:45	01/22/08	1						
08010467-05E	MW-6R	Water	01/15/08 12:20	01/22/08	1						
08010467-06D	MW-8	Water	01/15/08 9:50	01/22/08	1						
08010467-07E	MW-9R	Water	01/15/08 11:50	01/22/08	1						
08010467-08E	DW-1	Water	01/15/08 13:40	01/22/08	1						
08010467-09E	DW-2	Water	01/15/08 8:55	01/22/08	1						

RUSH

Comments: METHANE

4.0°C

PX

		Date/Time			Date/Time
Relinquished by:	Jmallus	1/16/08 1700	**Received by:**	Erikaffds	1-17-08 10:00
Relinquished by:			**Received by:**		

SPL, Inc.
500 Ambassador Caffery Parkway

Scott, LA 70583-8544
(337) 237-4775

CHAIN-OF-CUSTODY RECORD

SPL INTER-COMPANY PRICING

Subcontractor:

SPL - Houston
8880 Interchange Dr

Houston, Texas 77054

TEL: (713) 660-0901
FAX: (713) 660-8975

Acct #: INTERCOMPANY

16-Jan-08

Sample ID	Test Code	Price	Requested Tests						
			RSK147						
08010467-01E	RSKSOP_147	$75.00	1						
08010467-02D	RSKSOP_147	$75.00	1						
08010467-03E	RSKSOP_147	$75.00	1						
08010467-04D	RSKSOP_147	$75.00	1						
08010467-05E	RSKSOP_147	$75.00	1						
08010467-06D	RSKSOP_147	$75.00	1						
08010467-07E	RSKSOP_147	$75.00	1						
08010467-08E	RSKSOP_147	$75.00	1						
08010467-09E	RSKSOP_147	$75.00	1						

Comments: METHANE

	Date/Time		Date/Time
Relinquished by:		**Received by:**	
Relinquished by:		**Received by:**	

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 289335

08010467

page ____ of ____

Client Name: ATC ASSOCIATES
Address: 400 NORTHEAST DR WEST COLUMBIA SC
Phone/Fax: (803) 735-0003
Client Contact: BOB BOLTON Email:
Project Name/No.: 14.25384.0012
Site Name: FORM UNITED EXXON
Site Location: WINNSBORO, SC
Invoice To: Ph:

matrix: W=water S=soil O=oil SL=sludge X=other
bottle: P=plastic A=amber glass G=glass V=vial X=other
size: 1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other
pres.: 1=HCl 2=HNO3 3=H2SO4 X=other

Requested Analysis

SAMPLE ID	DATE	TIME	comp	grab	matrix	bottle	size	pres.	Number of Containers	BTEX, NAPH, MTBE	1,2 DCA	8 OXYGENATES	EDB	NITRATE / SULFATE	Fe^{+}	METHANE	LEAD	
MW1	1/15/08	1020		✓	W	P/V		1/2/X	11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW2		1245							10	✓	✓	✓	✓				✓	10
MW4R		1120							11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW5		1045							10	✓	✓	✓	✓				✓	10
MW6R		1220							11	✓	✓	✓	✓	✓	✓	✓	✓	11
MW8		0950							10	✓	✓	✓	✓				✓	10
MW9R		1150							11									11
DW1		1340							11									11
DW2		0855							11									11
									11									

Client/Consultant Remarks:

Laboratory remarks: (1) BWK2 WS-54-(2) 1 ocl5 W-72-(8) WS-9-(W-4)

Intact? ☐ Y ☐ N
Ice? ☐ Y ☐ N
Temp: 4.5 C

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler:	date 1/15/08	time	2. Received by: Fed ex
3. Relinquished by: Fed ex	date 1/16/8	time 9:00	4. Received by:
5. Relinquished by:	date 1/16/8	time 9:45	6. Received by Laboratory:

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

APPENDIX D

Disposal Manifest

MATERIAL MANIFEST

JBR Environmental Services
P. O. Box 4098
Spartanburg, SC 29305

Manifest Document No. D-01240195

Page of

Job No. D-01240195

Emergency Phone Number: (864) 583-2717

GENERATOR INFORMATION

Name: FMR UNITED EXCON JOHNNY

US EPA ID No.

Street Address: WINNSBORO, SC

Mailing Address: FOR PAYEE ATC ASSOCIATES 400 NORTHEAST DR UNIT Q COLUMBIA, SC 29203

Phone No. I'LL TRANSFER PAYEE DRUM ONTO (803) 735-0003

Contact: FOR PAYEE FOR PAYEE COMING ON SUNDAY BOB BOYTON

DESCRIPTION OF MATERIALS

	HM	USDOT Proper Shipping Name (Complete All Items for Hazardous Materials)	Hazard Class	UN/NA ID No.	Packing Group	Containers Qty	Containers Type	Total Quantity	Unit Wt./Vol.
a.		NON-HAZ. LIQ	—	—	FMR	1/20H		1	DM
b.									
c.								.23	TONS

ADDITIONAL INFORMATION		ERG No.	JBR Profile Code	Facility Use
a.	WATER		AT-0108888	APPROVED For Disposal
b.				
c.				

GENERATORS CERTIFICATION

This is to certify that the above -described materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. I further certify that none of the materials described above are a hazardous waste as defined by EPA 40 CFR Part 261 or any applicable state law, and unless specifically identified above, the materials contain less than 1,000 ppm total halogens and do not contain quantifiable levels (2 ppm) of PCBs as defined by EPA 40 CFR Parts 279 and 761.

Printed/Typed Name: Johnny Horn

Signature: Johnny Horn

Mo./Day/Yr.: 1/24/08

TRANSPORTER INFORMATION

Transporter: ATC ASSOCIATES

Address: 400 NORTHEAST DR UNIT Q COLUMBIA, SC 29203

I hereby acknowledge receipt of the above-described materials for transport from the generator site listed above.

Signature: Johnny Horn

Shipment Date: 1/24/08

Transporter or EPA ID No.

Unit No.

Phone: (803) 735-0003

I hereby acknowledge that the above-described materials were received from the generator site and were transported to the facility listed below.

Signature: Johnny Horn

Delivery Date: 1/24/08

FACILITY INFORMATION

Facility: JBR Environmental Services

Address: 210 Alice Street, Spartanburg, SC 29303

I hereby acknowledge receipt of the materials covered by this manifest except for any discrepancy noted below.

Signature: K Walther

Receipt Date: 1/24/08

Facility or EPA ID No.: SCR000004358

Phone: 864-583-2717

Contact: Rex Russell

Discrepancies	Routing Codes	Handling Methods.
a.	42M-3219	
b.		
c.		

Original - Facility Retain | COPY 2 - Return to Generator | COPY 3 - Transporter Retain | COPY 4 - Generator Retain

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

BUREAU OF
UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

Keenan Energy Company
Mr. Billy Keenan
P.O. Box 3218
Columbia, SC 29230

FEB 09 1998

Re: United Exxon
Site ID: #11760, Cost Proposal #04299; Release #3
Release/Assessment Report received August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Bureau of Underground Storage Tank (UST) Management of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Assessment. The referenced report indicates concentration of chemicals of concern in the soil. To determine what risk the release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of the scope of work as outlined in the enclosed Initial Groundwater Assessment (IGWA) document is necessary. Since the above scope of work is detailed in the IGWA document, a separate plan is not required.

According to our records, the release was reported to the SCDHEC subsequent to the early detection incentive program. Therefore, in accordance with Section 44-2-40(B) of the Act, you are responsible for the first $25,000 for site rehabilitation. To insure that any expenditures you make apply to this $25,000 deductible, should the release become qualified to receive SUPERB funds, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the $25,000 deductible can be compensated from the SUPERB Account.

To proceed with the qualification process for the State Underground Petroleum Environmental Response Bank (SUPERB) Act, the following information is required:

- Written confirmation of the existence or nonexistence of an environmental insurance policy for this site. **This information must be signed by the responsible party and a notary public.** For your convenience, an insurance statement form has been enclosed. If an environmental insurance policy existed at the time of the release, a copy of the policy with all endorsements must be submitted with the insurance statement.

Please complete and return the enclosed insurance information form within 14 days from the date of this letter. Please note that the maximum approvable amount for the IGWA is **$1,320.00**. Upon receipt of the signed IGWA Invoice, IGWA Report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, up to **$1,320.00** may be applied toward your deductible.

UST PROGRAM
DOCKETING # 40 Tech

SCDHEC/UST/SLFS/CJW/980202

Please complete and return the enclosed Owner/Operator Information Sheet within 14 days from the date of this letter (note that all rehabilitation activities associated with a UST release must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98). Cost proposal #04299 has been established to track the allowable costs associated with this IGWA. Please include the cost proposal number when submitting your invoice.

Implementation of the IGWA should proceed upon receipt of this correspondence. The required monitoring well approval is enclosed. **The report should be submitted within 90 days from the date of this letter.** The Bureau grants preapproval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. All contaminated investigated derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

On all correspondence regarding this site and scope of work, please reference Site ID #11760 and cost proposal #04299. If you have any questions concerning this correspondence, please contact Chuck Williams at (803) 734-5626 or 1-800-826-5435.

Sincerely,
State Lead and Field Services Section
Assessment and Corrective Action Division
Bureau of Underground Storage Tank Management

Charles J. Williams, III, Hydrogeologist

Christopher S. Doll, P.G., Manager

enc: Copy of Monitoring Well Approval
Information Sheet
Initial Groundwater Assessment document
Insurance Information Form

cc: Technical File (Copy of Monitoring Well Approval)
Financial File
Read File

SCDHEC/UST/SLFS/CJW/980202

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

Monitoring Well Installation Approval Form

Date of Issue: February 2, 1998 Approval No.: 9115

Approval is hereby granted to: Keenan Energy Company
Site ID: #11760
County: Fairfield

This approval is for the construction of one shallow monitoring well in accordance with the South Carolina Well Standards and Regulations. The well are to be constructed within the aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well be submitted to my attention within thirty (30) days of completion (of last well(s) installed).

2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.

3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.

4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Chuck Williams, (803-734-5455).

5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) associated measurements (i.e., in-situ field measurements) to my attention within thirty (30) days of receipt from laboratory.

6. Monitoring wells will be installed by a well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71.

Approved by:

Charles J. Williams, III, Hydrogeologist
State Lead and Field Services Section
Assessment and Corrective Action Division
Bureau of Underground Storage Tank Management

cc: Central Midlands District EQC

SCDHEC/UST/SLFS/CJW/980202

SITE ID : 11760

SITE NAME : UNITED EXXON

COUNTY : FAIR FORD

RP : Billy Kornman

RP ADDRESS : PO Box 3218

COLA SC 29230

QUALIFIED ? YES NO

IF No, Lacking : Insurance 2/31/97
Abatement
Fees

SUBSTANCIAL COMPLIANCE ? YES NO

TANKS REMOVED ? YES NO

If Yes. Date of Removal : 6/26/97

If No. Date of TST:

Date of Release : 8/1/97 Release # : 3

Report/Date Received : 8/1/97

RANKING : 5A

WORK SCOPE : IGWA

OP 04299

9115

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

NOV 29 2006

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #28411 and 28412; MWA #UMW-20426
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received November 17, 2006
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced plan submitted by ATC Associates, Inc.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Based on the field screening results, up to six monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for five shallow and one deep well. A copy of the approval form is enclosed for your records. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release and the creek should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. Groundwater samples from monitoring wells MW-1, MW-2, MW-11, MW-13, MW-15, MW-16, DW-1 and the five new wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated August 24, 2005. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreement numbers 28411 and 28412 have been approved in the amount shown on the enclosed cost agreement forms for the aforementioned scope of work. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air temperature, general weather conditions during the AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

UST PROGRAM
DOCKETING # 41 tech

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, fax me at (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical (with MWA)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	ATC Associates, Incorporated
On behalf of:	Keenan Energy Incorporated
UST Permit #:	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to five (5) shallow and one (1) deep groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Arthur Shrader (tel: (803) 896-6669 or e-mail: shradeaa@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **November 20, 2006** **Approval #:** **UMW-20426**

Arthur Shrader, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management

Approved Cost Agreement 28411

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A	PLAN PREPARATION	0.5000	100.00	50.00
04 MOB/DEMOB						
		A	EQUIPMENT	2.5000	550.00	1,375.00
		B	PERSONNEL	4.0000	275.00	1,100.00
		C	ADVERSE TERRAIN VEHICLE	1.0000	550.00	550.00
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	45.0000	38.00	1,710.00
		C	TELESCOPING	75.0000	58.00	4,350.00
		D	ROCK DRILLING	45.0000	58.00	2,610.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	4.0000	55.00	220.00
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	12.5000	35.00	437.50
		F	SAMPLE BELOW PRODUCT	0.5000	50.00	25.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	18.0000	100.00	1,800.00
		E	LEAD	17.5000	20.00	350.00
		F	EDB	18.0000	55.00	990.00
		K	NITRATE	6.0000	20.00	120.00
		L	SULFATE	6.0000	20.00	120.00
		M	FERROUS IRON	6.0000	20.00	120.00
16 SUBSEQUENT SURVEY						
			SUBSEQUENT SURVEY	0.5000	260.00	130.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	4.0000	90.00	360.00
		A2	WASTEWATER - PUMPING TEST	500.0000	0.60	300.00
		C	SOIL (TREATMENT/DISPOSAL)	14.0000	50.00	700.00
18 MISCELLANEOUS						
			CONVERT TO FLUSH MOUNT WELLS	2.5000	250.00	625.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	18,055.00	2,708.25
				Total Amount		20,763.25

Approved Cost Agreement 28412

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A	PLAN PREPARATION	0.5000	100.00	50.00
04 MOB/DEMOB						
		A	EQUIPMENT	2.5000	550.00	1,375.00
		B	PERSONNEL	4.0000	275.00	1,100.00
		C	ADVERSE TERRAIN VEHICLE	1.0000	550.00	550.00
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	45.0000	38.00	1,710.00
		C	TELESCOPING	75.0000	58.00	4,350.00
		D	ROCK DRILLING	45.0000	58.00	2,610.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	4.0000	55.00	220.00
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	12.5000	35.00	437.50
		F	SAMPLE BELOW PRODUCT	0.5000	50.00	25.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	18.0000	100.00	1,800.00
		E	LEAD	17.5000	20.00	350.00
		F	EDB	18.0000	55.00	990.00
		K	NITRATE	6.0000	20.00	120.00
		L	SULFATE	6.0000	20.00	120.00
		M	FERROUS IRON	6.0000	20.00	120.00
16 SUBSEQUENT SURVEY						
			SUBSEQUENT SURVEY	0.5000	260.00	130.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	4.0000	90.00	360.00
		A2	WASTEWATER - PUMPING TEST	500.0000	0.60	300.00
		C	SOIL (TREATMENT/DISPOSAL)	14.0000	50.00	700.00
18 MISCELLANEOUS						
			CONVERT TO FLUSH MOUNT WELLS	2.5000	250.00	625.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	18,055.00	2,708.25
					Total Amount	20,763.25

11760

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

October 17, 2006

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Release 1 Reported August 1, 1997
Release 2 Reported August 1, 1997
Groundwater Assessment Report received October 11, 2006
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Assessment Report and agrees with your site rehabilitation contractor's recommendation that free product recovery and additional assessment activities are required.

The assessment report detailed the extent of groundwater chemicals of concern (CoC) on the property, but additional monitoring wells are required to delineate the closer to the creek and conduct additional Aggressive Fluid and Vapor Recovery events. Costs for this additional assessment activity will be split equally between release 1 and release 2. Our records indicate that you have selected ATC Associates Incorporated as your contractor to perform assessment activities at this site. Please have your contractor complete and submit an Assessment Component Cost Agreement form and **Tier II Assessment Plan** for installation of additional monitoring well, and sample all existing as well as the new monitoring well **on or before November 17, 2006.** The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov/eqc/lwm/forms/assess%7E1.pdf. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form.

On all correspondence regarding this site, please reference UST Permit #11760. Please be sure to include the requested information so that the appropriate approvals can be issued. **Note: approval from the Program must be issued before work begins.** Please call me at (803) 896-6669, fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

UST PROGRAM
DOCKETING # 42-Tech

cc: ATC Associates, Inc. 400 Northwest Drive, Unit Q, Columbia, SC 29203
Technical File

RECEIVED
OCT 17 2006
UNDERGROUND STORAGE
TANK PROGRAM

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

October 17, 2006

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
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The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Assessment Report and agrees with your site rehabilitation contractor's recommendation that free product recovery and additional assessment activities are required.

The assessment report detailed the extent of groundwater chemicals of concern (CoC) on the property, but additional monitoring wells are required to delineate the closer to the creek and conduct additional Aggressive Fluid and Vapor Recovery events. Costs for this additional assessment activity will be split equally between release 1 and release 2. Our records indicate that you have selected ATC Associates Incorporated as your contractor to perform assessment activities at this site. Please have your contractor complete and submit an Assessment Component Cost Agreement form and **Tier II Assessment Plan** for installation of additional monitoring well, and sample all existing as well as the new monitoring well **on or before November 17, 2006**. The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov/eqc/lwm/forms/assess%7E1.pdf. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form.

On all correspondence regarding this site, please reference UST Permit #11760. Please be sure to include the requested information so that the appropriate approvals can be issued. **Note: approval from the Program must be issued before work begins.** Please call me at (803) 896-6669, fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

cc: ATC Associates, Inc. 400 Northwest Drive, Unit Q, Columbia, SC 29203
Technical File

Confirmation Report – Memory Send

Date & Time: 10-17-2006 10:04am
Tel line : +803896624 5
Machine ID : UST PROGRAM

Job number	:	187
Date & Time	:	10-17 10:01am
To	:	97350443
Number of pages	:	001
Start time	:	10-17 10:03am
End time	:	10-17 10:04am
Pages sent	:	001
Status	:	OK
Job number	:	187 *** SEND SUCCESSFUL ***

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

February 16, 2006

MR & MRS BLITZER VANCE
400 NORTH CONGRESS STREET
WINNSBORO SC 2980-1141

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Groundwater Assessment Report received August 15, 2005
Access to Your Property
Fairfield County

Dear Mr. and Mrs. Vance:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) directed Keenan Oil Company Incorporated, as the tank owner, to conduct rehabilitation activities at the referenced facility. As you are aware, ATC Associates, Keenan Oil Company's site rehabilitation contractor, installed temporary screening points, seven monitoring wells, and conducted two free product recovery events on your property during the last year. A copy of the report was provided to you in April 2005. The free product recovery events have reduced the thickness of free phase product from over a foot to less than half a foot; however, the edges of the plume remains undefined.

Based on this success, the UST Program requests property access to conduct two additional 8-hour free product recovery events, install five additional wells, and sample the monitoring well network. As with all previous activities conducted on your property, all activities will be conducted at reasonable times and with minimum inconvenience to you. There will be no cost to you in allowing Keenan Oil Company Incorporated to access you property for environmental activities. **Please sign the enclosed right of entry form and return it to my attention on or before Friday, March 17, 2006.**

Thank you for your consideration in this matter. If you have any questions or would like to schedule a meeting to further discuss this matter, please contact me by phone at (803) 896-6669 or (800) 826-5435 (within SC), by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

UST PROGRAM
DOCKETING # 43 Tech

Enc: ATC Map Showing the Location of Existing and Proposed Monitoring Wells
Right of Entry Form (ROE)

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204 (with ROE)
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203 (with ROE)
Technical File (with ROE)

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, _____ certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property at 400 North Congress Street, Winnsboro, South Carolina for the following purposes:

1) **Between the dates of _____ to _____ on Tuesdays, Wednesdays, or Thursdays only between the hours of 8:00 am to 5:00 pm to conduct:**
   a. **An eight hour free product recovery event during on two separate dates, and**
   b. **Installation of five (5) monitoring wells in areas where screening was previously conducted.**

2) **Access the property approximately 30 days after the completion of the second aggressive fluid event between the hours of 9:30 am to 3:30 pm for measurement of groundwater conditions and/or collection of samples.**

I understand a representative of ATC Associates will notify me a minimum of 48 hours in advance of scheduled events and I will be provided a copy of the report of findings.

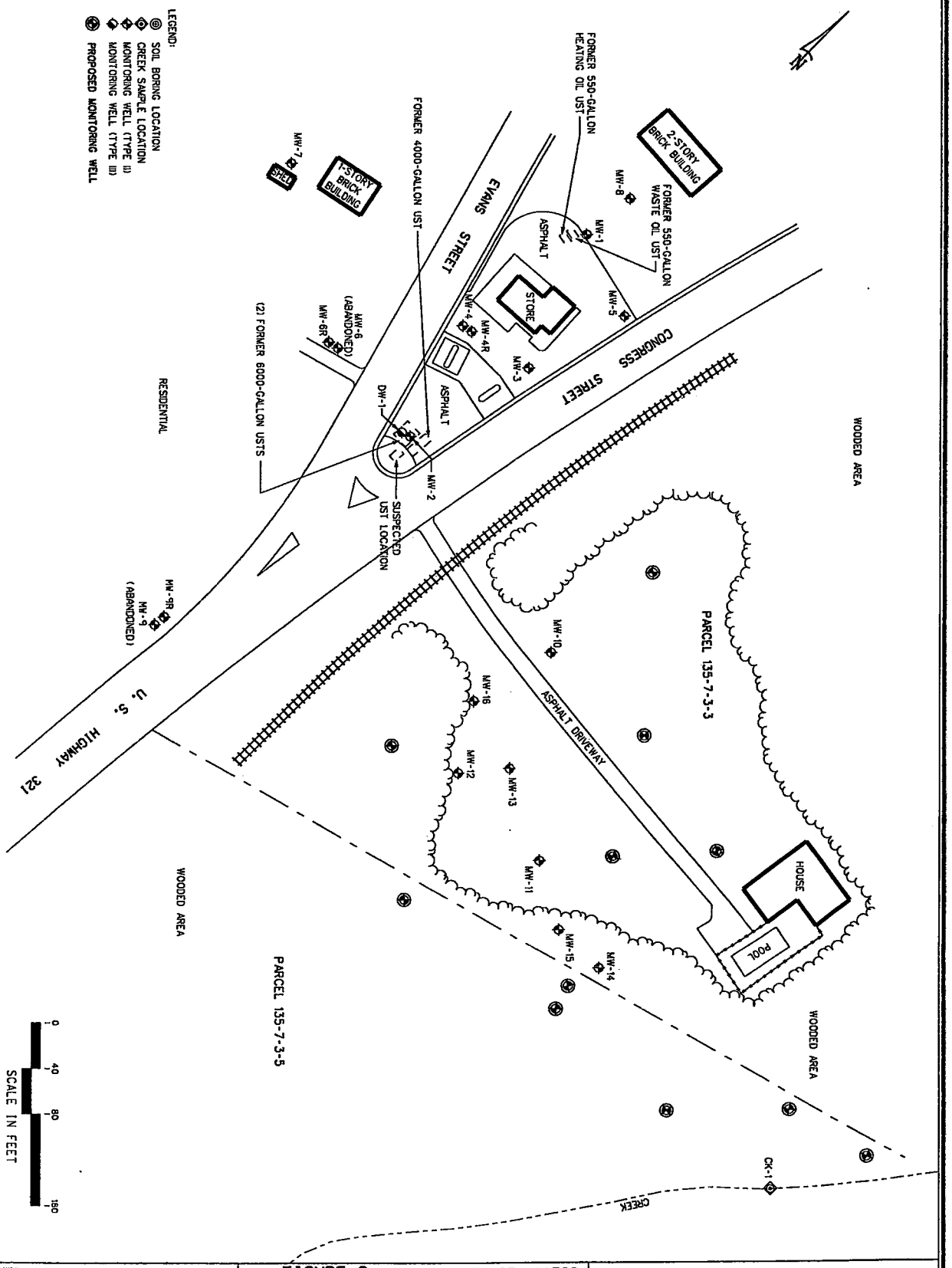
NAME (Please print) :_____

SIGNATURE : _____

WITNESS : _____

DATE : _____**Mo** _____**Day** _____**Year**

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760



NOTES:

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	08-03-2005	14.25384.0012

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

December 12, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #26139 and 26140; MWA #UMW-19699
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Enhanced Fluid Recovery and Assessment Report received August 9, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced report and needs the installation of additional groundwater monitoring wells to define the plume before active corrective action can be initiated.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Up to eleven (11) monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for these new wells. A copy of the map showing the approximate location of these wells is enclosed for your records. Please contact the Program prior to well installation for concurrence regarding the final well locations for these new wells. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release and a sample from the stream should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. The groundwater samples from the eleven (11) new monitoring wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated June 1, 2004. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreements number 26139 and 26140 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air temperature, general weather conditions during the AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

UST PROGRAM
DOCKETING # 44 Tech

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- Revised geological cross sections based on the newly installed monitoring wells.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and up to 3,000 gallons of groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis,

are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 26139 and 26140. If there are any questions concerning this project, please contact me at (803) 896-6669, fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Two Approved Cost Agreements (ACA)
Monitoring Well Approval (MWA)
Map

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical (with enc.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Approval is hereby granted to:	ATC Associates, Incorporated
(On behalf of):	Keenan Energy Company, Incorporated
Facility:	United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit Number:	11760
County:	Fairfield

This approval is for the installation of eleven (11) monitoring wells. The monitoring wells are to be installed in the approved locations. Monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.

3. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after well completion or abandonment unless another schedule has been approved by the Department. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

4. All analytical data and water levels obtained from each monitoring well shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

5. If any of the information provided to the Department changes, notification to Arthur Shrader (tel: (803) 896-6669 or e-mail: shradeaa@dhec.sc.gov) shall be provided a minimum of twenty-four (24) hours prior to well construction as required by R.61-71.H.1.a.

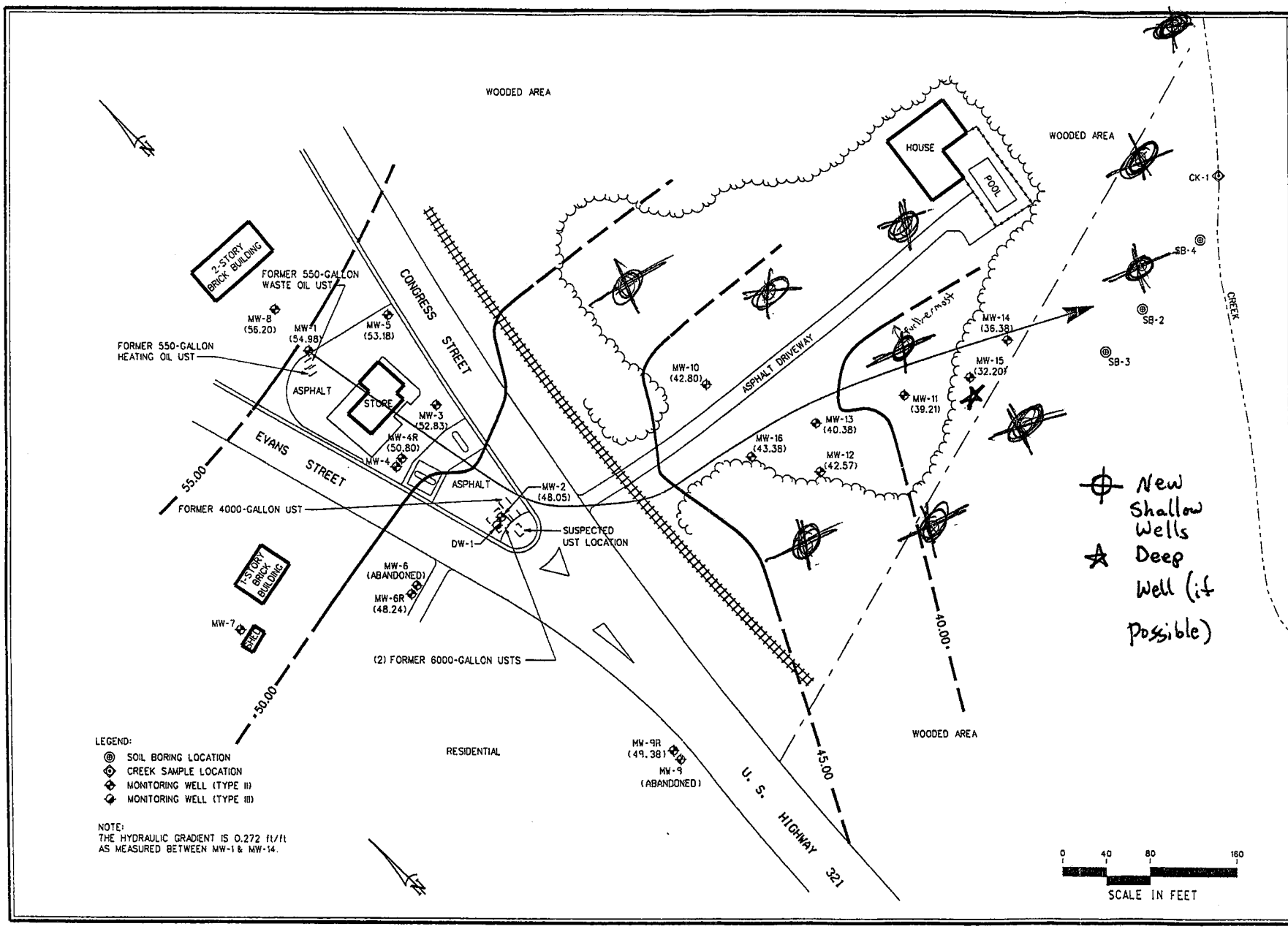
6. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c. All other wells shall be properly developed per R.61-71.H.2.d.

7. Departmental approval is required prior to abandonment of all monitoring wells as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002. A copy of this approval should be on the site during well installation.

Date of Issuance: **December 8, 2005** **Approval #:** **UMW-19699**

Arthur Shrader, Hydrogeologist
Assessment Section
Division of Assessment and Corrective Action
Bureau of Land and Waste Management



ATC ASSOCIATES INC
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	08-03-2005	14.25384.0012

NOTES:

Approved Cost Agreement 26139

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
03 COMPREHENSIVE SURVEY						
			COMPREHENSIVE SURVEY	0.5000	1,000.00	500.00
04 MOB/DEMOB						
		A	EQUIPMENT	1.0000	550.00	550.00
		B	PERSONNEL	3.5000	275.00	962.50
		C	ADVERSE TERRAIN VEHICLE	1.0000	550.00	550.00
09 WELL INSTALLATION						
		C	TELESCOPING	40.0000	58.00	2,320.00
		D	ROCK DRILLING	400.0000	58.00	23,200.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	5.5000	55.00	302.50
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	8.0000	35.00	280.00
		E	GAUGE WELL ONLY	2.0000	20.00	40.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	14.0000	100.00	1,400.00
		E	LEAD	14.0000	20.00	280.00
		F	EDB	14.0000	55.00	770.00
		K	NITRATE	5.5000	20.00	110.00
		L	SULFATE	5.5000	20.00	110.00
		M	FERROUS IRON	5.5000	20.00	110.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
		A2	WASTEWATER - PUMPING TEST	1,000.0000	0.60	600.00
		C	SOIL (TREATMENT/DISPOSAL)	11.0000	50.00	550.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	35,827.50	5,374.13
23 EFR						
		A	8 HOUR EVENT	1.0000	3,000.00	3,000.00
				Total Amount		41,201.63

Approved Cost Agreement 26140

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
03 COMPREHENSIVE SURVEY						
			COMPREHENSIVE SURVEY	0.5000	1,000.00	500.00
04 MOB/DEMOB						
		A	EQUIPMENT	1.0000	550.00	550.00
		B	PERSONNEL	3.5000	275.00	962.50
		C	ADVERSE TERRAIN VEHICLE	1.0000	550.00	550.00
09 WELL INSTALLATION						
		C	TELESCOPING	40.0000	58.00	2,320.00
		D	ROCK DRILLING	400.0000	58.00	23,200.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	5.5000	55.00	302.50
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	8.0000	35.00	280.00
		E	GAUGE WELL ONLY	2.0000	20.00	40.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	14.0000	100.00	1,400.00
		E	LEAD	14.0000	20.00	280.00
		F	EDB	14.0000	55.00	770.00
		K	NITRATE	5.5000	20.00	110.00
		L	SULFATE	5.5000	20.00	110.00
		M	FERROUS IRON	5.5000	20.00	110.00
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
		A2	WASTEWATER - PUMPING TEST	1,000.0000	0.60	600.00
		C	SOIL (TREATMENT/DISPOSAL)	11.0000	50.00	550.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	35,827.50	5,374.13
23 EFR						
		A	8 HOUR EVENT	1.0000	3,000.00	3,000.00
				Total Amount		41,201.63

ACTIVE CORRECTIVE ACTION OPTIONS FORM

UST PERMIT #11760

I, Keenan Energy Company, certify that I am the legal owner of the underground storage tanks at the facility identified below or serve as the authorized representative for the owner. I wish to secure price quotations for corrective action activities as required by SCDHEC, and to select my own corrective action contractor after price quotation results are received. I understand that the SCDHEC will also advertise for price quotations in the South Carolina Business Opportunities. I understand compensation to the contractor will be from the SUPERB Account but I will have the obligation to pay the contractor for any costs not approved by the SCDHEC.

Name of Facility United Exxon Phone # 803-256-0667

Street Address of Facility 401 N Congress St

City, State ZIP Winnsboro, SC 29180-1199

UST Owner Keenan Energy Company

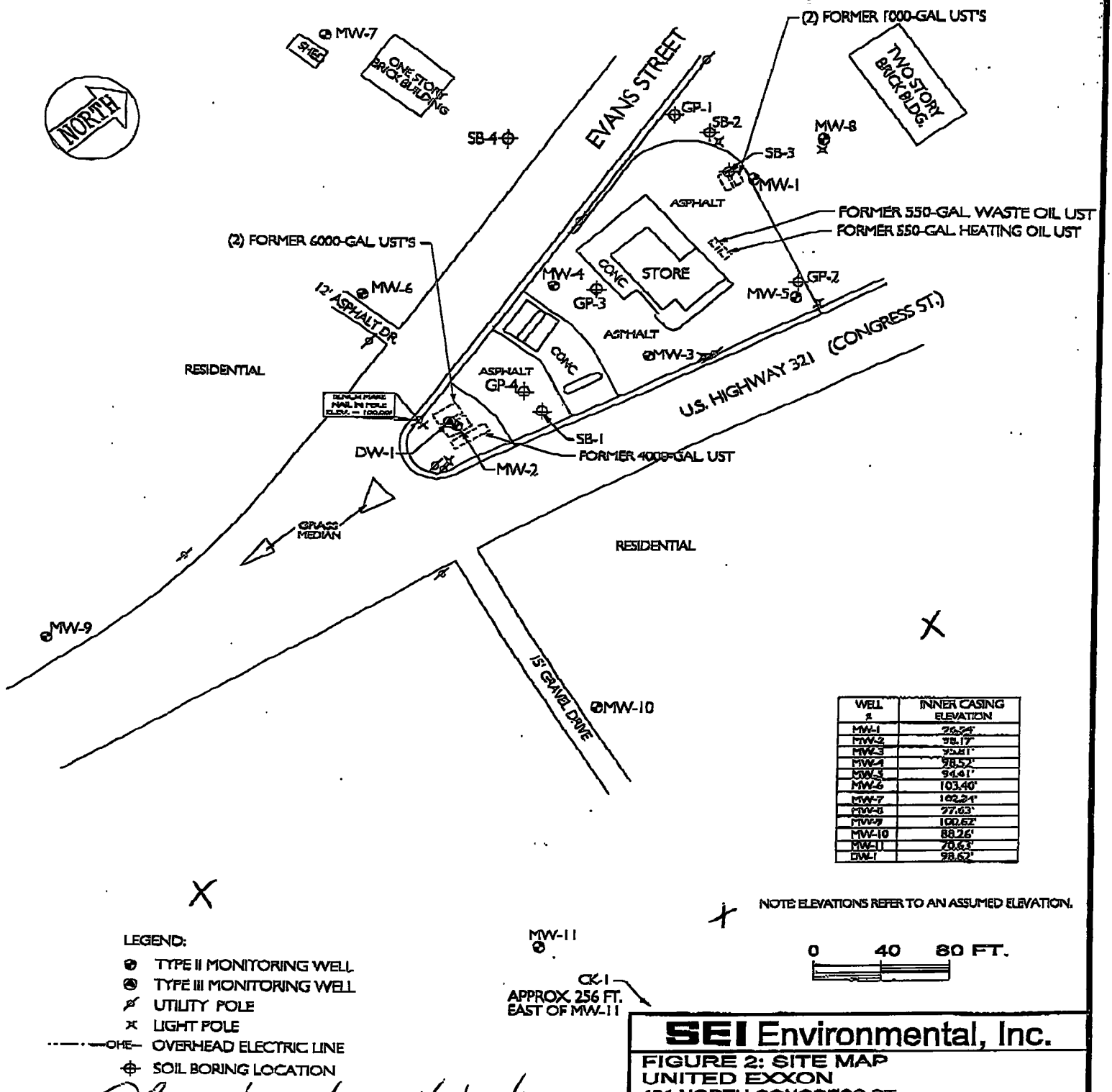
Signature [signature] Date 10/14/05

Legal owner of (2) 6,000 UST only -
(1) 4,000 UST
(2) 1,000 UST

Please note I have attached site map dated 3/19/99 that shows tanks registered on UST Permit 11760. We are the owner of these tanks only - Please note on above listed tanks have been removed along with (2) 550 gallons tanks for waste oil and Heating oil - That are also shown on site map.

[signature]

UST PROGRAM DOCKETING # 45 Tech



WELL #	INNER CASING ELEVATION
MW-1	96.74'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.24'
MW-8	97.03'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #398-008 | DATE: 3/19/99
DWG #UE00082b | DRAWN BY: JCJ

(X) Proposed monitor well location
X Proposed soil boring
(X) Adjacent to creek

location for collection of a saturated soil sample and groundwater collection

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

SEP 15 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
PO BOX 3218
COLUMBIA SC 29230-3218

UST PROGRAM DOCKETING # 46 Tecn

Re: United Exxon, 401 N. Congresss St., Winnsboro, SC
UST Permit #11760
Release #2 reported August 1, 1997
Release #3 reported August 1, 1997
AFVR and Groundwater Assessment Report received August 9, 2005
Fairfield County

SCANNED

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report submitted by ATC & Associates, Inc. on your behalf. The report indicates that active corrective action is necessary at the site to ensure there is no potential impact to human health or the environment.

Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action. The selected technology must eliminate the presence of free-phase product in all monitoring wells and reduce the petroleum chemicals of concern (CoCs) concentrations to site-specific target levels (SSTLs) determined by the Program.

The SUPERB Site Rehabilitation and Fund Access Regulations R.61-98 require the UST owner/operator to develop and implement a reasonable, cost-effective corrective action to be performed by a SCDHEC-certified site rehabilitation contractor. As the owner/operator for the releases reported on August 1, 1997, you may choose one of two options as to how to proceed with this requirement: owner/operator lead or state lead.

- If you select the owner/operator lead option, you will be required to select a contractor to perform the corrective action. In order to assist you in determining the clean-up technology, time frame, clean-up levels, and associated costs, the Program will prepare a technical specification package and provide you copies to send to contractors of your choice. In addition, the Program will announce the request for solicitations in the South Carolina Business Opportunities, a bi-weekly state government publication. This announcement will clearly indicate that you will select the contractor to implement the corrective action. The Program strongly suggests that a written contract between you and the selected contractor be developed following the completion of the solicitation process. The parties to this contract would be you and the contractor you choose. The Program's function would be to verify progress of corrective action activities. To utilize the owner/operator lead option, please sign and return the enclosed Active Corrective Action Options Form **within 15 days of the date of this letter.**

- If you choose the state lead option, the Program will procure a certified site rehabilitation contractor to perform corrective action on your behalf. To utilize the state lead option, please sign and return the Permission and Right-of-Entry form **within 15 days of the date of this letter**.

On all correspondence or inquiries regarding this project, please reference UST Permit #11760. If you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6675 or (800) 826-5435 (in South Carolina only.)

Sincerely,

Wes Clymer, Hydrogeologist
Northeastern SC Corrective Action Section
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Active Corrective Action Options Form (Owner/Operator Lead)
Permission/Right-of-Entry Form (State Lead)

cc: Technical file (no enc)

DHEC/UST/WRC/9.15.05

WC

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

AUG 12 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
PO BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 N. Congresss St., Winnsboro, SC
UST Permit #11760
Release #2 reported August 1, 1997
Release #3 reported August 1, 1997
AFVR and Groundwater Assessment Report received August 9, 2005
Fairfield County

Dear Mr. Keenan:

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Funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account will soon be available for active corrective action. The selected technology must eliminate the presence of free-phase product in all monitoring wells and reduce the petroleum chemicals of concern (CoCs) concentrations to site-specific target levels (SSTLs) determined by the Program.

The SUPERB Site Rehabilitation and Fund Access Regulations R.61-98 require the UST owner/operator to develop and implement a reasonable, cost-effective corrective action to be performed by a SCDHEC-certified site rehabilitation contractor. As the owner/operator for the releases reported on August 1, 1997, you may choose one of two options as to how to proceed with this requirement: owner/operator lead or state lead.

- If you select the owner/operator lead option, you will be required to select a contractor to perform the corrective action. In order to assist you in determining the clean-up technology, time frame, clean-up levels, and associated costs, the Program will prepare a technical specification package and provide you copies to send to contractors of your choice. In addition, the Program will announce the request for solicitations in the South Carolina Business Opportunities, a bi-weekly state government publication. This announcement will clearly indicate that you will select the contractor to implement the corrective action. The Program strongly suggests that a written contract between you and the selected contractor be developed following the completion of the solicitation process. The parties to this contract would be you and the contractor you choose. The Program's function would be to verify progress of corrective action activities. To utilize the owner/operator lead option, please sign and return the enclosed Active Corrective Action Options Form within 15 days of the date of this letter.

UST PROGRAM
DOCKETING # 4 Treat

- If you choose the state lead option, the Program will procure a certified site rehabilitation contractor to perform corrective action on your behalf. To utilize the state lead option, please sign and return the Permission and Right-of-Entry form within 15 days of the date of this letter.

On all correspondence or inquiries regarding this project, please reference UST Permit #11760. If you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6675 or (800) 826-5435 (in South Carolina only.)

Sincerely,

Wes Clymer, Hydrogeologist
Northeastern SC Corrective Action Section
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Active Corrective Action Options Form (Owner/Operator Lead)
Permission/Right-of-Entry Form (State Lead)

cc: ATC Associates, Inc., 400 Northeast Dr., Unit Q, Columbia, SC 29203 (no enc)
Mr. & Mrs. Vance, 400 N. Congress St., Winnsboro, SC 29180 (no enc)
Mr. John McLeod, PO Drawer 30, Winnsboro, SC 29180 (no enc)
Technical file (no enc)

DHEC/UST/WRC/8.10.05

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

June 20, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Release 1 Reported August 1, 1997
Release 2 Reported August 1, 1997
Groundwater Assessment Report received April 1, 2005
Stream Sample Collected June 2, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) reviewed the referenced Groundwater Assessment Report by ATC Associates Incorporated and directed additional free product recovery events and additional assessment activities. The report documented petroleum chemicals of concern (CoC) in the creek adjacent to the Vance property.

The UST Program collected a groundwater sample from a tributary of McCulley Creek on June 2, 2005. Laboratory analysis of a water grab sample by Pace Analytical Laboratory detected Methyl-tert Butyl Ether (MtBE) at 7.2 micrograms per liter (parts per billion). A copy of the laboratory report is enclosed for your information. This report is very similar to the detection of MtBE at 8 micrograms per liter reported in the referenced report submitted by ATC Associates on your behalf.

On all correspondence regarding this site, please reference UST Permit #11760. Please call me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

UST PROGRAM
DOCKETING # 48 tech

Enc: Pace Laboratory Report for United Exxon (UST Permit #11760) received June 17, 2005

cc: ATC Associates, Inc. 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical File (with original enc.)

Pace Analytical®
www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Pace Analytical Services, Inc.
2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

RECEIVED
JUN 17 2005
UNDERGROUND STORAGE TANK PROGRAM

June 14, 2005

Ms. Debra Thoma
SCDHEC
UST Program
2600 Bull Street
Columbia, SC 29201

RE: Lab Project Number: 9296009
Client Project ID: United Exxon/11760

Dear Ms. Thoma:

Enclosed are the analytical results for sample(s) received by the laboratory on June 8, 2005. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

Inorganic Wet Chemistry and Metals Analyses were performed at our Pace Asheville laboratory and Organic testing was performed at our Pace Charlotte laboratory unless otherwise footnoted.

If you have any questions concerning this report please feel free to contact me.

Sincerely,

Sherri Stabel
Sherri.Stabel@pacelabs.com
Project Manager

Enclosures

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www.pacelabs.com

Pace Analytical Services, Inc.
9800 Kincey Avenue, Suite 100
Huntersville, NC 28078
Phone: 704.875.9092
Fax: 704.875.9091

Pace Analytical Services, Inc.
2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

Lab Project Number: 9296009
Client Project ID: United Exxon/11760

Lab Sample No: 925720674 | Project Sample Number: 9296009-001 | Date Collected: 06/07/05 09:20
Client Sample ID: CREEK | Matrix: Water | Date Received: 06/08/05 09:30

Parameters	Results	Units	Report Limit	DF	Analyzed	By	CAS No.	Qual	RegLmt
GC/MS Volatiles									
GC/MS VOCs by 8260	Method: EPA 8260								
Benzene	ND	ug/l	5.0	1.0	06/10/05 06:54	DLK	71-43-2		
Ethylbenzene	ND	ug/l	5.0	1.0	06/10/05 06:54	DLK	100-41-4		
Methyl-tert-butyl ether	7.2	ug/l	5.0	1.0	06/10/05 06:54	DLK	1634-04-4		
Naphthalene	ND	ug/l	5.0	1.0	06/10/05 06:54	DLK	91-20-3		
Toluene	ND	ug/l	5.0	1.0	06/10/05 06:54	DLK	108-88-3		
m&p-Xylene	ND	ug/l	10.	1.0	06/10/05 06:54	DLK			
o-Xylene	ND	ug/l	5.0	1.0	06/10/05 06:54	DLK	95-47-6		
Toluene-d8 (S)	101	%		1.0	06/10/05 06:54	DLK	2037-26-5		
4-Bromofluorobenzene (S)	99	%		1.0	06/10/05 06:54	DLK	460-00-4		
Dibromofluoromethane (S)	98	%		1.0	06/10/05 06:54	DLK	1868-53-7		
1,2-Dichloroethane-d4 (S)	93	%		1.0	06/10/05 06:54	DLK	17060-07-0		

Ashville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
SC Environment 99030
FL NELAP E87648

REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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Charlotte Certification IDs
NC Wastewater 12
NC Drinking Water 37706
SC 99006
FL NELAP E87627

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Pace Analytical Services, Inc.
2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

Lab Project Number: 9296009
Client Project ID: United Exxon/11760

PARAMETER FOOTNOTES

Dilution factor shown represents the factor applied to the reported result and reporting limit due to changes in sample preparation, dilution of the extract, or moisture content

Method 9071B modified to use ASE.

All pH, Free Chlorine, Total Chlorine and Ferrous Iron analyses conducted outside of EPA recommended immediate hold time.

Depending on the moisture content the PRLs can be elevated for all soil samples reported on a dry weight basis.

2-Chloroethyl vinyl ether has been shown to degrade in the presence of acid.

ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
(S)	Surrogate

Ashville Certification IDs
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2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

QUALITY CONTROL DATA

Lab Project Number: 9296009
Client Project ID: United Exxon/11760

QC Batch: 130139
QC Batch Method: EPA 8260
Associated Lab Samples: 925720674

Analysis Method: EPA 8260
Analysis Description: GC/MS VOCs by 8260

METHOD BLANK: 925729832
Associated Lab Samples: 925720674

Parameter	Units	Blank Result	Reporting Limit	Footnotes
Benzene	ug/l	ND	5.0	
Ethylbenzene	ug/l	ND	5.0	
Methyl-tert-butyl ether	ug/l	ND	5.0	
Naphthalene	ug/l	ND	5.0	
Toluene	ug/l	ND	5.0	
m&p-Xylene	ug/l	ND	10.	
o-Xylene	ug/l	ND	5.0	
Toluene-d8 (S)	%	101		
4-Bromofluorobenzene (S)	%	96		
Dibromofluoromethane (S)	%	97		
1,2-Dichloroethane-d4 (S)	%	92		

LABORATORY CONTROL SAMPLE: 925729840

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	Footnotes
Benzene	ug/l	50.00	48.33	97	
Ethylbenzene	ug/l	50.00	45.50	91	
Methyl-tert-butyl ether	ug/l	50.00	44.10	88	
Naphthalene	ug/l	50.00	44.72	89	
Toluene	ug/l	50.00	46.92	94	
m&p-Xylene	ug/l	100.00	92.02	92	
o-Xylene	ug/l	50.00	42.50	85	
Toluene-d8 (S)				107	
4-Bromofluorobenzene (S)				100	
Dibromofluoromethane (S)				104	
1,2-Dichloroethane-d4 (S)				96	

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NC Wastewater 40
NC Drinking Water 37712
SC Environment 99030
FL NELAP E87648

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Accredited in accordance with nelac

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NC Drinking Water 37706
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Fax: 704.875.9091

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2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

QUALITY CONTROL DATA

Lab Project Number: 9296009
Client Project ID: United Exxon/11760

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 925729857 925729865

Parameter	Units	925723140 Result	Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	RPD	Footnotes
Benzene	ug/l	0.3899	50.00	35.38	52.98	70	105	40	1
Toluene	ug/l	1.192	50.00	36.35	53.38	70	104	38	1
Toluene-d8 (S)						103	104		
4-Bromofluorobenzene (S)						96	102		
Dibromofluoromethane (S)						100	102		
1,2-Dichloroethane-d4 (S)						93	98		

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ACCREDITED IN ACCORDANCE WITH nelac

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Pace Analytical Services, Inc.
2225 Riverside Drive
Asheville, NC 28804
Phone: 828.254.7176
Fax: 828.252.4618

Lab Project Number: 9296009
Client Project ID: United Exxon/11760

QUALITY CONTROL DATA PARAMETER FOOTNOTES

Consistent with EPA guidelines, unrounded concentrations are displayed and have been used to calculate % Rec and RPD values.

LCS(D)	Laboratory Control Sample (Duplicate)
MS(D)	Matrix Spike (Duplicate)
DUP	Sample Duplicate
ND	Not detected at or above adjusted reporting limit
NC	Not Calculable
J	Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit
MDL	Adjusted Method Detection Limit
RPD	Relative Percent Difference
(S)	Surrogate
[1]	RPD value was outside control limits, however both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

Ashville Certification IDs
NC Wastewater 40
NC Drinking Water 37712
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SC 99006
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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

846075

Page: 1 of 1

Required Client Information: Section A

Company: SC DHEC
Address: 2600 BULL STREET
COLUMBIA, SC 29201
Phone: (803) 896-5435 Fax: (803) 896-6245

Required Client Information: Section B

Report To: D. Thoma
Copy To: —
Invoice To: FINANCE
P.O.: 416276, CA#24794
Project Name: UNITED EXXON
Project Number: 11760

Client Information (Check quote/contract):
Requested Due Date: *TAT: 7 DAY

*Turn around time less than 14 days subject to laboratory and contractual obligations and may result in a Rush Turnaround Surcharge.
Turn Around Time (TAT) in calendar days.

To Be Completed by Pace Analytical and Client Section C

Quote Reference:
Project Manager: SHS
Project #: 9296009
Profile #: 1700-1

Section D Required Client Information:

Valid Matrix Codes: DRINKING WATER DW; GROUNDWATER GW; SURFACE WATER SW; WASTE WATER WW; PRODUCT P; SOIL SL; OIL OL; WIPE WP; AIR AR; OTHER OT

ITEM #	SAMPLE ID (One character per box. (A-Z, 0-9 / .-) Sample IDs MUST BE UNIQUE)	MATRIX CODE	SAMPLE TYPE G=GRAB C=COMP	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	BTEX, N, MTBE (8260)	Remarks / Lab ID
1	CREEK	GW	G	6/7/05	915	6/7/05	920					X					X	925720674
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		

SITE LOCATION: ☐ NC ☒ SC ☐ GA ☐ Other

REGULATORY AGENCY: ☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER ☒ UST ☐ RCRA ☐ Other

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
Wes Clymer / SCDHEC	6/7/05	1115	U SHOLD	6/8	930

SAMPLE CONDITION

Temp in °C	4.0
Received on Ice	Y/N
Sealed Cooler	Y/N
Samples Intact	Y/N

SAMPLE NOTES

Additional Comments:

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Wes Clymer
SIGNATURE of SAMPLER: [signature]
DATE Signed: (MM / DD / YY) 6/7/05

SEE REVERSE SIDE FOR INSTRUCTIONS

Form COC01 Rev. 0304

Instructions for completing Chain of Custody (COC)

1. Complete all Client Information at top of sheet: name, address, phone, contact (person to whom report will be sent and contact can be made if questions arise), billing information if different from client, PO#, Project Name and/or Project Number as it will appear on the report.

2. Quote Reference, Project Manager, Project No. and Profile No. will be completed by Pace.

3. A separate COC must be filled out for each day of sample collection.

4. Sampler should print their name in the space provided and sign their name followed by the date of the sampling event.

5. Complete Sample Description as it will appear on the laboratory report; include time of sampling, sample matrix, no. of containers and preservative used.

6. Analysis Requested: Complete analysis on the lines provided and place a check in the column for the samples requiring the analysis. It may be necessary to use the space provided for additional comments or include attachments for extended lists of parameters.

7. Submission of samples to laboratory: Indicate Item Number of those samples being transferred; sign relinquished by, and include your affiliation.

*** IMPORTANT NOTE:**

Standard Turnaround Time is 2 weeks. If this does not satisfy your requirements, arrangements must be made prior to samples being submitted to the laboratory. Contact your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be indicated on the chain of custody. (Use Additional Comments Section.)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

JUN 07 2005

SHERRI STABEL
PACE ANALYTICAL SERVICES
9800 KINCEY AVE STE 100
HUNTERSVILLE NC 28078

Re: Laboratory Analyses
Bid # SB-19780-6/11/02-EMW, PO # 416276

Dear Ms. Stabel:

Under the terms and conditions of the referenced bid package, analytical sampling has been approved for the referenced facility. The facility has been assigned an individual Cost Agreement (CA) number as listed below. Please reference the CA number and Purchase Order #416276 on the appropriate invoice submitted for payment against the facility. SCDHEC personnel will perform the sampling on June 7, 2005.

UST Permit #	County	Analyses-Groundwater	CA #	Bottles (Y/N)	Date Needed
07554	Richland	1-BTEX, Naph, MTBE (8260)	24793:P	N	-
11760	Fairfield	1-BTEX, Naph, MTBE (8260)	24794:P	N	-

If you have any questions or need further assistance, please contact me at (803) 896-6669 or (800) 826-5435 (within SC only).

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment & Corrective Action Division

Enc: Approved Cost Agreement

cc: Debra Thoma, State Lead & Field Services
Technical Files

UST PROGRAM DOCKETING # 49 Tech

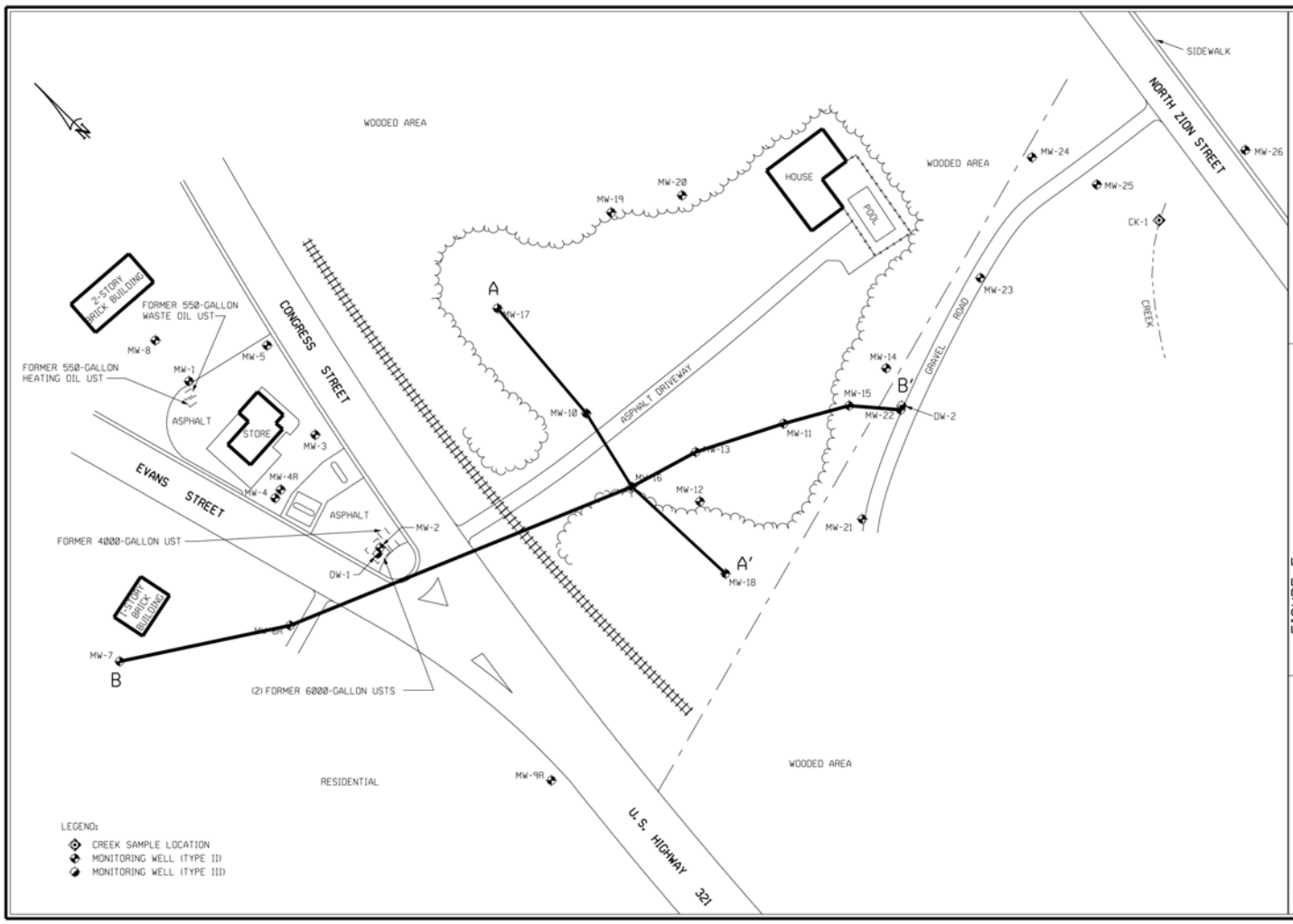
Approved Cost Agreement 24794

Facility: 11760 UNITED EXXON
SHRADEAA

PO Number: 416276-1678

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	1.0000	30.00	30.00

Total Amount 30.00



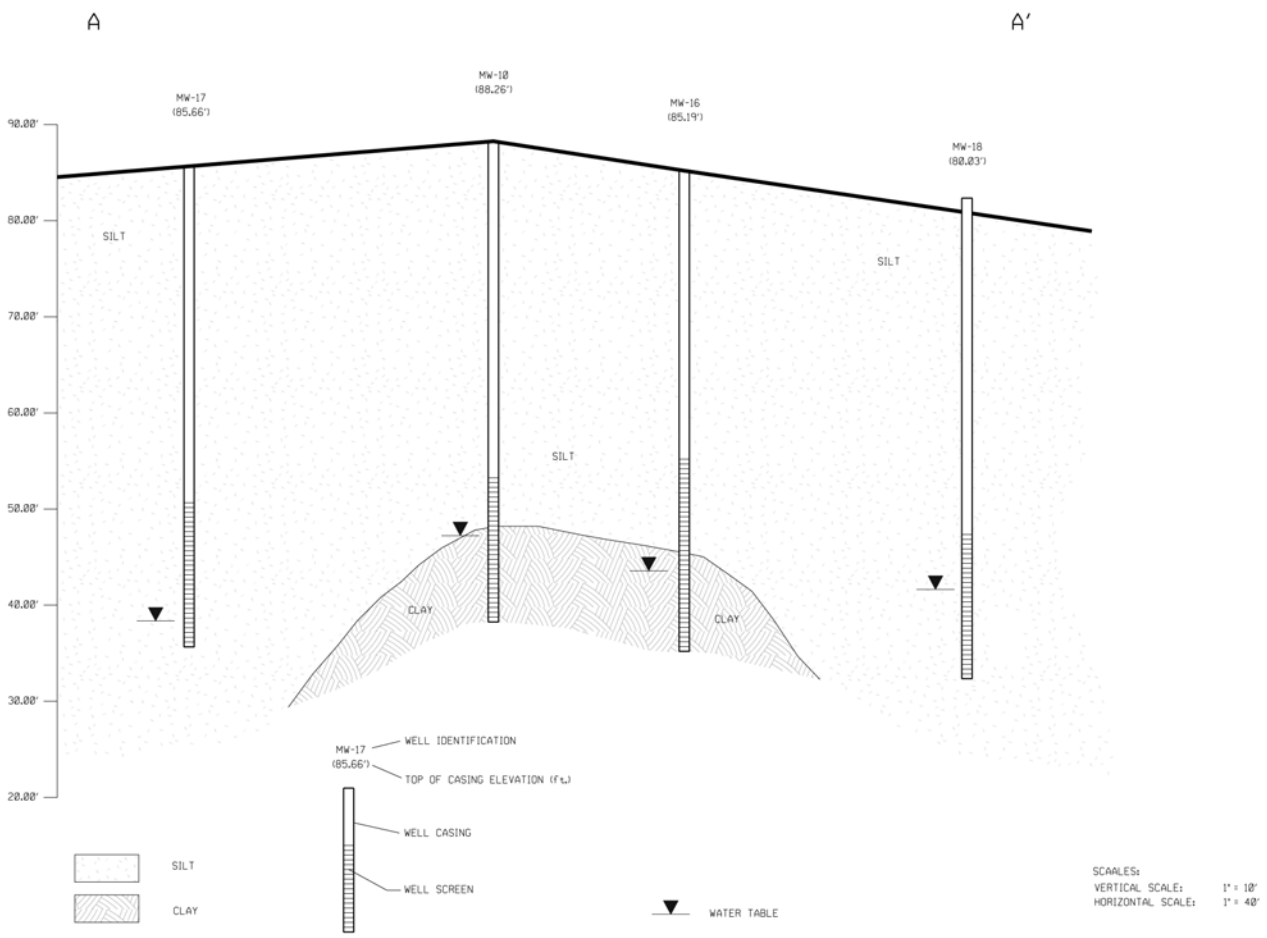
ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	02-11-2008	14.25384.0012

TITLE FIGURE 5 UST PERMIT #11760
GEOLOGIC TRANSECT MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

NOTES:



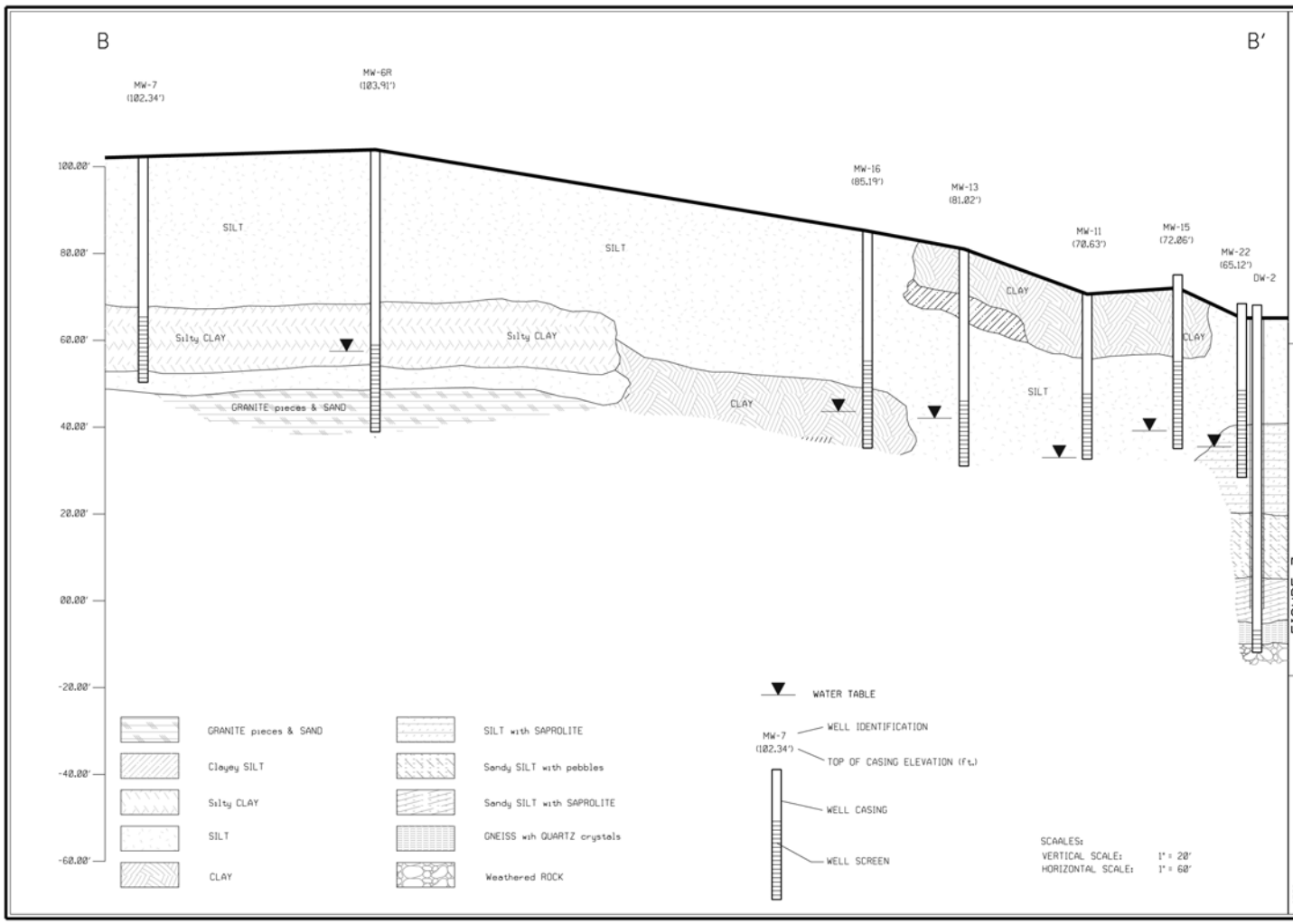
NOTES:
1. MW-18 IS AN ABOVE-GRADE WELL

TITLE FIGURE 6 UST PERMIT #11760
GEOLOGIC CROSS-SECTION A-A'
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
AS SHOWN	02-11-2008	14.25384.0012



NOTES:
1. DURING THE JANUARY 14, 2008, GAUGING EVENT, MW-7 WAS DRY; 0.02 FEET OF PRODUCT AT MW-11; AND 0.23 FEET OF PRODUCT AT MW-13.
2. MW-15, MW-22, AND DW-2 ARE ABOVE-GRADE WELLS.

FIGURE 7
GEOLOGIC CROSS-SECTION B-B'
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA
UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
AS SHOWN	02-11-2008	14.25384.0012

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

JUN 03 2008

BILLY KEENAN
KEENAN ENERGY COMPANY
PO BOX 3218
COLUMBIA SC 29230-3218

Re: AFVR and Groundwater Sampling Directive
United Exxon, 401 North Congress Street, Winnsboro, SC 29130
UST Permit 11760; CA # 32543 & 32544
Releases 2 & 3 reported August 1, 1997
Monitoring Report received February 12, 2008
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Assocaites (ATC), Inc. The UST Program has reviewed the referenced report and determined the next necessary scope of work to be two aggressive fluid vapor recovery (AFVR) events in the vicinity MW-10 & MW-11 and a comprehensive groundwater sampling event to obtain current data.

Cost Agreements #32543 & 32544 have been approved in the amount shown on the enclosed cost agreement forms for two AFVR events and a comprehensive sampling event for all wells associated with the release. Please sample surface water from the stream at previous sampled locations.

- The first 8-hour AFVR event should be conducted within 30 days of the date of this letter. The next 8-hour AFVR event should be conducted 45 days thereafter.

- Groundwater samples from all monitoring wells associated with the release should be collected no earlier than 30 days after the last AFVR event and analyzed for BTEX, Naphthalene, 1,2-Dichloroethane and M*t*BE by EPA method 8260B and EDB by EPA Method 8011. Please note, previously installed monitoring wells that bracket the water table do not require purging prior to sample collection.

Reports submitted at the completion of AFVR events should include the following:

- A narrative portion documenting the AFVR event noting site conditions, the names of the AFVR contractor, field personnel, date, times the event started and ended, ambient air temperature, general weather conditions during the AFVR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for each event. Wells containing free phase product should be gauged at the beginning and end of each AFVR event. Disposal manifests for the event should be included as part of the final report.

UST DOCKET 5tech

Please have ATC submit groundwater sampling results to the Program in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.

- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater elevation and laboratory analytical data for all monitoring wells should be presented in tabular format and must include **historical data** for all monitoring wells located at the facility.

- A groundwater elevation contour map of the site based on current groundwater potentiometric data.

- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.

- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.

- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

The AFVR report and SUPERB invoice are due within 90 days of the date of this correspondence. Please note that if an invoice is not received within 120 days of this correspondence, the referenced cost agreement will be closed.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report.

On all correspondence concerning this site, please reference **UST Permit #11760 and CA #32543 & 32544.** If you have any questions regarding this correspondence, feel free to contact me by phone at (803) 896-4085, or by email at madabhs@dhec.sc.gov.

Sincerely,

Sriram Madabhushi

Sriram Madabhushi, P.G., Hydrogeologist
Northeastern SC Corrective Action Section
Assessment & Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Bob Bolton, ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ enc)
Technical File (w/ enc)

Approved Cost Agreement 32543

Facility: 11760 UNITED EXXON
MADABHS
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		B PERSONNEL	1.0000	275.00	275.00
10 SAMPLE COLLECTION					
		A GROUND WATER	1.0000	55.00	55.00
		C WATER SUPPLY	0.5000	25.00	12.50
		D GROUNDWATER NO-PURGE	16.5000	35.00	577.50
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	18.5000	100.00	1,850.00
		BB 1,2-DCA	16.0000	10.75	172.00
		D GW PAH'S	18.0000	120.00	2,160.00
		E LEAD	16.0000	20.00	320.00
		F EDB	16.0000	55.00	880.00
		P 8 OXYGENATES	16.0000	85.00	1,360.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	1.5000	90.00	135.00
		A2 WASTEWATER - PUMPING TEST	1,000.0000	0.60	600.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	11,397.00	1,709.55
23 EFR					
		A 8 HOUR EVENT	1.0000	3,000.00	3,000.00
				Total Amount	13,106.55

Approved Cost Agreement 32544

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		BB 1,2-DCA	16.0000	10.75	172.00
		E LEAD	16.0000	20.00	320.00
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			Total Amount		13,106.55

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

May 5, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #24340 and 24341; MWA #UMW-19129
Release 2 and 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received April 4, 2005
Signed Property Access Agreement received May 5, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control received the signed property right of entry form for 315 North Congress Street and 101 Evans Street on May 5, 2005. A copy is enclosed for your records and a copy has been provided to your site rehabilitation contractor. Please have ATC Associates Incorporated coordinate directly with Mr. John McLeod, the property owner, for the exact date(s) and times of property access. ATC Associates Incorporated should take necessary measures to ensure there is minimal damage to either property. Any damage to the premises at 315 North Congress Street or 101 Evans Street in Winnsboro, South Carolina must be repaired immediately.

Assessment activities should commence as soon as possible. On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Signed Right of Entry Form for 315 North Congress and 101 Evans Street, Winnsboro, SC

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc.)
Mr. John D. McLeod, PO Drawer 30, Winnsboro, SC 29180 (w/o enc.)
Technical File (w/ original)

UST PROGRAM DOCKETING # 50 Tech

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

RECEIVED

MAY 0 5 2005

UNDERGROUND STORAGE TANK PROGRAM

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, JOHN D. McLeod certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Street Address : 101 Evans Street (MW-6) and 315 North Congress Street (MW-9)

City, State : Winnsboro, SC

1) Abandonment of Monitoring Wells MW-6 and MW-9. I understand both wells will be properly abandoned with no permanent effects shall remain to the property. These wells will be filled with a cement mixture from the bottom to the top of each well. The well vault and concrete pad will be removed, dirt will be used to fill the hole, and grass seed will be planted.

2) Install two replacement wells. I understand that these wells will look like monitoring wells MW-6 and MW-9 and remain with the property until cleanup is complete. Additionally, Keenan Oil Company Incorporated, SCDHEC or their agents will access the property at reasonable times for measurement of groundwater conditions and/or collection of samples. The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : JOHN D. McLEOD

SIGNATURE : [signature] individually and for co-tenant Virginia D. McLeod

WITNESS : Dale C. Mann

DATE : 5 Mo 4 Day 05 Year

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

May 2, 2005

MR JOHN D MCLEOD
PO DRAWER 30
WINNSBORO SC 29180-0030

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
ATC Letter To You dated April 27, 2005
Access to Your Property
Fairfield County

UST PROGRAM DOCKETING # 51 Tee

Dear Mr. McLeod:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has directed Keenan Oil Company Incorporated, as the tank owner, to conduct rehabilitation activities at the referenced facility. As you are aware, monitoring wells MW-6 and MW-9 have been dry for several years. In order for Keenan Oil Company Incorporated to complete assessment activities, these two wells need to be replaced and groundwater samples collected for laboratory analysis. Access to your and your mother's property is necessary at this time to define the extent of the problem and conduct cleanup activities if necessary. ATC Associates, Keenan Oil Company's site rehabilitation contractor, will conduct assessment activities at reasonable time and with minimal inconvenience to you. Copies of several fact sheets for gasoline chemicals of concern are enclosed for your information. If you would like additional information please visit the Agency for Toxic Substances and Disease Registry's web site at http://www.atsdr.cdc.gov/toxfaq.html.

The Department has the authority pursuant to the State Underground Petroleum Environmental Response Bank Act (S.C. Code Ann. 44-2-10 *et seq.* (Supp. 1996)) and the UST Control Regulations (S.C. Code Ann. Regs. 61-92 (Supp.1996)) to hold Keenan Oil Company Incorporated, the UST owner/ operator, responsible for addressing the existing contamination. The Department also has authority under the Pollution Control Act (S.C. Code Ann. 48-1-10 *et seq.* (1976)), as amended, to require each and every individual property owner to abate pollution on his or her own property. Indeed, the South Carolina Supreme Court has held landowners strictly liable under the Pollution Control Act for contamination emanating from their property. The Department believes it to be in your best interest to allow Keenan Oil Company Incorporated and its contractor ATC Associates Incorporated to address the contamination problem as they, until now, have done. There will be no cost to you in allowing Keenan Oil Company Incorporated to access you property for environmental activities. If you deny access to your property, you may be required to conduct environmental assessment activities to include cleanup activities at your own expense.

The UST Program requests that you allow the installation of these wells to proceed in a timely manner and return the required right of entry form. **Please sign the enclosed right of entry form and return it to my attention on or before Friday, May 20, 2005. If not, the Program may pursue a court order to gain access to the property.**

Thank you for your consideration in this matter. If you have any questions or would like to schedule a meeting to further discuss this matter, please contact me by phone at (803) 896-6669 or (800) 826-5435 (within SC), by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

Enc: Right of Entry Form
Map with Monitoring Well Locations
ATSDR Fact Sheet for Benzene
ATSDR Fact Sheet for Naphthalene

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204 (without enc.)
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203 (without enc.)
Technical File (with enc.)

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, _____ certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Street Address : 101 Evans Street (MW-6) and 315 North Congress Street (MW-9)

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2) **Install two replacement wells. I understand that these wells will look like monitoring wells MW-6 and MW-9 and remain with the property until cleanup is complete. Additionally, Keenan Oil Company Incorporated, SCDHEC or their agents will access the property at reasonable times for measurement of groundwater conditions and/or collection of samples. The monitoring wells will be properly abandoned upon completion of remediation activities.**

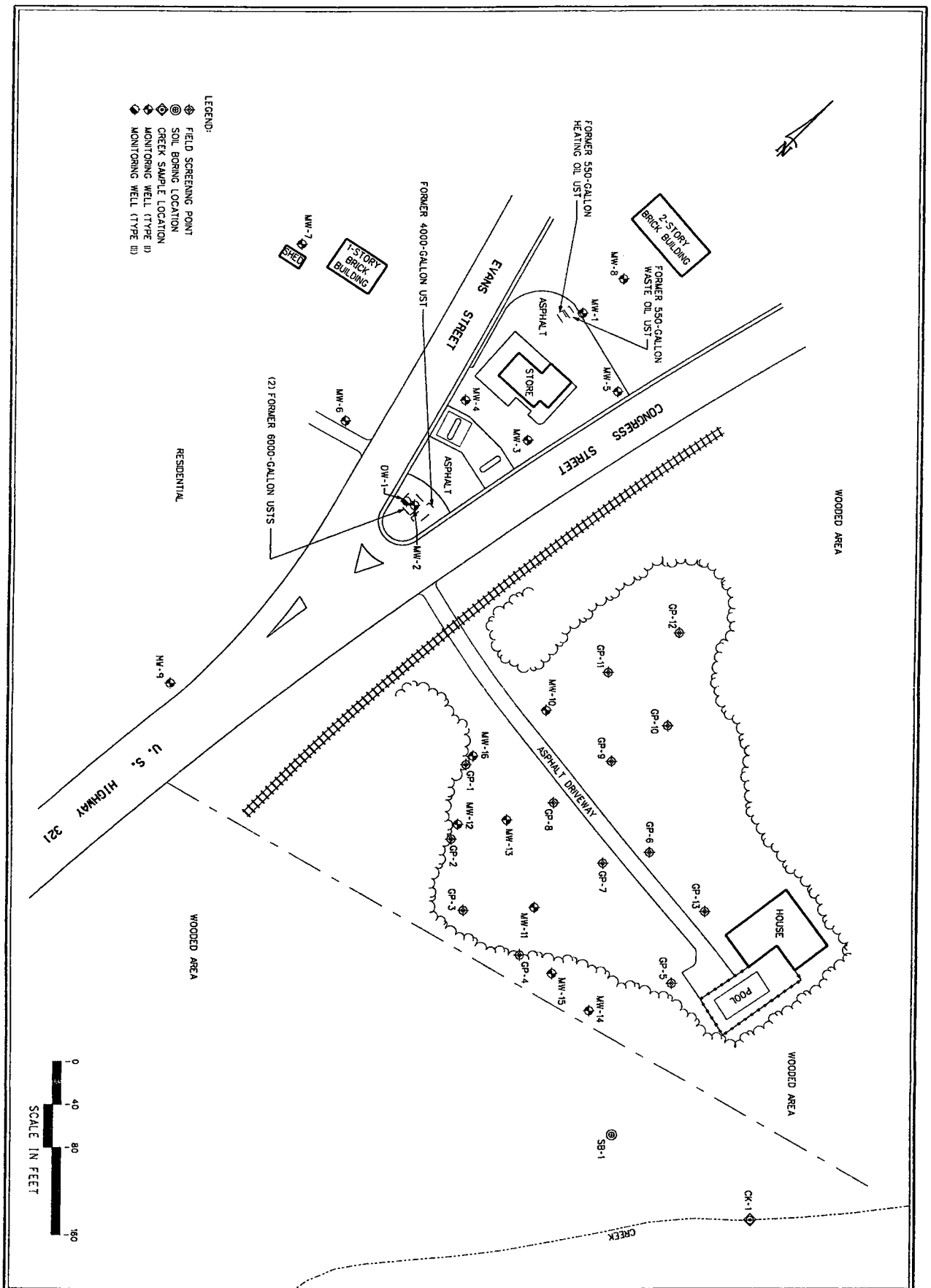
NAME (Please print) :_____

SIGNATURE : _____

WITNESS : _____

DATE : _____Mo _____Day _____Year

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760



NOTES:

TITLE **FIGURE 2** UST PERMIT #11760

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN				1" = 80'	03-30-2005	14.25384.0012

ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

CONTENTS

Highlights
What is benzene?
What happens to benzene when it enters the environment?
How might I be exposed to benzene?
How can benzene affect my health?
How likely is benzene to cause cancer?
Is there a medical test to show whether I've been exposed to benzene?
Has the federal government made recommendations to protect human health?
Glossary
References
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RELATED RESOURCES

ToxFAQ™ 47k
ToxFAQ™ en Español 91k
Public Health Statement 175k
Toxicological Profile 9.9MB
MMG 58k

A-Z INDEX

A B C D E
F G H I J K
L M N O P
Q R S T U
V W X Y Z

ATSDR RESOURCES

ToxFAQs™
ToxFAQs™ en Español
Public Health Statements
Toxicological Profiles
Minimum Risk Levels
MMGs
MHMIs
Interaction Profiles

September 1997

ToxFAQs™ for Benzene

(Benceno)

CAS# 71-43-2

This fact sheet answers the most frequently asked health questions about benzene. For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Benzene is a widely used chemical formed from both natural processes and human activities. Breathing benzene can cause drowsiness, dizziness, and unconsciousness; long-term benzene exposure causes effects on the bone marrow and can cause anemia and leukemia. Benzene has been found in at least 813 of the 1,430 National Priorities List sites identified by the Environmental Protection Agency (EPA).

What is benzene?

Benzene is a colorless liquid with a sweet odor. It evaporates into the air very quickly and dissolves slightly in water. It is highly flammable and is formed from both natural processes and human activities.

Benzene is widely used in the United States; it ranks in the top 20 chemicals for production volume. Some industries use benzene to make other chemicals which are used to make plastics, resins, and nylon and synthetic fibers. Benzene is also used to make some types of rubbers, lubricants, dyes, detergents, drugs, and pesticides. Natural sources of benzene include volcanoes and forest fires. Benzene is also a natural part of crude oil, gasoline, and cigarette smoke.

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What happens to benzene when it enters the environment?

- Industrial processes are the main source of benzene in the

Priority List of Hazardous Substances
Division of Toxicology

environment.

- Benzene can pass into the air from water and soil.
- It reacts with other chemicals in the air and breaks down within a few days.
- Benzene in the air can attach to rain or snow and be carried back down to the ground.
- It breaks down more slowly in water and soil, and can pass through the soil into underground water.
- Benzene does not build up in plants or animals.

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How might I be exposed to benzene?

- Outdoor air contains low levels of benzene from tobacco smoke, automobile service stations, exhaust from motor vehicles, and industrial emissions.
- Indoor air generally contains higher levels of benzene from products that contain it such as glues, paints, furniture wax, and detergents.
- Air around hazardous waste sites or gas stations will contain higher levels of benzene.
- Leakage from underground storage tanks or from hazardous waste sites containing benzene can result in benzene contamination of well water.
- People working in industries that make or use benzene may be exposed to the highest levels of it.
- A major source of benzene exposure is tobacco smoke.

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How can benzene affect my health?

Breathing very high levels of benzene can result in death, while high levels can cause drowsiness, dizziness, rapid heart rate, headaches, tremors, confusion, and unconsciousness. Eating or drinking foods containing high levels of benzene can cause vomiting, irritation of the stomach, dizziness, sleepiness, convulsions, rapid heart rate, and death.

The major effect of benzene from long-term (365 days or longer) exposure is on the blood. Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection.

Some women who breathed high levels of benzene for many months had irregular menstrual periods and a decrease in the size of their ovaries. It is not known whether benzene exposure affects the developing fetus in pregnant women or fertility in men.

Animal studies have shown low birth weights, delayed bone formation, and bone marrow damage when pregnant animals breathed benzene.

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How likely is benzene to cause cancer?

The Department of Health and Human Services (DHHS) has determined that benzene is a known human carcinogen. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs.

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Is there a medical test to show whether I've been exposed to benzene?

Several tests can show if you have been exposed to benzene. There is test for measuring benzene in the breath; this test must be done shortly after exposure. Benzene can also be measured in the blood, however, since benzene disappears rapidly from the blood, measurements are accurate only for recent exposures.

In the body, benzene is converted to products called metabolites. Certain metabolites can be measured in the urine. However, this test must be done shortly after exposure and is not a reliable indicator of how much benzene you have been exposed to, since the metabolites may be present in urine from other sources.

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Has the federal government made recommendations to protect human health?

The EPA has set the maximum permissible level of benzene in drinking water at 0.005 milligrams per liter (0.005 mg/L). The EPA requires that spills or accidental releases into the environment of 10 pounds or more of benzene be reported to the EPA.

The Occupational Safety and Health Administration (OSHA) has set a permissible exposure limit of 1 part of benzene per million parts of air (1 ppm) in the workplace during an 8-hour workday, 40-hour workweek.

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Glossary

Anemia: Decreased ability of the blood to transport oxygen.

Carcinogen: A substance with the ability to cause cancer.

Chromosomes: Parts of the cells responsible for the development of hereditary characteristics.

Metabolites: Breakdown products of chemicals.

Milligram (mg): One thousandth of a gram.

Pesticide: A substance that kills pests.

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References

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Managing Hazardous Materials Incidents. Volume III – Medical Management Guidelines for Acute Chemical Exposures: Benzene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

Agency for Toxic Substances and Disease Registry (ATSDR). 1997. Toxicological Profile for benzene. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

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Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road NE, Mailstop F-32
Atlanta, GA 30333
Phone: 1-888-42-ATSDR (1-888-422-8737)
FAX: (770)-488-4178
Email: ATSDRIC@cdc.gov

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ATSDR
AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY

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What are naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?
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How can naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene affect my health?
How likely are naphthalene, 1 methylnaphthalene, or 2 methylnaphthalene to cause cancer?
How can naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene affect children
How can families reduce the risks of exposure to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene
Is there a medical test to determine whether I've been exposed to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene?
Has the federal government made recommendations to protect human health?
References
Contact Information

RELATED RESOURCES

ToxFAQ™ 88k
ToxFAQ™ en Español 88k
Public Health

September 2003

ToxFAQs™ for Naphthalene, 1-Methylnapthalene, 2-Methylnapthalene

(Naftalina, 1-Metilnaftalina y 2-Metilnaftalina)

CAS# Naphthalene 91-20-3
1-Methylnapthalene 90-12-0
2-Methylnapthalene 91-57-6

This fact sheet answers the most frequently asked health questions about naphthalene, 1-methylnapthalene, and 2-methylnapthalene. For more information, you may call the ATSDR Information Center at 1-888-422-8737. This fact sheet is one in a series of summaries about hazardous substances and their health effects. This information is important because this substance may harm you. The effects of exposure to any hazardous substance depend on the dose, the duration, how you are exposed, personal traits and habits, and whether other chemicals are present.

HIGHLIGHTS: Exposure to naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene happens mostly from breathing air contaminated from the burning of wood, tobacco, or fossil fuels, industrial discharges, or moth repellents. Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. Naphthalene has caused cancer in animals. Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene have been found in at least 647, 37, and 410, respectively, of the 1,636 National Priority List sites identified by the Environmental Protection Agency (EPA).

What are naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene?

Naphthalene is a white solid that evaporates easily, and is found naturally in fuels when they are burned. It is also called white tar, and tar camphor, and has been used in mothballs and moth flakes. Burning tobacco or wood produces naphthalene. It has a strong, but not unpleasant smell. 1-Methylnaphthalene and 2-methylnaphthalene are naphthalene-related compounds. 1-Methylnaphthalene is a clear liquid and 2-methylnaphthalene is a solid; both can be smelled in air and in water at very low concentrations.

Statement 120k
Public Health Statement en Español 47k
Toxicological Profile 3.1MB
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The major commercial use of naphthalene is in the manufacture of polyvinyl chloride (PVC) plastics. Its major consumer use is in moth repellents and toilet deodorant blocks. 1-Methylnaphthalene and 2-methylnaphthalene are used to make other chemicals such as dyes and resins. 2-Methylnaphthalene is also used to make vitamin K.

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What happens to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene when they enter the environment?

- Exposure to naphthalene, 1-methylnaphthalene and 2-methylnaphthalene from eating foods or drinking beverages is unlikely.
- Touching fabrics that are treated with moth repellents containing naphthalene.
- Naphthalene enters the environment from industrial and domestic sources, and from accidental spills.
- Naphthalene can dissolve in water to a limited degree and may be present in drinking water from wells close to hazardous waste sites and landfills.
- Naphthalene can become weakly attached to soil or pass through soil into underground water.
- In air, moisture and sunlight break it down within 1 day. In water, bacteria break it down or it evaporates into the air.
- Naphthalene does not accumulate in the flesh of animals or fish that you might eat.
- 1-Methylnaphthalene and 2-methylnaphthalene are expected to act like naphthalene in air, water, or soil because they have similar chemical and physical properties.

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How might I be exposed to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene?

- Breathing low levels in outdoor air.
- Breathing air contaminated from industrial discharges or smoke from burning wood, tobacco, or fossil fuels.
- Using or making moth repellents, coal tar products, dyes or inks could expose you to these chemicals in the air.
- Drinking water from contaminated wells.
- Exposure to naphthalene, 1-methylnaphthalene and 2-methylnaphthalene from eating foods or drinking beverages is unlikely.
- Touching fabrics that are treated with moth repellents containing naphthalene.

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How can naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene affect my health?

Exposure to large amounts of naphthalene may damage or destroy some of your red blood cells. This could cause you to have too few red blood cells until your body replaces the destroyed cells. This

condition is called hemolytic anemia. Some symptoms of hemolytic anemia are fatigue, lack of appetite, restlessness, and pale skin. Exposure to large amounts of naphthalene may also cause nausea, vomiting, diarrhea, blood in the urine, and a yellow color to the skin. There are no studies of humans exposed to 1-methylnaphthalene or 2-methylnaphthalene.

Animals sometimes develop cloudiness in their eyes after swallowing high amounts of naphthalene. It is not clear whether this also develops in people. Rats and mice that breathed naphthalene vapors daily for a lifetime developed irritation and inflammation of their nose and lungs. It is unclear if naphthalene causes reproductive effects in animals; most evidence says it does not.

Mice fed food containing 1-methylnaphthalene and 2-methylnaphthalene for most of their lives had part of their lungs filled with an abnormal material.

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How likely are naphthalene, 1 methylnaphthalene, or 2 methylnaphthalene to cause cancer?

There is no direct evidence in humans that naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene cause cancer. However, cancer from naphthalene exposure has been seen in animal studies. Some female mice that breathed naphthalene vapors daily for a lifetime developed lung tumors. Some male and female rats exposed to naphthalene in a similar manner also developed nose tumors.

Based on the results from animal studies, the Department of Health and Humans Services (DHHS) concluded that naphthalene is reasonably anticipated to be a human carcinogen. The International Agency for Research on Cancer (IARC) concluded that naphthalene is possibly carcinogenic to humans. The EPA determined that naphthalene is not classifiable as to human carcinogenicity.

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How can naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene affect children?

Hospitals have reported many cases of hemolytic anemia in children, including newborns and infants, who either ate naphthalene mothballs or deodorants cakes or who were in close contact with clothing or blankets stored in naphthalene mothballs. Naphthalene can move from a pregnant woman's blood to the unborn baby's blood. Naphthalene has been detected in some samples of breast milk from the general U.S. population, but not at levels that are expected to be of concern.

There is no information on whether naphthalene has affected

development in humans. No developmental abnormalities were observed in the offspring from rats, mice, and rabbits fed naphthalene during pregnancy.

We do not have any information on possible health effects of 1-methylnaphthalene or 2-methylnaphthalene on children.

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How can families reduce the risks of exposure to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene?

- Families can reduce the risks of exposure to naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene by avoiding smoking tobacco, generating smoke during cooking, or using fireplaces or heating appliances in the their homes.
- If families use naphthalene-containing moth repellents, the material should be enclosed in containers that prevent vapors from escaping, and kept out of the reach from children.
- Blankets and clothing stored with naphthalene moth repellents should be aired outdoors to remove naphthalene odors and washed before they are used.
- Families should inform themselves of the contents of air deodorizers that are used in their homes and refrain from using deodorizers with naphthalene.

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Is there a medical test to determine whether I've been exposed to naphthalene, 1 methylnaphthalene, and 2 methylnaphthalene?

Tests are available that measure levels of these chemicals and their breakdown products in samples of urine, feces, blood, maternal milk, or body fat. These tests are not routinely available in a doctor's office because they require special equipment, but samples can be sent to special testing laboratories. These tests cannot determine exactly how much naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene you were exposed to or predict whether harmful effects will occur. If the samples are collected within a day or two of exposure, then the tests can show if you were exposed to a large or small amount of naphthalene, 1-methylnaphthalene, or 2-methylnaphthalene.

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Has the federal government made recommendations to protect human health?

The EPA recommends that children not drink water with over 0.5 parts per million (0.5 ppm) naphthalene for more than 10 days or over 0.4 ppm for any longer than 7 years. Adults should not drink water with more than 1 ppm for more than 7 years. For water consumed over a lifetime (70 years), the EPA suggests that it contain no more than 0.1 ppm naphthalene.

The Occupational Safety and Health Administration (OSHA) set a limit of 10 ppm for the level of naphthalene in workplace air during an 8-hour workday, 40-hour workweek. The National Institute for Occupational Safety and Health (NIOSH) considers more than 250 ppm of naphthalene in air to be immediately dangerous to life or health. This is the exposure level of a chemical that is likely to impair a worker's ability to leave a contaminate area and therefore, results in permanent health problems or death.

back to top

References

Agency for Toxic Substances and Disease Registry (ATSDR). 2003. Toxicological Profile for Naphthalene, 1-Methylnaphthalene, and 2-Methylnaphthalene (Draft for Public Comment). Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service.

back to top

Where can I get more information?

ATSDR can tell you where to find occupational and environmental health clinics. Their specialists can recognize, evaluate, and treat illnesses resulting from exposure to hazardous substances. You can also contact your community or state health or environmental quality department if you have any more questions or concerns.

For more information, contact:

Agency for Toxic Substances and Disease Registry
Division of Toxicology
1600 Clifton Road NE, Mailstop F-32
Atlanta, GA 30333
Phone: 1-888-42-ATSDR (1-888-422-8737)
FAX: (770)-488-4178
Email: ATSDRIC@cdc.gov

back to top

UST PROGRAM
D H E C
PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201

Return Service Requested

RECEIVED

AUG 2 3 2005

UNDERGROUND STORAGE
TANK PROGRAM

#11760

Mr John McLeod
PO Box 30
Winnsboro SC 29180

WCS

AR

294 NO 1 605 C 00 08/20/05
RETURN TO SENDER
MCLEOD'JOHN D
101 EVANS ST
WINNSBORO SC 29180-1229

RETURN TO SENDER

FRUUSMF 29201-1297

FIRST CLASS

$00.35²

MAILED FROM ZIP CODE 1921

ATC ASSOCIATES INC.

RECEIVED
APR 2 9 2005
UNDERGROUND STORAGE TANK PROGRAM

http://www.atc-enviro.com

UST PROGRAM DOCKETING # 52 Tech

ATC has approximately 2,000 employees in more than 70 offices throughout the United States to meet the needs of our clients for high quality, cost-effective environmental management services. Our areas of specialization include:

- *Asbestos Testing and Consulting*
- *Soil and Groundwater Assessment, Design and Remediation Services*
- *Geotechnical Engineering*
- *Construction Materials Testing*
- *Underground Storage Tank Compliance*
- *Environmental Training*
- *Certified Industrial Hygiene and Safety Services*
- *Solid Waste Facility Planning and Management*
- *Water and Wastewater Engineering*
- *Risk Assessments and Facility Management*
- *Environmental Permitting and Compliance Services*
- *Hazardous Materials and Waste Management Services*
- *Lead Testing and Risk Management Services*
- *Information Systems Management Services*

400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Telephone: (803) 735-0003
Toll Free: (866) 735-0003
Fax: (803) 735-0443

To: ART SHRADER	From: Bob Bolton
Telephone	Pages: 3 (includes cover sheet)
Fax:	Date: 4/28/05
Re: United EXXON DENIAL	CC:

☒ Urgent ☐ For Review ☐ Please Comment
☐ Confidential ☐ As Requested

Comments:

ART,

AS REQUESTED. HE IS A LAWYER AND WON'T GRANT US ACCESS.

PLEASE WORK YOUR "MAGIC".

THANKS,

BOB

Confidentiality Notice: This information contained in this facsimile message, and in any accompanying documents, constitutes confidential information that belongs to ATC Associates Inc. This information is intended only for the individual or entity named above. If you are not the intended recipient of this information, you are notified that any disclosure, copying, distribution, or taking of any action in reliance on this information is strictly prohibited. If you have received this facsimile message in error, please notify us immediately by telephone at the number listed above to arrange for its return to us. Thank you.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

April 27, 2005

Mr. John D. McLeod
Post Office Drawer 30
Winnsboro, South Carolina 29180

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. McLeod:

As I mentioned in our telephone conversation yesterday, ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of replacement monitor wells for MW-6 and MW-9 on your property located near the site is necessary. The replacement wells would be installed adjacent to the wells currently on your property. Currently, Monitor Wells MW-6 and MW-9 have been dry for several years, and replacement of these wells is necessary to fully assess the former United Exxon. A map identifying the location of MW-6 and MW-9 is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access. Specifically, SCDHEC can not issue you a letter requesting permission to allow the monitor well installations under the Pollution Control Act until you deny ATC access by returning this letter noting such.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☐ _____
Access approved

☑ _____
Access denied

Phone number 803-635-2702
(If you wish to be notified prior to field activities)

Ask DHEC to furnish statutory authority for the request.

Can you merely deepen the existing well? If a new well is necessary, will you fill the old one and remove the cement cap.?

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

April 28, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #24340 and 24341; MWA #UMW-19129
Releases 2 and 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received April 4, 2005
Signed Property Access Agreement received April 22, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control received the signed property right of entry form for 400 North Congress Street on April 22, 2005. A copy is enclosed for your records and a copy has been provided to your site rehabilitation contractor. Please have ATC Associates Incorporated coordinate directly with Mr. Blitzer Vance, the property owner, for the exact date(s) and times of property access. ATC Associates Incorporated should take necessary measures to ensure there is minimal damage to the driveway or property at the Vance's residence. Any damage to the premises at 400 North Congress Street must be repaired immediately.

Assessment activities should commence on or after May 1, 2005. On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Signed Right of Entry Form for 400 North Congress Street, Winnsboro, SC

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc.)
Mr & Mrs Blitzer Vance, 400 North Congress Street, Winnsboro, SC 2980-1141 (w/o enc.)
Technical File (w/ original)

UST PROGRAM DOCKETING # #53 Teca

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

RECEIVED

APR 22 2005

UNDERGROUND STORAGE TANK PROGRAM

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, Blitzer Vance certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property at 400 North Congress Street, Winnsboro, South Carolina for the following purposes:

1) **Between the dates of 1 to 31 May 2005 on Tuesdays, Wednesdays, or Thursdays only to conduct an eight hour free product recovery event during the hours of 8:00 am to 5:00 pm on two separate dates.**

2) **Access the property approximately 30 days after the completion of the second aggressive fluid event between the hours of 9:30 am to 3:30 pm for measurement of groundwater conditions and/or collection of samples.**

I understand a representative of ATC Associates will notify me a minimum of 48 hours in advance of scheduled events and I will be provided a copy of the report of findings.

NAME (Please print) : Blitzer Vance

SIGNATURE : Blitz Vance

WITNESS : _____

DATE : _____ **Mo** _____ **Day** _____ **Year**

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

RECEIVED

APR 22 2005

UNDERGROUND STORAGE TANK PROGRAM

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, Blitzer Vance certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property at 400 North Congress Street, Winnsboro, South Carolina for the following purposes:

1) **Between the dates of** 1 **to** 31 **May 2005 on Tuesdays, Wednesdays, or Thursdays only to conduct an eight hour free product recovery event during the hours of 8:00 am to 5:00 pm on two separate dates.**

2) **Access the property approximately 30 days after the completion of the second aggressive fluid event between the hours of 9:30 am to 3:30 pm for measurement of groundwater conditions and/or collection of samples.**

I understand a representative of ATC Associates will notify me a minimum of 48 hours in advance of scheduled events and I will be provided a copy of the report of findings.

NAME (Please print) : Blitzer Vance

SIGNATURE : Betty Vance

WITNESS : _____

DATE : _____ **Mo** _____ **Day** _____ **Year**

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

APR 08 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

UST PROGRAM DOCKETING # 54 Tesh

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #24340 and 24341; MWA #UMW-19129
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal and Assessment Component Cost Agreement received April 4, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced plan submitted by ATC Associates, Inc.

Assessment activities at the site should begin immediately upon receipt of this letter. Assessment activities should include an Aggressive Fluid/Vapor Recovery (AFVR) event to remove free phase product from MW-2, MW-10 and MW-11. Characterization of all exposure pathways should be completed using field screening points. Based on the field screening results, up to three monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (CoC). The UST Program has provided monitoring well approval to your site rehabilitation contractor for these new wells and for replacement of monitoring wells MW-4, MW-6 and MW-9 that were dry during the latest sampling event. A copy of the approval form is enclosed for your records. Please contact the Program prior to well installation for concurrence regarding the final well locations for the three new wells. Approximately one month after completion of the AFVR event, a comprehensive groundwater sampling event should be completed on all wells associated with this release to obtain current data. Samples from all monitoring wells associated with the release should be collected and analyzed for BTEX, naphthalene, MtBE lead and EDB. Groundwater samples from monitoring wells MW-1, MW-2, MW-11, MW-13, MW-15, MW-16, DW-1 and the three new wells should also be analyzed for sulfates, nitrates, and ferrous iron. Laboratory analysis should be in accordance with *Analytical Methodology* dated June 1, 2004. A copy of this publication is available on line at http://www. scdhec.gov /eqc/ust /pubs/analmet.pdf.

Cost agreement numbers 24340 and 24341 have been approved in the amount shown on the enclosed cost agreement form for the aforementioned scope of work plus the use of ground penetrating radar in the vicinity of the intersection of Congress and Evans Streets to see if an additional UST is present. If an additional UST(s) is located, you will be responsible for registration and possible abandonment of this UST in accordance with UST Regulations. **A report of findings for the AFVR events and assessment activities is due on or before 100 days from the date of this letter.** The report should include the following:

- A narrative portion documenting each AFVR event noting site conditions, the name of the AFVR contractor, field personnel, date, time each AFVR event started and ended, ambient air

gallons of the petroleum products removed as a liquid or vapor for the event. AFVR data reported must include product recovery rate, volatile air emission concentration, vacuum radius of influence measurements taken at every 30-minute intervals during the event and gauging data from adjacent wells. Wells containing free phase product should be gauged at the beginning and end of each AFVR event.

- A narrative portion documenting site conditions after each AFVR event and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event.
- Boring logs and a DHEC Form 1903 signed by a well driller licensed in the state of South Carolina for each new monitoring well.
- A narrative portion documenting current site conditions during the groundwater sampling event noting the names of field personnel, date, time, ambient air temperature, dissolved oxygen levels, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells for this and shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. An interim invoice for well installation may be submitted to the UST Program. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The UST Program grants pre-approval for transportation of up to 3,000 gallons of groundwater from the referenced site to a permitted treatment facility. The contaminated groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 24340 and 24341. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with original MWA and ACA)
Technical (with MWA)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

Monitoring Well Installation Approval Form

Date of Issue: February 1, 2005 Approval No.: UMW-19129

Approval is hereby granted to:	ATC Associates, Incorporated
On behalf of:	Keenan Energy Incorporated
UST Permit #:	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to 120 feet of screening (six shallow and one deep) groundwater monitoring wells in accordance with the construction plans and technical specifications outlined in the South Carolina Well Standards R. 61-71. The wells are to be constructed within the surficial aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. **A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Arthur Shrader at (803) 896-6669 or shradeaa@dhec.sc.gov *and* Mike Radford (District Contact) at (803) 896-0620 or radforrm@dhec.sc.gov.**
5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) in the technical report.
6. Monitoring wells and temporary monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells and temporary monitoring wells will be abandoned by or under the direct supervision of a licensed well driller certified by the State of South Carolina. Temporary monitoring wells shall not remain in place for longer than 30 days from the date of installation. Monitoring wells may be abandoned only upon concurrence by this Division.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

Approved Cost Agreement 24340

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		A PLAN PREPARATION	0.5000	100.00	50.00
03 COMPREHENSIVE SURVEY					
		COMPREHENSIVE SURVEY	0.5000	1,000.00	500.00
04 MOB/DEMOB					
		A EQUIPMENT	2.5000	500.00	1,250.00
		B PERSONNEL	3.5000	250.00	875.00
06 SOIL BORINGS (DRILLED)					
		SOIL BORINGS & FLD SCREENING	60.0000	17.00	1,020.00
08 ABANDONMENT					
		ABANDONMENT	60.0000	4.00	240.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	135.0000	38.00	5,130.00
		C TELESCOPING	50.0000	58.00	2,900.00
10 SAMPLE COLLECTION					
		A GROUND WATER	4.0000	55.00	220.00
		D GROUNDWATER NO-PURGE	7.0000	35.00	245.00
		E GAUGE WELL ONLY	2.0000	20.00	40.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	11.0000	100.00	1,100.00
		E LEAD	11.0000	20.00	220.00
		F EDB	11.0000	55.00	605.00
		K NITRATE	5.0000	20.00	100.00
		L SULFATE	5.0000	20.00	100.00
		M FERROUS IRON	5.0000	20.00	100.00
	SOIL SOIL	Q BTEX+NAPTH	3.5000	100.00	350.00
12 AQUIFER CHARACTERIZATION					
		B SLUG TEST	1.0000	150.00	150.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
		A2 WASTEWATER - PUMPING TEST	1,000.0000	0.60	600.00
		C SOIL (TREATMENT/DISPOSAL)	11.0000	50.00	550.00
18 MISCELLANEOUS					
		GPR FOR UST	1.0000	500.00	500.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	21,525.00	3,228.75
23 EFR					
		A 8 HOUR EVENT	1.5000	3,000.00	4,500.00
			Total Amount		24,753.75

Approved Cost Agreement 24341

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		A PLAN PREPARATION	0.5000	100.00	50.00
03 COMPREHENSIVE SURVEY					
		COMPREHENSIVE SURVEY	0.5000	1,000.00	500.00
04 MOB/DEMOB					
		A EQUIPMENT	2.5000	500.00	1,250.00
		B PERSONNEL	3.5000	250.00	875.00
06 SOIL BORINGS (DRILLED)					
		SOIL BORINGS & FLD SCREENING	60.0000	17.00	1,020.00
08 ABANDONMENT					
		ABANDONMENT	60.0000	4.00	240.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	135.0000	38.00	5,130.00
		C TELESCOPING	50.0000	58.00	2,900.00
10 SAMPLE COLLECTION					
		A GROUND WATER	4.0000	55.00	220.00
		D GROUNDWATER NO-PURGE	7.0000	35.00	245.00
		E GAUGE WELL ONLY	2.0000	20.00	40.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	11.0000	100.00	1,100.00
		E LEAD	11.0000	20.00	220.00
		F EDB	11.0000	55.00	605.00
		K NITRATE	5.0000	20.00	100.00
		L SULFATE	5.0000	20.00	100.00
		M FERROUS IRON	5.0000	20.00	100.00
	SOIL SOIL	Q BTEX+NAPTH	3.5000	100.00	350.00
12 AQUIFER CHARACTERIZATION					
		B SLUG TEST	1.0000	150.00	150.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
		A2 WASTEWATER - PUMPING TEST	1,000.0000	0.60	600.00
		C SOIL (TREATMENT/DISPOSAL)	11.0000	50.00	550.00
18 MISCELLANEOUS					
		GPR FOR UST	1.0000	500.00	500.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	21,525.00	3,228.75
23 EFR					
		A 8 HOUR EVENT	1.5000	3,000.00	4,500.00
				Total Amount	24,753.75

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health
and Environmental Control

UNDERGROUND STORAGE TANK PROGRAM
BUREAU OF LAND AND WASTE MANAGEMENT
2600 Bull Street, Columbia, South Carolina 29201
Telephone (803) 896-6240 Fax (803) 896-6245

MEMORANDUM

UST PROGRAM
DOCKETING # 55 Tech

Date: April 7, 2005

To: Ernie Bell, Ph.D., District Health Director
Palmetto Health District

Ann Clark, Acting Director
Central Midlands EQC District

Tom B. Knight
Bureau of Water

Bruce Bleau
Bureau of Water

Nancy C. Whittle
EQC Administration

From: Art Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division

Subject: United Exxon, 401 North Congress Street, Columbia, SC
UST Permit # 11760

Seven Underground Storage Tanks (USTs) were removed from the ground at the referenced facility in April 1996. On April 1, 2005, the UST Program received a report from ATC Associates Incorporated that Methyl-tert Butyl Ether (MtBE) was entering a tributary of McCulley Creek. Laboratory analysis of a water grab sample detected MtBE at 8 micrograms per liter (parts per billion). As no other petroleum constituents were detected in the sample, the release is believed to be from the former UST system. A confirmation sample will be collected in the future once the tributary returns to base flow conditions. A copy of an extract of the assessment report to include the topographic map, concentration map, and laboratory report is attached for your information.

ATC Associates is continuing to define the extent of petroleum chemicals of concern. A report of findings is due in July 2004. Once the assessment is completed, the tank owner or DHEC will procure the services of a certified contractor to perform active corrective action of the affected area. If you have any questions, please call me at (803) 896-6669.

Enc: Copy of a portion of ATC Associated Report received April 1, 2005

cc: Technical file (without enclosures)

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

April 5, 2005

MR & MRS BLITZER VANCE
400 NORTH CONGRESS STREET
WINNSBORO SC 2980-1141

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Groundwater Assessment Report received April 1, 2005
Access to Your Property
Fairfield County

UST PROGRAM DOCKETING # 56 Tech

Dear Mr. and Mrs. Vance:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) directed Keenan Oil Company Incorporated, as the tank owner, to conduct rehabilitation activities at the referenced facility. As you are aware, ATC Associates, Keenan Oil Company's site rehabilitation contractor, installed temporary screening points, seven monitoring wells, and conducted two free product recovery events on your property. A copy of the referenced report is enclosed for your information. The free product recovery events have reduced the thickness of free phase product from over a foot to less than half a foot.

Based on the success, the UST Program requests property access to conduct two additional 8-hour free product recovery events and sample the monitoring well network. As with all previous activities conducted on your property, all activities will be conducted at reasonable times and with minimum inconvenience to you. There will be no cost to you in allowing Keenan Oil Company Incorporated to access you property for environmental activities. **Please sign the enclosed right of entry form and return it to my attention on or before Tuesday, April 22, 2005.**

Thank you for your consideration in this matter. If you have any questions or would like to schedule a meeting to further discuss this matter, please contact me by phone at (803) 896-6669 or (800) 826-5435 (within SC), by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

Enc: Copy of Text, Tables and Figures from Groundwater Assessment Report for Former United Exxon
Right of Entry Form (ROE)

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204 (with ROE)
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203 (with ROE)
Technical File (with ROE)

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, _____ certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property at 400 North Congress Street, Winnsboro, South Carolina for the following purposes:

1) **Between the dates of _____ to _____ May 2005 on Tuesdays, Wednesdays, or Thursdays only to conduct an eight hour free product recovery event during the hours of 8:00 am to 5:00 pm on two separate dates.**

2) **Access the property approximately 30 days after the completion of the second aggressive fluid event between the hours of 9:30 am to 3:30 pm for measurement of groundwater conditions and/or collection of samples.**

I understand a representative of ATC Associates will notify me a minimum of 48 hours in advance of scheduled events and I will be provided a copy of the report of findings.

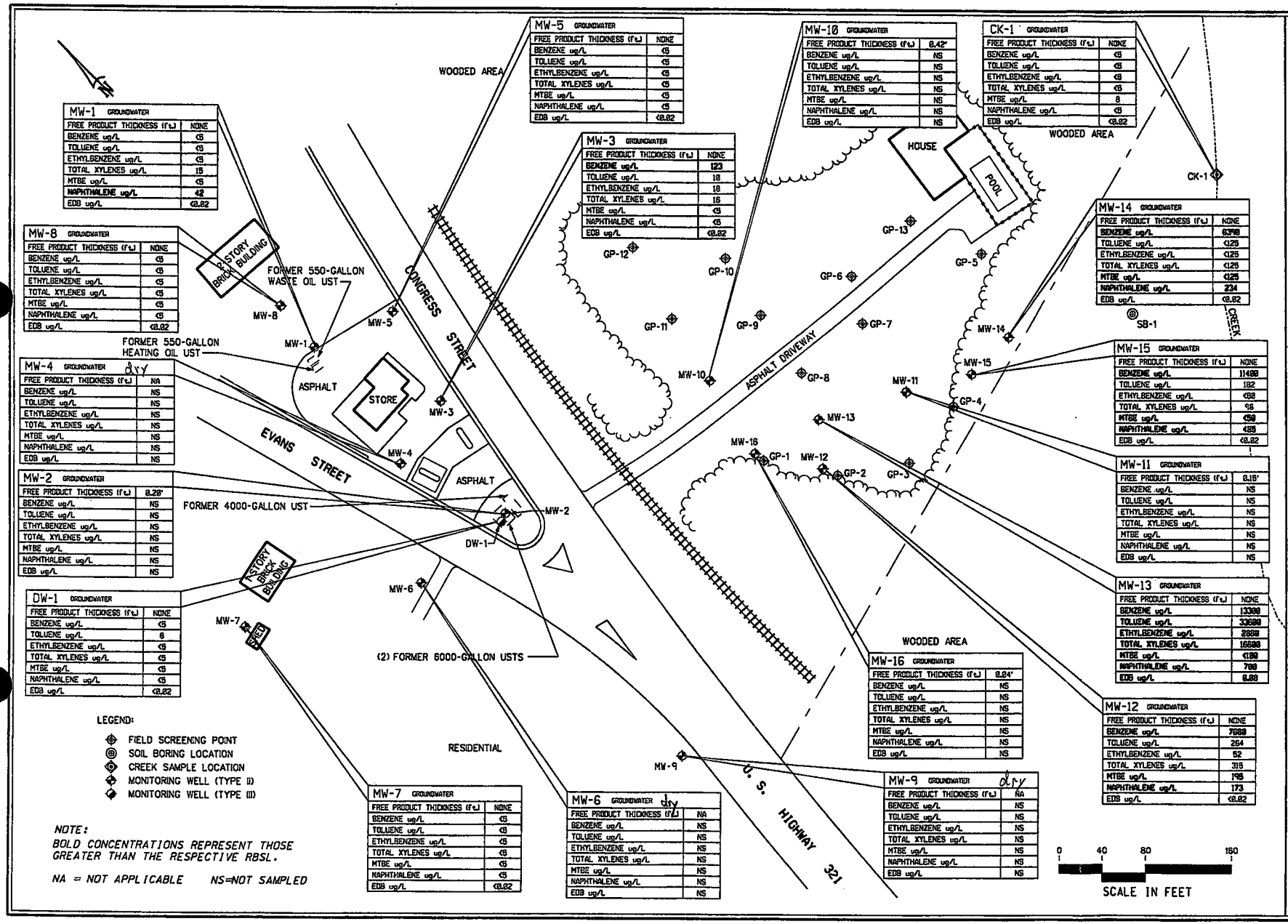
NAME (Please print) : _____

SIGNATURE : _____

WITNESS : _____

DATE : _____**Mo** _____**Day** _____**Year**

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760



MW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	15
MTBE ug/L	<5
NAPHTHALENE ug/L	**42**
EDB ug/L	<0.02

MW-2 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.20'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-3 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**123**
TOLUENE ug/L	18
ETHYLBENZENE ug/L	18
TOTAL XYLENES ug/L	16
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-4 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-5 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-6 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-7 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-8 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

MW-9 GROUNDWATER dry	
FREE PRODUCT THICKNESS (ft.)	NA
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-10 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.42'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-11 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.15'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

MW-12 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**7680**
TOLUENE ug/L	264
ETHYLBENZENE ug/L	52
TOTAL XYLENES ug/L	315
MTBE ug/L	195
NAPHTHALENE ug/L	**173**
EDB ug/L	<0.02

MW-13 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**13300**
TOLUENE ug/L	**33600**
ETHYLBENZENE ug/L	**2880**
TOTAL XYLENES ug/L	**16600**
MTBE ug/L	<100
NAPHTHALENE ug/L	**700**
EDB ug/L	0.08

MW-14 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**6370**
TOLUENE ug/L	<125
ETHYLBENZENE ug/L	<125
TOTAL XYLENES ug/L	<125
MTBE ug/L	<125
NAPHTHALENE ug/L	**234**
EDB ug/L	<0.02

MW-15 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	**11400**
TOLUENE ug/L	182
ETHYLBENZENE ug/L	<98
TOTAL XYLENES ug/L	96
MTBE ug/L	**<50**
NAPHTHALENE ug/L	**<85**
EDB ug/L	<0.02

MW-16 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	0.24'
BENZENE ug/L	NS
TOLUENE ug/L	NS
ETHYLBENZENE ug/L	NS
TOTAL XYLENES ug/L	NS
MTBE ug/L	NS
NAPHTHALENE ug/L	NS
EDB ug/L	NS

DW-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	8
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	<5
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

CK-1 GROUNDWATER	
FREE PRODUCT THICKNESS (ft.)	NONE
BENZENE ug/L	<5
TOLUENE ug/L	<5
ETHYLBENZENE ug/L	<5
TOTAL XYLENES ug/L	<5
MTBE ug/L	8
NAPHTHALENE ug/L	<5
EDB ug/L	<0.02

LEGEND:

- FIELD SCREENING POINT
- SOIL BORING LOCATION
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE:
BOLD CONCENTRATIONS REPRESENT THOSE GREATER THAN THE RESPECTIVE RBSL.

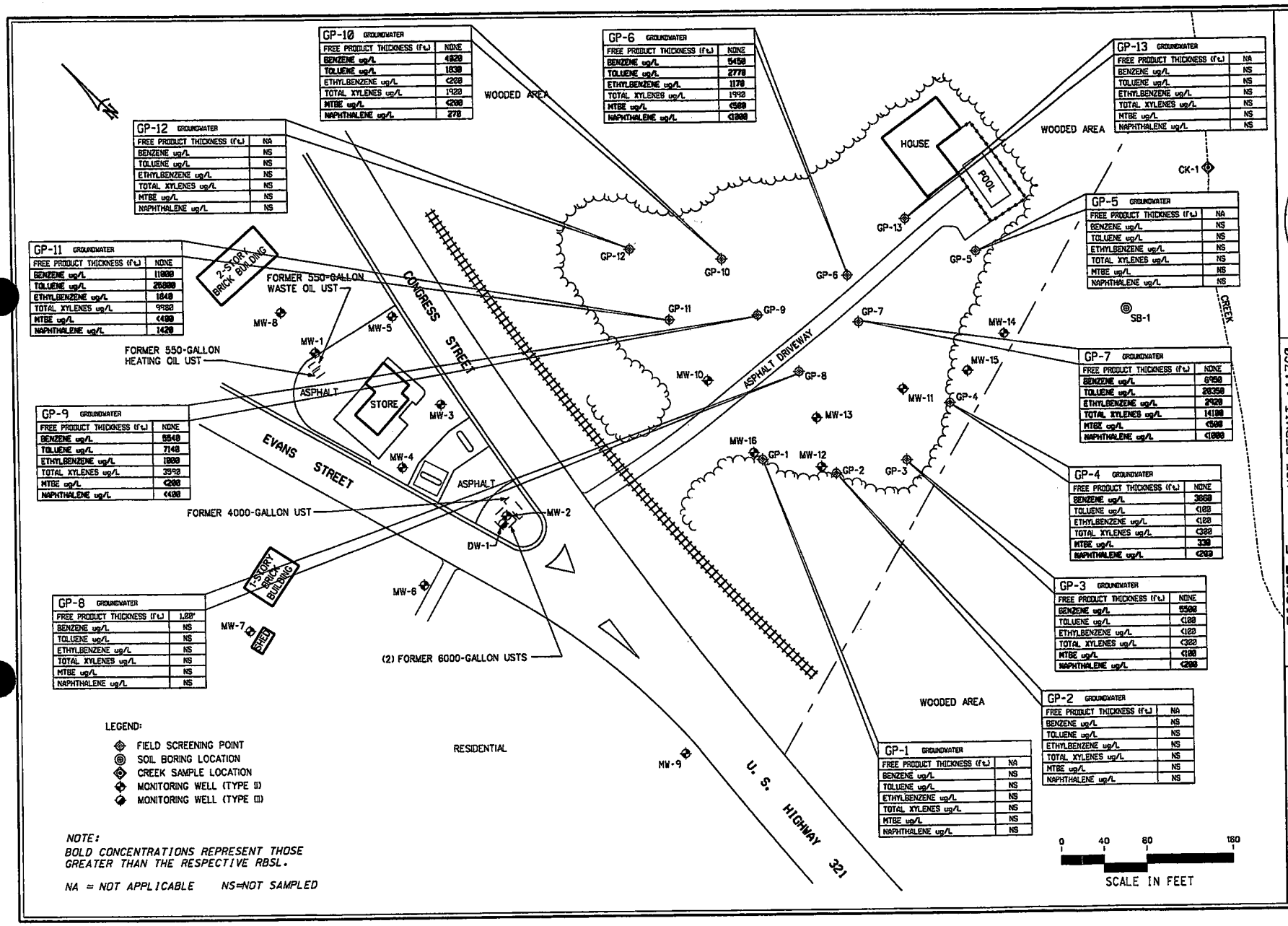
NA = NOT APPLICABLE NS=NOT SAMPLED

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 6 UST PERMIT #11760
GROUNDWATER CONCENTRATIONS MAP
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012

NOTES:



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

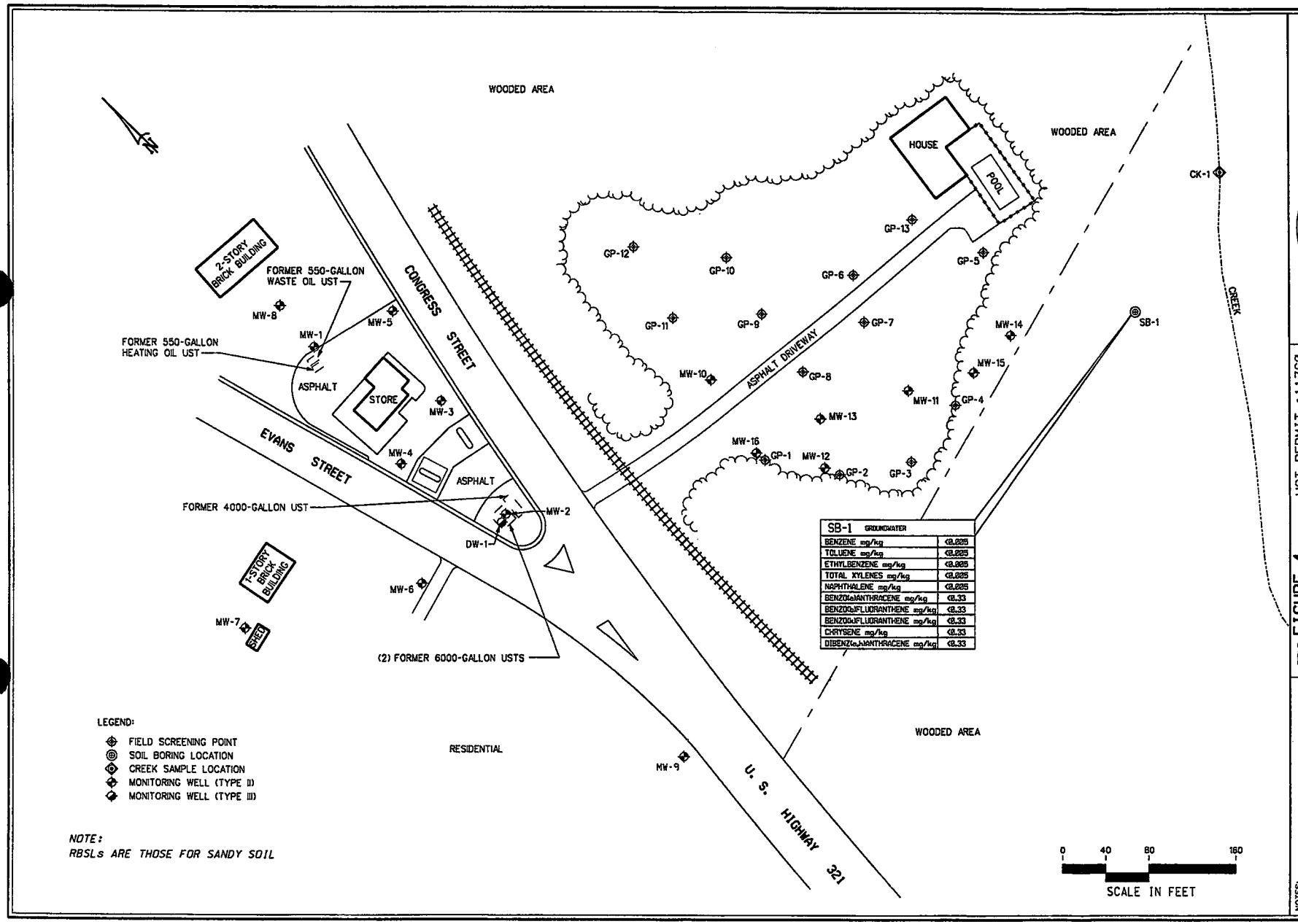
TITLE FIGURE 5 UST PERMIT #11760
FIELD SCREENING GROUNDWATER CONCENTRATION MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

SCALE	DATE	PROJECT NO.
1" = 80'	03-30-2005	14.25384.0012

TYPE CODE	PREP. BY	REV. BY
	BB	

C/AD FILE 1252116.DGN

NOTES:



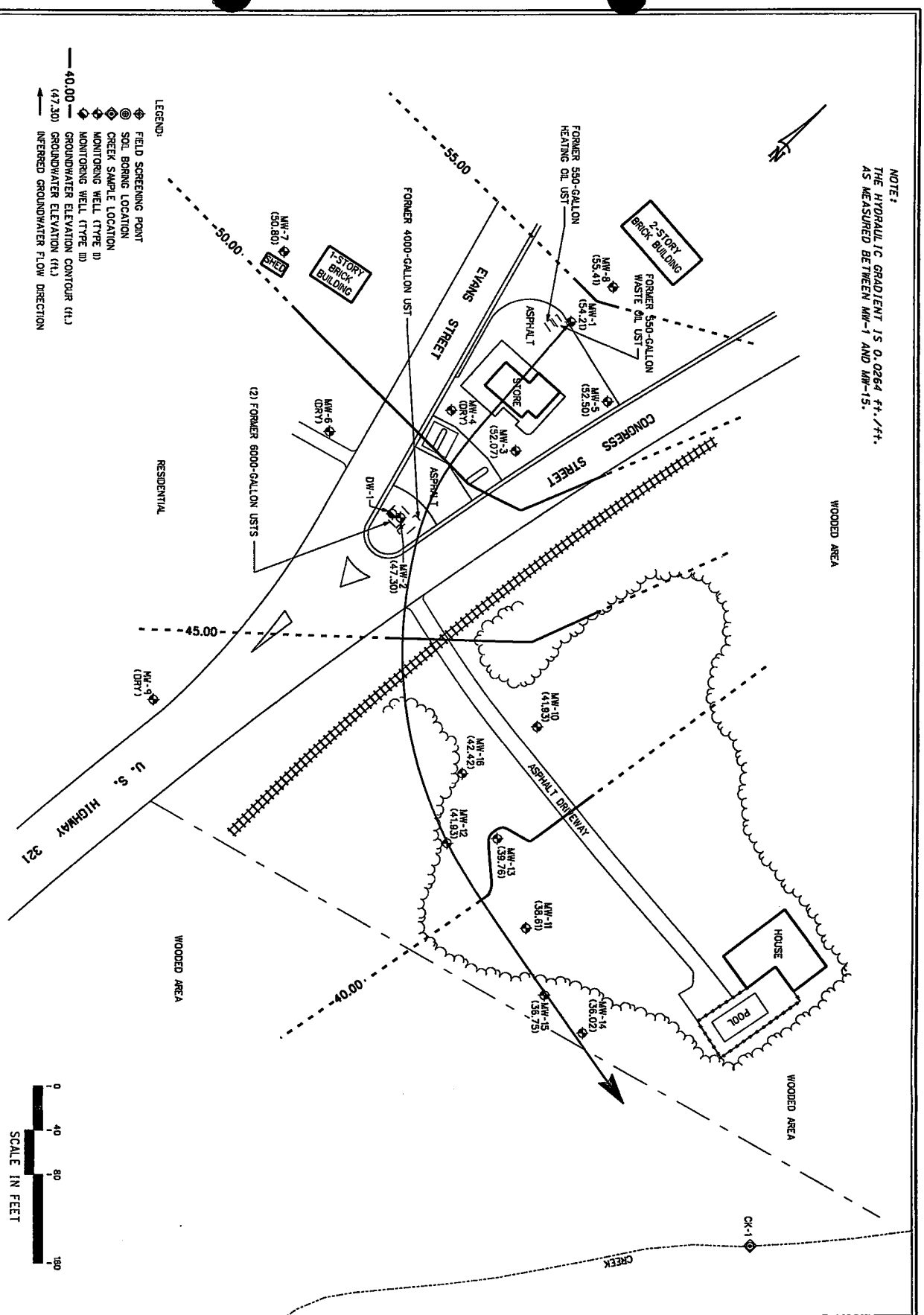
SB-1 GROUNDWATER	
BENZENE mg/kg	<0.025
TOLUENE mg/kg	<0.025
ETHYLBENZENE mg/kg	<0.025
TOTAL XYLENES mg/kg	<0.025
NAPHTHALENE mg/kg	<0.025
BENZO(a)ANTHRACENE mg/kg	<0.33
BENZO(b)FLUORANTHENE mg/kg	<0.33
BENZO(k)FLUORANTHENE mg/kg	<0.33
CHRYSENE mg/kg	<0.33
DIBENZ(a,h)ANTHRACENE mg/kg	<0.33

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

TITLE FIGURE 4 UST PERMIT #11760
SOIL CONCENTRATION MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012

NOTES:

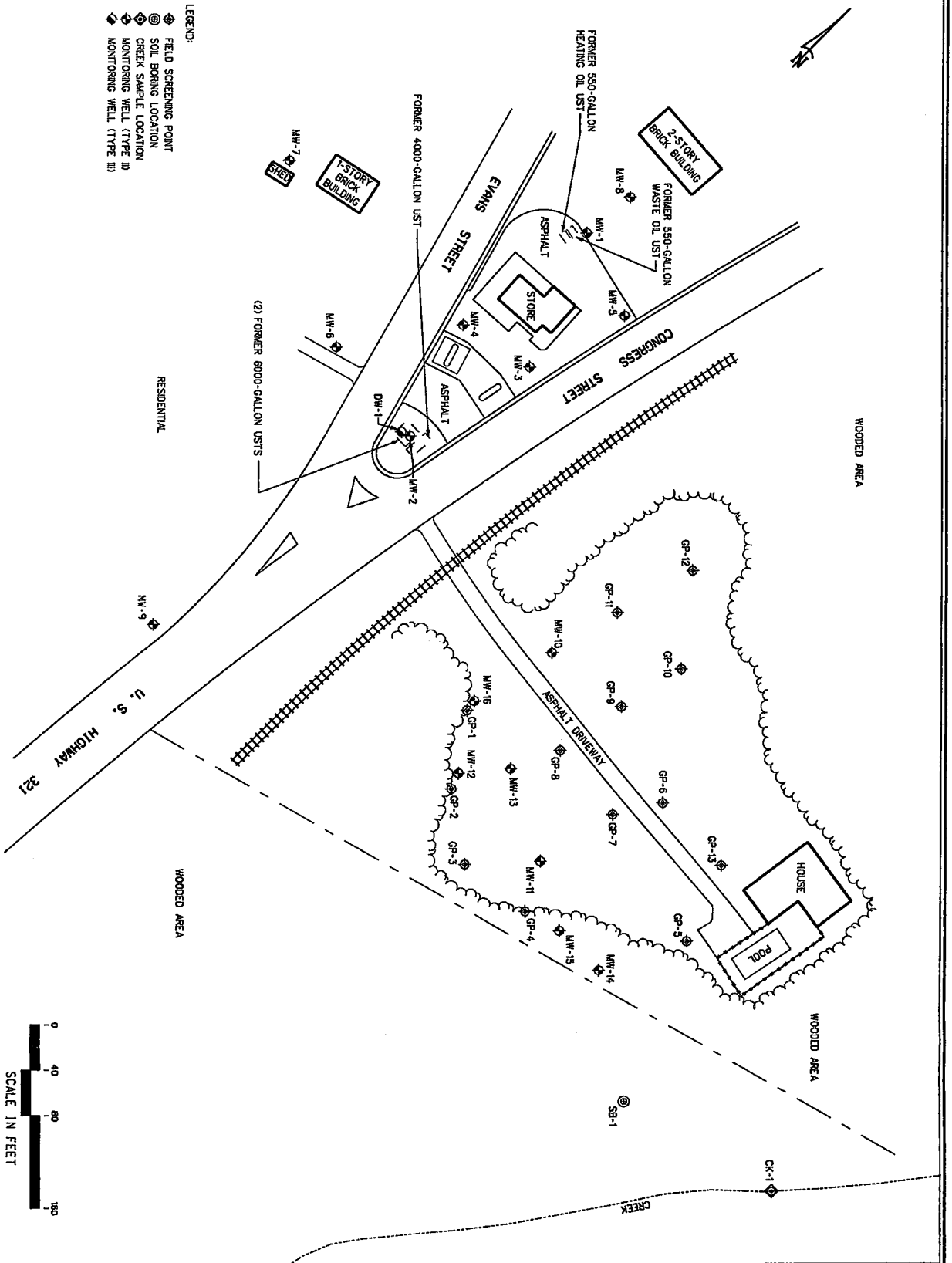


NOTES:

TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012



NOTES:

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	03-30-2005	14.25384.0012

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED
APR 04 2005
UNDERGROUND STORAGE
TANK PROGRAM

April 4, 2005

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Proposal
United Exxon
Fairfield County
UST Permit # 11760

Dear Mr. Shrader:

Please find enclosed the Groundwater Assessment proposal for United Exxon per your April 1, 2005, request. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Bob Bolton
Project Manager

UST PROGRAM
DOCKETING # 57 Tech

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

D H E C
PROMOTE PROTECT PROSPER

Tier II Plan
Division of Underground Storage Tank Management

UST Permit #: 11760 County: Fairfield Facility Name: United Exxon

Facility Address: 401 North Congress St., Winnsboro, SC

Responsible Party: Keenan Energy Co., Inc. Address: P.O. Box 3281, Columbia, SC 29230

No. USTs: _____ Removed? _____ (date) Replaced? _____ (date)

Current use of facility/property: Retail Propane Sales

Current property owner name: Keenan Energy Company, Inc.

Current property owner address: P.O. Box 3281, Columbia, SC 29230

Field Screening Methodology

Specify the field screening methodology to be used. The use of field screening methods to optimize the number and location of permanent wells is required.

Not Applicable

Permanent Monitoring Wells (estimate number and total completed depth)

# of shallow wells: 3 Total depth: 40' Each

# of deep wells: _____ Total depth: _____ (if necessary)

Comments, if warranted: _____

Analyses

List the analytical parameters (e.g., BTEX, MTBE) and estimated number.

17 sets BTEX, Naph, MTBE, & EDB - Groundwater

Implementation Schedule

Start up date: _____ Completion date: _____

Report submittal date: _____

UST Permit #: 11760 Facility Name: United Exxon

Site Maps

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.

2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

North arrow	Legend with facility name and address, UST Permit number, date, and a bar scale
Location of property lines	Streets or highways (indicate names and numbers)
Location of buildings	Identification of located buildings
Paved areas on or adjacent to site	Location of all present and former ASTs and USTs
Previous soil sampling locations	Underground and above ground utilities on or adjacent to site
Previous monitoring well locations	Location of any other potential receptor

Aquifer Characterization (check one and provide explanation for choice)

Pump test: Slug tests:

Not Applicable

Small Volume Disposal Type and Method

Soil: Drummed for proper disposal

Purge water: Drummed for proper disposal

Additional comments:

1. The creek will be sampled during the proposed groundwater assessment activities

2. Ground penetrating radar will be used at the intersection of Evans & Congress St. to investigate the possibility of an additional UST system existing south of MW-2.

3. Soil boring footage was added in case we're unable to install monitor wells.

ASSESSMENT COMPONENT COST AGREEMENT

SOUTH CAROLINA
Department of Health and Environmental Control
Bureau of Underground Storage Tank Management
State Underground Petroleum Environmental Response Bank Account

Facility Name **United Exxon**
UST Permit # **11760** Cost Agreement #

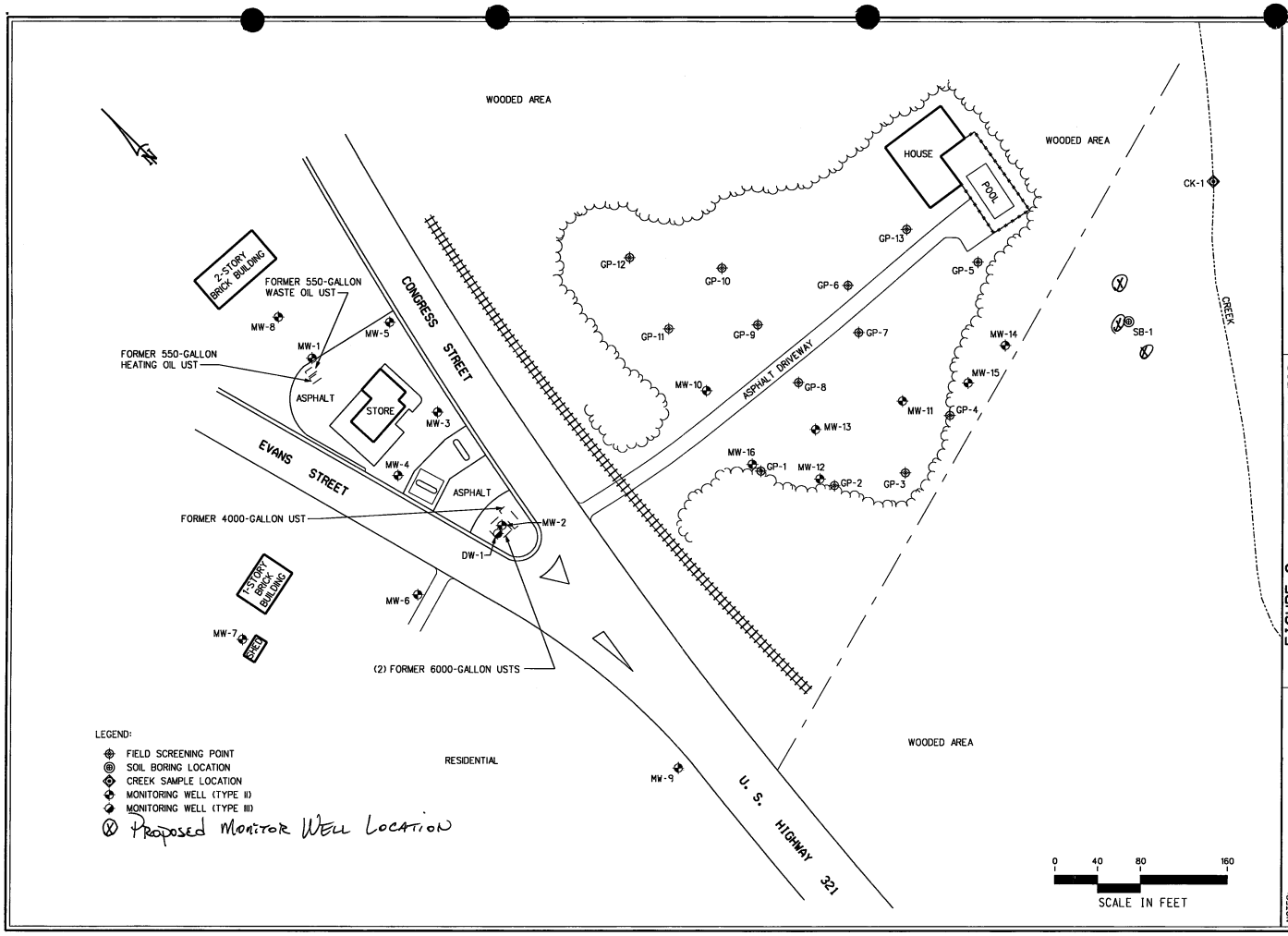
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
A. Plan Preparation	1	x	$100.00	$ $100.00
B. Tax Maps		x	$50.00	$ $0.00
2. Receptor Survey*		x	$500.00	$ $0.00
3. Comprehensive Survey		x	$1,000.00	$ $0.00
4. Mob/Demob (List component #)				
A. Equipment 9,23,23,23	4	x	$500.00	$ $2,000.00
B. Personnel 9,10,16,17,23,23,23	7	x	$250.00	$ $1,750.00
C. Adverse Terrain Vehicle		x	$500.00	$ $0.00
5. Soil Borings (hand auger)*		feet x	$14.00	$ $0.00
6. Soil Borings (drilled)	(includes collection and quantification)			
and Field Screening*	120	feet x	$17.00	$ $2,040.00
7. Soil Leachability Model		x	$200.00	$ $0.00
8. Abandonment*	120	feet x	$4.00	$ $480.00
9. Well Installation*	(includes drilling costs)			
A. Water Table (hand auger)		feet x	$20.00	$ $0.00
B. Water Table (drilled) 150	120	feet x	$38.00	$ $4,560.00
C. Telescoping	~~150~~	feet x	$58.00	$ $0.00
D. Rock Drilling	~~170~~	feet x	$58.00	$ $0.00
10. Groundwater Sample Collection*				
A. Groundwater	4	samples x	$55.00	$ $220.00
B. Air Vapor		samples x	$90.00	$ $0.00
C. Water Supply		samples x	$25.00	$ $0.00
D. Groundwater No Purge	13	samples x	$35.00	$ $455.00
E. Gauge Well only	4	samples x	$20.00	$ $80.00
11. Analyses-Groundwater				
A. BTEX+Naph.+MTBE	17	samples x	$100.00	$ $1,700.00
B. Rush BTEX Analysis		samples x	$120.00	$ $0.00
C. BTEX+Naph.+MTBE+ Trimethylbenzene		samples x	$135.00	$ $0.00
D. PAH's		samples x	$120.00	$ $0.00
E. Lead	17	samples x	$20.00	$ $0.00
F. EDB	17	samples x	$55.00	$ $935.00
G. 8 RCRA Metals		samples x	$140.00	$ $0.00
H. TPH (9070)		samples x	$55.00	$ $0.00
I. pH		samples x	$10.00	$ $0.00
J. BOD		samples x	$40.00	$ $0.00
K. Nitrate		samples x	$20.00	$ $0.00
L. Sulfate		samples x	$20.00	$ $0.00
M. Ferrous Iron		samples x	$20.00	$ $0.00
N. Methane		samples x	$110.00	$ $0.00
O. Organic Lead		samples x	$100.00	$ $0.00
P. 8 Oxygenates		samples x	$85.00	$ $0.00

Continue on back of page

ASSESSMENT COMPONENT COST AGREEMENT					
11. Analyses-Soil					
Q. BTEX + Naph.		samples	x	$100.00	$ $0.00
R. PAH's		samples	x	$120.00	$ $0.00
S. 8 RCRA Metals		samples	x	$150.00	$ $0.00
T. TPH (9071)		samples	x	$60.00	$ $0.00
U. TPH (3550)		samples	x	$65.00	$ $0.00
V. TPH (5035)		samples	x	$65.00	$ $0.00
W. Grain size / hydrometer		samples	x	$75.00	$ $0.00
X. Total Organic Carbon		samples	x	$35.00	$ $0.00
11. Analysis - Air					
Y. BTEX + Napth.		samples	x	$100.00	$ $0.00
Z. Hydrocarbon Fuel Identification		samples	x	$593.00	$ $0.00
12. Aquifer Characterization*					
A. Pumping Test		hours	x	$120.00	$ $0.00
B. Slug test		tests	x	$150.00	$ $0.00
13. Free Product Recovery Rate Test*		tests	x	$120.00	$ $0.00
14. Fate/Transport Modeling					
A. Mathematical Model		each		$300.00	$ $0.00
B. Computer Model		each		$500.00	$ $0.00
15. Risk Evaluation					
A. Tier I			x	$300.00	$ $0.00
B. Tier II			x	$500.00	$ $0.00
16. Subsequent Survey*	1		x	$260.00	$ $260.00
17. Disposal*					
A. Wastewater					
1. Purging/Sampling	4	drums	x	$90.00	$ $360.00
2. Pumping test/EFR	2000	gallons	x	$0.60	$ $1,200.00
B. Free Product		drums	x	$110.00	$ $0.00
C. Soil (Treatment/Disposal)	17	drums	x	$50.00	$ $850.00
18. Miscellaneous (receipts required)					
Ground Penetrating Radar at Evans Street	1		x	$1,000.00	$ $1,000.00
and Congress Street Intersection.			x		$ $0.00
			x		$ $0.00
			x		$ $0.00
20. Tier I Assessment (Use DHEC 3665 Form)					
21. IGWA (Use DHEC 3666 Form)					
22. Corrective Action (Use DHEC 3687 Form)					
23. EFR					
A. 8-Hour Event*	3	each	x	$3,000.00	$ $9,000.00
B. Additional Hour		per hour	x	$204.00	$ $0.00
C. Off-Gas Treatment		per hour	x	$35.00	$ $0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:					
A. New GAC System Installation*		each	x	$2,500.00	$ $0.00
B. Refurbished GAC System Install*		each	x	$850.00	$ $0.00
C. Filter Replacement / Removal*		each	x	$450.00	$ $0.00
D. GAC System removal, cleaning & refurbishment		each	x	$450.00	$ $0.00
E. GAC System Housing		each	x	$450.00	$ $0.00
F. In-line particulate filter		each	x	$140.00	$ $0.00
G. Additional piping & fittings		feet	x	$4.00	$ $0.00
19. Report/Project Management and Coordination	0.15		x	(SUBTOTAL) $26,990.00	$ $4,048.50
25. Total					$ $31,038.50

NEWACC2000

*The appropriate mobilization cost can be added to complete these tasks, as necessary.



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

SCALE	DATE	PROJECT NO.
1" = 80'	03-30-2005	14.25384.0012

TITLE FIGURE 2
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

UST PERMIT #11760

CAD FILE	TYPE CODE	PREP. BY	REV. BY
1252116.DGN		BB	

NOTES:

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

April 1, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Release 1 Reported August 1, 1997
Release 2 Reported August 1, 1997
Groundwater Assessment Report received April 1, 2005
Fairfield County

UST PROGRAM DOCKETING # 58 Rech

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Assessment Report and agrees with your site rehabilitation contractor's recommendation for additional free product recovery events and additional assessment activities, to include an investigation of the possibility of an additional UST(s) system is located near the intersection of Congress and Evans Streets. The report documents petroleum chemicals of concern (CoC) in the creek adjacent to the Vance property and free phase product on the referenced facility and the Vance property.

Our records indicate that you have selected ATC Associates Incorporated as your contractor to perform assessment activities at this site. Please have your contractor complete and submit an Assessment Component Cost Agreement form and **Tier II Assessment Plan** for additional free product recovery events, installation of additional monitoring wells to delineate the extent of the CoC in the wood south of the Vance property, replace three dry monitoring wells, and sample all existing as well as the new monitoring well **on or before April 8, 2005**. The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov/eqc/lwm/forms/assess %7E1.pdf . Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form. Costs for this additional assessment activity will be split equally between release 1 and release 2.

On all correspondence regarding this site, please reference UST Permit #11760. Please be sure to include the requested information so that the appropriate approvals can be issued. **Note: approval from the Program must be issued before work begins.** Please call me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

cc: ATC Associates, Inc. 400 Northeast Drive, Unit Q, Columbia, SC 29203
Technical File

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

April 1, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Release 1 Reported August 1, 1997
Release 2 Reported August 1, 1997
Groundwater Assessment Report received April 1, 2005
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Assessment Report and agrees with your site rehabilitation contractor's recommendation for additional free product recovery events and additional assessment activities, to include an investigation of the possibility of an additional UST(s) system is located near the intersection of Congress and Evans Streets. The report documents petroleum chemicals of concern (CoC) in the creek adjacent to the Vance property and free phase product on the referenced facility and the Vance property.

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Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

cc: ATC Associates, Inc. 400 Northeast Drive, Unit Q, Columbia, SC 29203
Technical File

Confirmation Report - Memory Send

Date & Time:		Apr-01-2005 17:04
Tel line	:	+18038966245
Machine ID	:	UST PROGRAM
Job number	:	938
Date & Time	:	Apr-01 17:02
To	:	97350443
Number of pages	:	001
Start time	:	Apr-01 17:02
End time	:	Apr-01 17:04
Pages sent	:	001
Status	:	OK
Job number	:	938 *** SEND SUCCESSFUL ***

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

January 4, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA# 21054 and 21055; MWA# UMW-17996
Release 2 and 3 Reported August 1, 1997
Groundwater Assessment Proposal Received January 7, 2004
Signed Property Access Agreement received December 15, 2004
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control received the signed property right of entry form for 400 North Congress Street on December 15, 2004. A copy is enclosed for your records and a copy has been provided to your site rehabilitation contractor. Please have ATC Associates Incorporated coordinate directly with Mr. Blitzer Vance, the property owner, for the exact date(s) and times of property access. ATC Associates Incorporated should take necessary measures to ensure there is minimal damage to the driveway or property at the Vance's residence. Any damage to the premises at 400 North Congress Street must be repaired immediately.

Assessment activities should commence on or after January 10, 2005 with a report of findings due not later than April 1, 2005. On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

UST PROGRAM
DOCKETING # 59 Tech

enc: Signed Right of Entry Form for 400 North Congress Street, Winnsboro, SC

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc.)
Mr & Mrs Blitzer Vance, 400 North Congress Street, Winnsboro, SC 2980-1141 (w/o enc)

ATC ASSOCIATES INC.

400 No[illegible]st Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Jnit Q
29203
s.com
-0003
-0443

Art

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. and Mrs. Vance:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of three (3) groundwater monitor wells and up to 9 soil borings on your property (Parcel 135-7-3-3) located across North Congress Street from the site is necessary. A map identifying the proposed monitor well and soil boring locations is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well and soil boring installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE TANK PROGRAM

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

RECEIVED
APR 02 2004
UNDERGROUND STORAGE TANK PROGRAM

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☑ Blitz Vance
Access approved

☐ _____
Access denied

Phone number 803-712-0048
(If you wish to be notified prior to field activities)
(see addendum)

ADDENDUM TO RIGHT OF ENTRY LETTER

TO: ARTHUR SHRADER

FROM: BLITZER & ARLENE VANCE

SUBJECT: PROPERTY ACCESS PURSUANT TO ACCESS PERMIT #11760

DATE: 12/13/04

CC: ATC ASSOCIATES INC

How to Use This Memo Template

Mr. Shrader, thank you for your facilitation of this matter with the contractor in question. As previously discussed please have the contractor limit their access to the following time periods if possible:

1/10/05 – 3 /11/05 Mon-Thur 09:00 – 15:00

Dogs will be controlled during this time period for their safety. Also, please have them provide prior notification the night before any required access.

I would also like to point out an error on the map, which you provided. The entryway to our property is not a gravel road, but a paved asphalt driveway. Please relay this information to the contractor and have them chose appropriate equipment in order to limit damage.

Blitz Vance

Blitzer Vance
400 N Congress
Winnsboro, SC 29180

blvance@chestertel.com
803-712-0048 (home)
803-212-8928 (mobile)

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE

ATC ASSOCIATES INC.

400 N[illegible]east Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Jnit Q
29203
s.com
-0003
-0443

Art

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

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Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
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RECEIVED
APR 02 2004
UNDERGROUND STORAGE TANK PROGRAM

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

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Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☑ Blitz Vance
Access approved

☐ _____
Access denied

Phone number 803-712-0048
(If you wish to be notified prior to field activities)
(see addendum)

ADDENDUM TO RIGHT OF ENTRY LETTER

TO: ARTHUR SHRADER

FROM: BLITZER & ARLENE VANCE

SUBJECT: PROPERTY ACCESS PURSUANT TO ACCESS PERMIT #11760

DATE: 12/13/04

CC: ATC ASSOCIATES INC

HOW TO USE THIS MEMO TEMPLATE

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Blitz Vance

Blitzer Vance
400 N Congress
Winnsboro, SC 29180

blvance@chestertel.com
803-712-0048 (home)
803-212-8928 (mobile)

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

January 4, 2005

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA# 21054 and 21055; MWA# UMW-17996
Release 2 and 3 Reported August 1, 1997
Groundwater Assessment Proposal Received January 7, 2004
Signed Property Access Agreement received December 15, 2004
Fairfield County

Dear Mr. Keenan:

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Assessment activities should commence on or after January 10, 2005 with a report of findings due not later than April 1, 2005. On all correspondence concerning this site, please reference UST permit number 11760. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Signed Right of Entry Form for 400 North Congress Street, Winnsboro, SC

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc.)
Mr & Mrs Blitzer Vance, 400 North Congress Street, Winnsboro, SC 2980-1141 (w/o enc)

Confirmation Report – Memory Send

Date & Time: Jan-05-2005 07:56
Tel line : +8038966245
Machine ID : UST PROGRAM

Job number : 968
Date & Time : Jan-05 07:54
To : 97350443
Number of pages : 004
Start time : Jan-05 07:54
End time : Jan-05 07:56
Pages sent : 004
Status : OK
Job number : 968 *** SEND SUCCESSFUL ***

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR BILLY KEENAN
KEENAN ENERGY COMPANY INC
P O BOX 3218
COLUMBIA SC 29230

NOV 0 5 2008

Re: AFVR and Gauging Event Directive
United Exxon, 401 N. Congress Street, Winnsboro, SC
UST Permit # 11760, CA # 34211 and # 34213
Releases reported August 1, 1997
Monitoring Report received October 21, 2008
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates, Inc. The Program has reviewed the referenced report and determined the next necessary scope of work to be five 8-hour Aggressive Fluid Vapor Recovery (AFVR) events to remove free phase product from MW-2, MW-10, MW-11, MW-13, and MW-16 followed by a 30-day gauging event.

Cost Agreement # 34211 and # 34213 have been approved in the amount shown on the enclosed cost agreements for the AFVR events and gauging event.

- The first 8-hour AFVR event should be conducted within 30 days of the date of this letter.
- Gauging event to be conducted on MW-2, MW-10, MW-11, MW-13, and MW-16 no earlier than 30 days after the last AFVR event.

The report submitted at the completion of these activities should include the following:

- A narrative portion documenting the AFVR events noting site conditions, the names of the AFVR contractor, field personnel, date, times the AFVR events started and ended, ambient air temperature, general weather conditions during the AFVR events, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for each event. Wells containing free phase product should be gauged at the beginning and end of the AVFR event. Disposal manifests for the AFVR events should be included as part of the final report.

Please have ATC Associates, Inc. submit gauging results to the Program in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the gauging event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all gauged wells, unless otherwise directed by the Program, shall be presented in tabular form.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

UST DOCKET
bleal

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina

certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice is due within 90 days from the date of this letter and with in 45 days from the sampling date. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work..

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference UST Permit # 11760. If you have any questions, please feel free to contact me by phone at (803) 896-4085, by fax at (803) 896-6245, or by email at jacksosm@dhec.sc.gov.

Sincerely,

Stephanie M. Jackson, Hydrogeologist
Corrective Action Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement
cc: ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203
Technical file (w/o enc)

Approved Cost Agreement 34211

Facility: 11760 UNITED EXXON
JACKSOSM
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	2.5000	575.00	1,437.50
		B	PERSONNEL	3.0000	290.00	870.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY	2.5000	20.00	50.00
17 DISPOSAL						
		A2	WASTEWATER - PUMPING TEST	5,000.0000	0.60	3,000.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	13,557.50	2,033.63
23 EFR						
		A	8 HOUR EVENT	2.5000	3,000.00	7,500.00
		C	OFF GAS TREATMENT	20.0000	35.00	700.00
				Total Amount		15,591.13

Approved Cost Agreement 34213

Facility: 11760 UNITED EXXON
JACKSOSM
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	2.5000	575.00	1,437.50
		B	PERSONNEL	3.0000	290.00	870.00
10 SAMPLE COLLECTION						
		E	GAUGE WELL ONLY`	2.5000	20.00	50.00
17 DISPOSAL						
		A2	WASTEWATER - PUMPING TEST	5,000.0000	0.60	3,000.00
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		PCT	PERCENT	0.1500	13,557.50	2,033.63
23 EFR						
		A	8 HOUR EVENT	2.5000	3,000.00	7,500.00
		C	OFF GAS TREATMENT	20.0000	35.00	700.00
				Total Amount		15,591.13

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE TANK PROGRAM

RIGHT OF ENTRY

I, Blitzer Vance certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes: (see addendum)

Street Address: 400 North Congress Street

City, State: Winnsboro, SC

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site. These will be holes drilled at various locations into the ground to collect soil and groundwater samples and determine the location of groundwater monitoring wells.

2) Installing up to fifteen (15) monitoring / recovery well(s). I understand that these wells will look like the monitoring well currently in my front yard and remain with the property until cleanup is complete. Additionally, Keenan Oil Company Incorporated, SCDHEC or their agents will access the property at reasonable times for measurement of groundwater conditions and/or collection of samples. The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : Blitzer Vance

SIGNATURE : Blitz Vance

WITNESS : _____

DATE : 12 Mo 17 Day 2004 Year

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760

UST PROGRAM DOCKETING # 60 Tech

ADDENDUM TO RIGHT OF ENTRY LETTER

TO: ARTHUR SHRADER

FROM: BLITZER & ARLENE VANCE

SUBJECT: PROPERTY ACCESS PURSUANT TO ACCESS PERMIT #11760

DATE: 12/13/04

CC: ATC ASSOCIATES INC

HOW TO USE THIS MEMO TEMPLATE

Mr. Shrader, thank you for your facilitation of this matter with the contractor in question. As previously discussed please have the contractor limit their access to the following time periods if possible:

1/10/05 – 3 /11/05 Mon-Thur 09:00 – 15:00

Dogs will be controlled during this time period for their safety. Also, please have them provide prior notification the night before any required access.

I would also like to point out an error on the map, which you provided. The entryway to our property is not a gravel road, but a paved asphalt driveway. Please relay this information to the contractor and have them chose appropriate equipment in order to limit damage.

Blitzer Vance
400 N Congress
Winnsboro, SC 29180

blvance@chestertel.com
803-712-0048 (home)
803-212-8928 (mobile)

RECEIVED
DEC 15 2004
TORAGE
PROGRAM

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Jnit Q
29203
s.com
-0003
-0443

Art

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

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RECEIVED
DEC 15 2004
UNDERGROUND STORAGE TANK PROGRAM

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RECEIVED
APR 02 2004
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Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

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Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☑ Blitzer Vance
Access approved

☐ _____
Access denied

Phone number 803-712-0048
(If you wish to be notified prior to field activities)
(see addendum)

ADDENDUM TO RIGHT OF ENTRY LETTER

TO: ARTHUR SHRADER

FROM: BLITZER & ARLENE VANCE

SUBJECT: PROPERTY ACCESS PURSUANT TO ACCESS PERMIT #11760

DATE: 12/13/04

CC: ATC ASSOCIATES INC

HOW TO USE THIS MEMO TEMPLATE

Mr. Shrader, thank you for your facilitation of this matter with the contractor in question. As previously discussed please have the contractor limit their access to the following time periods if possible:

1/10/05 – 3 /11/05 Mon-Thur 09:00 – 15:00

Dogs will be controlled during this time period for their safety. Also, please have them provide prior notification the night before any required access.

I would also like to point out an error on the map, which you provided. The entryway to our property is not a gravel road, but a paved asphalt driveway. Please relay this information to the contractor and have them chose appropriate equipment in order to limit damage.

Blitz Vance

Blitzer Vance
400 N Congress
Winnsboro, SC 29180

blvance@chestertel.com
803-712-0048 (home)
803-212-8928 (mobile)

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE

Confirmation Report - Memory Send

Date & Time: Dec-15-2004 16:56
Tel line : +8038966245
Machine ID : UST PROGRAM

Job number	:	624
Date & Time	:	Dec-15 16:54
To	:	97350443
Number of pages	:	005
Start time	:	Dec-15 16:54
End time	:	Dec-15 16:56
Pages sent	:	005
Status	:	OK

Job number : 624 *** SEND SUCCESSFUL ***

ATC ASSOCIATES INC.

400 Northeast Drive, Unit G
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Unit G
29203
s.com
-0003
-0443

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

Re: **Environmental Assessment**
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. and Mrs. Vance:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of three (3) groundwater monitor wells and up to 9 soil borings on your property (Parcel 135-7-3-3) located across North Congress Street from the site is necessary. A map identifying the proposed monitor well and soil boring locations is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well and soil boring installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

RECEIVED
DEC 15 2004
UNDERGROUND STORAGE TANK PROGRAM

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

RECEIVED
APR 02 2004
UNDERGROUND STORAGE TANK PROGRAM

ENVIRONMENTAL, GEOTECHNICAL AND MATERIALS PROFESSIONALS

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

November 23, 2004

MR & MRS BLITZER VANCE
400 NORTH CONGRESS STREET
WINNSBORO SC 29180-1125

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Telephone Conversation on November 12, 2004
Fairfield County

Dear Mr. and Mrs. Vance:

Thank you for talking with me about conducting assessment activities on your property. I have relayed your concerns to Robert Bolton Junior of ATC Associates, Incorporated, the site rehabilitation contractor selected by Keenan Oil Company Incorporated. Mr. Bolton was very receptive to the idea of initiating assessment activities in January 2005 with a minimum of disruption to your property. The number and location of screening points and monitoring wells will depend on the extent of the problem; however, ATC Associates has agreed to conducting work during reasonable hours, protect the pecan trees in your front yard, as well as work as far from your house and driveway as possible.

The following items are enclosed for your information:

1. ATC Associates' letter requesting access to your property. A map showing the proposed locations for soil borings and groundwater monitoring wells is Figure 1.
2. ATC Associates' letter dated August 9, 2004. This letter summarizes the attempt to recover petroleum products from monitoring well MW-11, the recovery of petroleum products from monitoring well MW-2, and a figure showing the location of existing monitoring wells.
3. A copy of ATC Associates' certificate of insurance.

Thank you for your consideration in this matter. Please return the signed right of entry form by December 15, so assessment activities can resume in January. If you have any questions or would like to further discuss this matter, please contact me by phone at (803) 896-6669 or (800) 826-5435 (within SC), by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

UST PROGRAM DOCKETING # #61 Tech

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

Enc: As Stated plus Right of Entry Form

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204 (without enc.)
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203 (without enc.)
Technical File (without enc.)

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health

BUREAU OF LAND AND WASTE MANAGEMENT
UNDERGROUND STORAGE TANK PROGRAM
2600 Bull Street
Columbia, SC 29201
Telephone (803) 896-6240

RIGHT OF ENTRY

I, _____ certify that I am the legal owner or the authorized representative for _____ (owner) of the property described below. I understand that have been provided a sketch map indicating the locations of the work to be performed. Permission is hereby granted to Keenan Oil Company Incorporated and/or the South Carolina Department of Health and Environmental Control (SCDHEC) and its agents to enter the referenced property for the following purposes:

Street Address: 400 North Congress Street

City, State: Winnsboro, SC

1) Drilling of screening points. The work will be properly abandoned upon completion, and no permanent effects shall remain on site. These will be holes drilled at various locations into the ground to collect soil and groundwater samples and determine the location of groundwater monitoring wells.

2) Installing up to fifteen (15) monitoring / recovery well(s). I understand that these wells will look like the monitoring well currently in my front yard and remain with the property until cleanup is complete. Additionally, Keenan Oil Company Incorporated, SCDHEC or their agents will access the property at reasonable times for measurement of groundwater conditions and/or collection of samples. The monitoring wells will be properly abandoned upon completion of remediation activities.

NAME (Please print) : _____

SIGNATURE : _____

WITNESS : _____

DATE : _____ **Mo** _____ **Day** _____ **Year**

Please Return to: Arthur Shrader, UST Program
Reference UST Permit #11760

ATC ASSOCIATES INC.

0 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Jnit Q
29203
s.com
-0003
-0443

Art

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. and Mrs. Vance:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of three (3) groundwater monitor wells and up to 9 soil borings on your property (Parcel 135-7-3-3) located across North Congress Street from the site is necessary. A map identifying the proposed monitor well and soil boring locations is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well and soil boring installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

RECEIVED
APR 0 2 2004
UNDERGROUND STORAGE TANK PROGRAM

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

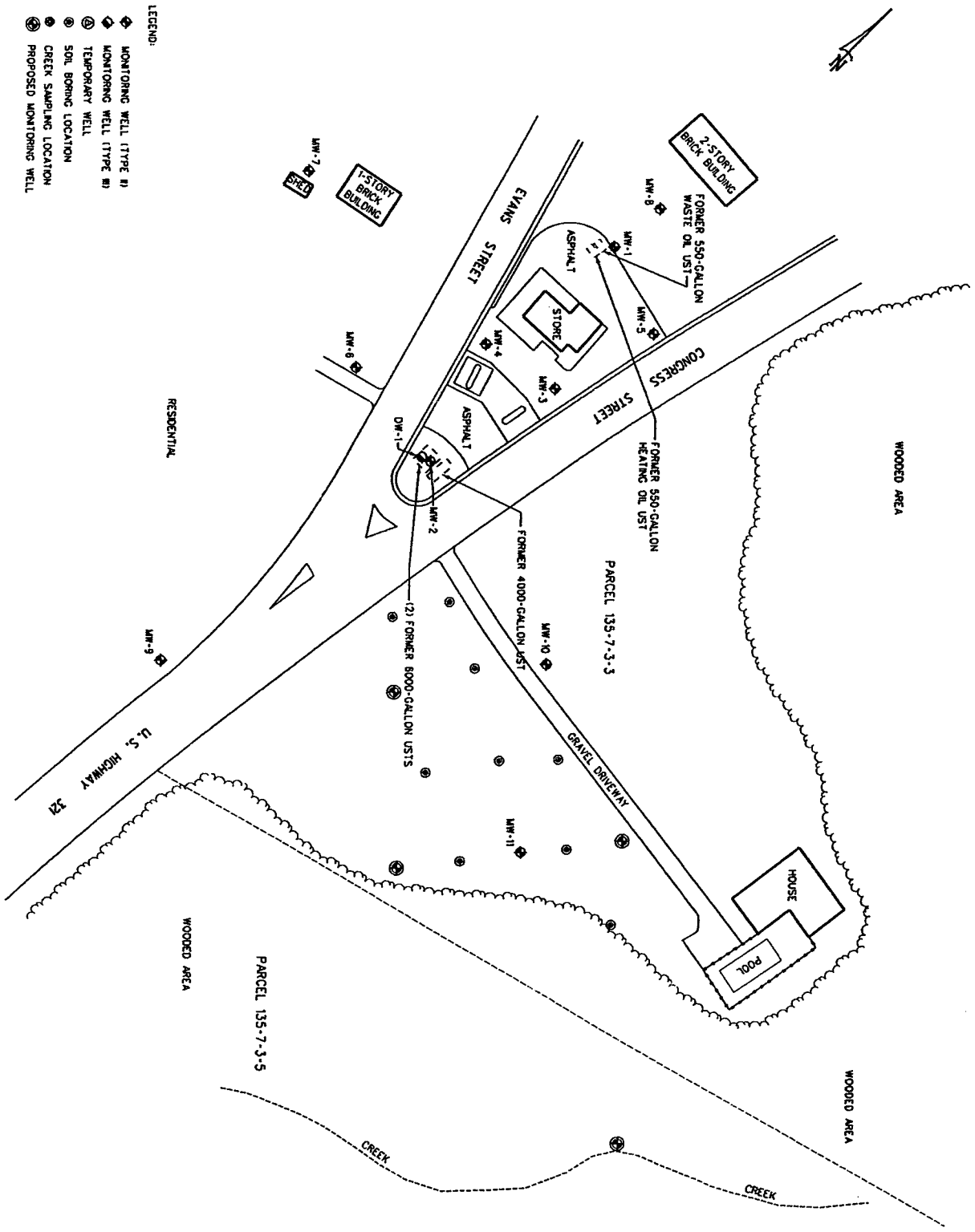
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☐ _____
Access approved

☐ _____
Access denied

Phone number_____
(If you wish to be notified prior to field activities)



NOTES:

TITLE FIGURE 1 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
125?116.DGN		BB		1" =	04-01-2004	14.25384.0012

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED
AUG 1 1 2004
UNDERGROUND STORAGE
TANK PROGRAM

August 9, 2004

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: SCDHEC Invoices
United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760
Release #1 Cost Agreement #21054
Release #2 Cost Agreement #21055

Dear Mr. Shrader:

Please find enclosed a copy of the SCDHEC invoices for the EFR event that was completed April 1, 2004, at United Exxon. Since there are two releases at the site, the mobilization, water disposal, and EFR event is evenly divided between the two releases as the separate cost agreements reflect. The original invoices have been forwarded to Ms. Pat Holland. On April 1, 2004, ATC Associates Inc. personnel oversaw the EFR event at United Exxon by Nu-Way Industrial Services, Inc. Specifically, the EFR event was attempted on Monitor Well MW-11; however, due to steep terrain which prevented the EFR truck from operating adjacent to MW-11, the EFR event was conducted on Monitor Well MW-2. The EFR event was conducted for 8 hours, and approximately 800 gallons of liquid were removed from Monitor Well MW-2. A site map and the field data sheet from the EFR event is attached.

Should you have any questions or require additional information, please contact me at 735-0003.

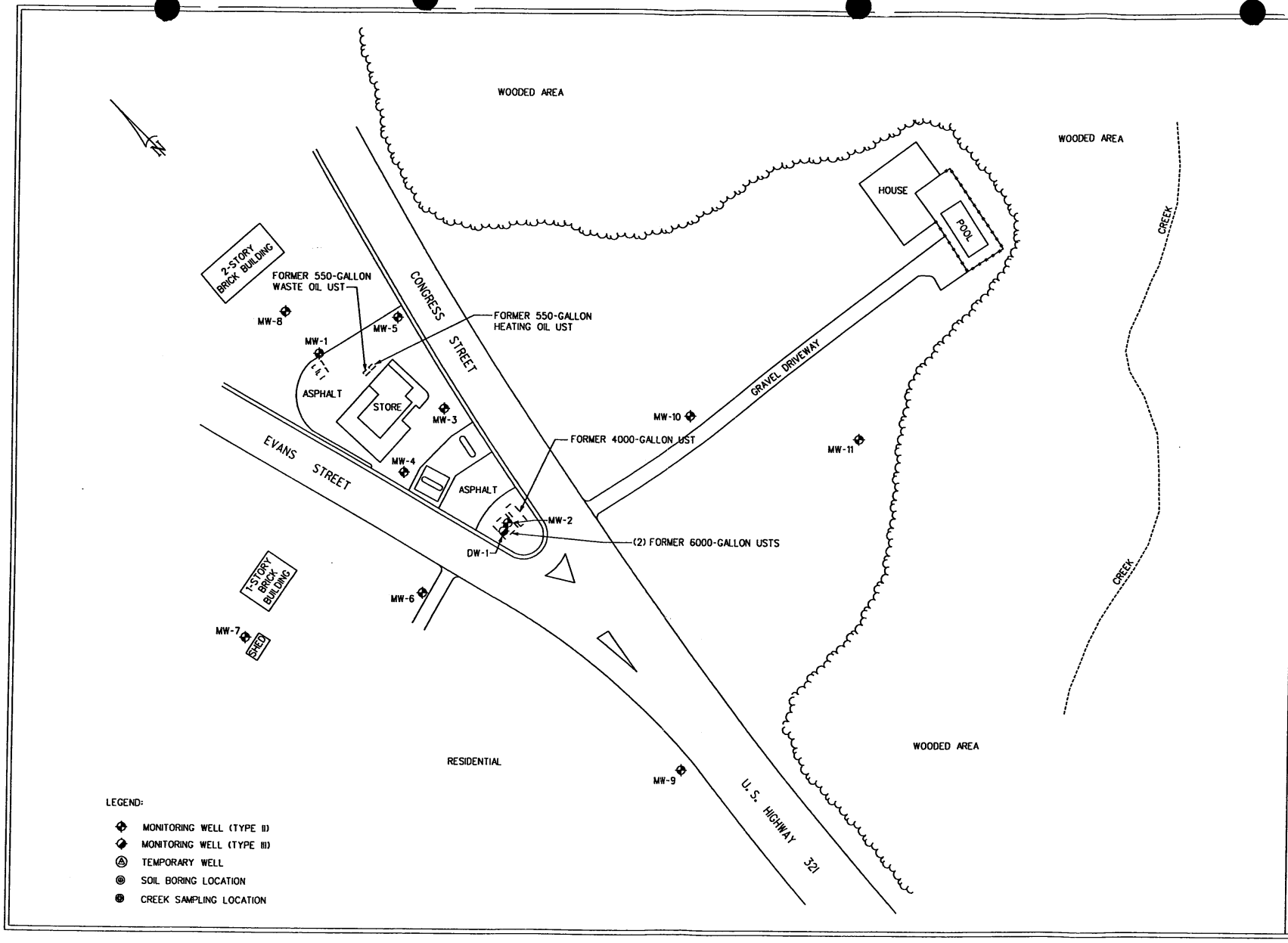
Sincerely,
ATC Associates Inc.

Bob Bolton
Project Manager

Fred Lyke, PG #1055
Environmental Division Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc..



ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

TITLE	SCALE	DATE	PROJECT NO.
FIGURE 2 UST PERMIT #11760 SITE MAP UNITED EXXON 401 NORTH CONGRESS STREET WINNSBORO, SOUTH CAROLINA	1" = 80'	09-09-2003	89.25384.0449
CAD FILE 1252116.DGN	TYPE CODE	PREP. BY BB	REV. BY

NOTES:

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com

CERTIFICATE OF INSURANCE

Date:(MM/DD/YY) 5/28/2004

PRODUCER
Lockton Companies of Houston, Inc.
5847 San Felipe, Suite 320
Houston, TX 77057
866-260-3538 (Phone)
866-492-1055 (Fax)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

RECEIVED JUN 0 9 2004 # 0038 0044 0304 0319 ✓

INSURERS AFFORDING COVERAGE

Insurer A:	Commerce & Industry (AIG)
Insurer B:	Insurance Company of the State of Pennsylvania
Insurer C:	American Home Assurance Co.
Insurer D:	American International Specialty Lines Insurance Company

INSURED:
ATC Group Services Inc.
ATC Associates Inc.
3417-A Trade Park Court
Charlotte, NC 28217

COVERAGES La

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY BE EXHAUSTED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	EFFECTIVE DATE	EXPIRATION DATE	LIMITS	
	GENERAL LIABILITY	417-87-02	06/01/2004	06/01/2005	EACH OCCURRENCE	$ 1,000,000
A	X COMMERCIAL GENERAL LIABILITY				FIRE DAMAGE (ANY ONE FIRE)	$ 500,000
	X OCCURRENCE				MED EXP (PER PERSON)	$ 10,000
	XCU INCLUDED				PERSONAL & ADV INJURY	$ 1,000,000
	ISO FORM CG 00 01 10 01				GENERAL AGGREGATE	$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:				PRODUCTS/COMP. OP. AGG	$ 2,000,000
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT (EACH ACCIDENT)	$ 1,000,000
	X ANY AUTO					
A	ALL OWNED AUTOS	505-36-20 (AOS)	06/01/2004	06/01/2005		
A	SCHEDULED AUTOS	505-45-48 (FL, GA & NY)	06/01/2004	06/01/2005		
A	X HIRED AUTOS	505-45-49 (MA)	06/01/2004	06/01/2005		
A	X NON-OWNED AUTOS	505-36-81 (TX)	06/01/2004	06/01/2005		
	EXCESS LIABILITY/UMBRELLA	UL0791364	06/01/2004	06/01/2005	EACH OCCURRENCE	$ 5,000,000
D	X OCCURRENCE				AGGREGATE	$ 5,000,000
	CLAIMS MADE					
	WORKERS' COMPENSATION				WORKERS' COMPENSATION	STATUTORY
C	and EMPLOYERS LIABILITY	WC-3283277 (AOS)	06/01/2004	06/01/2005	EL EACH ACCIDENT	$ 1,000,000
B		WC-3283279 (NJ & MI)	06/01/2004	06/01/2005	EL DISEASE-EA EMPLOYEE	$ 1,000,000
C		WC-3283278 (CA)	06/01/2004	06/01/2005	EL DISEASE-POLICY LIMIT	$ 1,000,000
D	OTHER Professional/Pollution Liability – Claims Made	1956612	06/01/2004	06/01/2005	$1,000,000 Each Claim $1,000,000 Aggregate	

REMARKS: DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/EXCLUSIONS ADDED BY ENDORSEMENT PROVISIONS:

CHECK BOX

☒ BLANKET WAIVER OF SUBROGATION IS GRANTED IN FAVOR OF CERTIFICATE HOLDER ON ALL POLICIES EXCEPT PROFESSIONAL/POLLUTION LIABILITY WITH RESPECT TO LIABILITY ARISING OUT OF OPERATION PERFORMED BY OR ON BEHALF OF NAMED INSURED WHERE AND TO THE EXTENT REQUIRED BY WRITTEN CONTRACT.

☒ CERTIFICATE HOLDER IS NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES (EXCEPT FOR WORKERS' COMP/EL AND PROFESSIONAL/POLLUTION) WITH RESPECT TO LIABILITY ARISING OUT OF OPERATIONS PERFORMED BY OR ON BEHALF OF NAMED INSURED WHERE AND TO THE EXTENT REQUIRED BY WRITTEN CONTRACT.

UMBRELLA LIMITS ARE EXCESS OF GENERAL LIABILITY, AUTOMOBILE LIABILITY AND EMPLOYER'S LIABILITY.

RECEIVED JUN 0 9 2004 UNDERGROUND STORAGE TANK PROGRAM

CERTIFICATE HOLDER:

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201

CANCELLATION:

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL 30* DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. *EXCEPT 10 DAYS NOTICE FOR NONPAYMENT.

AUTHORIZED REPRESENTATIVE: J. Kelly

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

September 21, 2004

MR & MRS BLITZER VANCE
400 NORTH CONGRESS
WINNSBORO SC 2980-1141

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Access to Your Property
Fairfield County

Dear Mr. and Mrs. Vance:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has directed Keenan Oil Company Incorporated, as the tank owner, to conduct rehabilitation activities at the referenced facility. ATC Associates is currently conducting an environmental assessment and requires access to your property in order to install field-screening points, monitoring wells, and recover gasoline that is floating on the top of the water table. ATC Associates in April tried to recover gasoline from beneath your property with a recovery truck parked in your driveway. Due to the distance from the truck to the monitoring well, an adequate vacuum could not be maintained so no gasoline was recovered. ATC Associates tried to install a series of monitoring wells between your property and creek. The large number of rocks made installation of a well by hand in this area impossible. Access by a drill rig is impossible because there are no roads wide enough to provide access.

I would like to meet with you at your earliest convenience to discuss property access later this year for future rehabilitation activities. The screening points will be installed by a Geoprobe™ drill and will be used to sample soil and groundwater. A pipe will be pushed into the soil and groundwater samples withdrawn. Based on these sampling results, a minimum number of monitoring wells will be installed. The monitoring wells will be constructed in accordance with the South Carolina Well Standards and Regulations. They will be completed at grade and will have a small diameter manhole cover and concrete pad like what is currently in your yard. To reduce the possibility of any damage to your yard, I am proposing that all work with equipment be accomplished during late fall or winter. Additionally, ATC Associates plans on driving any equipment on plywood sheets to further reduce any possible problems to your property. In the unlikely event that any damage would occur to your property, Keenan Oil Company and ATC Associates will immediately address your concerns. The monitoring wells that would be installed this winter will not interfere with normal usage of your property. They will be properly abandoned once cleanup is completed, and no permanent effects will remain on your property. All work will be conducted during reasonable hours and at no cost to you

I look forward to hearing from you. Please contact me by phone at (803) 896-6669 or (800) 826-5435 (within SC), by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

UST PROGRAM DOCKETING # [redacted] #62 Tech

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203
Technical File

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

September 7, 2004

MR & MRS VANCE
303 NORTH ZION
WINNSBORO SC 2980-1141

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Access to Your Property
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Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

UST PROGRAM
DOCKETING # 63-11ch

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203
Technical File

Confirmation Report — Memory Send

Date & Time: Sep-07-2004 04:18pm
Tel line : +8038966245
Machine ID : UST PROGRAM

Job number	:	522
Date & Time	:	Sep-07 04:17pm
To	:	97350443
Number of pages	:	001
Start time	:	Sep-07 04:17pm
End time	:	Sep-07 04:18pm
Pages sent	:	001
Status	:	OK

Job number : 522 *** SEND SUCCESSFUL ***

D H E C

PROMOTE PROTECT PROSPER

C. Lead Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

September 7, 2004

MR & MRS VANCE
303 NORTH ZION
WINNSBORO SC 2980-1141

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Access to Your Property
Fairfield County

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Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

cc: Keenan Oil Company, 3923 West Beltline, Columbia, SC 29204
ATC Associates Inc., 400 Northeast Drive, Suite Q, Columbia, SC 29203
Technical File

ATC

ASSOCIATES INC.

http://www.atc-enviro.com

RECEIVED
AUG 18 2004
UNDERGROUND STORAGE TANK PROGRAM

ATC has approximately 2,000 employees in more than 70 offices throughout the United States to meet the needs of our clients for high quality, cost-effective environmental management services. Our areas of specialization include:

- *Asbestos Testing and Consulting*
- *Soil and Groundwater Assessment, Design and Remediation Services*
- *Geotechnical Engineering*
- *Construction Materials Testing*
- *Underground Storage Tank Compliance*
- *Environmental Training*
- *Certified Industrial Hygiene and Safety Services*
- *Solid Waste Facility Planning and Management*
- *Water and Wastewater Engineering*
- *Risk Assessments and Facility Management*
- *Environmental Permitting and Compliance Services*
- *Hazardous Materials and Waste Management Services*
- *Lead Testing and Risk Management Services*
- *Information Systems Management Services*

400 Northeast Drive, Suite Q
Columbia, South Carolina 29203

Telephone: (803) 735-0003
Toll Free: (866) 735-0003
Fax: (803) 735-0443

To: Pat Shrader	From: Bob Bolton
Telephone	Pages: 3 (includes cover sheet)
Fax:	Date: 8/18/04
Re: United Exxon	CC:

☒ Urgent ☐ For Review ☐ Please Comment
☐ Confidential ☒ As Requested

Comments:
Pat,

As requested in your fax of August 11.

Thanks
Bob

SCANNED

UST PROGRAM
DOCKETING # 64A

Confidentiality Notice: This information contained in this facsimile message, and in any accompanying documents, constitutes confidential information that belongs to ATC Associates Inc. This information is intended only for the individual or entity named above. If you are not the intended recipient of this information, you are notified that any disclosure, copying, distribution, or taking of any action in reliance on this information is strictly prohibited. If you have received this facsimile message in error, please notify us immediately by telephone at the number listed above to arrange for its return to us. Thank you.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

August 18, 2004

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: SCDHEC Invoices
United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760
Release #1 Cost Agreement #21054
Release #2 Cost Agreement #21055

Dear Mr. Shrader:

In my letter of August 9, 2004, I inadvertently omitted the level of product at Monitor Well MW-11 and the disposal manifest associated with the EFR event of April 1, 2004. The depth to product at MW-11 was 31.47 feet, and the depth to water was 33.34 feet. Also attached is a copy of the disposal manifest associated with the EFR event. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Bob Bolton
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

24697

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 24697

2. Page 1 of 1

3. Generator's Name and Mailing Address

SUPERIOR GAS
401 N. CONGRESS STREET
WINNSBORO, SC 29180

4. Generator's Phone ( )

ATC ASSOCIATES
803-735-0003
Bob Bolton

5. Transporter 1 Company Name: NU-WAY INDUSTRIAL SVC, INC

6. US EPA ID Number: SCD987598331

A. Transporter's Phone: 803-957-9175

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter's Phone

9. Designated Facility Name and Site Address

NU-WAY ENVIRONMENTAL SERVICES
1741 CALKS FERRY ROAD
LEXINGTON, SC 29073

10. US EPA ID Number

C. Facility's Phone: 803-957-9175

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol
a. NON REGULATED NON HAZARDOUS MATERIAL (WELL WATER)	001	TT	800	G
b.				
c.				
d.				

D. Additional Descriptions for Materials Listed Above

E. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

EMERGENCY CONTACT: NUWAY ENVIRONMENTAL, INC. 803-957-9175
NIS JOB#24690

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name | Signature | Month | Day | Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Chris Risinger | Signature | Month 4 | Day 7 | Year 04

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Month | Day | Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 19.

Printed/Typed Name: CHRIS RABLEY | Signature | Month 04 | Day 07 | Year 04

ORIGINAL - RETURN TO GENERATOR

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

RECEIVED

AUG 1 1 2004

UNDERGROUND STORAGE TANK PROGRAM

August 9, 2004

Mr. Art Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: SCDHEC Invoices
United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760
Release #1 Cost Agreement #21054
Release #2 Cost Agreement #21055

Dear Mr. Shrader:

Please find enclosed a copy of the SCDHEC invoices for the EFR event that was completed April 1, 2004, at United Exxon. Since there are two releases at the site, the mobilization, water disposal, and EFR event is evenly divided between the two releases as the separate cost agreements reflect. The original invoices have been forwarded to Ms. Pat Holland. On April 1, 2004, ATC Associates Inc. personnel oversaw the EFR event at United Exxon by Nu-Way Industrial Services, Inc. Specifically, the EFR event was attempted on Monitor Well MW-11; however, due to steep terrain which prevented the EFR truck from operating adjacent to MW-11, the EFR event was conducted on Monitor Well MW-2. The EFR event was conducted for 8 hours, and approximately 800 gallons of liquid were removed from Monitor Well MW-2. A site map and the field data sheet from the EFR event is attached.

Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

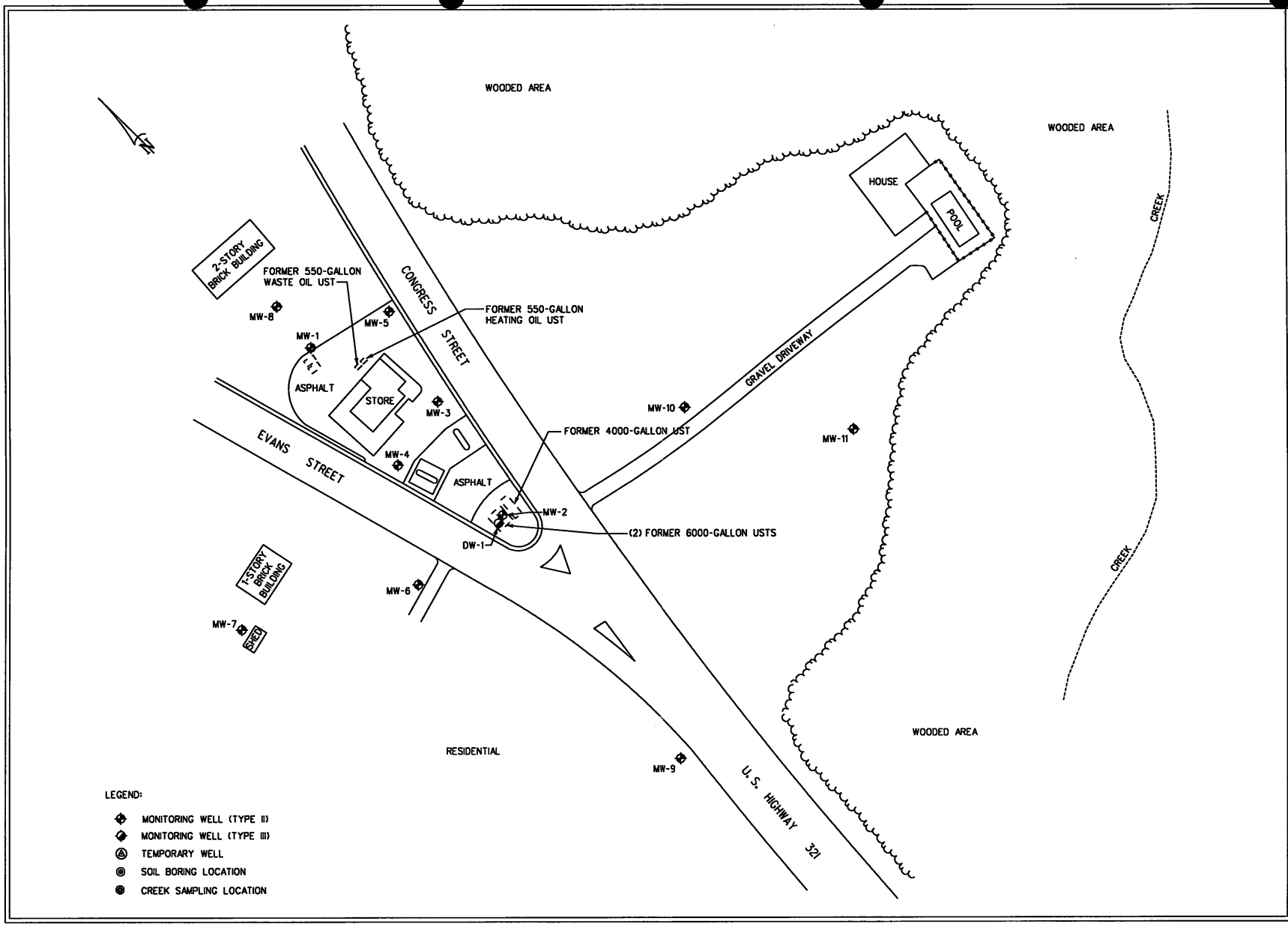
Bob Bolton
Project Manager

Fred Lyke, PG #1055
Environmental Division Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc..

UST PROGRAM
DOCKETING # 6B Tech



ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	09-09-2003	89.25384.0449

NOTES:

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com

NIS FIELD DATA SHEET

Client: ATC and Associates	Site: United Exxon, Winnsboro, SC NuWay Job J24690	Date: 4/1/04	Event # 1

MW-2	Time hh:mm	Extraction Well-head Vacuum (in Hg) Inlet	MW 2	0	0	0	0	0	0	0	0	0	0	0	0	0		Vacuum Truck Exhaust Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Risinger		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
MW-2	9:00	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	55	11.2	5.6
	9:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	56	11.4	5.7
	10:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	67	13.7	6.8
	10:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0	>	10000	73	14.9	14.9
	11:00	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0		6076	76	9.4	9.4
	11:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		3562	82	5.9	5.9
	12:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		2232	92	4.2	2.1
	12:30	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0		2434	65	3.2	1.6
	13:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2162	76	3.3	1.7
	13:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0		3704	80	6.1	3.0
	14:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		3909	70	5.6	2.8
	14:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		3564	76	5.5	2.8
	15:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2560	70	3.7	1.8
	15:30	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2442	69	3.4	1.7
	16:00	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0		2361	71	3.4	3.4
	16:30	0	21	0	0	0	0	0	0	0	0	0	0	0	0	0		2244	74	3.4	3.4
	17:00	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0		2138	76	3.3	3.3

Extraction Well	Stinger Depth	Breather Port

Hydrocarbons Removed (vapor):	76	Pounds
Hydrocarbons Removed (liquids):	25	Gallons
Total Hydrocarbons Removed:	35	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility:		
Total Liquids Removed:	800	Gallons

Comments: Before - Product at 49.85' and water at 51.75' 1.9' ft

After - Zero Product

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

April 5, 2004

CERTIFIED MAIL

Mr. Vernon F. Amick
303 North Zion Street
Winnsboro, South Carolina 29180

Art

RECEIVED
APR 07 2004
UNDERGROUND STORAGE TANK PROGRAM

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. Amick:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of one (1) groundwater monitor well on your property (Parcel 135-7-3-5) located near the site is necessary. A map identifying the proposed monitor well location is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

UST PROGRAM DOCKETING # 65 Tech

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

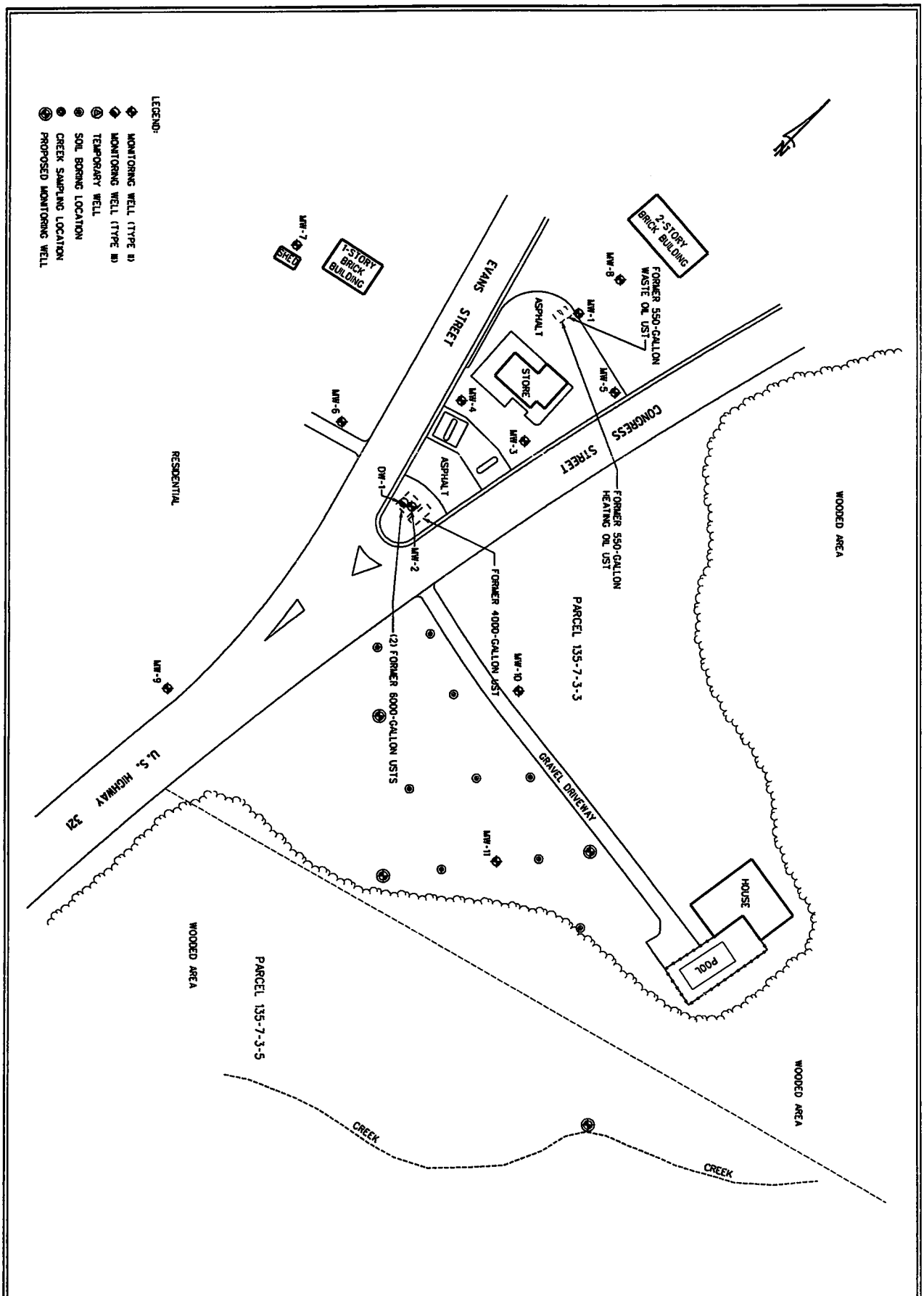
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☐ _____
Access approved

☐ _____
Access denied

Phone number_____
(If you wish to be notified prior to field activities)



NOTES:

TITLE FIGURE 1 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1[redacted]16.DGN		BB		1" = [redacted]	04-01-2004	14.25384.0012

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

Art

March 30, 2004

CERTIFIED MAIL

Mr. and Mrs. Blitzer L. Vance
400 North Congress Street
Winnsboro, South Carolina 29180

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

UST PROGRAM
DOCKETING # bb Tech

Dear Mr. and Mrs. Vance:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of three (3) groundwater monitor wells and up to 9 soil borings on your property (Parcel 135-7-3-3) located across North Congress Street from the site is necessary. A map identifying the proposed monitor well and soil boring locations is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well and soil boring installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

RECEIVED
APR 02 2004
UNDERGROUND STORAGE TANK PROGRAM

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

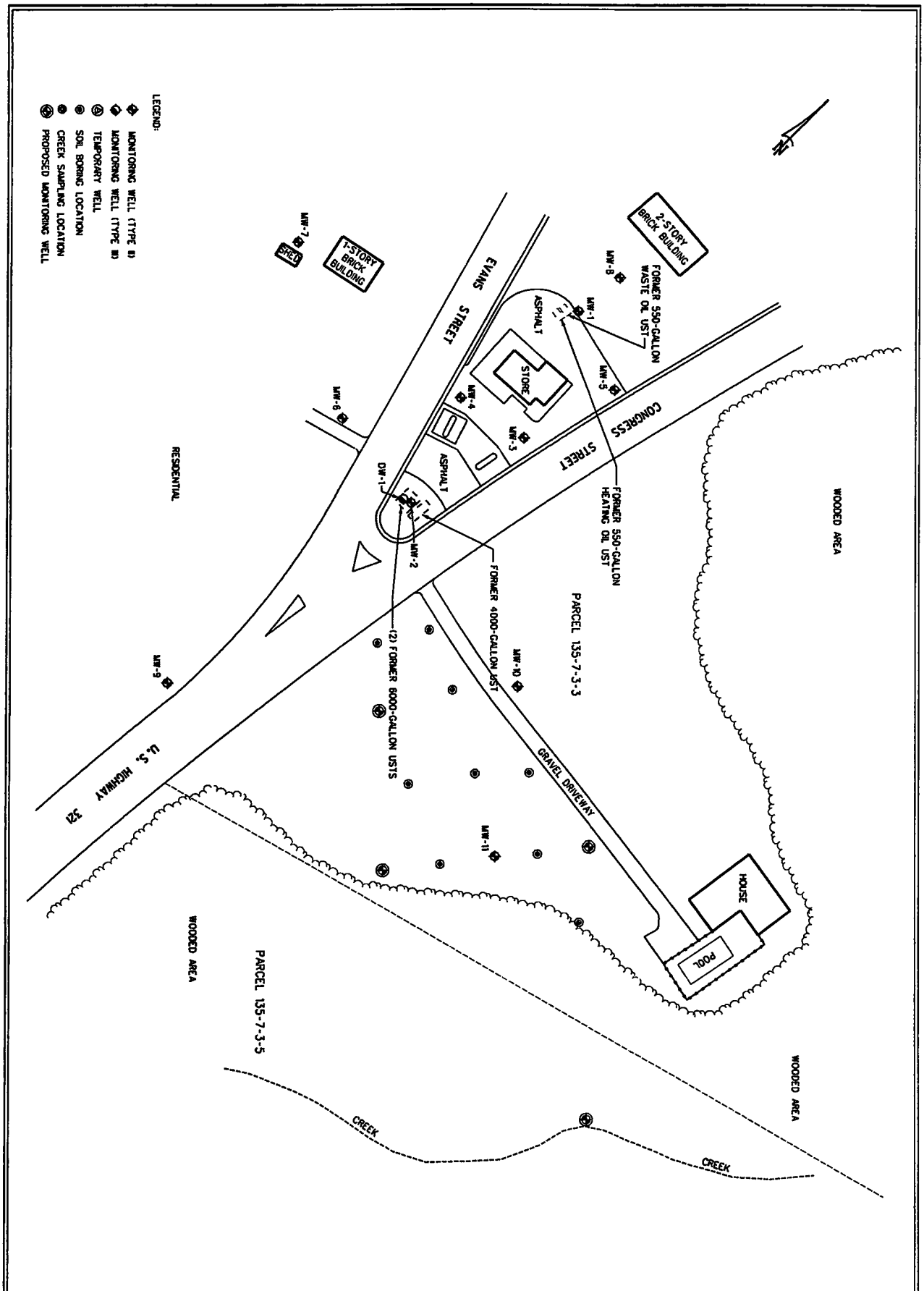
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☐ _____
Access approved

☐ _____
Access denied

Phone number_____
(If you wish to be notified prior to field activities)



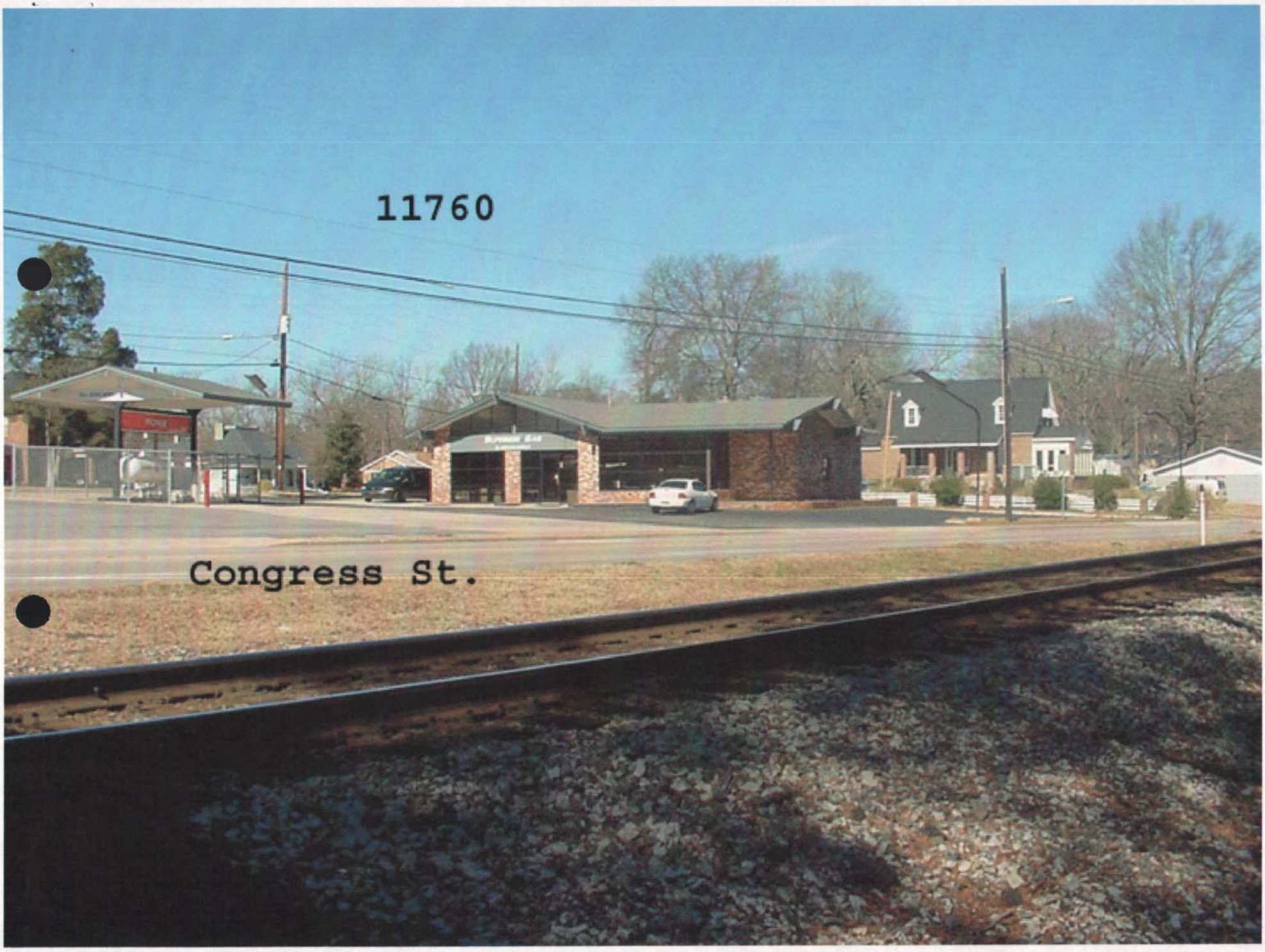
NOTES:

TITLE FIGURE 1 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = [illegible]	04-01-2004	14.25384.0012

FILL TANKS HERE
SUPERIOR GAS
11760


11760
Congress St.

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

March 30, 2004 Art

CERTIFIED MAIL

Mr. Van Bruce Robinson
128 Runneymede Drive
Blythewood, South Carolina 29016

Re: Environmental Assessment
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

Dear Mr. Robinson:

ATC Associates Inc. (ATC) is conducting an Environmental Assessment at the former United Exxon on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, Inc. In order to conduct the assessment, the installation of one (1) groundwater monitor well on your property (Parcel 135-7-3-5) located near the site is necessary. A map identifying the proposed monitor well location is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while ATC is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well installations. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Arthur Shrader, SCDHEC Project Manager, at 803-896-6240 and reference UST Permit #11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

RECEIVED
APR 0 2 2004
UNDERGROUND STORAGE TANK PROGRAM

UST PROGRAM DOCKETING # 67 Tech

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

If you have any questions or would like to further discuss any aspect of this site access request, please contact me at 866-735-0003 or Mr. Arthur Shrader, SCDHEC Project Manager at 803-896-6240.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

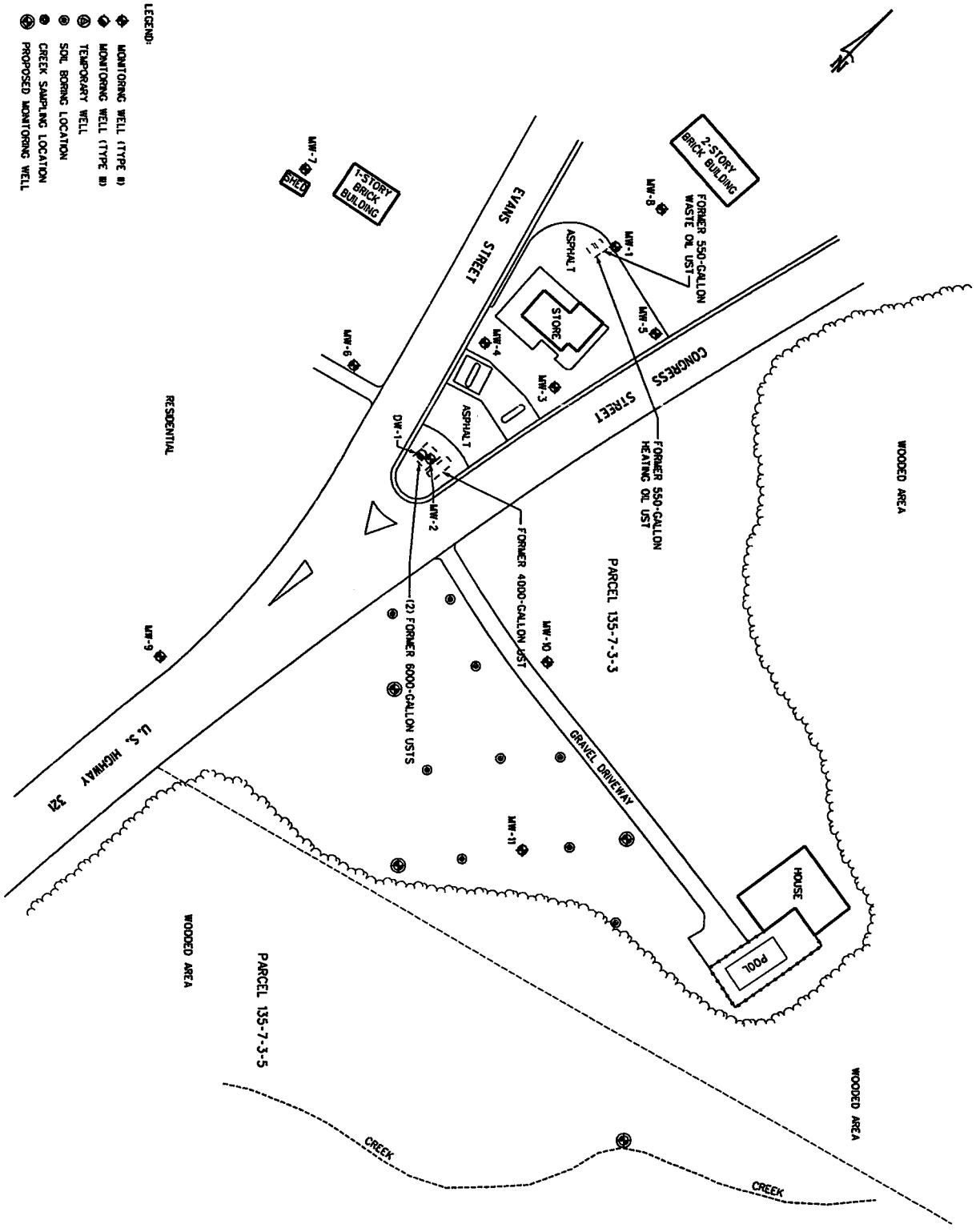
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.
Mr. Arthur Shrader, SCDHEC

☐_____
Access approved

☐_____
Access denied

Phone number_____
(If you wish to be notified prior to field activities)



NOTES:

TITLE FIGURE 1 UST PERMIT #11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1[redacted]116.DGN		BB		1" = [redacted]	04-01-2004	14.25384.0012

BOARD:
Elizabeth M. Hagood
Chairman

Mark B. Kent
Vice Chairman

Howard L. Brilliant, MD
Secretary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

BOARD:
Carl L. Brazell

Louisiana W. Wright

L. Michael Blackmon

Coleman F. Buckhouse, MD

FEB 06 2004

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA# 21054 and 21055; MWA# UMW-17996
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Groundwater Assessment Proposal Received January 7, 2004
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates Incorporated. The Program has reviewed the referenced plan and agrees with your site rehabilitation contractor that the next necessary scope of work to be conduct of an Enhanced Fluid Recovery (EFR) event, installation of additional monitoring wells to delineate the extent of the free product and define petroleum Chemicals of Concern (CoC) closer to the creek, and sampling of the creek and all groundwater monitoring wells.

Cost agreement numbers 21054 (for release number 2) and 21055 (for release number 3) have been approved in the amount shown on the enclosed cost agreement form. Costs have been divided between releases 2 and 3. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. Approval for the installation of up to 360 feet of screening and four shallow groundwater-monitoring wells has been provided to your environmental consultant; a copy is enclosed for your records. Once screening is completed, ATC Associates Incorporated should contact the Program for approval of locations to install groundwater-monitoring wells. To insure the data in the assessment report accurately depicts site conditions if future active corrective action activities are required, final groundwater gauging and sampling events will be initiated more than 30 days after the completion of the EFR event. Groundwater samples should be collected and analyzed for PAHs, BTEX, naphthalene, and MTBE by EPA method 8260B, and EBD by EPA Method 8011. The detection limit for EDB is 0.05 ug/l (micrograms per liter). The assessment report should include a narrative portion documenting the EFR event noting site conditions, the names of the EFR contractor, field personnel, date, times each EFR event started and ended, ambient air temperature, general weather conditions during the EFR event, and the estimated amount in gallons of the petroleum products removed as a liquid or vapor for each event. Wells containing free phase product should be gauged at the beginning and end of an EFR event. Disposal manifests for the EFR event should be included as part of the final report.

ATC Associates Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. **A Report of Findings and invoice are due within 100 days from the date of this letter.** An interim invoice for monitoring well installation may be submitted for this scope of work. Please submit boring logs with the interim invoice. If an invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means the invoice will not be processed for payment until all other committed funds are paid or monies become available.

UST PROGRAM
DOCKETING # 68 Tech

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable, and the right to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum-contaminated soil and up to 5,000 gallons of groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on-site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference UST permit number 11760 and cost agreement numbers 21054 and 21055. If there are any questions concerning this project, please contact me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/ original MWA and ACA)
Technical (w/o enc)

BOARD:
Elizabeth M. Hagood
Chairman

Mark B. Kent
Vice Chairman

Howard L. Brilliant, MD
Secretary

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

BOARD:
Carl L. Brazell

Louisiana W. Wright

L. Michael Blackmon

Coleman F. Buckhouse, MD

Monitoring Well Installation Approval Form

Date of Issue: January 8, 2004 Approval No.: UMW-17996

Approval is hereby granted to:	ATC Associates, Inc.
(On behalf of):	Keenan Energy Company, Inc.
UST Permit #	11760
Address:	401 North Congress Street, Winnsboro, SC
County:	Fairfield

This approval is for the construction of up to 360 feet of screening and four groundwater monitoring wells in accordance with the construction plans and technical specifications outlined in the Tier II Assessment Document. The wells are to be constructed within the surficial aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.
2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.
3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.
4. **A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Arthur Shrader at (803) 896-6669 or shradeaa@dhec.sc.gov *and* Mark Whittle at (803) 896-0620 or whittlemg@dhec.sc.gov.**
5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) in the technical report.
6. Monitoring wells and temporary monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.
7. Monitoring wells and temporary monitoring wells will be abandoned by or under the direct supervision of a licensed well driller certified by the State of South Carolina. Temporary monitoring wells shall not remain in place for longer than 30 days from the date of installation. Monitoring wells may be abandoned only upon concurrence by this Division.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

cc: Central Midlands EQC District

Approved Cost Agreement 054

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		A PLAN PREPARATION	0.5000	100.00	50.00
04 MOB/DEMOB					
		A EQUIPMENT	1.0000	500.00	500.00
		B PERSONNEL	2.0000	250.00	500.00
06 SOIL BORINGS (DRILLED)					
		SOIL BORINGS & FLD SCREENING	180.0000	17.00	3,060.00
08 ABANDONMENT					
		ABANDONMENT	180.0000	4.00	720.00
09 WELL INSTALLATION					
		A WATER TABLE (HAND AUGER)	7.5000	20.00	150.00
		B WATER TABLE (DRILLED)	65.0000	38.00	2,470.00
10 SAMPLE COLLECTION					
		A GROUND WATER	8.5000	55.00	467.50
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	8.5000	100.00	850.00
		F EDB	8.5000	55.00	467.50
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	0.5000	260.00	130.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	1.0000	90.00	90.00
		A2 WASTEWATER - PUMPING TEST	750.0000	0.60	450.00
		C SOIL (TREATMENT/DISPOSAL)	5.0000	50.00	250.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	11,655.00	1,748.25
23 EFR					
		A 8 HOUR EVENT	0.5000	3,000.00	1,500.00
			Total Amount		13,403.25

Approved Cost Agreement [redacted]055

Facility: 11760 UNITED EXXON
SHRADEAA -
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN					
		A PLAN PREPARATION	0.5000	100.00	50.00
04 MOB/DEMOB					
		A EQUIPMENT	1.0000	500.00	500.00
		B PERSONNEL	2.0000	250.00	500.00
06 SOIL BORINGS (DRILLED)					
		SOIL BORINGS & FLD SCREENING	180.0000	17.00	3,060.00
08 ABANDONMENT					
		ABANDONMENT	180.0000	4.00	720.00
09 WELL INSTALLATION					
		A WATER TABLE (HAND AUGER)	7.5000	20.00	150.00
		B WATER TABLE (DRILLED)	65.0000	38.00	2,470.00
10 SAMPLE COLLECTION					
		A GROUND WATER	8.5000	55.00	467.50
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	8.5000	100.00	850.00
		F EDB	8.5000	55.00	467.50
16 SUBSEQUENT SURVEY					
		SUBSEQUENT SURVEY	0.5000	260.00	130.00
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		A1 WASTEWATER - PURGING/SAMPLING	1.0000	90.00	90.00
		A2 WASTEWATER - PUMPING TEST	750.0000	0.60	450.00
		C SOIL (TREATMENT/DISPOSAL)	5.0000	50.00	250.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	11,655.00	1,748.25
23 EFR					
		A 8 HOUR EVENT	0.5000	3,000.00	1,500.00
			Total Amount		13,403.25

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
www.atcassociates.com
803-735-0003
Fax 803-735-0443

January 5, 2004

Mr. Arthur Shrader, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

17996

Re: Groundwater Assessment Proposal
United Exxon
Fairfield County
UST Permit # 11760

Dear Mr. Shrader:

Please find enclosed the Groundwater Assessment proposal for United Exxon per your November 25, 2003, request. Should you have any questions or require additional information, please contact me at 803-735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Project Manager

UST PROGRAM DOCKETING # 6 9Tech

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

RECEIVED
JAN 07 2004
UNDERGROUND STORAGE TANK PROGRAM

DHEC
PROMOTE PROTECT PROSPER

Tier II Plan
Division of Underground Storage Tank Management

UST Permit #: 11760 County: Fairfield Facility Name: United Exxon

Facility Address: 401 N. Congress St., Winnsboro, SC

Responsible Party: Keenan Energy Company Address: P.O. Box 3281, Columbia, SC

No. USTs: _____ Removed? _____ (date) Replaced? _____ (date)

Current use of facility/property: PROPANE GAS SALES

Current property owner name: _____

Current property owner address: _____

Field Screening Methodology

Specify the field screening methodology to be used. The use of field screening methods to optimize the number and location of permanent wells is required.

NOT APPLICABLE ... DELINEATING LPH

Permanent Monitoring Wells (estimate number and total completed depth)

# of shallow wells: 4 Total depth: 145'

# of deep wells: – Total depth: _____ (if necessary)

Comments, if warranted: _____

Analyses

List the analytical parameters (e.g., BTEX, MTBE) and estimated number.

Groundwater: 17 SETS BTEX, Naph, MTBE, EDB

Implementation Schedule

Start up date: _____ Completion date: _____

Report submittal date: _____

UST Permit #: 11760 Facility Name: United Exxon

Site Maps

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.

2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:

North arrow	Legend with facility name and address, UST Permit number, date, and a bar scale
Location of property lines	Streets or highways (indicate names and numbers)
Location of buildings	Identification of located buildings
Paved areas on or adjacent to site	Location of all present and former ASTs and USTs
Previous soil sampling locations	Underground and above ground utilities on or adjacent to site
Previous monitoring well locations	Location of any other potential receptor

Aquifer Characterization (check one and provide explanation for choice)

Pump test: Slug tests:

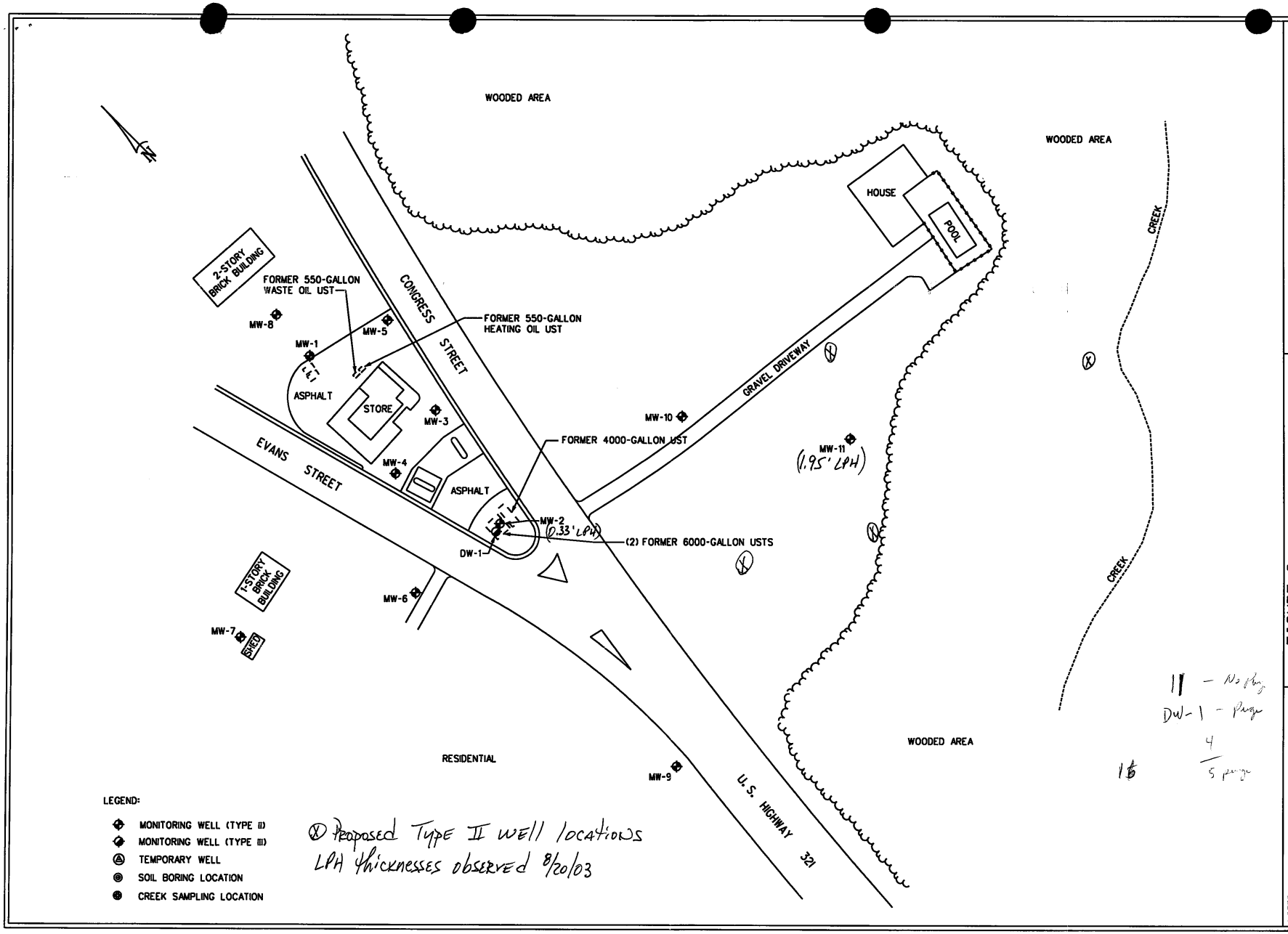
NOT APPLICABLE

Small Volume Disposal Type and Method

Soil: DRUMMED for proper disposal

Purge water: DRUMMED for proper disposal

Additional comments:



ATC ASSOCIATES INC.
Charlotte, North Carolina 28217 (704)529-3200 FAX (704)529-3272

SCALE	DATE	PROJECT NO.
1" = 80'	09-09-2003	89.25384.0449

REV. BY	PREP. BY	TYPE CODE	CAD FILE
	BB		1252116.DGN

TITLE FIGURE 2 UST PERMIT •11760
SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

NOTES:

PDF created with FinePrint pdfFactory Pro trial version http://www.fineprint.com

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

February 17, 2009

UST
FEB 18 2009
PROGRAM

Ms. Stephanie Jackson, Hydrogeologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Re: Aggressive Fluid Vapor Recovery Activities
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Dear Ms. Jackson:

Mr. Billy Keenan of Keenan Energy Company, Inc. contracted ATC Associates Inc. (ATC) to conduct five Aggressive Fluid Vapor Recovery (AFVR) events at the former United Exxon facility as directed in your letter to Mr. Keenan dated November 5, 2008. On December 10, 2008, ATC personnel oversaw AFVR activities at Monitor Well MW-11 by NuWay Environmental Services (NuWay) personnel. The AFVR event was conducted for eight hours with off-gas treatment, and approximately 467 gallons of liquid were removed from the monitor well. On December 11, 2008, ATC personnel oversaw AFVR activities at Monitor Well MW-2 by NuWay personnel. The AFVR event was conducted for eight hours with off-gas treatment, and approximately 270 gallons of liquid were removed from the monitor well.

On January 13, 2009, ATC personnel oversaw AFVR activities at Monitor Well MW-13 by A & D Environmental (A & D) personnel. This AFVR event was conducted for eight hours with off-gas treatment, and approximately 385 gallons were removed from the monitor well. On January 14, 2009, ATC personnel oversaw AFVR activities at Monitor Well MW-16 by A & D personnel. This AFVR event was conducted for eight hours with off-gas treatment, and approximately 168 gallons were removed from the monitor well. On January 15, 2009, ATC personnel oversaw AFVR activities at Monitor Well MW-10 by A & D personnel. This AFVR event was conducted for eight hours with off-gas treatment, and approximately 109 gallons were removed from the monitor well. Summaries of each AFVR event are presented in the appendix.

On February 16, 2009, ATC personnel mobilized to the site and gauged Monitor Wells MW-2, MW-10, MW-11, MW-13, and MW-16. Free product was detected in each monitor well, except MW-11, using an interface probe and verified visually using a

UST
DOCKET
Heck

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

new, disposable polyethylene bailer. Depth to groundwater and product thicknesses is presented in Table I.

Based on current product thicknesses at the former United Exxon, ATC recommends the completion of three AFVR events approximately 21 days apart at Monitor Well MW-2 in an attempt to recover the product before it migrates across North Congress Street. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

Fred Lyke, P.G. #1055
Branch Manager

FREDERICK P. LYKE
REGISTERED
No. 1055
SOUTH CAROLINA
PROFESSIONAL GEOLOGIST

Attachments

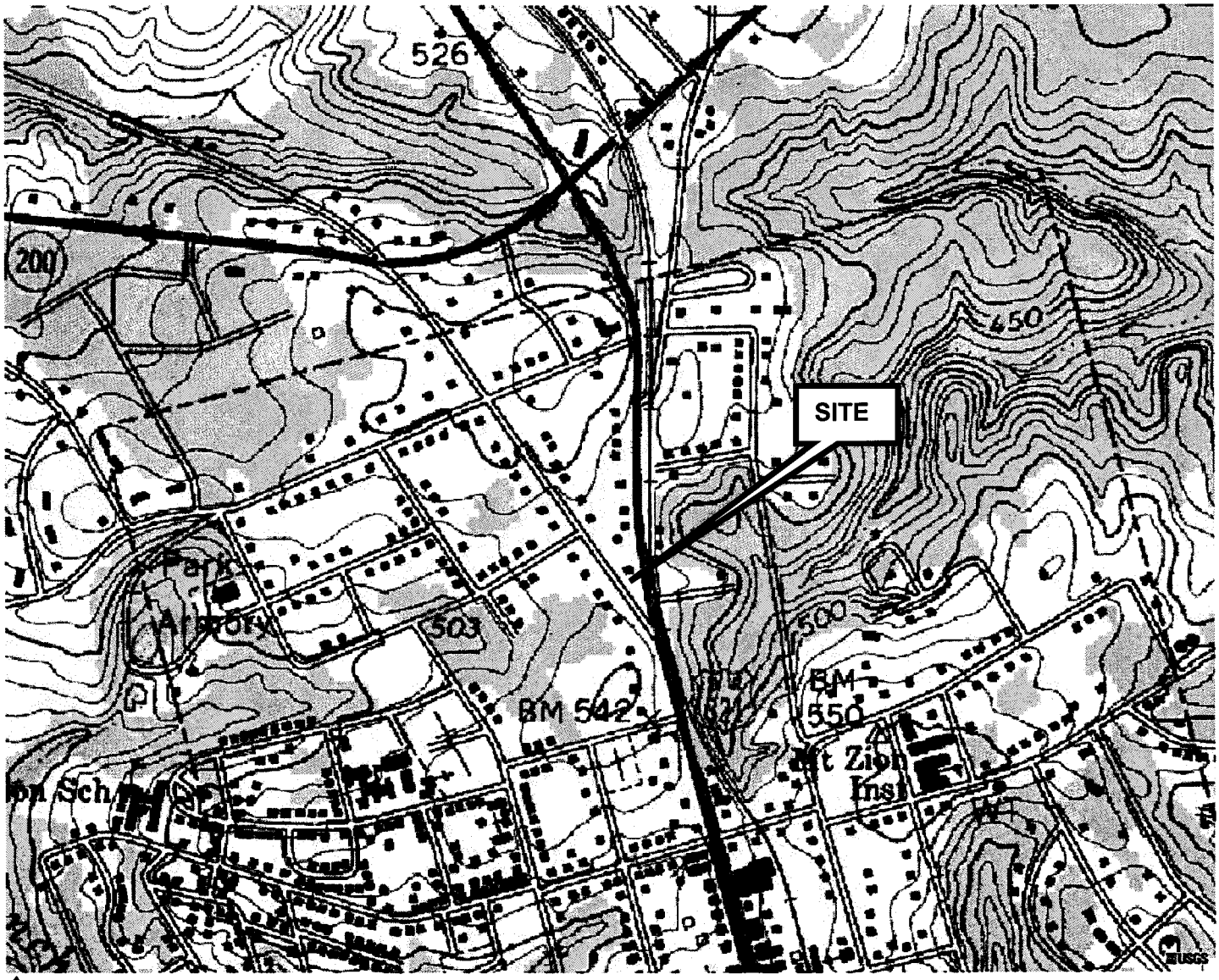
cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

TABLE

TABLE I Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Length of Screen (feet)	Depth of Well (feet)	Water Table Elevation (feet)
MW-2	02/16/2009	98.17	53.42*	0.76	15	54	44.75
	09/22/2008		52.66*	0.18			45.51
MW-10	02/16/2009	88.26	47.42*	0.27	15	50	40.84
	09/22/2008		47.66*	0.33			40.60
MW-11	02/16/2009	70.63	33.39	0.00	15	38	37.24
	09/22/2008		33.51*	0.04			37.12
MW-13	02/16/2009	81.02	42.71*	0.09	15	50	38.31
	09/22/2008		42.75*	0.11			38.27
MW-16	02/16/2009	85.19	44.49	0.44	20	50	40.70
	09/22/2008		44.44*	0.06			40.75

*Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]
LPH = Liquid Phase Hydrocarbons

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

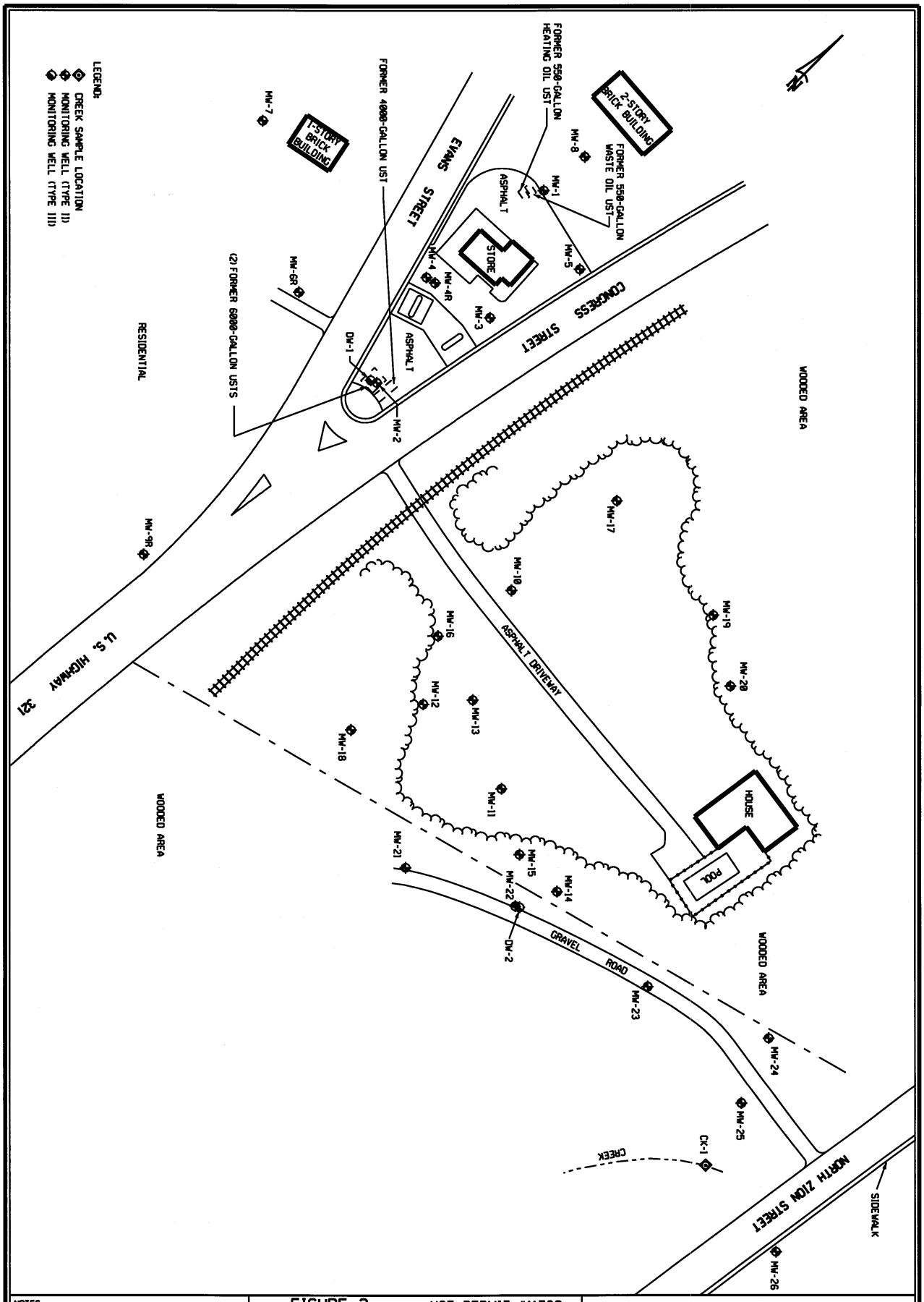
400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



NOTES:

TITLE FIGURE 2 UST PERMIT #11760

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803)735-0003 FAX (803)735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.DGN		BB		1" = 80'	10-17-2008	14.25384.0012

APPENDIX

AFVR Summary Reports

NUWAY ENVIRONMENTAL SERVICES, LLC

Corporate Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

December 10, 2008

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Enhanced Fluid Recovery (EFR)
United Exxon
401 North Congress Street
Winnsboro, SC
J2008-829

Dear Mr. Bolton:

On December 10, 2008 NuWay Environmental Services, LLC (NuWay) performed an Enhanced Fluid Recovery (EFR) event at the above referenced location. The EFR was performed for 8 hours on monitoring well MW-11 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in this well and also wells MW-10, MW-12, MW-13, and MW-16. Approximately 467 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

NuWay appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
NuWay Environmental Services, LLC

Bill Aikins

Bill Aikins
Project Manager

Client:ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 10 Dec 08

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-11	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	18				72.0	631	860	67.5
8:30am	4	18				80.9	638	930	69.9
9:00am	4	18				85.4	688	950	70.9
9:30am	4	18				91.8	771	1150	73.3
10:00am	4	18				87.6	846	1100	79.9
10:30am	4	18				82.0	710	1060	85.8
11:00am	4	18				79.6	791	1040	91.4
11:30am	4	18				70.1	540	1170	99.8
12:00pm	4	18				72.3	626	1190	106.3
12:30pm	4	18				67.1	480	1150	116.0
1:00pm	4	18				69.9	536	1120	113.4
1:30pm	4	18				65.0	319	1200	121.8
2:00pm	4	18				62.3	471	1220	128.6
2:30pm	4	18				60.4	493	1200	131.8
3:00pm	4	18				56.3	320	1160	127.0
3:30pm	4	18				56.0	481	1140	123.0
4:00pm	4	18				52.4	367	1210	125.9

Well Gauging Data:			Before EFR Event			After EFR Event			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP(ft)	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-11			33.55	33.58		0	35.40		
MW-10			0	47.68		0	47.66		
MW-12			0	40.95		0	40.95		
MW-13			0	42.81		42.85	42.95		
MW-16			0	44.49		0	44.48		

Comments: 8 hour EFR with Carbon unit

Total of 467 gallons of liquids generated this event.

NES FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 10 Dec 08	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-11	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0		631	748	9.6	4.8
	8:30am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	638	809	10.5	5.3
	9:00am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	688	827	11.6	5.8
	9:30am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	771	1001	15.8	15.8
	10:00am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	846	957	16.5	16.5
	10:30am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	710	922	13.4	13.4
	11:00am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	791	905	14.6	7.3
	11:30am	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	540	1018	11.2	5.6
	12:00pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	626	1035	13.2	6.6
	12:30pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	480	1001	9.8	4.9
	1:00pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	536	974	10.7	5.3
	1:30pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	319	1044	6.8	3.4
	2:00pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	471	1061	10.2	5.1
	2:30pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	493	1044	10.5	5.3
	3:00pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	320	1009	6.6	3.3
	3:30pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	481	992	9.7	4.9
	4:00pm	4	18	0	0	0	0	0	0	0	0	0	0	0	0	0	>	367	1053	7.9	3.9

Extraction Well	Stinger Depth	Breather Port
MW-11		

Hydrocarbons Removed (vapor):	117	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	15	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	467	Gallons

Comments: 8 hr EFR with off-gas treatment

Total of 467 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 28171

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: NuWay Environmental Services, LLC (fka) NuWay Industrial Service
U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
NuWay Environmental Service, LLC
1741 Calks Ferry Road
Lexington, SC 29073
U.S. EPA ID Number: SCD987598331
Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	467	G.	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 NIS Job #2008-882

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature:
Month 12 Day 10 Year 08

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Driver
Signature:
Month 12 Day 10 Year 08

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette
Signature:
Month 12 Day 10 Year 08

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

NUWAY ENVIRONMENTAL SERVICES, LLC

Corporate Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

December 11, 2008

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Enhanced Fluid Recovery (EFR)
United Exxon
401 North Congress Street
Winnsboro, SC
J2008-829

Dear Mr. Bolton:

On December 11, 2008 NuWay Environmental Services, LLC (NuWay) performed an Enhanced Fluid Recovery (EFR) event at the above referenced location. The EFR was performed for 8 hours on monitoring well MW-2 with off-gas treatment. The well were gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in the wells listed as well as MW-13, MW-12, MW-10, MW-11, and MW-16. Approximately 270 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

NuWay appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
NuWay Environmental Services, LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 11 Dec 08

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-	MW-2	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4		26			76.7	828	980	65.0
8:30am			26			79.0	742	900	69.9
9:00am			26			84.6	670	1040	72.3
9:30am			26			80.0	967	1220	78.9
10:00am			26			76.8	862	1200	85.7
10:30am			26			72.0	909	1170	90.0
11:00am			26			69.3	821	1140	96.9
11:30am			26			65.7	743	1100	109.4
12:00pm			26			69.9	840	1160	119.9
12:30pm			26			71.8	730	1070	115.4
1:00pm			26			70.3	769	1020	118.0
1:30pm			26			65.6	516	1090	119.9
2:00pm			26			62.0	627	1130	121.4
2:30pm			26			58.4	575	1190	125.8
3:00pm			26			60.0	591	1220	127.1
3:30pm			26			57.3	429	1260	131.6
4:00pm			26			55.0	501	1280	127.3

Well Gauging Data:			**Before EFR Event**			**After EFR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP(ft)	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-13			42.80	43.01		42.80	43.05		
MW-12			0	40.88		0	40.88		
MW-10			0	47.85		0	47.86		
MW-11			33.56	33.58		33.56	33.59		
MW-16			0	44.39		0	44.39		
MW-2			52.95	53.09		0	59.20		

Comments: 8 hour EFR with Carbon unit

Total of 270 gallons of liquids generated this event.

NIS FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congree Street, Winnsboro, SC	Date: 11 Dec 08	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)															Vacuum Truck Exhaust			
		Inlet	MW-2	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117															Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0		828	853	14.4	7.2
	8:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	>	742	783	11.9	5.9
	9:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	>	670	905	12.4	6.2
	9:30am	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	967	1061	21.0	21.0
	10:00am	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	862	1044	18.4	18.4
	10:30am	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	909	1018	18.9	18.9
	11:00am	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	821	992	16.6	8.3
	11:30am	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	743	957	14.5	7.3
	12:00pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	840	1009	17.3	8.7
	12:30pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	730	931	13.9	6.9
	1:00pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	769	887	13.9	7.0
	1:30pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	516	948	10.0	5.0
	2:00pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	627	983	12.6	6.3
	2:30pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	575	1035	12.2	6.1
	3:00pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	591	1061	12.8	6.4
	3:30pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	429	1096	9.6	4.8
	4:00pm	4	26	0	0	0	0	0	0	0	0	0	0	0	0	>	501	1114	11.4	5.7

Extraction Well	Stinger Depth	Breather Port
MW-2		

Hydrocarbons Removed (vapor):	150	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	19	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	270	Gallons

Comments: 8 hr EFR with off-gas treatment

Total of 270 gallons of liquids generated this event.

DIFFERENTIAL PRESSURE DATA

Well No.	MW-10	MW-11	MW-12	MW-16	MW-	MW-
Nearest Ex. Well:	MW-16	MW-15	MW-13	MW-12	MW-	MW-
Approx. Distance:						
Time (hh:mm)	**Differential Pressure Readings (inches of water):**					
8:00am	0.3	0.1	0.4	0.1		
9:00am	0.2	0.1	0.4	0.1		

Vacuum Truck Information	**Recovery/ Disposal Information**	
Subcontractor:	Hydrocarbons Removed (vapor):	pounds
Truck Operator:	Hydrocarbons Removed (liq):	gallons
Truck No:	Total Hydrocarbons Removed:	equiv.gal.
Vacuum Pumps:	Molecular Weight Utilized:	g/mole
Pump Type:	Total Liquids Removed:	gallons
Tank Capacity(gal.):	Disposal Facility:	
Stack I.D. (inches):	Manifest Number:	
Pumps:	**Offgas Treatment Information**	
RPM:	Atmospheric Exhaust:	pounds
Job Time:	Destruction Efficiency: %	percent

Comments:

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 28172

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: NuWay Environmental Services, LLC (fka) NuWay Industrial Service
U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
NuWay Environmental Service, LLC
1741 Calks Ferry Road
Lexington, SC 29073
U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	270	G.	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

NIS Job #2008-[illegible] 829

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature
Month 12 Day 11 Year 08

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Dauer
Signature
Month 12 Day 11 Year 08

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette
Signature
Month 12 Day 11 Year 08

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

January 13, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Advanced Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On January 13, 2009 A&D Environmental Services (SC) LLC performed an Advanced Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-13 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in this well and also wells MW-10, MW-12, MW-13, and MW-16. Approximately 385 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins WSA

Bill Aikins
Project Manager

Client:ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 13 Jan 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-13	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	25				68.6	899	1140	58.4
8:30am	4	25				52.0	1071	730	87.4
9:00am	4	25				57.3	946	990	94.0
9:30am	4	25				63.8	1224	1030	100.6
10:00am	4	25				68.0	1360	1120	107.4
10:30am	4	25				73.9	1346	1200	111.3
11:00am	4	25				79.1	1317	1280	116.4
11:30am	4	25				84.0	1163	1250	121.8
12:00pm	4	25				80.7	1019	1200	119.7
12:30pm	4	25				83.5	960	1160	123.2
1:00pm	4	25				80.2	881	1220	126.3
1:30pm	4	25				81.6	920	1260	131.4
2:00pm	4	25				78.1	674	1140	136.6
2:30pm	4	25				76.3	643	1240	142.8
3:00pm	4	25				74.9	730	1200	140.0
3:30pm	4	25				69.5	611	1120	138.3
4:00pm	4	25				67.2	728	1050	140.1

Well Gauging Data:			Before EFR Event			After EFR Event			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP(ft)	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-10			47.62	47.84		47.69	47.99		
MW-12			0	40.90		0	40.52		
MW-13			42.72	42.84		0	43.23		
MW-11			33.47	33.49		33.46	37.47		
MW-16			44.36	44.93		44.46	45.02		

Comments: 8 hour EFR with Carbon unit

Total of 385 gallons of liquids generated this event.

DIFFERENTIAL PRESSURE DATA

Well No.	MW-10	MW-12	MW-11	MW-	MW-	MW-
Nearest Ex. Well:	MW-	MW-	MW-	MW-	MW-	MW-
Approx. Distance:						
Time (hh:mm)	Differential Pressure Readings (inches of water):					
	.2	.3	5			
	.2	.3	6			
	.2	.3	6			
	.2	.3	6			
	.3	.3	6			
	.3	.4	6			
	.3	.4	6			
	.3	.4	6			
	.3	.4	6			
	.3	.4	7			
	.3	.4	7			
	.3	.4	7			

Vacuum Truck Information	Recovery/ Disposal Information	
Subcontractor:	Hydrocarbons Removed (vapor):	pounds
Truck Operator:	Hydrocarbons Removed (liq):	gallons
Truck No:	Total Hydrocarbons Removed:	equiv.gal.
Vacuum Pumps:	Molecular Weight Utilized:	g/mole
Pump Type:	Total Liquids Removed:	gallons
Tank Capacity(gal.):	Disposal Facility:	
Stack I.D. (inches):	Manifest Number:	
Pumps:	**Offgas Treatment Information**	
RPM:	Atmospheric Exhaust:	pounds
Job Time:	Destruction Efficiency: %	percent

Comments:

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 13 Jan 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-13	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0		899	992	18.2	9.1
	8:30am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1071	635	13.9	6.9
	9:00am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	946	861	16.6	8.3
	9:30am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1224	896	22.4	22.4
	10:00am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1360	974	27.1	27.1
	10:30am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1346	1044	28.7	28.7
	11:00am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1317	1114	29.9	15.0
	11:30am	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1163	1088	25.8	12.9
	12:00pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1019	1044	21.7	10.9
	12:30pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	960	1009	19.8	9.9
	1:00pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	881	1061	19.1	9.5
	1:30pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	920	1096	20.6	10.3
	2:00pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	674	992	13.7	6.8
	2:30pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	643	1079	14.2	7.1
	3:00pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	730	1044	15.6	7.8
	3:30pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	611	974	12.2	6.1
	4:00pm	4	25	0	0	0	0	0	0	0	0	0	0	0	0	0	>	728	914	13.6	6.8

Extraction Well	Stinger Depth	Breather Port
MW-13		

Hydrocarbons Removed (vapor):	206	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	27	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	385	Gallons

Comments: 8 hr EFR with off-gas treatment

Total of 385 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 28273

5. Generator's Name and Mailing Address: United Exxon, 401 North Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC (fka) NuWay Environmental Services, LLC — U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name — U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	385	G.	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 NIS Job #2008-829

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: JOHN MONEGHAN — Signature: [signature] — Month 01 Day 13 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: CHRIS DRIVER — Signature: [signature] — Month 01 Day 13 Year 09

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette — Signature: [signature] — Month 1 Day 13 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

January 14, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Enhanced Fluid Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On January 14, 2009 A&D Environmental (SC) Services, LLC performed an Advanced Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-16 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in this well and also wells MW-12, MW-13, and MW-11. Approximately 168 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client:ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 14 Jan 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-16	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	23				55.0	437	470	28.1
8:30am	4	23				58.8	485	540	30.5
9:00am	4	23				60.9	525	660	36.7
9:30am	4	23				64.6	611	880	45.2
10:00am	4	23				69.3	583	1040	48.9
10:30am	4	23				67.0	598	1200	52.0
11:00am	4	23				72.5	773	1380	60.0
11:30am	4	23				70.8	916	1320	66.5
12:00pm	4	23				76.0	880	1310	74.6
12:30pm	4	23				73.2	791	1260	79.9
1:00pm	4	23				70.0	626	1280	85.5
1:30pm	4	23				70.9	715	1310	90.2
2:00pm	4	23				68.4	870	1300	95.5
2:30pm	4	23				68.0	619	1210	100.4
3:00pm	4	23				66.0	683	1150	106.3
3:30pm	4	23				65.3	600	1200	110.9
4:00pm	4	23				63.1	637	1180	110.9

Well Gauging Data:			**Before EFR Event**			**After EFR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP(ft)	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-10			47.60	47.80		47.64	47.88		
MW-12			0	40.90		0	40.90		
MW-13			42.71	42.83		42.82	42.99		
MW-11			33.47	33.49		33.31	33.32		
MW-16			44.36	44.93		0	43.63		

Comments: 8 hour EFR with Carbon unit

Total of 168 gallons of liquids generated this event.

DIFFERENTIAL PRESSURE DATA

Well No.	MW-12	MW-13	MW-11	MW-10	MW-	MW-
Nearest Ex. Well:	MW-	MW-	MW-	MW-	MW-	MW-
Approx. Distance:						
Time (hh:mm)	Differential Pressure Readings (inches of water):					
	.03	.01	0	.01		
	.03	.01	0	.03		
	.03	.01	0	.04		
	.03	.01	0	.04		
	.05	.03	0	.04		
	.05	.05	0	.04		
	.06	.05	0	.04		
	.06	.05	0	.04		
	.06	.05	0	.04		
	.06	.05	0	.04		
	.06	.05	0	.04		
	.06	.05	0	.04		

Vacuum Truck Information	Recovery/ Disposal Information	
Subcontractor:	Hydrocarbons Removed (vapor):	pounds
Truck Operator:	Hydrocarbons Removed (liq):	gallons
Truck No:	Total Hydrocarbons Removed:	equiv.gal.
Vacuum Pumps:	Molecular Weight Utilized:	g/mole
Pump Type:	Total Liquids Removed:	gallons
Tank Capacity(gal.):	Disposal Facility:	
Stack I.D. (inches):	Manifest Number:	
Pumps:	**Offgas Treatment Information**	
RPM:	Atmospheric Exhaust:	pounds
Job Time:	Destruction Efficiency: %	percent

Comments:

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 14 Jan 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-16	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0		437	409	3.6	1.8
	8:30am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	485	470	4.7	2.3
	9:00am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	525	574	6.2	3.1
	9:30am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	611	766	9.6	9.6
	10:00am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	583	905	10.8	10.8
	10:30am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	598	1044	12.7	12.7
	11:00am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	773	1201	19.0	9.5
	11:30am	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	916	1148	21.5	10.7
	12:00pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	880	1140	20.5	10.2
	12:30pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	791	1096	17.7	8.9
	1:00pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	626	1114	14.2	7.1
	1:30pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	715	1140	16.6	8.3
	2:00pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	870	1131	20.1	10.0
	2:30pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	619	1053	13.3	6.7
	3:00pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	683	1001	14.0	7.0
	3:30pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	600	1044	12.8	6.4
	4:00pm	4	23	0	0	0	0	0	0	0	0	0	0	0	0	0	>	637	1027	13.4	6.7

Extraction Well	Stinger Depth	Breather Port
MW-16		

Hydrocarbons Removed (vapor):	132	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	17	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	168	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 168 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of 1	3. Emergency Response Phone 803-957-9175	4. Waste Tracking Number 28275

5. Generator's Name and Mailing Address: United Exxon, 401 North Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC (fka) NuWay Environmental Services, LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	168	G.	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

NIS Job #2008-829

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: John Moneghan

Signature: x [signature]

Month 01 Day 14 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Driver

Signature: [signature]

Month 01 Day 14 Year 09

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette

Signature: [signature]

Month 1 Day 14 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

Jnauary 15, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Enhanced Fluid Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On January 15, 2009 A&D (SC) Environmental Services, LLC performed an Advanced Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-10 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in this well and also wells MW-11, MW-12, MW-13, and MW-16. Approximately 109 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins WGA

Bill Aikins
Project Manager

Client:ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 15 Jan 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-10	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	20				50.1	1017	630	23.8
8:30am	4	20				54.3	1380	690	26.4
9:00am	4	20				57.6	1164	880	35.8
9:30am	4	20				59.8	1286	900	38.4
10:00am	4	20				64.3	1117	1140	46.8
10:30am	4	20				67.0	981	1100	54.3
11:00am	4	20				71.3	640	1230	59.1
11:30am	4	20				70.0	711	1260	63.5
12:00pm	4	20				75.8	967	1200	69.8
12:30pm	4	20				79.4	750	1180	77.3
1:00pm	4	20				82.4	806	1120	84.9
1:30pm	4	20				86.1	653	1060	90.8
2:00pm	4	20				89.6	621	1100	95.5
2:30pm	4	20				86.1	829	1150	100.0
3:00pm	4	20				84.0	631	1100	105.7
3:30pm	4	20				85.1	525	1050	108.9
4:00pm	4	20				82.0	718	1240	113.0

Well Gauging Data:			**Before EFR Event**			**85.1After EFR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP(ft)	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-10			47.69	47.99		0	46.72		
MW-16			44.46	45.02		0	45.13		
MW-11			33.46	37.47		33.81	38.15		
MW-13			0	43.23		0	43.50		
MW-12			0	40.52		0	42.81		

Comments: 8 hour AFVR with Carbon unit

Total of 109 gallons of liquids generated this event.

DIFFERENTIAL PRESSURE DATA

Well No.	MW-16	MW-11	MW-12	MW-13	MW-	MW-
Nearest Ex. Well:	MW-	MW-	MW-	MW-	MW-	MW-
Approx. Distance:						
Time (hh:mm)	Differential Pressure Readings (inches of water):					
	.03	0	0	0		
	.03	0	0	0		
	.05	0	0	0		
	.05	0	0	0		
	.05	0	0	0		
	.07	0	0	0		
	.07	0	0	0		
	1	0	0	0		
	1	0	0	0		
	1	0	0	0		
	1	0	0	0		
	1	0	0	0		

Vacuum Truck Information	Recovery/ Disposal Information	
Subcontractor:	Hydrocarbons Removed (vapor):	pounds
Truck Operator:	Hydrocarbons Removed (liq):	gallons
Truck No:	Total Hydrocarbons Removed:	equiv.gal.
Vacuum Pumps:	Molecular Weight Utilized:	g/mole
Pump Type:	Total Liquids Removed:	gallons
Tank Capacity(gal.):	Disposal Facility:	
Stack I.D. (inches):	Manifest Number:	
Pumps:	**Offgas Treatment Information**	
RPM:	Atmospheric Exhaust:	pounds
Job Time:	Destruction Efficiency: %	percent

Comments:

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 15 Jan 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-10	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0		1017	566	11.7	5.9
	8:30am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1380	600	16.9	8.5
	9:00am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1164	766	18.2	9.1
	9:30am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1286	783	20.6	20.6
	10:00am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1117	992	22.6	22.6
	10:30am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	981	957	19.2	19.2
	11:00am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	640	1070	14.0	7.0
	11:30am	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	711	1096	15.9	8.0
	12:00pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	967	1044	20.6	10.3
	12:30pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	750	1027	15.7	7.9
	1:00pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	806	974	16.0	8.0
	1:30pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	653	922	12.3	6.1
	2:00pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	621	957	12.1	6.1
	2:30pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	829	1001	16.9	8.5
	3:00pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	631	957	12.3	6.2
	3:30pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	525	914	9.8	4.9
	4:00pm	4	20	0	0	0	0	0	0	0	0	0	0	0	0	0	>	718	1079	15.8	7.9

Extraction Well	Stinger Depth	Breather Port
MW-10		

Hydrocarbons Removed (vapor):	167	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	22	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	109	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 109 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:
2. Page 1 of 1
3. Emergency Response Phone: 803-957-9175
4. Waste Tracking Number: 28276

5. Generator's Name and Mailing Address: United Exxon, 401 North Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC (fka) NuWay Environmental Services, LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name:

U.S. EPA ID Number:

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	109	G.	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

NIS Job #2008-829

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: John Monegan — Signature: — Month 01 Day 15 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Driver — Signature: — Month 01 Day 15 Year 09

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Dowe — Signature: — Month 01 Day 15 Year 09

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

November 25, 2003

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3281
COLUMBIA SC 29230-3218

Re: United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760
Release 1 Reported August 1, 1997
Release 2 Reported August 1, 1997
Groundwater Sampling Report Received September 11, 2003
Lee County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Monitoring Report and agrees with your site rehabilitation contractor's recommendation that free product recovery and additional assessment activities are required.

The assessment report detailed the extent of groundwater chemicals of concern (CoC) on the property, but additional monitoring wells are required to delineate the extent of the free product, conduct an enhanced fluid recovery event, and if possible install monitoring wells closer to the creek. Costs for this additional assessment activity will be split equally between release 1 and release 2. Our records indicate that you have selected ATC Associates Incorporated as your contractor to perform assessment activities at this site. Please have your contractor complete and submit an Assessment Component Cost Agreement form and **Tier II Assessment Plan** for installation of additional monitoring well, and sample all existing as well as the new monitoring well **on or before January 16, 2004.** The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov/eqc/lwm/forms/assess%7E1.pdf. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form.

On all correspondence regarding this site, please reference UST Permit #05738. Please be sure to include the requested information so that the appropriate approvals can be issued. **Note: approval from the Program must be issued before work begins.** Please call me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

cc: ATC Associates, Inc. 3421 M St. Vardell Ln., Charlotte, NC 28217
Technical File

UST PROGRAM DOCKETING # 70 Tech

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

November 25, 2003

MR CHASE FORTENBERRY
BISHOPVILLE PETROLEUM COMPANY
P O BOX 347
BISHOPSVILLE SC 29010-0347

Re: Quick Mart 1, 310 North Main Street, Bishopville, SC
UST Permit #05738
Release 1 Reported December 30, 1991
Release 2 Reported April 21, 2003
Groundwater Sampling Report Received July 15, 2003
Lee County

Dear Mr. Fortenberry:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Groundwater Monitoring Report and agrees with your site rehabilitation contractor's recommendation that additional assessment activities are required.

The assessment report detailed the extent of groundwater chemicals of concern (CoC) on the property, but additional monitoring wells are required across Main Street to delineate the extent of the CoC in groundwater. Costs for this additional assessment activity will be split equally between release 1 and release 2. Our records indicate that you have selected ATC Associates Incorporated as your contractor to perform assessment activities at this site. Please have your contractor complete and submit an Assessment Component Cost Agreement form and **Tier II Assessment Plan** for installation of additional monitoring well, and sample all existing as well as the new monitoring well **on or before January 16, 2004**. The Tier II assessment forms may be obtained from the UST website at http://www.scdhec.gov/eqc/lwm/forms/assess%7E1.pdf. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Agreement form.

On all correspondence regarding this site, please reference UST Permit #05738. Please be sure to include the requested information so that the appropriate approvals can be issued. **Note: approval from the Program must be issued before work begins.** Please call me at (803) 896-6669, (800) 826-5435 (within South Carolina only), fax (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov if you have questions or need additional information.

Sincerely,

Arthur Shrader, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division
UST Program
Bureau of Land and Waste Management

cc: ATC Associates, Inc. 3421 M St. Vardell Ln., Charlotte, NC 28217
Technical File

Confirmation Report - Memory Send

Date & Time: Nov-25-2003 08:27am
Tel line : 803 898 4330
Machine ID : UST PROGRAM

Job number : 483
Date & Time : Nov-25 08:26am
To : 97350443
Number of pages : 002
Start time : Nov-25 08:26am
End time : Nov-25 08:27am
Pages sent : 002
Status : OK
Job number : 483 *** SEND SUCCESSFUL ***

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

UNDERGROUND STORAGE TANK PROGRAM
BUREAU OF LAND AND WASTE MANAGEMENT

Phone (803) 896-6240 Fax (803) 896-6245

JUL 25 2003

MR BILLY KEENAN
KEENAN OIL CO INC
PO BOX 3218
COLUMBIA SC 29230-3218

Re: United Exxon, 401 N. Congress St., Winnsboro, SC
UST Permit #11760, CA #19077 & 19079
Releases 2 & 3 Reported August 1, 1997
Technical File Reviewed June 2, 2003
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates. The Program has reviewed the referenced technical file and determined the next necessary scope of work to be a comprehensive groundwater sampling event to obtain current data.

Cost Agreements #19077 and 19079 have been approved in the amounts shown on the enclosed approved cost agreements to sample all monitoring wells associated with the release. Samples should be analyzed for BTEX + Naph. + MTBE by EPA method 8260B and EDB by EPA method 8011.

Please have ATC Associates submit groundwater sampling results to the Program in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.

UST PROGRAM
DOCKETING # 11 Tech

ATC Associates can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice is due within 60 days from the date of this letter. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference **UST Permit #11760 and CA #'s 19077 and 19079.** If there are any questions concerning this project, please contact me at (803) 896-6323 or (800) 826-5435 (within South Carolina only).

Sincerely,

Susan Block

Susan Block, Hydrogeologist
Owner/Operator Support Section
Assessment and Corrective Action Division

enc: Approved Cost Agreements (ACAs)

cc: ATC Associates, 2725 E. Millbrook Rd., Ste. 121, Raleigh, NC 27604 (w/ copy of ACAs)
Technical file (w/ copy of ACAs)
Read file (no enc.)

SCDHEC/UST/060303

Approved Cost Agreement 077

Facility: 11760 UNITED EXXON
BLOCKSE
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		B	PERSONNEL	1.0000	250.00	250.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	6.5000	55.00	357.50
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	6.5000	100.00	650.00
		F	EDB	6.5000	55.00	357.50
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	1.0000	90.00	90.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	1,705.00	255.75
				Total Amount		1,960.75

Approved Cost Agreement 079

Facility: 11760 UNITED EXXON
BLOCKSE
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		B PERSONNEL	1.0000	250.00	250.00
10 SAMPLE COLLECTION					
		A GROUND WATER	6.5000	55.00	357.50
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	6.5000	100.00	650.00
		F EDB	6.5000	55.00	357.50
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	1.0000	90.00	90.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	1,705.00	255.75
			Total Amount		1,960.75

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of UST Permit # Attached Sites, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ IGWA, Tier I, Tier II
☐ All future assessment scopes. **

Name of Contractor/Person(s) ATC Associates

Address 2725 E Millbrook Rd Ste 121
Raleigh NC 27604

Telephone Number (Rec) 920-2625

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*Indicate if the person listed is your own employee

** If you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above?
____ Yes ✓ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancée.

3. PAYMENT

For eligible costs you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

____ For eligible costs, I request that payment be made to me after I have paid the contractor.

✓ For eligible costs, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature [signature]

Date 5/15/03

UST PROGRAM DOCKETING # 72 Tech

Former Hosack's (Gas Bah #41)
UST #07905

Eau Claire 66
UST #07697

Cola Service Station
UST #07696

Derrick's 66
UST #06152

Higgins 66
UST #07902

United Exxon
UST #11760

Gas Bah #8
UST #11759

Frank's Car Wash
UST #11758

Fax
To
645
9423

Susan Block

Record Group # 169

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

Report On Records Destroyed
Records and Forms Management Unit
(UST Program ONLY)

1. Return this form to:
DHEC Forms Manager-Heritage Building
1777 St. Julian Place
Columbia, SC 29204

The records listed below have been disposed of in accordance with provisions of the Public Records Act, Code of Laws of South Carolina, 1976, Sections 30-1-10 through 30-1-140, as amended, and approved Records Retention Schedules.

2. Signature: Marquista Williams

3. Title: Administrative Specialist II Date:

Records Officer signature:

4. Record Series Titles	5. Record Series #	6. Inclusive Dates	7. Volume (cubic footage)	8. Date of Destruction
Analytical Data Sheets	10302	10/00-1/01	0.04	12/18/01
*Documents put in recycle box on date of destruction.			9)	Total cubic Feet destroyed

SITE ID # 11760 FACILITY NAME: United Exxon

REVIEWED BY

DHEC 0521 (~~4/1988~~) Page 1 of 2 [Records Retention schedule #'s 12-300 and 12-331]

UST PROGRAM DOCKETING # 13 Feet

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800-377-2826
803-788-2535
Fax 803-788-2399

Kristen

RECEIVED
DEC 0 6 2000
Bureau of Underground
Storage Tank Management

December 5, 2000

CERTIFIED MAIL

Ms. Sue H. Rheiner
400 North Congress Street
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit # 11760

Dear Ms. Rheiner:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at United Exxon. In order to complete the assessment, the collection of four (4) soil samples, the installation of three (3) temporary groundwater monitoring wells, and the installation of one (1) permanent groundwater monitoring well on your property, (Parcel 135-7-3-3) located at 400 North Congress Street in Winnsboro, South Carolina, is necessary. The three temporary wells will be sampled the day following their installations and then properly removed. The proposed permanent well will be 2" in diameter with an above ground riser. This well will be installed adjacent to the creek, that is located at the rear of your property. A map showing the proposed monitoring wells and soil sample locations is enclosed.

You, as the property owner, will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the monitor well installations. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Ms. Kristen Hein, SCDHEC Project Manager, at 803-898-4343, and reference UST Permit #11760.

UST PROGRAM
DOCKETING # 74 Tech

SEI
Environmental, Inc.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Ms. Kristen Hein, SCDHEC Project Manager at 803-898-4343.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

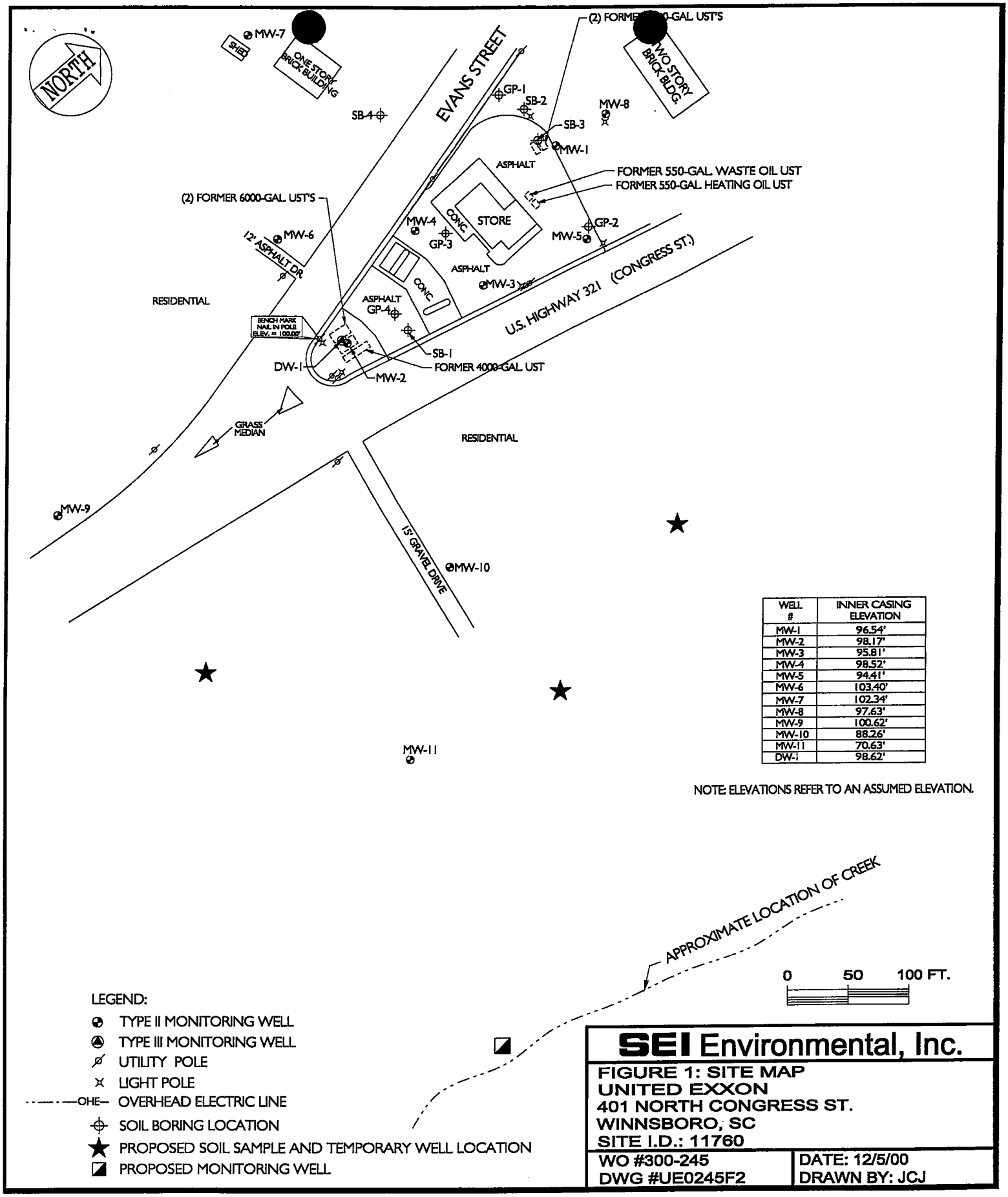
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company
Ms. Kristen Hein, SCDHEC

☐ _____
Access approved

☐ _____
Access denied

Phone number_____
(If you wish to be notified prior to field activities)



WELL #	INNER CASING ELEVATION
MW-1	96.54'
MW-2	98.17'
MW-3	95.81'
MW-4	98.52'
MW-5	94.41'
MW-6	103.40'
MW-7	102.34'
MW-8	97.63'
MW-9	100.62'
MW-10	88.26'
MW-11	70.63'
DW-1	98.62'

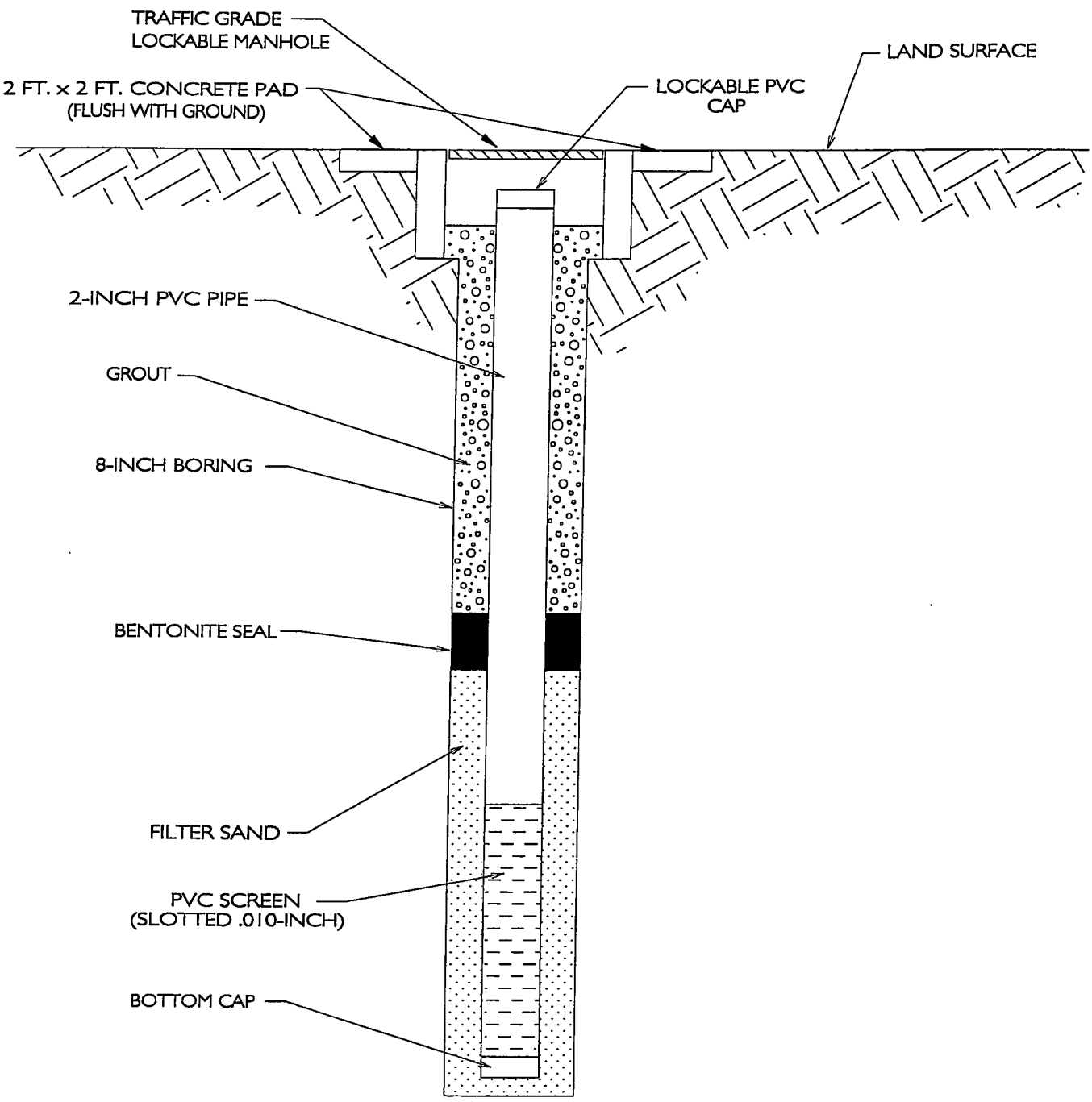
NOTE: ELEVATIONS REFER TO AN ASSUMED ELEVATION.

SEI Environmental, Inc.

FIGURE 1: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.: 11760

WO #300-245 | DATE: 12/5/00
DWG #UE0245F2 | DRAWN BY: JCJ

TYPE II MONITORING WELL



NOT TO SCALE

SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

SEP 22 2000

Mr. Billy Keenan
Keenan Energy Company, Inc.
P.O. Box 3218
Columbia, South Carolina 29230

Re: United Exxon
UST Permit #11760, CP #08012 (release #2), CP #08013 (release #3), MWA # 11374
Release Reported August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Division of Underground Storage Tank Management recognizes your commitment to continue work at this site utilizing your own contractor. The Division has reviewed the technical file of the referenced facility. The results of the previous ground-water quality analysis indicate the concentrations of Chemicals of Concern are above the Risk Based Screening Levels established for groundwater.

All releases from regulated underground storage tanks that have been reported to this Department have been prioritized using a ranking system that evaluates the risk to human health and the environment. Based on the available data, your site's priority classification is 3A. Therefore, SUPERB funds are available for additional site investigative activities at this time. The next scope of work to be implemented at this facility includes plume definition, and a complete ground-water sampling event.

Cost Proposal #08012 and #08013 have been approved to complete plume definition and sample all monitoring wells associated with the release. Please have your contractor complete the assessment report and submit an assessment component invoice within sixty days of the date of this letter. All documents involving geologic interpretation or engineering must be prepared by a qualified professional registered in the State of South Carolina. Approval for up to 150 feet for field screening (if technically necessary) and the installation of one shallow monitoring well has been provided to your environmental consultant; a copy is enclosed for your records.

SEI Environmental can submit an invoice for direct billing from the SUPERB account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice are due within 60 days from the date of this letter. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable. The SCDHEC reserves the right to audit project records at any time during the project or after completion of work.

UST PROGRAM
DOCKETING # 75 Tech

The Division grants preapproval for transportation of virgin petroleum contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or ground water must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or ground water on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water.

On all correspondence concerning this site, please reference **UST Permit #11760** and **Cost Proposal #08012 and #08013.** If there are any questions concerning this project, please contact Kristen Hein at (803) 898-4343 or (800) 826-5435 (within South Carolina only).

Sincerely,

Owner/Operator Assistance Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

Kristen A. Hein, Hydrogeologist

Lee A. Monts, Manager

enc: Approved Cost Proposals
Copy of MWA

cc: Technical File (w/copy of MWA.)
Financial File (w/copy of ACCP)
Mr. Bob Bolton, SEI Environmental, 3021 McNaughton Dr., Ste. 9, Columbia, SC 29223 (w/original MWA, copy of ACCP)

SCDHEC/UST/050499

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

Monitoring Well Installation Approval Form

Date of Issue: May 4, 1999

Approval No.: 11374

Approval is hereby granted to:	SEI Environmental
On behalf of:	Billy Keenan, Keenan Energy Company
UST Permit #:	11760
County:	Fairfield

This approval is for the construction of one permanent monitoring well in accordance with the construction plans and technical specifications outlined in the SCDHEC Rapid Assessment Guidance Document. The wells are to be constructed within the surficial aquifer for the intended purpose of monitoring ground-water quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well will be submitted with the technical report.

2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.

3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.

4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Kristen Hein at (803) 898-4343 or heinka@columb26.dhec.state.sc.us.

5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to Kristen Hein with the technical report.

6. Monitoring wells and temporary monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

7. Monitoring wells and temporary monitoring wells will be abandoned by or under the direct supervision of a licensed well driller certified by the State of South Carolina. Temporary monitoring wells shall not remain in place for longer than 30 days from the date of installation. Monitoring wells may be abandoned only upon concurrence by this Division.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by: Kristen A. Hein

Kristen A. Hein, Hydrogeologist
Owner/Operator Assistance Section
Division of UST Management

cc: Central Midlands District EQC
Billy Keenan

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

APR 09 1999

Mr. Billy Keenan
Keenan Energy Group
P.O. Box 3218
Columbia, South Carolina 29230

Re: **United Exxon**
UST Permit # 11760
Release Reported August 1, 1997
Rapid Assessment Report received March 26, 1999
Fairfield County

Dear Mr. Keenan:

The Division of Underground Storage Tank Management of the South Carolina Department of Health and Environmental Control has reviewed the referenced assessment report submitted by SEI, Environmental.

The results of the assessment indicate the concentrations of chemicals of concern are above allowable risk based screening levels (RBSL); however, the plume has not been fully delineated in the down-gradient direction. According to the SUPERB Rapid Assessment Guidance document, the objective and performance standard of the rapid assessment is to delineate the horizontal and vertical extent of chemicals of concern in soil and groundwater. The guidance document also states that, based on field screening results, all permanent monitoring wells should be installed during one drill rig mobilization. Your contractor should complete the plume delineation and collect ground water samples from all monitoring wells associated with the release and from any surface waters in the area. This sampling should include analyses for nitrate, sulfate, ferrous iron, and methane. In addition, Site Specific Target Levels should be developed with a computer model utilizing intrinsic parameters for each CoC and each particular pathway identified in the site conceptual model. This modeling should be conducted to protect the creek downgradient of the site.

Please have your contractor complete and submit the enclosed Assessment Component Cost Proposal form and Rapid Assessment Plan form within thirty days of the date of this letter to address the comments above. Every component may not be necessary to complete the above scope of work. The SUPERB allowable cost for each component is included on the Assessment Component Cost Proposal form. Since the plume was not defined during the previous assessment as directed in Departmental documents, the Division cannot allow costs for additional mobilizations.

UST PROGRAM
DOCKETING # 76 Teen

On all correspondence or inquiries regarding this project, please reference **UST Permit #11760**. If you have any questions, please contact Kristen Hein at (803) 898-4343 or (800) 826-5435 (within South Carolina only).

Sincerely,

Owner / Operator Assistance Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

Kristen A. Hein, Hydrogeologist

Lee A. Monts, Manager

enc: Rapid Assessment Plan
Assessment Component Cost Proposal
Rapid Assessment Guidance Document

cc: Bob Bolton, SEI, Environmental, 3021 McNaughton Dr., Ste. 9, Cola., SC 29223 (w/enc)
Technical / Read Files

DHEC/UST/040599

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

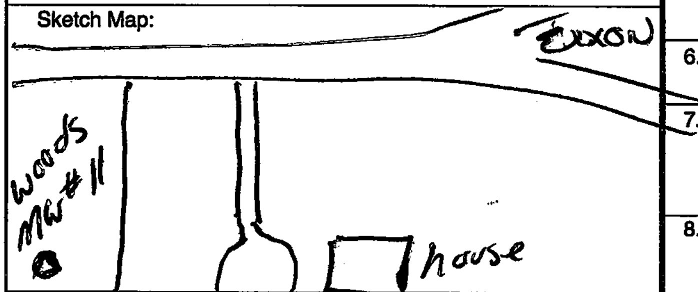
1. LOCATION OF WELL:

County: Fairfield System Name:

Latitude: Longitude:

Distance and Direction from Road Intersections:
401 N. Congress St.
Winnsboro SC
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☐ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Brw Sl	25	25
TN WS Sl	13	38

RECEIVED
DEC 9 1998
Water Monitoring, Assessment & Protection Division

UST PROGRAM
DOCKETING # 7747ech

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW# 11
Bentonite Seal from 24'-26'

4. OWNER OF WELL: Keenan Energy Co.
Address: POB 3218
Columbia, SC 29230
Telephone No.:

Engineer: SEI, Environmental, Inc.
Address: 3021 McNaughton Dr, Suite 9
Columbia, SC 29223
Telephone No.: (803) 788-2535

5. WELL DEPTH (completed) 38' ft. Date Started: 10-29-98 Date Completed: 10-29-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ______ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ______

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 28 ft. depth
______ in. to ______ ft. depth

Height: Above/Below Surface N/A ft.
Weight ______ lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 28 ft. and 38 ft. **NOTE: MULTIPLE SCREENS USE SECOND SHEET**
______ ft. and ______ ft.
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 32' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface. N/A
______ ft. after ______ hrs. Pumping ______ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. WATER QUALITY N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 26' ft. to 38 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From 0.3 ft. to 24 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ______ ft. ______ direction N/A
Type well disinfected ☐ Yes Type:
upon completion ☐ No Amount:

16. PUMP: Date installed: ______ Not installed ☐ N/A
Mfr. Name: ______ Model No.: ______
H.P. ______ Volts ______ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: ECS Inc. Date: 10-30-98
Address: PO Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1333
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water

DHEC — PROMOTE PROTECT PROSPER

2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:

County: Fairfield System Name:

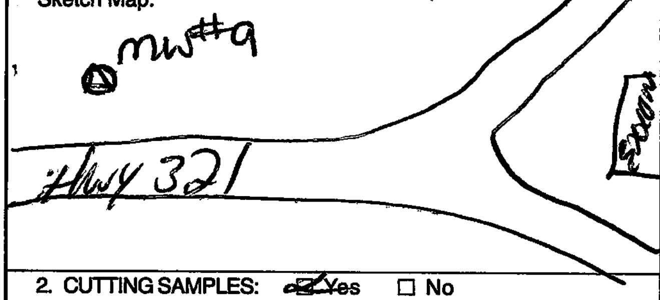
Latitude: Longitude:

Distance and Direction from Road Intersections:

401 N. Congress St.
Winnsboro SC

Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☑ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☑ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
TN Sl	25	25
Brn S Sl	25	50

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW#9
Bentonite seal 31'-33'

4. OWNER OF WELL: Keenan Energy Co.
Address: POB 3218
Telephone No.: Columbia, SC 29230

Engineer: SEI Environmental, Inc (803) 788-2535
Address: 3021 McNaughton Dr. Suite 9
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 50' ft. Date Started: 10-28-98 Date Completed:

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ______ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☑ Monitor Well ☐ ______

8. CASING: ☑ Threaded ☐ Welded
Diam.: 2"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 40 ft. depth
______ in. to ______ ft. depth

Height: Above/Below Surface N/A ft.
Weight ______ lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10
Set Between: 40 ft. and 50 ft. **NOTE: MULTIPLE SCREENS**
______ ft. and ______ ft. **USE SECOND SHEET**
Sieve Analysis ☐ Yes (please enclose) ☑ No

10. STATIC WATER LEVEL 46' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface. N/A
______ ft. after ______ hrs. Pumping ______ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ______

12. WATER QUALITY N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☑ Yes ☐ No
Installed from 33 ft. to 51 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ______
Depth: From 0.3 ft. to 31 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ______ ft. ______ direction N/A
______ Type well disinfected ☐ Yes Type: ______
upon completion ☐ No Amount: ______

16. PUMP: Date installed: ______ Not installed ☐ N/A
Mfr. Name: ______ Model No.: ______
H.P. ______ Volts ______ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: ECS Inc Date: 10-30-98
Address: P.O. Box 703, Matthews NC 28106
Signed: Chris Bender Cert. No. 1333
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

Water Well Record
Bureau of Water

DHEC — PROMOTE PROTECT PROSPER

2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:

County: Fairfield System Name:

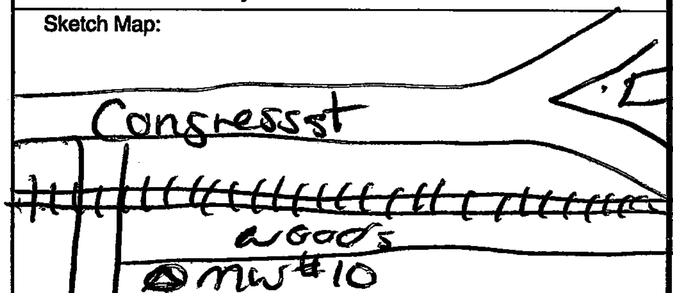
Latitude: Longitude:

Distance and Direction from Road Intersections:

401 N. Congress St.
Winnsboro SC

Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Tn Sl	25	25
Brn S Sl	25	50

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW#10
Bentonite Seal from 36-38'

4. OWNER OF WELL: Keenan Energy Co.
Address: POB 3218
Telephone No.: Columbia, SC 29230

Engineer: SEI environmental, Inc (803)
Address: 3021 McNaughton Dr. Suite 9 788-2535
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 50' ft. Date Started: Date Completed: 10-28-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE: ☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 40 ft. depth
____ in. to ____ ft. depth

Height: Above/Below Surface N/A ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 10'
Set Between: 40 ft. and 50 ft. **NOTE: MULTIPLE SCREENS USE SECOND SHEET**
____ ft. and ____ ft.
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 43' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface. N/A
____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. WATER QUALITY N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 38 ft. to 50' ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0.3 ft. to 36 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction N/A
____ Type well disinfected ☐ Yes Type: ____
upon completion ☐ No Amount: ____

16. PUMP: Date installed: ____ Not installed ☐ N/A
Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 10-30-98
Address: PO Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No. 1332
Authorized Representative

Williac/j

11760

Water Well Record
Bureau of Water

DHEC — PROMOTE PROTECT PROSPER

, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:

County: Fairfield Syst...

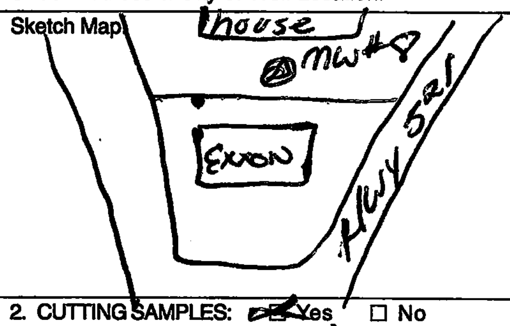
Latitude: Longitude:

Distance and Direction from Road Intersections:

401 N. Congress St.
Winnsboro, SC

Street Address & City of Well Location:

Sketch Map:



...ER OF WELL: Keenan Energy Company
Address: POB 3218
Columbia, SC 29230
Telephone No.:

Engineer: SEI environmental, Inc
Address: 3021 McNaughton Dr. suite 9, Columbia, SC 29223
Telephone No.: (803) 788-2535

5. WELL DEPTH (completed) 45' ft. Date Started: 8-14-98 Date Completed:

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE: ☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 30 ft. depth
____ in. to ____ ft. depth

Height: Above/Below Surface N/A ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Brn, sl	35	35
Tn, Brn, W, sl	7	42

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 15
Set Between: 30 ft. and 45 ft. **NOTE: MULTIPLE SCREENS USE SECOND SHEET**
____ ft. and ____ ft.
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 35' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface. N/A
____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. WATER QUALITY N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 27 ft. to 45' ft.
Effective size 20/30 Uniformity Coefficient silica sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0.3 ft. to 25 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction N/A
____ Type well disinfected ☐ Yes Type: ____
upon completion ☐ No Amount: ____

16. PUMP: N/A Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

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Groundwater Management Section

UST PROGRAM DOCKETING # 78 Tech

3. REMARKS: MW#8
Bentonite Seal from 25-27

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc. Date: 8-21-98
Address: PO Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1333
Authorized Representative

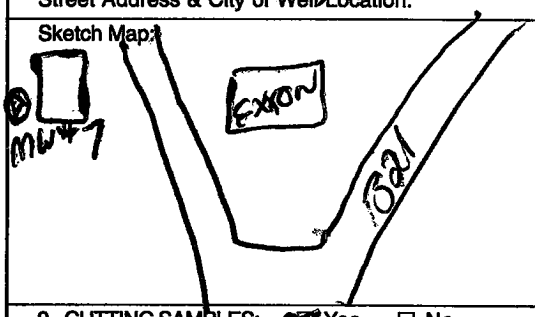
DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield System Name:
Latitude: Longitude:
Distance and Direction from Road Intersections: 401 N. Congress St. Winnsboro, SC
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BRN SI	35	35
TN, BRN, W, SI	17	52

*Indicate Water Bearing Zones
(Use a 2nd sheet if needed)

3. REMARKS: MW#7 Bentonite seal from ~~26'-30'~~ 28'-30'

4. OWNER OF WELL: Keenan Energy Company
Address: POB 3218
Telephone No.: Columbia, SC 29230
Engineer: SEI environmental, Inc
Address: 3021 McNaughton Dr. Suite 9
Telephone No.: Columbia, SC 29223 (803) 788-2535

5. WELL DEPTH (completed): 52' ft. Date Started: 8-14-98 Date Completed: 8-14-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE: ☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 32 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface ____ ft.
Weight N/A lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 20'
Set Between: 32 ft. and 52 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 40' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
N/A ____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

12. WATER QUALITY
N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 30 ft. to 52 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0.3" ft. to 28' ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
N/A Type well disinfected upon completion ☐ Yes ☐ No Type: ____ Amount: ____

16. PUMP: Date installed: ____ Not installed ☐
N/A
Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 8-28-98
Address: PO Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1333
Authorized Representative

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Groundwater Management Section

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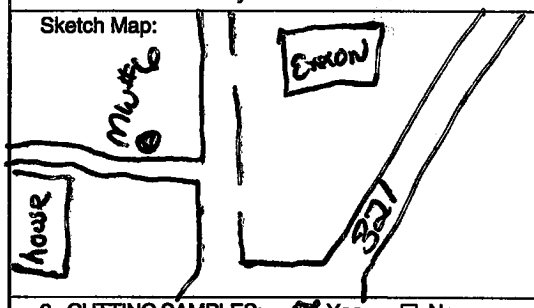
Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield System Name:
Latitude: Longitude:
Distance and Direction from Road Intersections: 401 N. Congress St
Winnsboro, SC
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No
Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
BRN, TN, SI	35	35
TN, W, SI	20	55

*Indicate Water Bearing Zones
(Use a 2nd sheet if needed)

3. REMARKS: MW#6
Bentonite seal from 35'-37'

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SEP 08 1998
Groundwater Management Section

4. OWNER OF WELL: Keenan Energy Company
Address: PO B 3218
Telephone No.: Columbia, SC 29230
Engineer: SEI environmental, Inc (803)
Address: 3021 McNaughton Dr. Suite 9 788-2535
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 55' ft. Date Started: Date Completed: 8-13-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
40 in. to 40 ft. depth
in. to ft. depth
Height: Above/Below Surface N/A ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: 010 Length: 15'
Set Between: 40 ft. and 55 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 50' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface. N/A
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. WATER QUALITY N/A
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 37 ft. to 55 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other
Depth: From 0-3" ft. to 35 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction N/A
Type well disinfected upon completion ☐ Yes ☐ No Type: Amount:

16. PUMP: Date installed: Not installed ☐ N/A
Mfr. Name: Model No.:
H.P. Volts Length of drop pipe ft. Capacity gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 8-28-98
Address: P.O. Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1333
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

August 19, 1998

Mr. Jerry Brannon
Resident Maintenance Engineer
South Carolina Department of Transportation (SCDOT) Winnsboro Maintenance Facility
P.O. Box 261
Winnsboro, SC 29180

Re: Application for Encroachment Permit received August 11, 1998
United Exxon
Facility ID #11760
Fairfield County

Dear Mr. Brannon:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Application for Encroachment Permit submitted by SEI Environmental, Inc. on behalf of Keenan Oil Company, Inc. The application requests permission to install three permanent monitoring wells in the right-of-way of US-321 (North Congress Street) in Winnsboro, SC.

The SCDHEC considers the proposed location of the wells within the right-of-way as necessary and appropriate to assess ground-water contamination at the United Exxon facility. This assessment is in the public interest of protecting the ground-water supply of the State of South Carolina. The Department, therefore, respectfully requests that the SCDOT approve the application as submitted. Should you require additional information regarding this facility, feel free to contact me at (803) 734-5432.

Sincerely,

Joel P. Padgett, P.G.
SCDOT Liaison

JPP/jpp
11760.OFF

UST PROGRAM
DOCKETING # 19 Tec

DHEC/JPP/081998

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

APR 22 2009

MR BILLY KEENAN
KEENAN ENERGY COMPANY INC
P O BOX 3218
COLUMBIA SC 29230

Re: AFVR and GWS Directive
United Exxon, 401 N. Congress Street, Winnsboro, SC
UST Permit # 11760; CA# 35632 and # 35633
Release # 2 and # 3 reported August 1, 1997
AFVR Report received February 18, 2009
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates, Inc. The Program has reviewed the referenced report and determined the next necessary scope of work to be four Aggressive Fluid Vapor Recovery (AFVR) events to remove free phase product from MW-2, MW-10, and MW-16 followed by a comprehensive groundwater sampling event. The first two AFVR events should be conducted on MW-2 approximately three weeks apart. The third AFVR event should be performed on MW-16 approximately two weeks after the second AFVR event. The fourth AFVR event should be performed on MW-10 approximately two weeks after the third AFVR event.

Cost Agreements # **35632** and # **35633** has been approved in the amount shown on the enclosed cost agreement for the AFVR events and comprehensive sampling event for all monitoring wells associated with the release.

- The first 8-hour AFVR event should be conducted within 30 days of the date of this letter.
- Groundwater samples from all monitoring wells associated with the release and the nearby creek should be collected no earlier than 30 days after the fourth AFVR event and analyzed for BTEX, Naphthalene, MTBE, and 1,2-DCA by EPA method 8260B and EDB by EPA method 8011.

The AFVR portion of the report should include the following:

- A narrative portion documenting the AFVR events noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR events started and ended, ambient air temperature, and general weather conditions during the AFVR events.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the event. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).

UST DOCKET

- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.
- A table documenting the free product thickness in each well before and after the recovery event.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- Recovered free phase petroleum and groundwater must be accepted by a permitted treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report.

Groundwater sampling results should be in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- Should any monitoring wells or water supply wells not be sampled, note the reason for which the sampling was not conducted on such wells.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer currently registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice is due within 120 days from the date of this letter and with in 45 days from the sampling date. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference UST Permit # **11760**. If you have any questions, please feel free to contact me by phone at (803) 896-4085, by fax at (803) 896-6649, or by email at dolphibm@dhec.sc.gov.

Regards,

Brian Dolphin, Geologist
Corrective Action Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement
cc: ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc)
Technical file (w/enc)

Approved Cost Agreement 35633

Facility: 11760 UNITED EXXON
DOLPHIBM
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		A EQUIPMENT	2.0000	575.00	1,150.00
		B PERSONNEL	3.0000	290.00	870.00
10 SAMPLE COLLECTION					
		A GROUND WATER	1.0000	55.00	55.00
		C WATER SUPPLY	0.5000	25.00	12.50
		D GROUNDWATER NO-PURGE	13.0000	35.00	455.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	14.5000	100.00	1,450.00
		BB 1,2-DCA	14.5000	10.75	155.88
		F EDB	14.5000	55.00	797.50
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	0.5000	90.00	45.00
		A2 WASTEWATER - PUMPING TEST	1,500.0000	0.60	900.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	12,450.88	1,867.63
23 EFR					
		A 8 HOUR EVENT	2.0000	3,000.00	6,000.00
		C OFF GAS TREATMENT	16.0000	35.00	560.00
			Total Amount		14,318.51

Approved Cost Agreement 35632

Facility: 11760 UNITED EXXON
DOLPHIBM
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB						
		A	EQUIPMENT	2.0000	575.00	1,150.00
		B	PERSONNEL	3.0000	290.00	870.00
10 SAMPLE COLLECTION						
		A	GROUND WATER	1.0000	55.00	55.00
		C	WATER SUPPLY	0.5000	25.00	12.50
		D	GROUNDWATER NO-PURGE	13.0000	35.00	455.00
11 ANALYSES						
	GW GROUNDWATER	A	BTEX+NAPTH+MTBE	14.5000	100.00	1,450.00
		BB	1,2-DCA	14.5000	10.75	155.88
		F	EDB	14.5000	55.00	797.50
17 DISPOSAL						
		A1	WASTEWATER - PURGING/SAMPLING	0.5000	90.00	45.00
		A2	WASTEWATER - PUMPING TEST	1,500.0000	0.60	900.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PCT	PERCENT	0.1500	12,450.88	1,867.63
23 EFR						
		A	8 HOUR EVENT	2.0000	3,000.00	6,000.00
		C	OFF GAS TREATMENT	16.0000	35.00	560.00
				Total Amount		14,318.51

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

August 11, 1998

Mr. Joel Padgett, P.G., SCDOT Liaison
SCDHEC
Bureau of UST Management
2600 Bull Street
Columbia, South Carolina 29201

RE: Encroachment Permit Application
United Exxon
401 North Congress Street
Winnsboro, South Carolina
Site ID #11760
Fairfield County

Dear Mr. Padgett:

Enclosed please find an Encroachment Permit Application and supporting documentation for the referenced site located in Winnsboro, South Carolina. SEI Environmental, Inc. (SEI) is conducting a Rapid Assessment at the site on behalf of the owner, Keenan Energy Company, in accordance with correspondence from SCDHEC dated May 1, 1998.

SEI requests your assistance in obtaining encroachment for installation of three monitoring wells along the right-of-way of US 321 (North Congress Street). The location of the wells is necessary to fully define the horizontal extent of groundwater contamination originating from United Exxon. Since these proposed locations are in the down-gradient direction from the site, the right-of-way is the best location for the installation of the wells. As the Rapid Assessment must be completed within the deadline specified by SCDHEC, your timely review and processing of this application will be greatly appreciated.

Should you have any questions or require additional information, feel free to contact me at (803) 788-2535.

Sincerely,
SEI Environmental, Inc.

Bob Bolton

Bob Bolton
Project Manager

RECEIVED
AUG 1 1 1998
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

UST PROGRAM
DOCKETING # 80 Tech

S.C. DEPARTMENT OF TRANSPORTATION
FORM 638 (REV. 7/93)

APPLICATION FOR ENCROACHMENT PERMIT

No. _____

(ENCROACHMENT PERMIT OTHER THAN A PUBLIC UTILITY)

APPLICANT: SEI Environmental, Inc (on behalf of Keenan Energy Co.)
ADDRESS: 3021 McNaughton DR, STE 9
Columbia, SC 29223
TELEPHONE NUMBER: 803 788 2535

COUNTY: Fairfield
ROAD/ROUTE: US 321
ROAD NAME: N. Congress ST

1. The undersigned applicant hereby applies to the South Carolina Department of Transportation (SCDOT) for a permit for encroachment on State Highway Right of Way as shown and described below:
2. Type of Encroachment: Installation of 3 monitoring wells
3. Description of location: West shoulder of N. Congress St. between the sidewalk and the road between 307 to 315 N Congress ST. The wells will be approx 15' from edge of N Congress ST.

(Attach sketch indicating roadway features such as: pavement width, shoulder width, sidewalk and curb and gutter location, significant drainage structure, north arrow, right of way width, and location of the proposed encroachment with respect to the roadway centerline and the nearest intersecting road on the State system.)

4. The undersigned applicant hereby requests the SCDOT to permit encroachment on the Department right of way as described herein. It is expressly understood that the encroachment, if and when constructed, shall be installed in accordance with the sketch attached hereto and made a part hereof. The applicant agrees to comply with and be bound by the Department's "A Policy for Accommodating Utilities on Highways Rights of Way" and "Standard Specifications for Highway Construction" (made a part hereof by reference) on file in the Utility Office of the Department, and all general provisions on the reverse hereof and special provisions below or attached hereto during the installation, operation and maintenance of said encroachment within the Department Right of Way. The applicant hereby further agrees, and binds his heirs, successors, assigns, to assume any and all liability this Department might otherwise have in connection with accidents or injuries to persons, or damage to property, including the highway, that may be caused by the construction, maintenance, use, moving or removing, of the physical appurtenances contemplated herein and agrees to indemnify this Department for any liability incurred or injury or damage sustained by reason of the past, present, or future existence of said appurtenances.

APPLICANT NAME: Bob Bolton - SEI Environmental, Inc (PLEASE PRINT OR TYPE) DATE: 8/11/98

APPLICANT SIGNATURE: Bob Bolton TITLE: Project Manager

In compliance with your request and subject to all the provisions, terms, conditions and restrictions stated in the application, general provisions on the reverse hereof, and special provisions below or attached hereto, the Department approves the request. This permit shall become null and void unless the work contemplated herein shall have been completed prior to _____.

SPECIAL PROVISIONS:

RECEIVED
AUG 11 1998
DIVISION OF UNDERGROUND STORAGE TANK MGMT.

DATE RECEIVED BY RES. MAINT. ENGR. | DATE FORWARDED | SCDOT APPROVAL | DATE

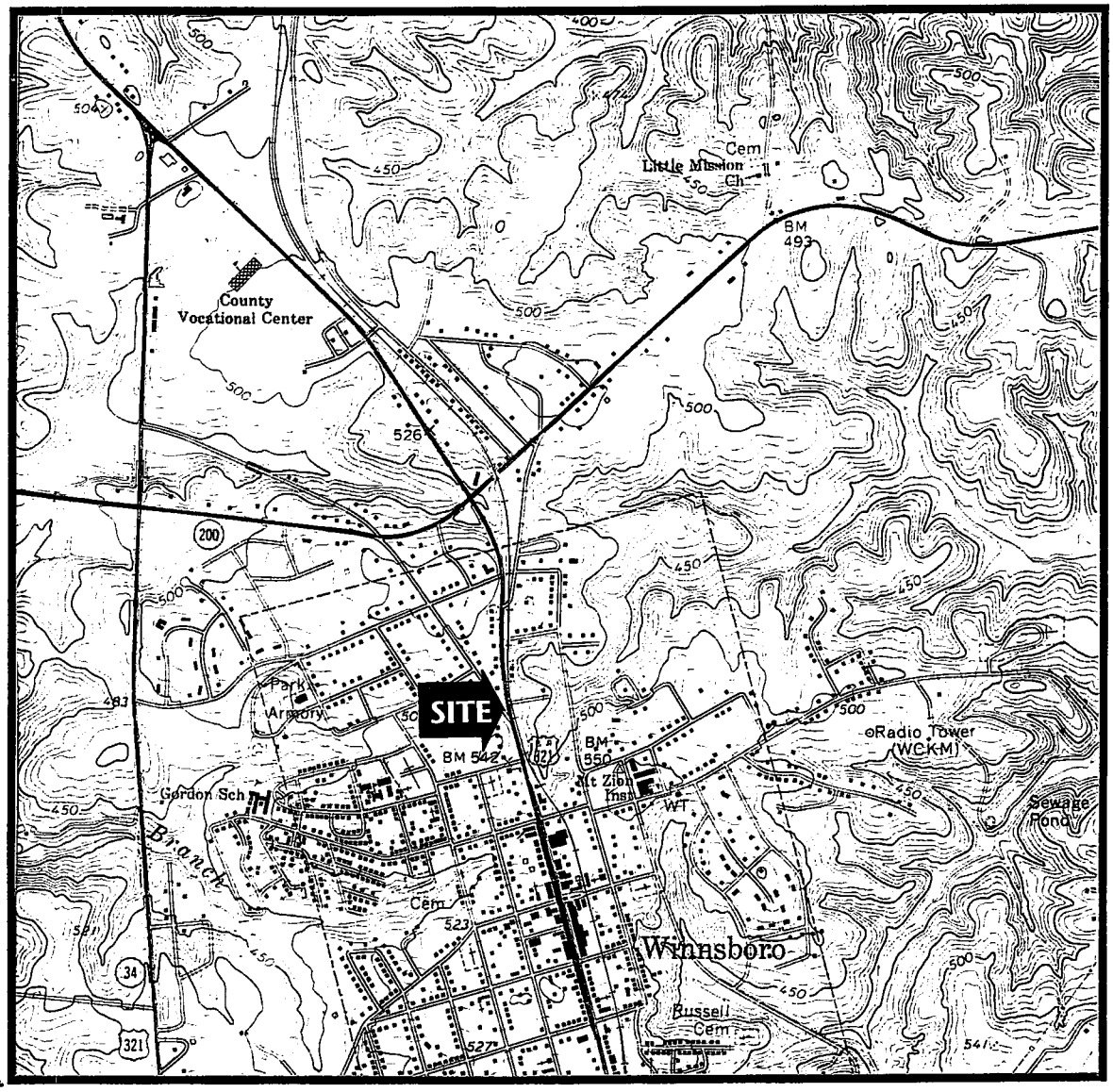
☐ RESIDENT MAINTENANCE ENGINEER ☐ STATE HIGHWAY ENGINEER

DATE RECEIVED BY DIST. ENGR. ADMIN. | DATE FORWARDED

☐ DISTRICT ENGINEERING ADMINISTRATOR ☐ DISTRICT MAINT./CONSTRUCTION ENGINEER

USGS TOPOGRAPHICAL MAP

WINNSBORO QUADRANGLE



SCALE 1:24000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

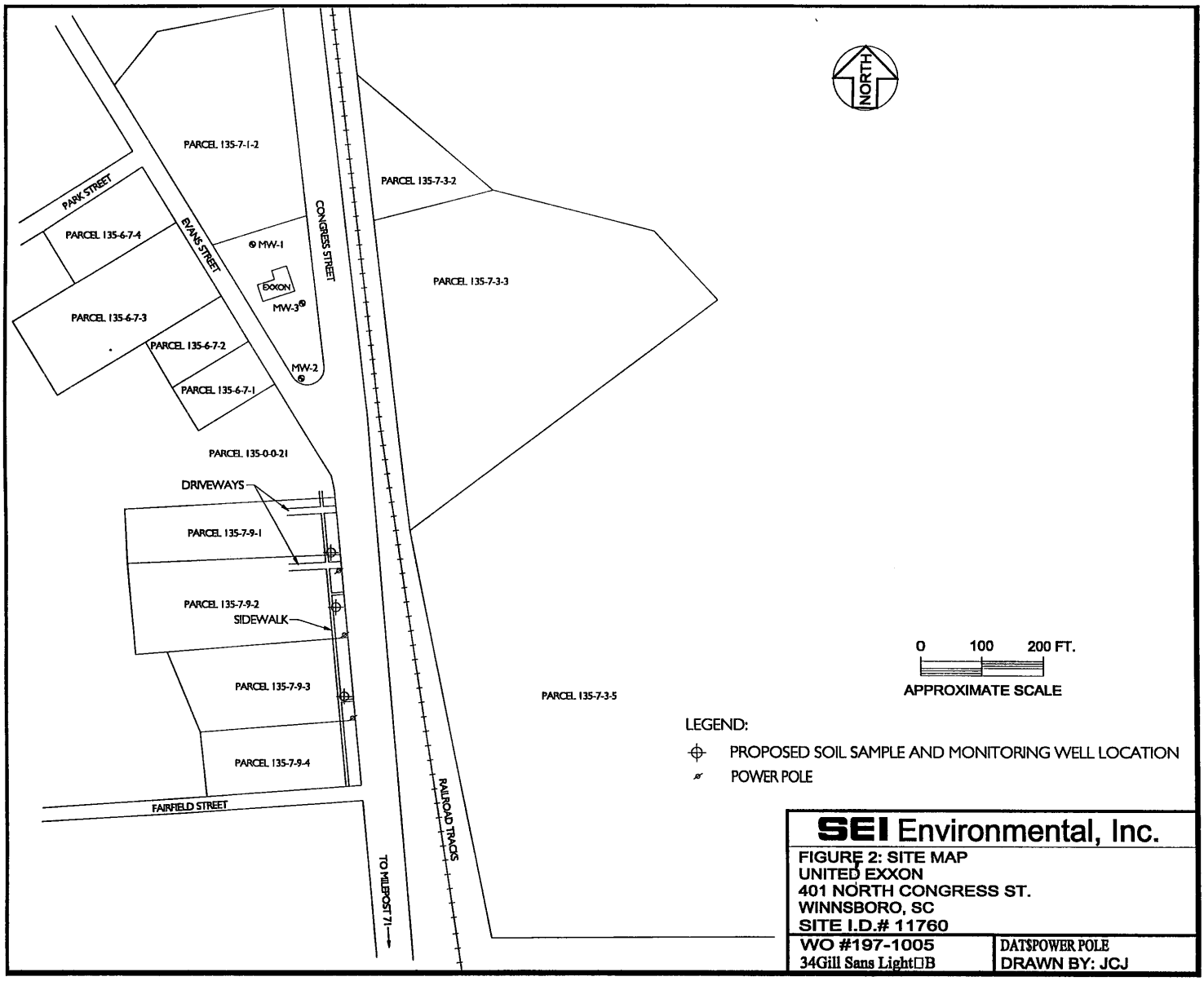
1 .5 0 1 KILOMETER

NORTH

SEI Environmental, Inc.

FIGURE 1: SITE LOCATION MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC

WO #197-343	DATE: 1/16/98
DWG #	DRAWN BY: JCJ

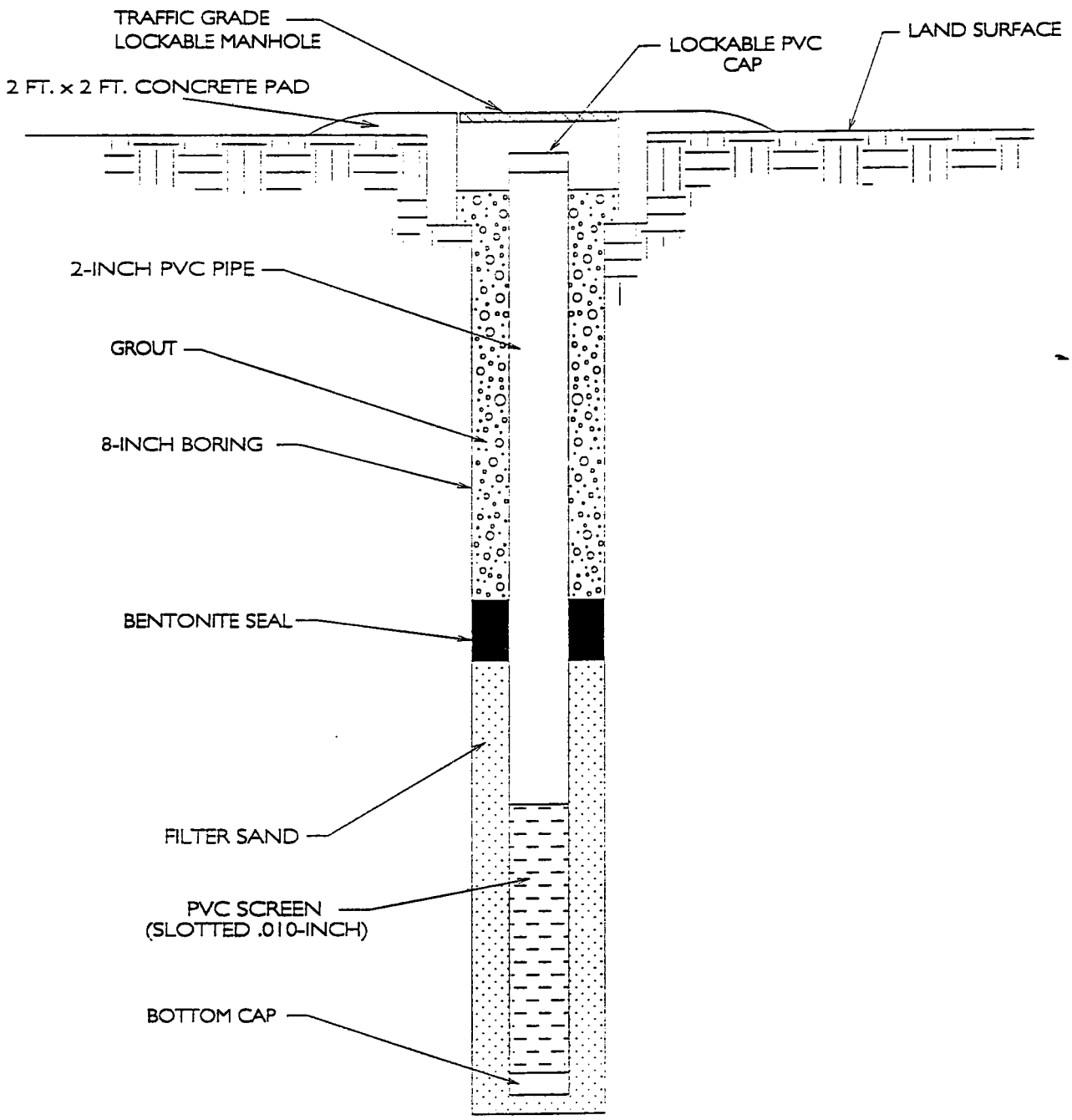


SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DAT$POWER POLE
34Gill Sans Light□B	DRAWN BY: JCJ

TYPE II MONITORING WELL



NOT TO SCALE

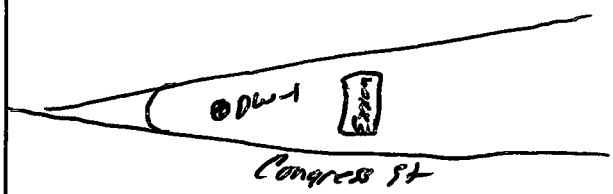
SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield System Name:
Latitude: Longitude:
Distance and Direction from Road Intersections:
401 N Congress St Winnsboro S.C.
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Red Brn sicl	40	40
Brn to sicl	40	80
Fract Rock si	9	89

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AUG 0 6 1998
Groundwater Management Section

UST PROGRAM
DOCKETING # 81 Tech

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: DW-1 Double cased well
Bentonite Seal 75-82

4. OWNER OF WELL: Keenan Energy Co.
Address: POB 3218
Columbia, SC 29230
Telephone No.:

Engineer: SE Environmental, Inc
Address: 3021 McNaughton Dr. Suite 9
Columbia, SC 29223
Telephone No.: 803 788 2535

5. WELL DEPTH (completed) 89 ft. Date Started: 7-9-98 Date Completed: 7-10-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☒ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 6" 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
6" 0 in. to 80 ft. depth
2" 0 in. to 84 ft. depth

Height: Above/Below Surface 0 ft.
Weight Sch 40 lb./ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 5
Set Between: 84 ft. and 89 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL
60 ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
NA ____ ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

12. WATER QUALITY
NA Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 82 ft. to 89 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0 ft. to 75 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
NA ____ Type well disinfected ☐ Yes Type: ____
upon completion ☐ No Amount: ____

16. PUMP: Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
NA H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 7-24-98
Address: PO Box 203 Matthews NC 28106
Signed: Craig Dennis Cert. No. 1358
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

RECEIVED
AUG 0 6 1998
Groundwater
Management Section

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

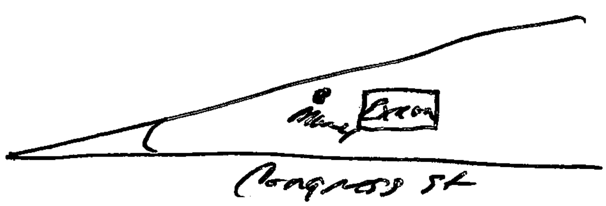
1. LOCATION OF WELL:

County: Fairfield
System Name:
Latitude:
Longitude:

Distance and Direction from Road Intersections:

401 N Congress St Winnsboro SC.
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Red Brn si cly	40	40
Brn tn si cly	5	45

RECEIVED
AUG 0 6 1998
Groundwater Management Section

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW-4
Bentonite Seal 26-28

4. OWNER OF WELL: Keenan Energy Co.
Address: POB 3218
Telephone No.: Columbia, SC 29230
Engineer: SEI environmental 803 788-2535
Address: 3021 McNaughton Dr. Suite 9
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 45' ft.
Date Started:
Date Completed: 7-10-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ______ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ______

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized
☐ Steel ☐ Other
0 in. to 30 ft. depth
______ in. to ______ ft. depth
Height: Above/Below Surface 0 ft.
Weight Sch 40 lb./ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 15'
Set Between: 30 ft. and 45 ft.
______ ft. and ______ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL
40 ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
NA ______ ft. after ______ hrs. Pumping ______ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield:

12. WATER QUALITY
NA
Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 28 ft. to 45 ft.
Effective size 20/30 Uniformity Coefficient silica snd

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ______
Depth: From 0 ft. to 26 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ______ ft. ______ direction
NA
Type well disinfected ☐ Yes Type: ______
upon completion ☐ No Amount: ______

16. PUMP: Date installed: ______ Not installed ☐
NA
Mfr. Name: ______ Model No.: ______
H.P. ______ Volts ______ Length of drop pipe ___ ft. Capacity ___ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: ECS Inc Date: 7-24-98
Address: PO Box 203 Matthews NC 28106
Signed: Craig Dorsch (Authorized Representative) Cert. No. 1358

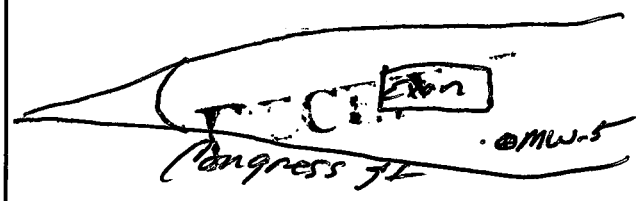
DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield System Name:
Latitude: Longitude:
Distance and Direction from Road Intersections:
Street Address & City of Well Location: 401 N Congress St Winnsboro SC

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Red Brn sl cly	40	40
Brn tn sl cly	5	45

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW-5
Bentonite Seal 26-28

4. OWNER OF WELL: Keenan Energy Company
Address: POB 3218
Telephone No.: Columbia, SC 29230

Engineer: SEI environmental, Inc 803
Address: 3021 McNaughton Dr. Suite 9 788 2535
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 45 ft. Date Started:
Date Completed: 2-10-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 30 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface 0 ft.
Weight Sch 40 lb./ft.
Drive Shoe? ☐ Yes ☒ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 15'
Set Between: 30 ft. and 45 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

10. STATIC WATER LEVEL
35 ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
NA ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

12. WATER QUALITY
NA Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 82 ft. to 89 ft.
Effective size 20/30 Uniformity Coefficient silica sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0 ft. to 26 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
NA Type well disinfected ☐ Yes Type: ____
upon completion ☐ No Amount: ____

16. PUMP: Date installed: ____ Not installed ☐
Mfr. Name: ____ Model No.: ____
NA Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: SCS Inc Date: 2-24-98
Address: PO Box 203 Mathias SC 29106
Signed: Gary Bench Cert. No. 1358
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

July 28, 1998

CERTIFIED MAIL

Mr. John D. McLeod
Post Office Drawer 30
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

RECEIVED
JUL 29 1998
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

Dear Mr. McLeod:

As you are aware, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon per SCDHEC's directive. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well to the right of your driveway on your property (Parcel 135-0-0-21) located at Evans Street and North Congress Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface. Should the groundwater be impacted at the proposed monitoring well location, the boring will be abandoned, and SEI will conduct another boring farther back along your driveway.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property owner will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best

UST PROGRAM
DOCKETING # 82 ree

SEI Environmental, Inc.

interest to allow the well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

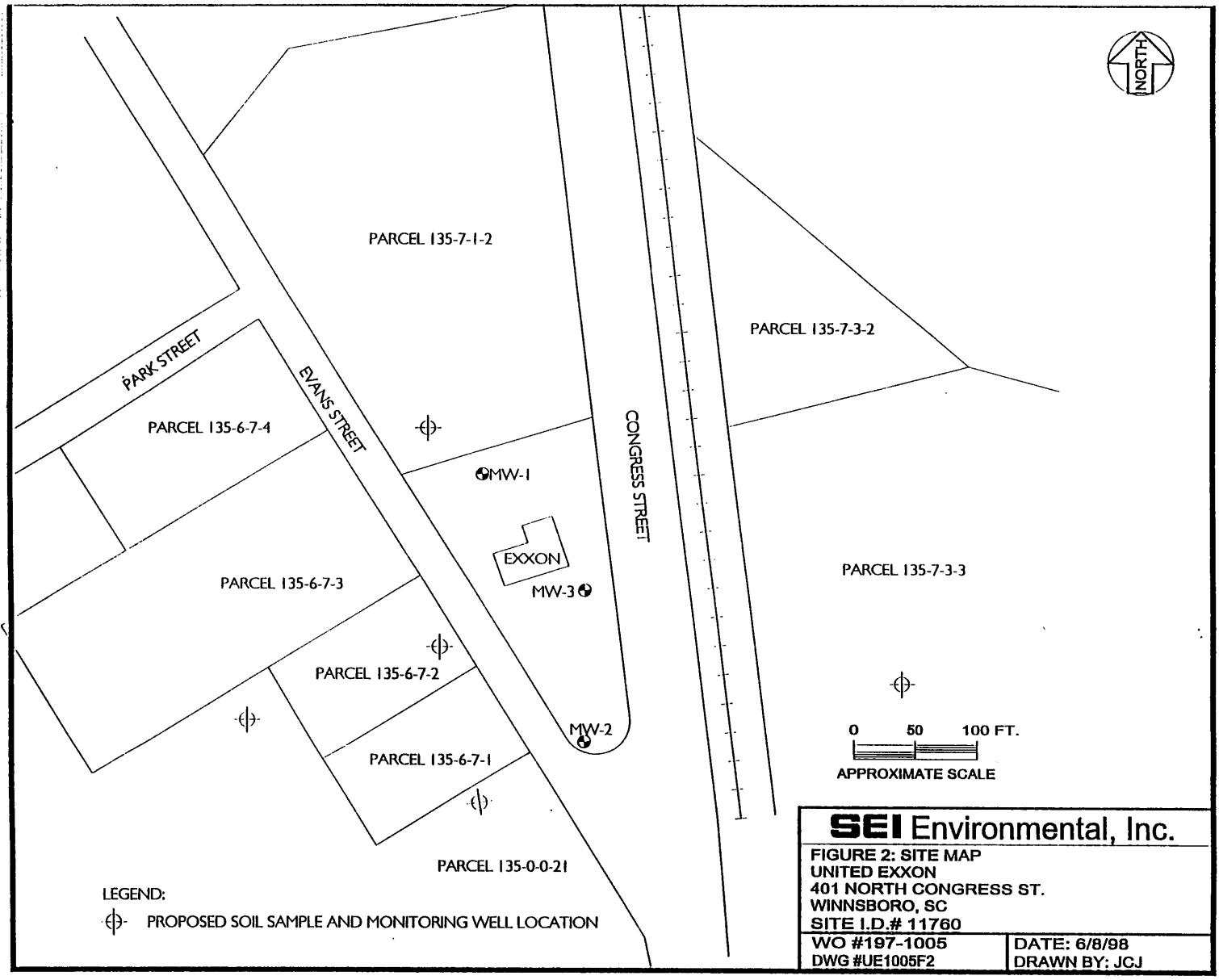
Bob Bolton
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access denied



SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

D H E C

PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

DIVISION OF
UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

JUL 01 1998

Ms. Pam Thompkins
132 Cove Court
Irmo, South Carolina 29063

Re: United Exxon
Site ID #11760
Access to property located adjacent to United Exxon

Dear Ms.Thompkins:

The Division of Underground Storage Tank Management of the South Carolina Department of Health and Environmental Control is requiring work be conducted to assess a gasoline release reported at the United Exxon. SEI Environmental, Inc. is working with the Division to perform the environmental assessment. SEI Environmental needs access to your property adjacent to the referenced site in order to install one permanent monitoring well so they can fully assess the effects of the gasoline release.

The permanent monitoring well will be constructed in accordance with the South Carolina Well Standards and Regulations. It will be completed flush to grade and will have a small diameter manhole cover and concrete pad. It will not interfere with normal usage of your property. The well will be properly abandoned upon completion of assessment and corrective action. SEI Environmental is required to return the property to its original condition upon completion of the required work.

If you have any questions, please contact Chuck Williams at (803) 734-5455 or (800) 826-5435 (within South Carolina).

Sincerely,

State Lead And Field Services Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

Charles J. Williams, III., Hydrogeologist

cc:: Bob Bolton, SEI Env., 3021 McNaughton Dr., Suite 9, Columbia, SC 29223
Technical File

UST PROGRAM
DOCKETING # 83 Tech

SCDHEC/UST/SLS/CJW/11760OFS.WPD/063098

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

RECEIVED
JUN 1 5 1998
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

June 12, 1998

CERTIFIED MAIL

Ms. Diane Melton
97 Evans Street
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Ms. Melton:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well on the property (Parcel 135-6-7-2) that you are currently leasing at 97 Evans Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property tenant will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on the premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

UST PROGRAM
DOCKETING # 84 tech

SEI
Environmental, Inc.

Mr. John McLeod, who has power of attorney for Ms. Annie B. McLeod and Mr. Amos D. McLeod, has granted SEI permission to perform this assessment work at 97 Evans Street pending your approval. Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G Bolton Jr

Robert G. Bolton, Jr.
Project Manager

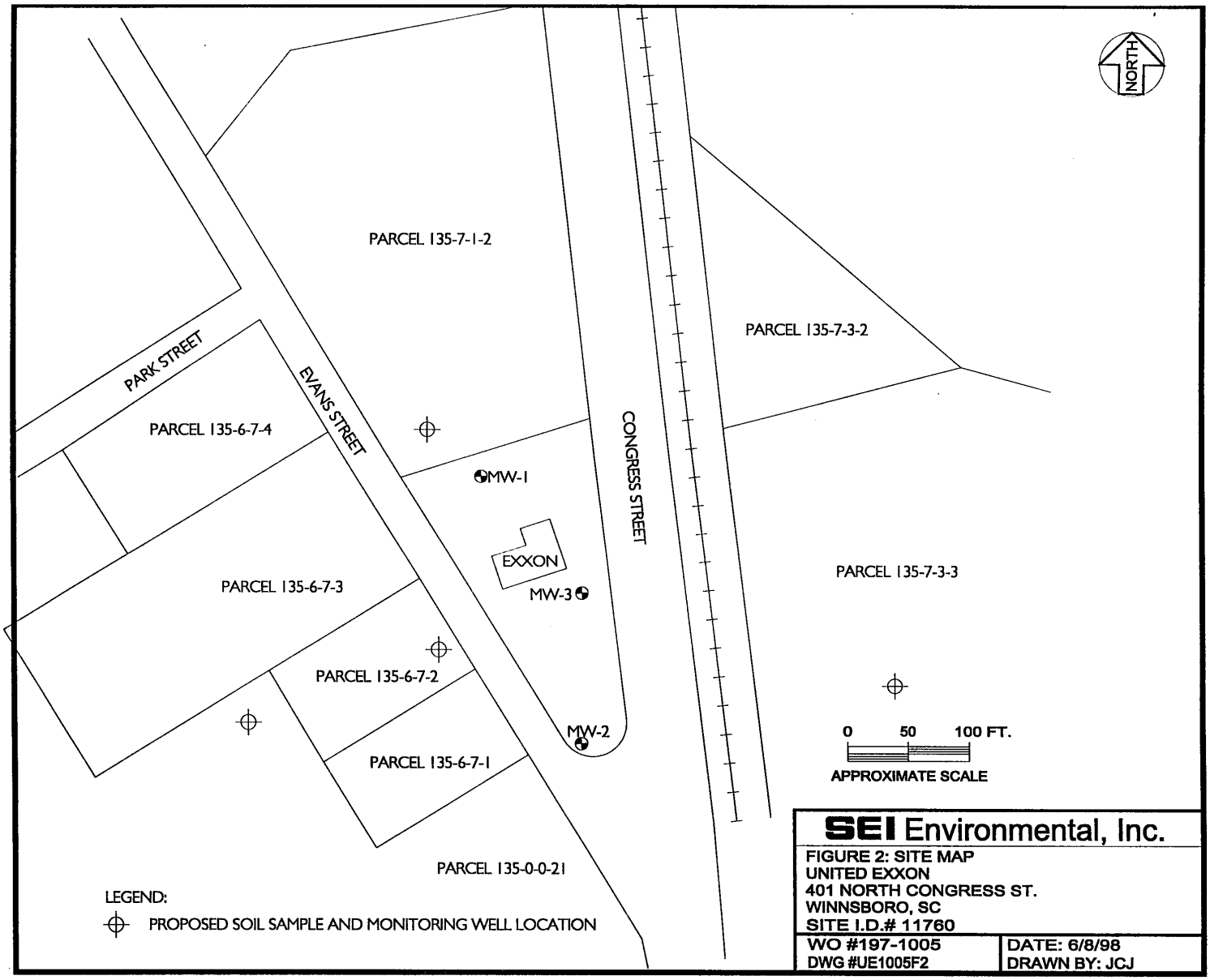
Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company
Mr. John McLeod
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access Denied

Phone number_____
(If you wish to be notified prior to field activities)

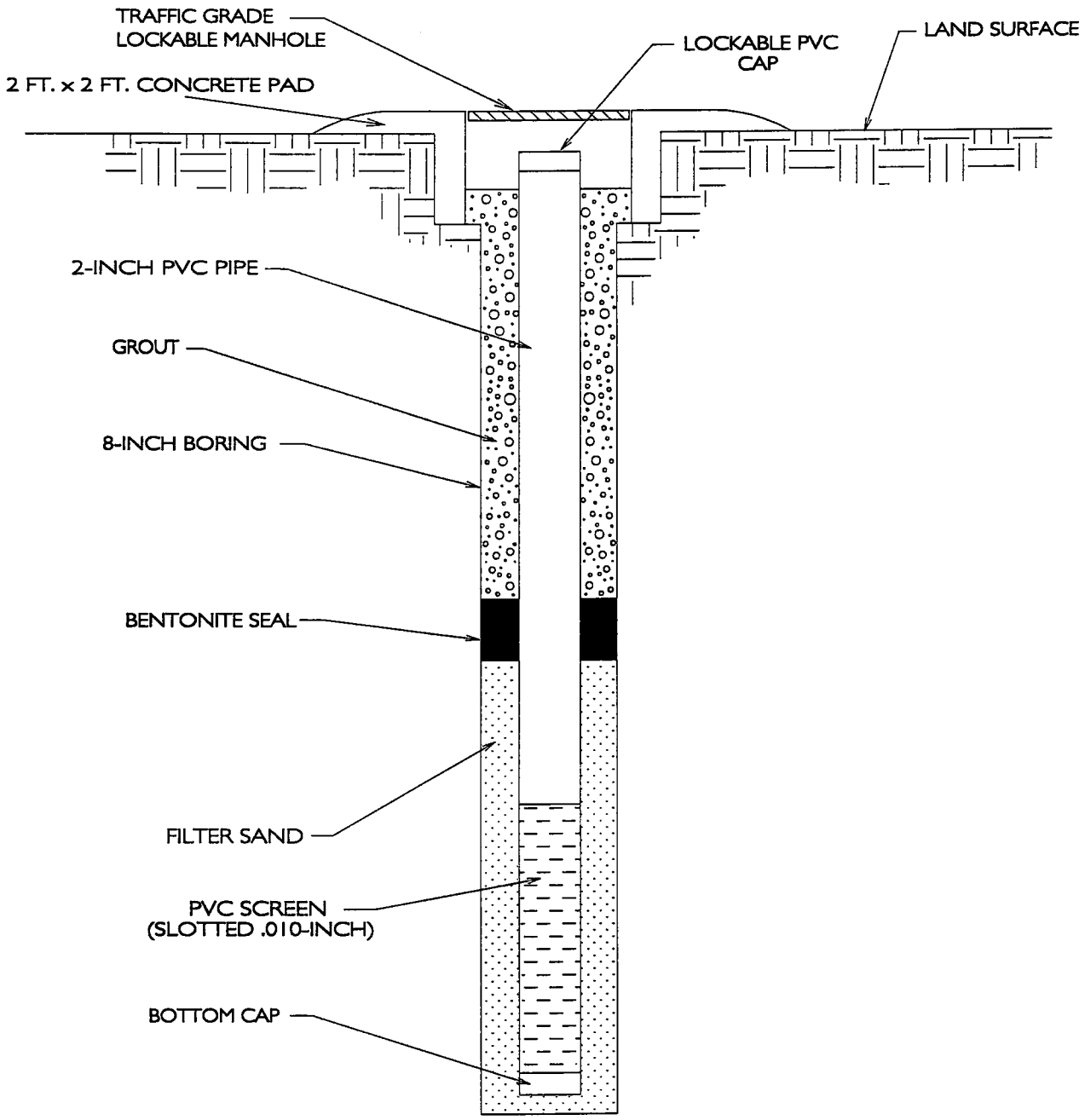


SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

TYPE II MONITORING WELL

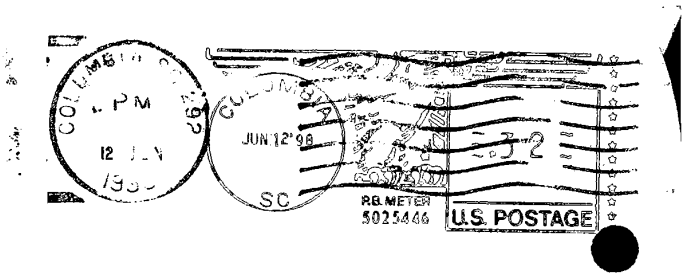


NOT TO SCALE

SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223



Mr. Charles J. Williams, III, Hydrogeologist
SCDHEC
Bureau of UST Management
2600 Bull Street
Columbia, South Carolina 29201-1708

29201-1708

SEI Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

RECEIVED
JUN 1 1 1998
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

June 9, 1998

CERTIFIED MAIL

Mr. John L. Wagner, Superintendent
Norfolk Southern Corporation
Transportation Department
1120 West Washington Street
Greenville, South Carolina 29601

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Mr. Wagner:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of two (2) soil samples and the installation of two (2) groundwater monitoring wells in the railroad easement along North Congress Street between Fairfield Street and Evans Street in Winnsboro, South Carolina is necessary. The proposed wells will be 2" in diameter with the top of the wells finished even with the land surface and will be locked. They will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring wells and soil sample locations is enclosed. Periodic access to the wells will be required to conduct sampling activities. When SCDHEC determines that the wells are no longer required, they will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the wells. Any material resulting from the well installations will be removed for proper disposal. Two to three hours of access for each well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property owner will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the well installations. If you have any questions regarding SCDHEC

UST PROGRAM
DOCKETING # 85Tecq

SEI
Environmental, Inc.

authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

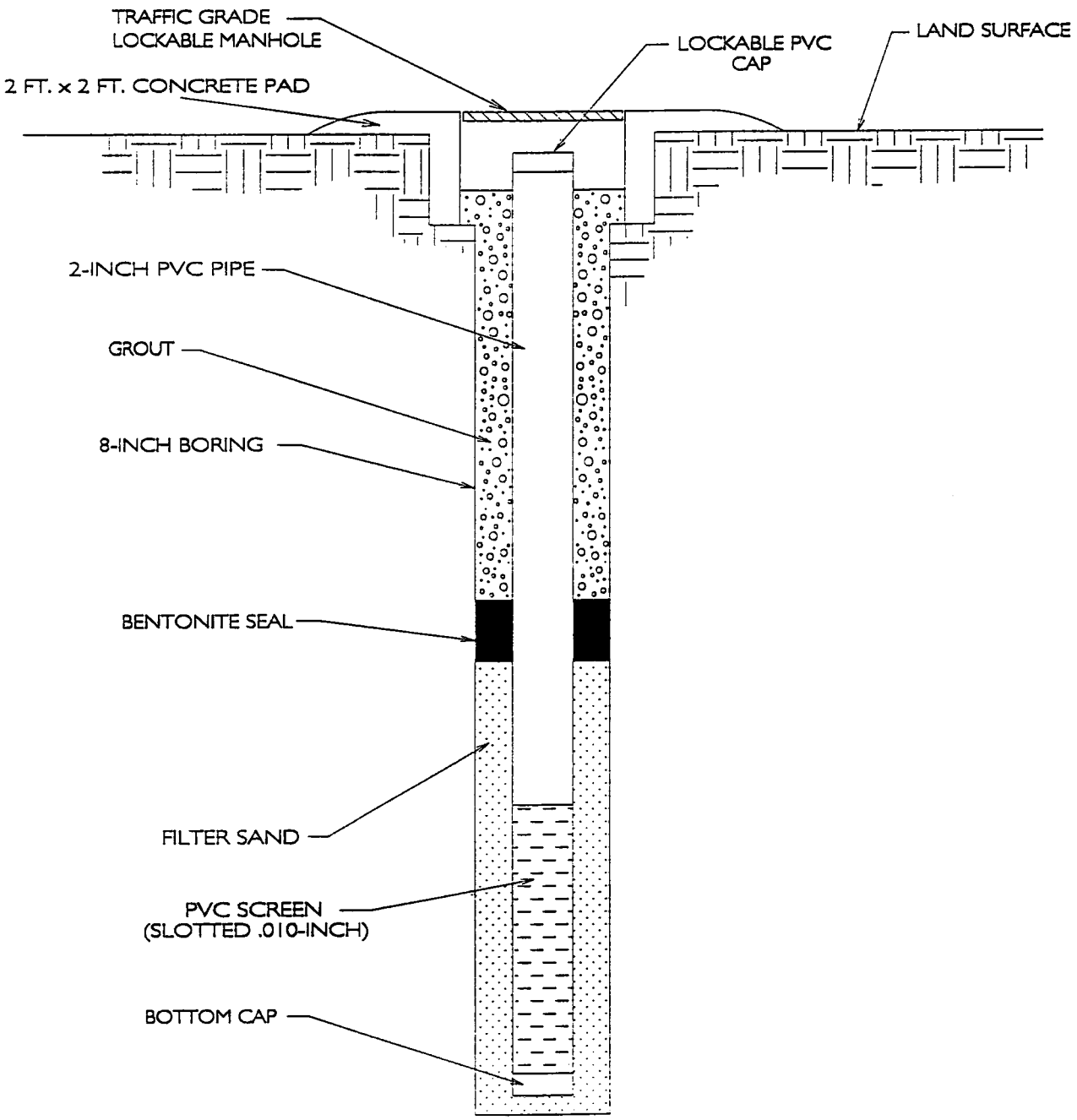
cc: Mr. T. W. Ambler, Norfolk Southern Corporation
Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access denied

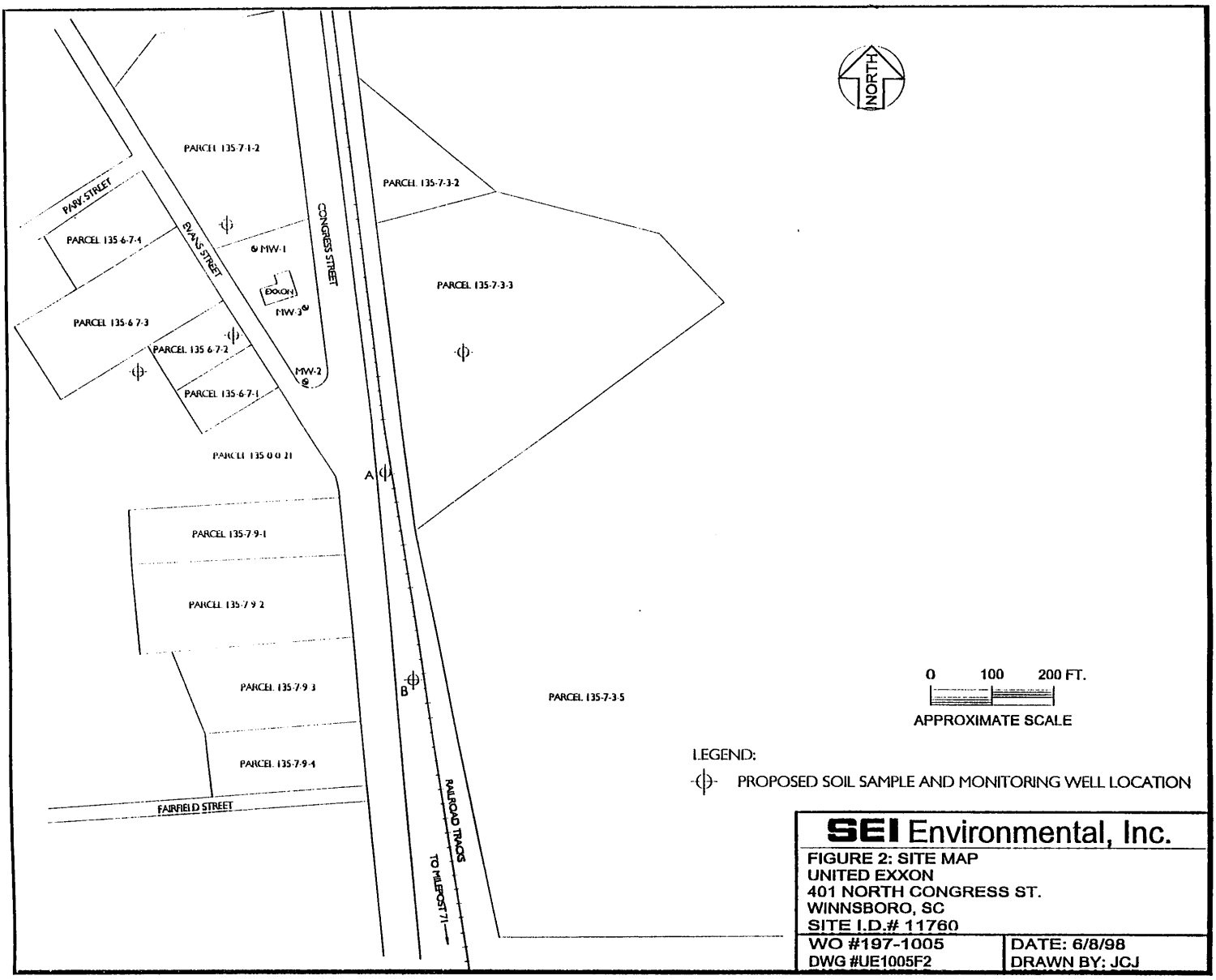
Phone number_____
(If you wish to be notified prior to field activities)

TYPE II MONITORING WELL



NOT TO SCALE

SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

June 10, 1998

Mr. T. W. Ambler, General Attorney
c/o Norfolk Southern Corporation
Three Commercial Place
Norfolk, Virginia 23510

CERTIFIED MAIL

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Mr. Ambler:

Please find enclosed a letter addressed to Mr. John Wagner, Division Superintendent of Norfolk Southern Corporation, from SEI Environmental, Inc. requesting permission to collect two (2) soil samples and install two (2) groundwater monitoring wells in the railroad easement along North Congress Street (U. S. Highway 321) in Winnsboro, South Carolina. The collection of these soil samples and installation of these wells is necessary to horizontally delineate petroleum hydrocarbons in the soil and groundwater. It should be noted that each soil sample will be collected from the installation of the groundwater monitoring well. This assessment is under the direction of South Carolina Department of Health and Environmental Control (SCDHEC). I have enclosed a copy of the SCDHEC letter to Keenan Energy Company that directs the work to be done.

Periodic access to the wells will be required to conduct sampling activities. When SCDHEC determines that the wells are no longer required, they will be properly abandoned.

The groundwater constituents that will be sampled for include: benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, methyl-tert-butyl-ether (MTBE), lead, ethylene dibromide (EDB), polynuclear aromatic hydrocarbons (PAH), arsenic, barium, cadmium, chromium, mercury, silver, and selenium. The soil will also be analyzed for BTEX, naphthalene, arsenic, barium, cadmium, chromium, mercury, silver, selenium, and lead. The monitoring wells will be sampled for the above mentioned constituents a few days after they are installed. SCDHEC will have final determination regarding how often these wells are sampled.

A map showing the proposed monitoring wells and soil sample locations is enclosed. The nearest milepost on the railroad is 71, which is located south of United Exxon. The horizontal distance from each proposed well to the track is approximately 15 to 20 feet. Monitoring Well A

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SEI
Environmental, Inc.

will be installed approximately 900 feet north of milepost 71, and Monitoring Well B will be installed approximately 585 feet north of milepost 71. Because these locations are within 50 feet of North Congress Street, the use of a grade crossing to access to these locations is not needed.

As per the SCDHEC letter, SEI Environmental, Inc. needs to complete this work in a timely manner. Therefore, your immediate assistance in this matter is warranted. Should you need additional information, please contact myself or Fred Lyke at 800-377-2826.

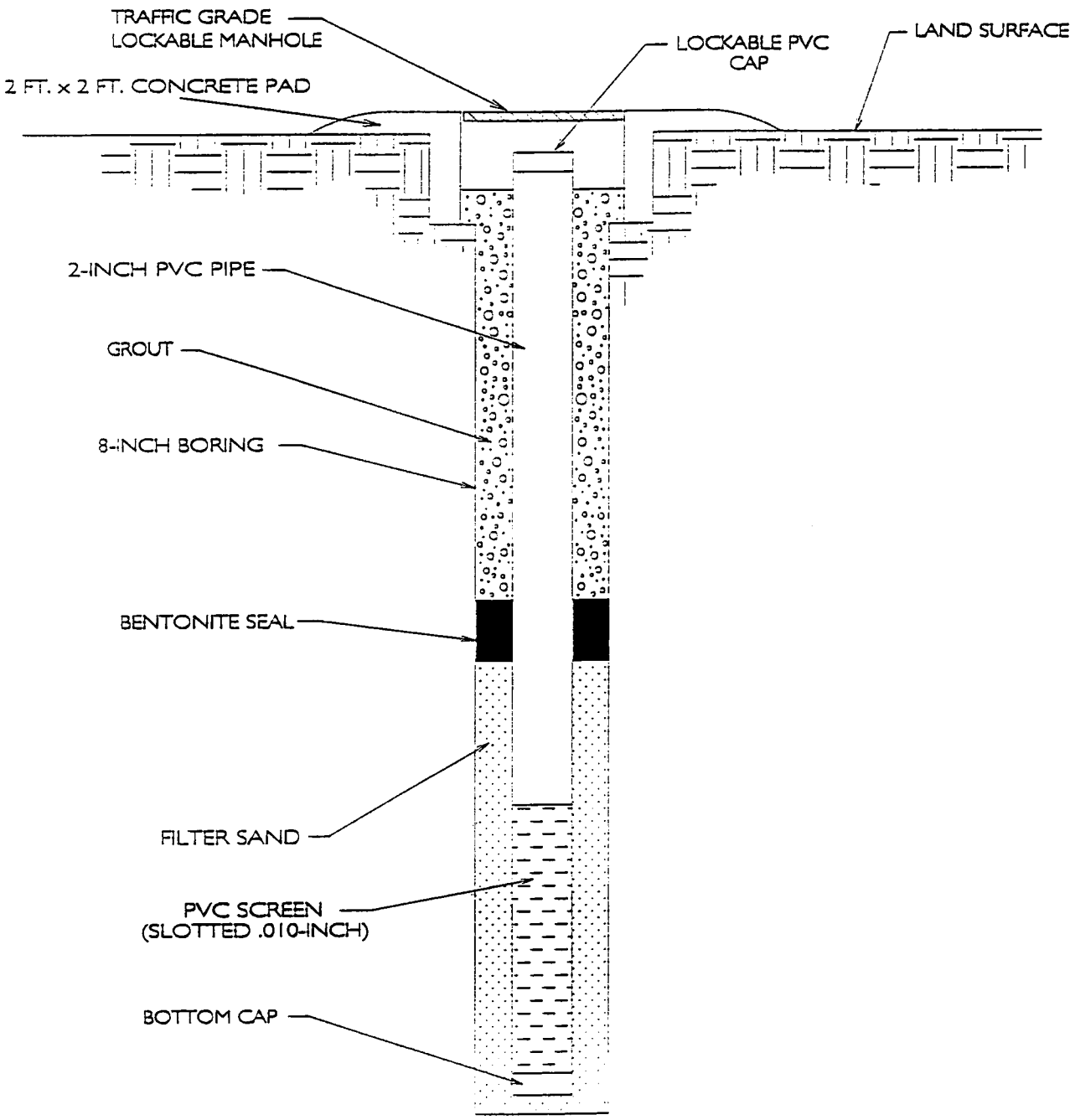
Sincerely,
SEI Environmental, Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

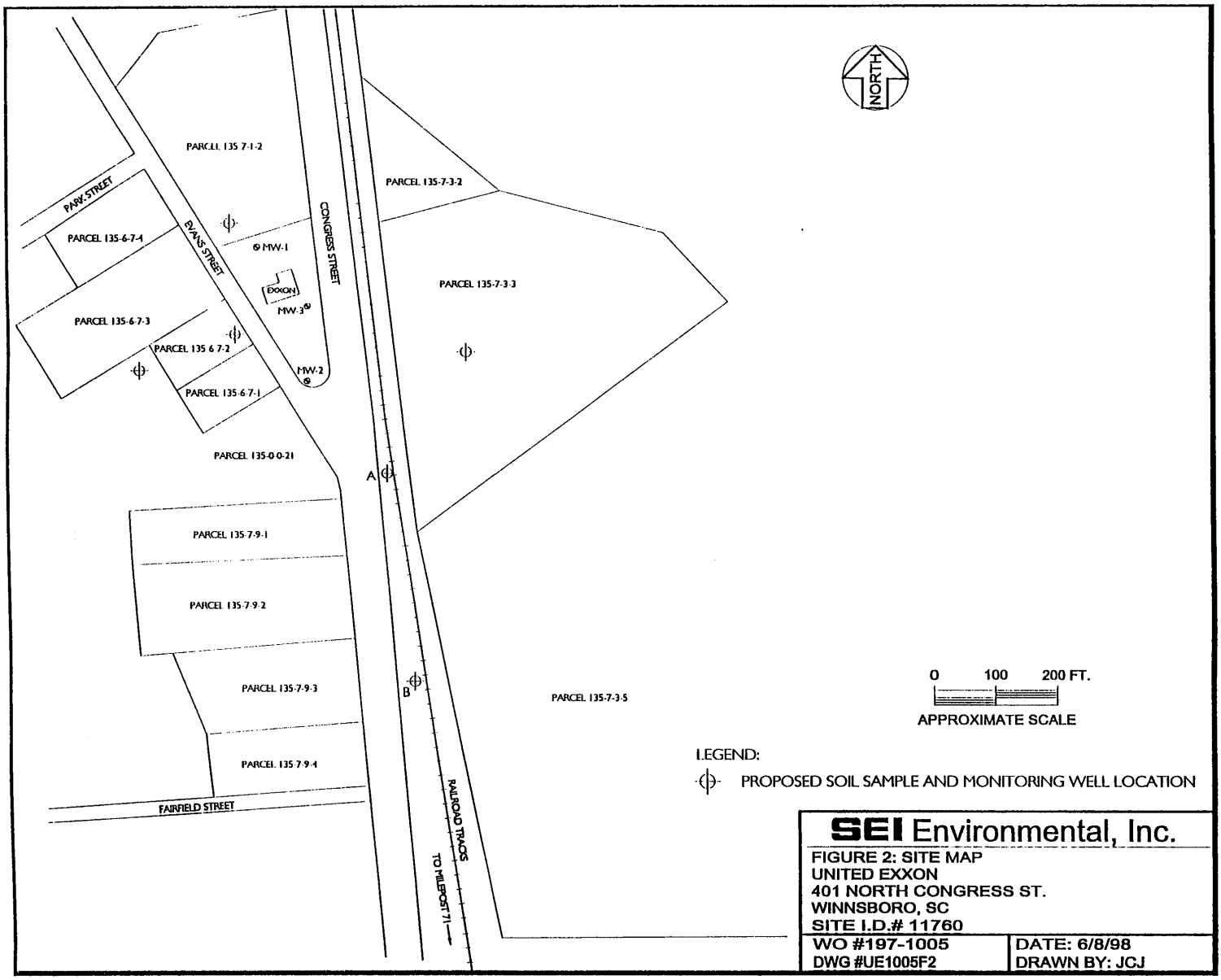
cc: Mr. Billy Keenan, Keenan Energy Company
Mr. John L. Wagner, Norfolk Southern Corporation
Mr. Charles J. Williams, III, SCDHEC

TYPE II MONITORING WELL



NOT TO SCALE

SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCI



SEI Environmental, Inc.

FIGURE 2: SITE MAP
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401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

RECEIVED
JUN 09 1998
DIVISION OF UNDERGROUND
STORAGE TANK MGMT.

June 9, 1998

CERTIFIED MAIL

Ms. Sue H. Rheiner
400 North Congress Street
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Ms. Rheiner:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well on your property (Parcel 135-7-3-3) located at 400 North Congress Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property owner will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

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DOCKETING # 87 Tech

SEI
Environmental, Inc.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

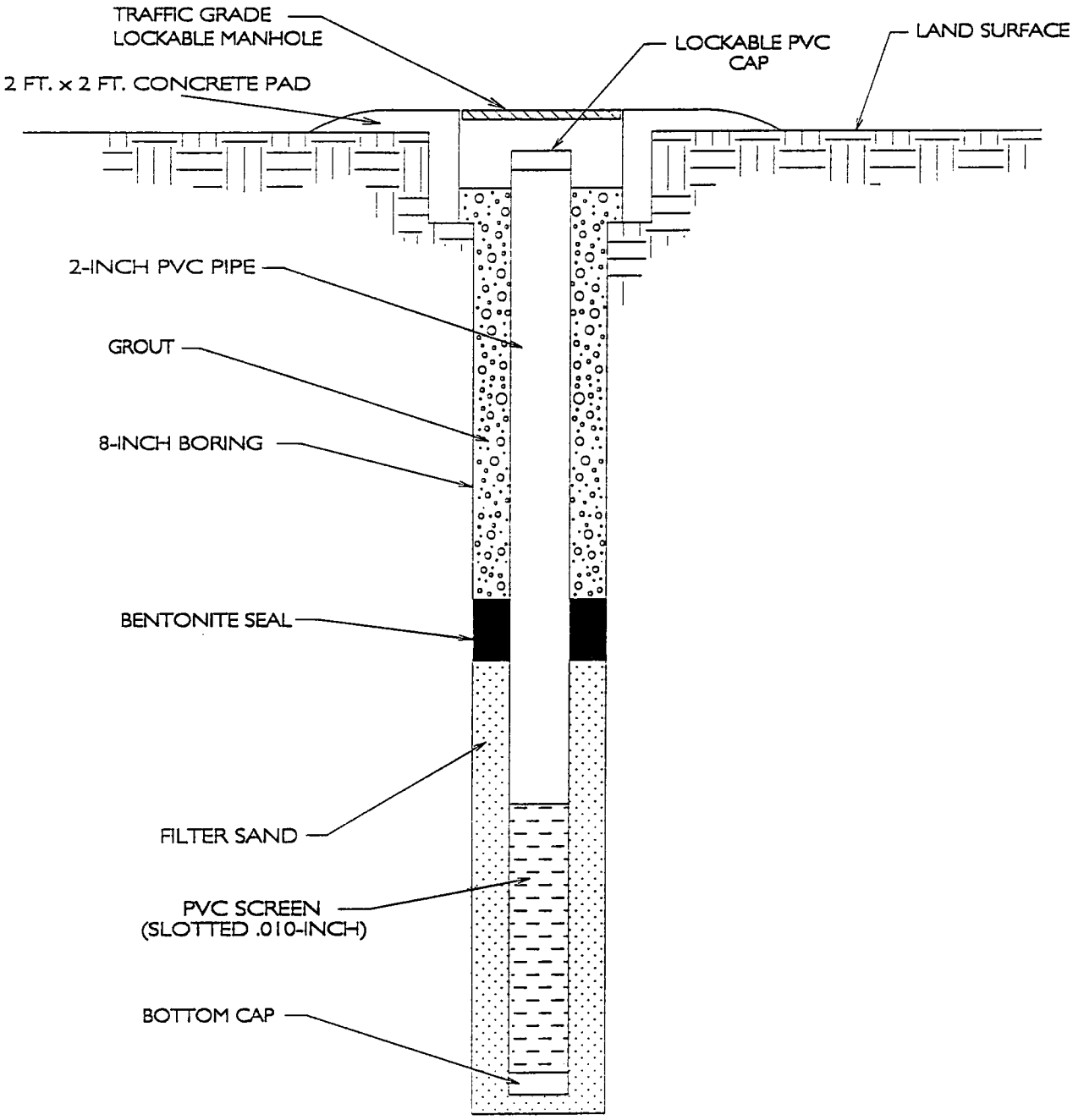
cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access Denied

Phone number_____
(If you wish to be notified prior to field activities)

TYPE II MONITORING WELL

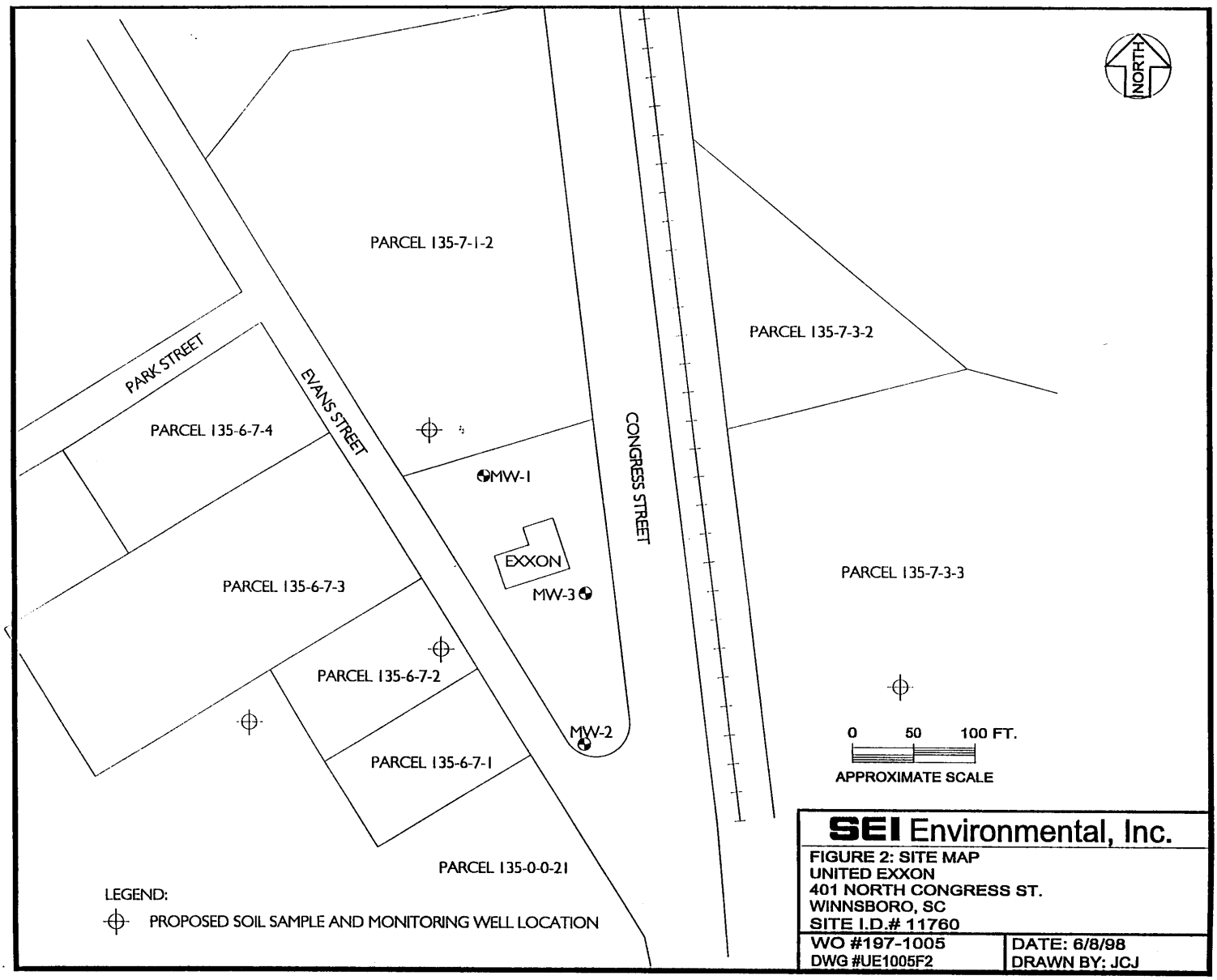


NOT TO SCALE

SEI Environmental, Inc.

TYPE II MONITORING WELL SCHEMATIC

WO #	DATE: 11/20/96
DWG #WELTYPII	DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

June 9, 1998

CERTIFIED MAIL

Ms. Pamela K. Taylor & Ms. Melba T. Edmonds
Route 2 Box 262
Irmo, South Carolina 29063

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Ms. Taylor & Ms. Edmonds:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well on your property (Parcel 135-7-1-2) located at 405 North Congress Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property owner will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

SEI
Environmental, Inc.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

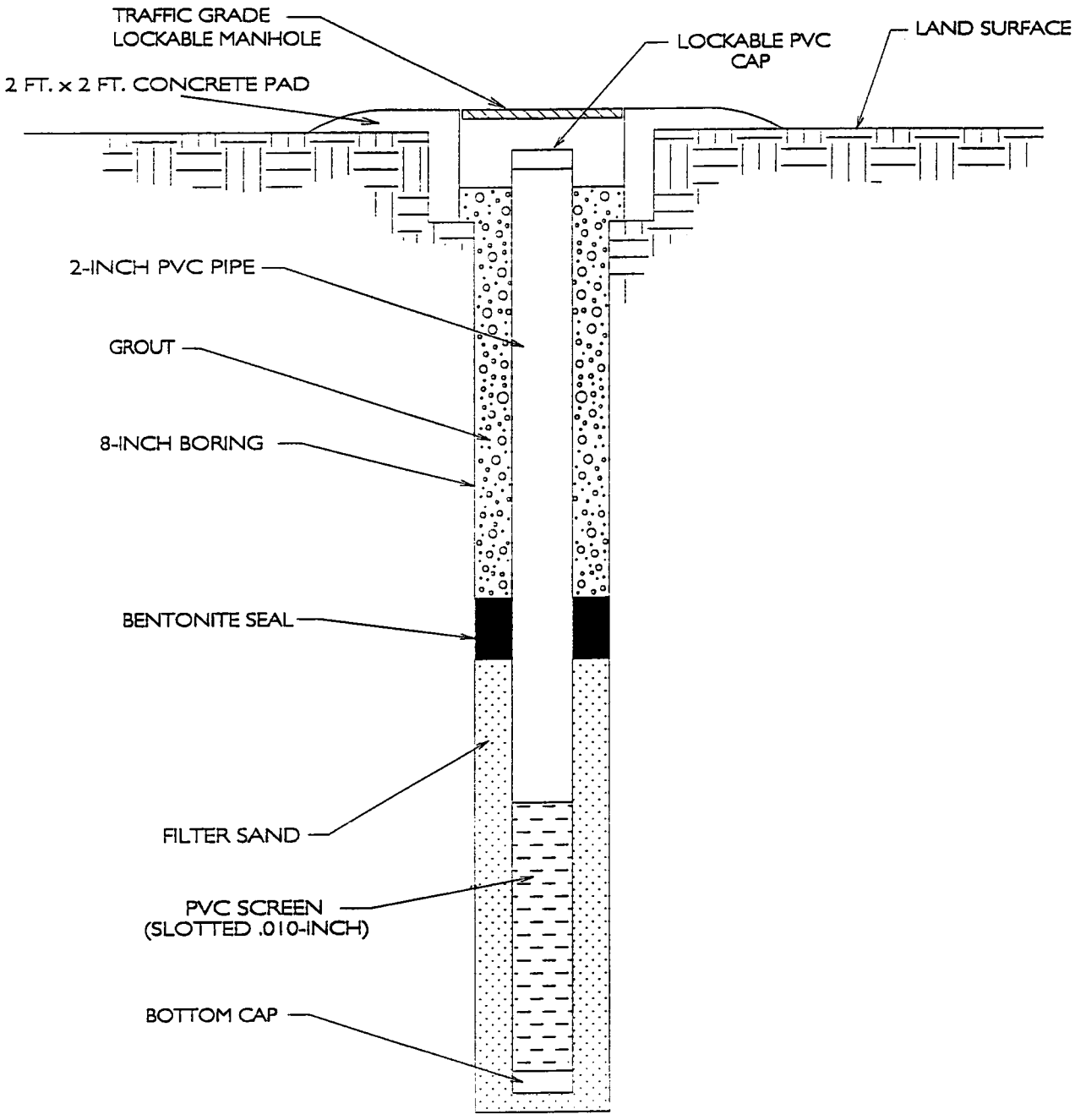
cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access Denied

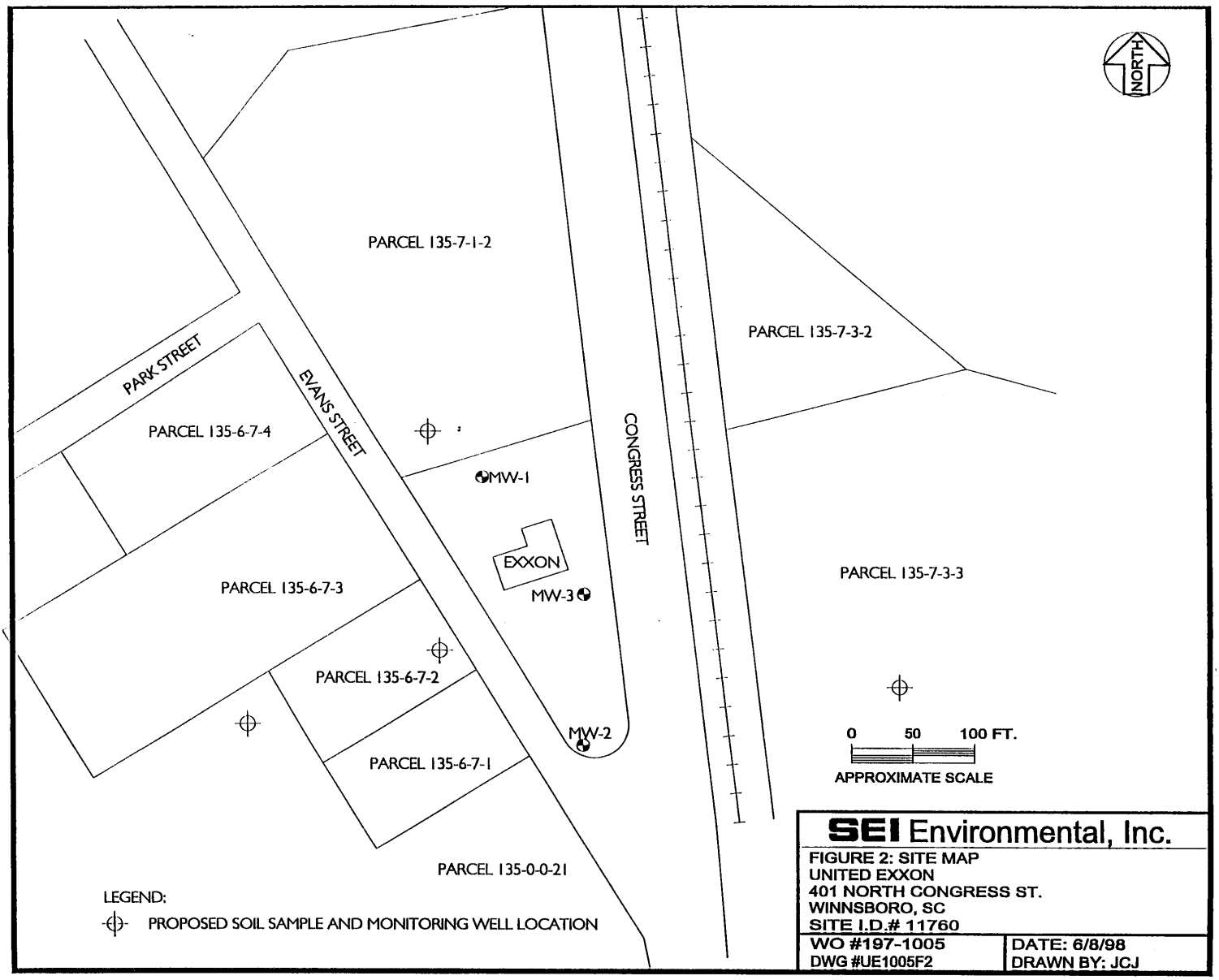
Phone number_____
(If you wish to be notified prior to field activities)

TYPE II MONITORING WELL



NOT TO SCALE

SEI Environmental, Inc.	
TYPE II MONITORING WELL SCHEMATIC	
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ



SEI Environmental, Inc.

FIGURE 2: SITE MAP
UNITED EXXON
401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

June 9, 1998

CERTIFIED MAIL

Mr. John D. McLeod & Ms. Virginia I. McLeod
Post Office Drawer 30
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Mr. McLeod & Ms. McLeod:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well on your property (Parcel 135-0-0-21) located at Evans Street and North Congress Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

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SEI
Environmental, Inc.

Please provide your authorization and approval by signing below and return the signature page in the enclosed envelope as soon as possible. Acknowledgment of this form is required by SCDHEC. Denial of site access will be forwarded to SCDHEC for their pursuit of site access.

If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

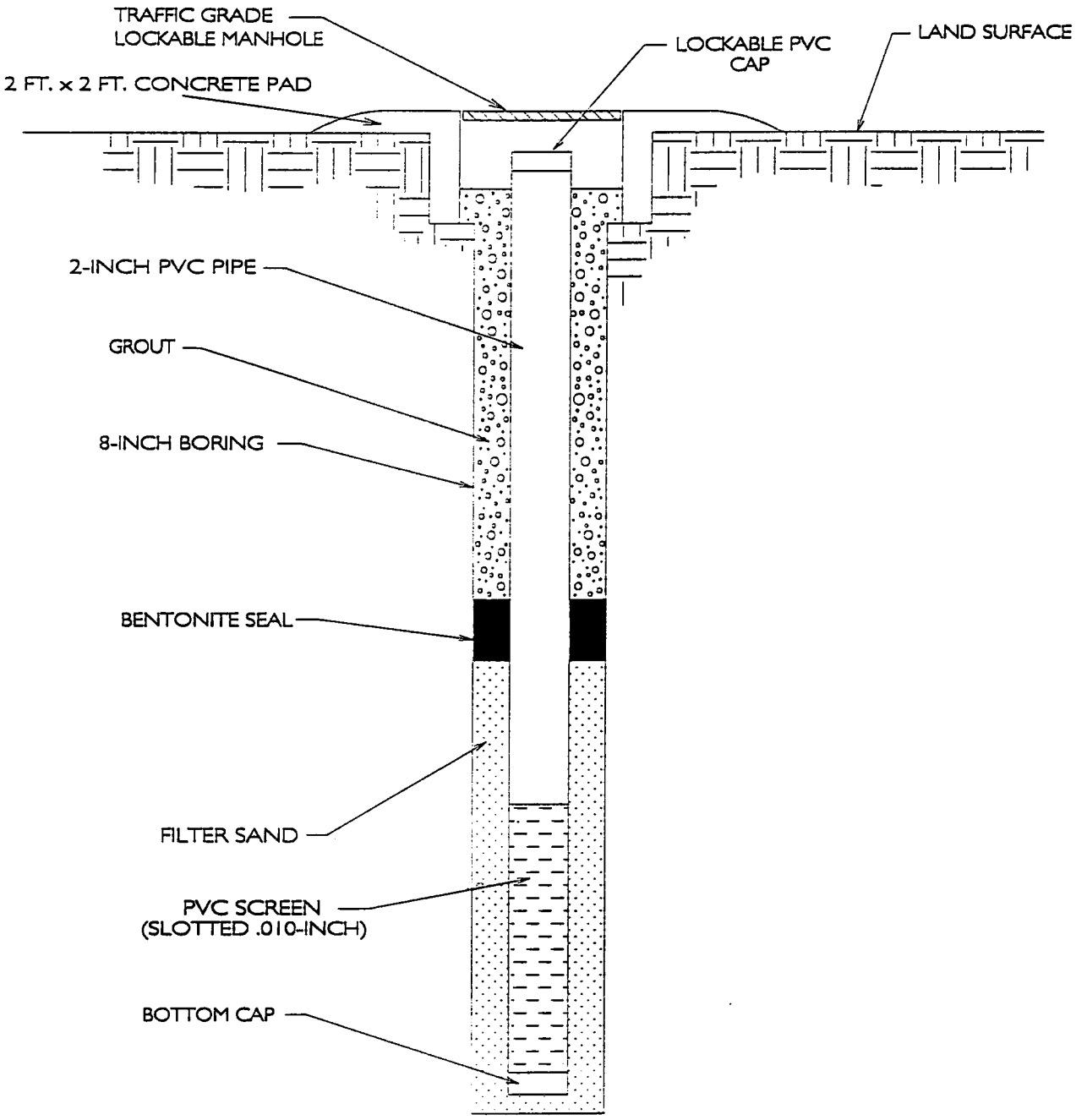
cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

☐ _____
Access Denied

Phone number_____
(If you wish to be notified prior to field activities)

TYPE II MONITORING WELL



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SEI Environmental, Inc.	
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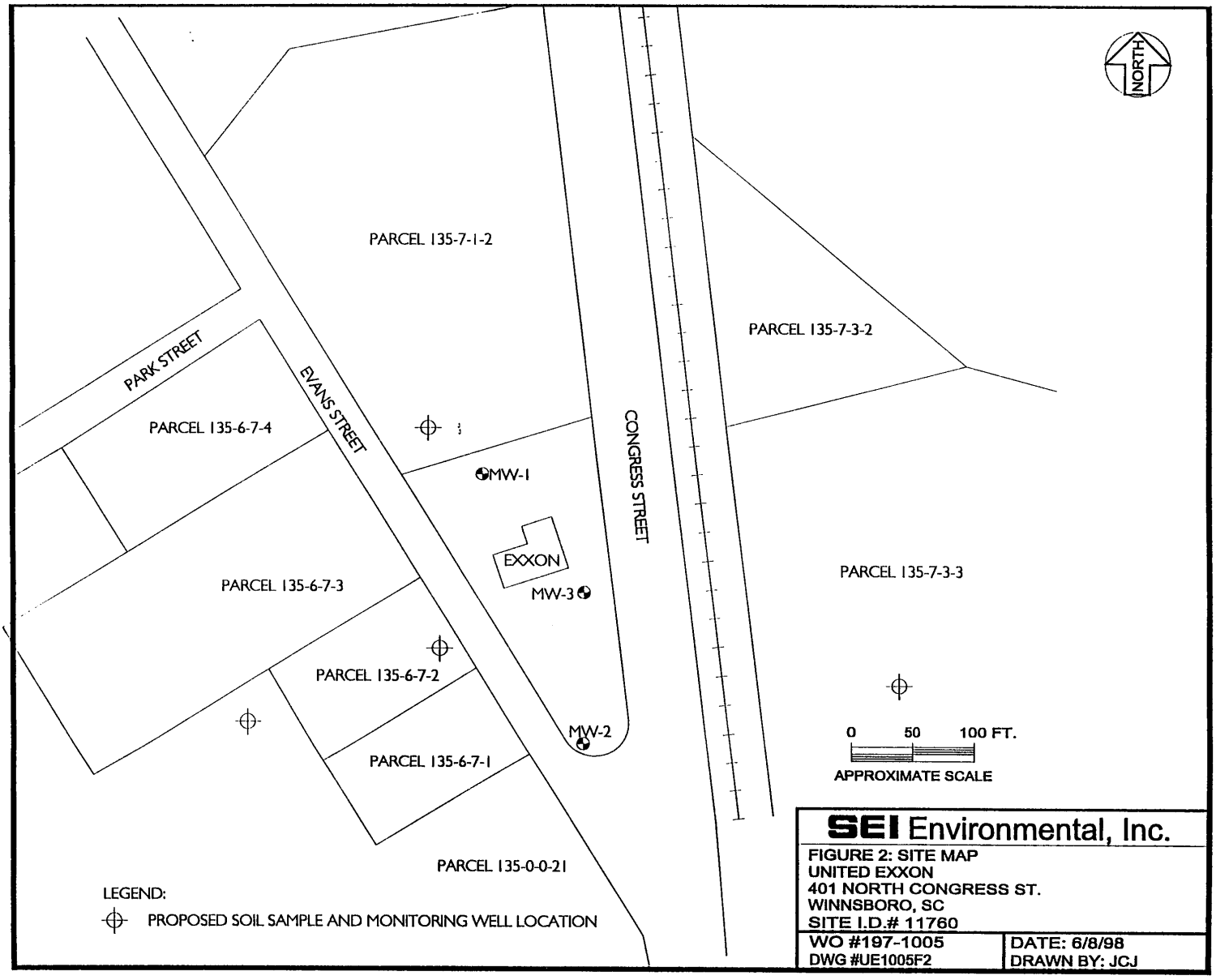

SEI Environmental, Inc.

FIGURE 2: SITE MAP
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401 NORTH CONGRESS ST.
WINNSBORO, SC
SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

June 9, 1998 **CERTIFIED MAIL**

Mr. Amos Davis & Ms. Annie Blythe McLeod
101 Evans Street
Winnsboro, South Carolina 29180

RE: Environmental Assessment
United Exxon
401 North Congress Street
Winnsboro, South Carolina
SCDHEC ID# 11760

Dear Mr. Davis & Ms. McLeod:

On behalf of South Carolina Department of Health and Environmental Control (SCDHEC) and Keenan Energy Company, SEI Environmental Inc (SEI) is conducting an environmental assessment at the United Exxon. In order to complete the assessment, the collection of one (1) soil sample and the installation of one (1) groundwater monitoring well on your property (Parcel 135-6-7-2) located at 97 Evans Street in Winnsboro, South Carolina is necessary. The proposed well will be 2" in diameter with the top of the well finished even with the land surface and will be locked. It will be surrounded by a 2'x2' concrete pad also even with the land surface.

A map showing the proposed monitoring well and soil sample location is enclosed. Periodic access to the well will be required to conduct sampling activities. When SCDHEC determines that this well is no longer required, it will be properly abandoned. All work performed by SEI will be pre-approved by SCDHEC, and all costs for installation, sampling and abandonment will be paid by SEI. SEI will contact you prior to the installation of the well. Any material resulting from the well installation will be removed for proper disposal. Two to three hours of access for the well installation will be required. Each sampling event will require about one hour of access time. Well abandonment will require about one hour of access time. SEI shall conduct its activities in a manner so as to minimize the disturbance to your property.

You as the property owner will not be held responsible or held liable for any damages or expenses for injury to persons or property while SEI is on your premises. SCDHEC has requested the completion of this assessment in a timely manner and believes it is in your best interest to allow the well installation. If you have any questions regarding SCDHEC authorization to conduct these activities, please contact Mr. Charles J. Williams, III, SCDHEC Project Manager, at 803-734-5455, and reference site ID# 11760.

UST PROGRAM
DOCKETING # 89 Tech

SEI
Environmental, Inc.

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If you have any questions or would like to further discuss any aspect of this site access request, please contact myself or Fred Lyke at 803-788-2535, or Mr. Charles J. Williams, III, SCDHEC Project Manager at 803-734-5455.

Sincerely,
SEI Environmental Inc.

Robert G. Bolton, Jr.
Project Manager

Enclosure

cc: Mr. Billy Keenan, Keenan Energy Company
Mr. Charles J. Williams, III, SCDHEC

☐ _____
Access approved

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Phone number_____
(If you wish to be notified prior to field activities)

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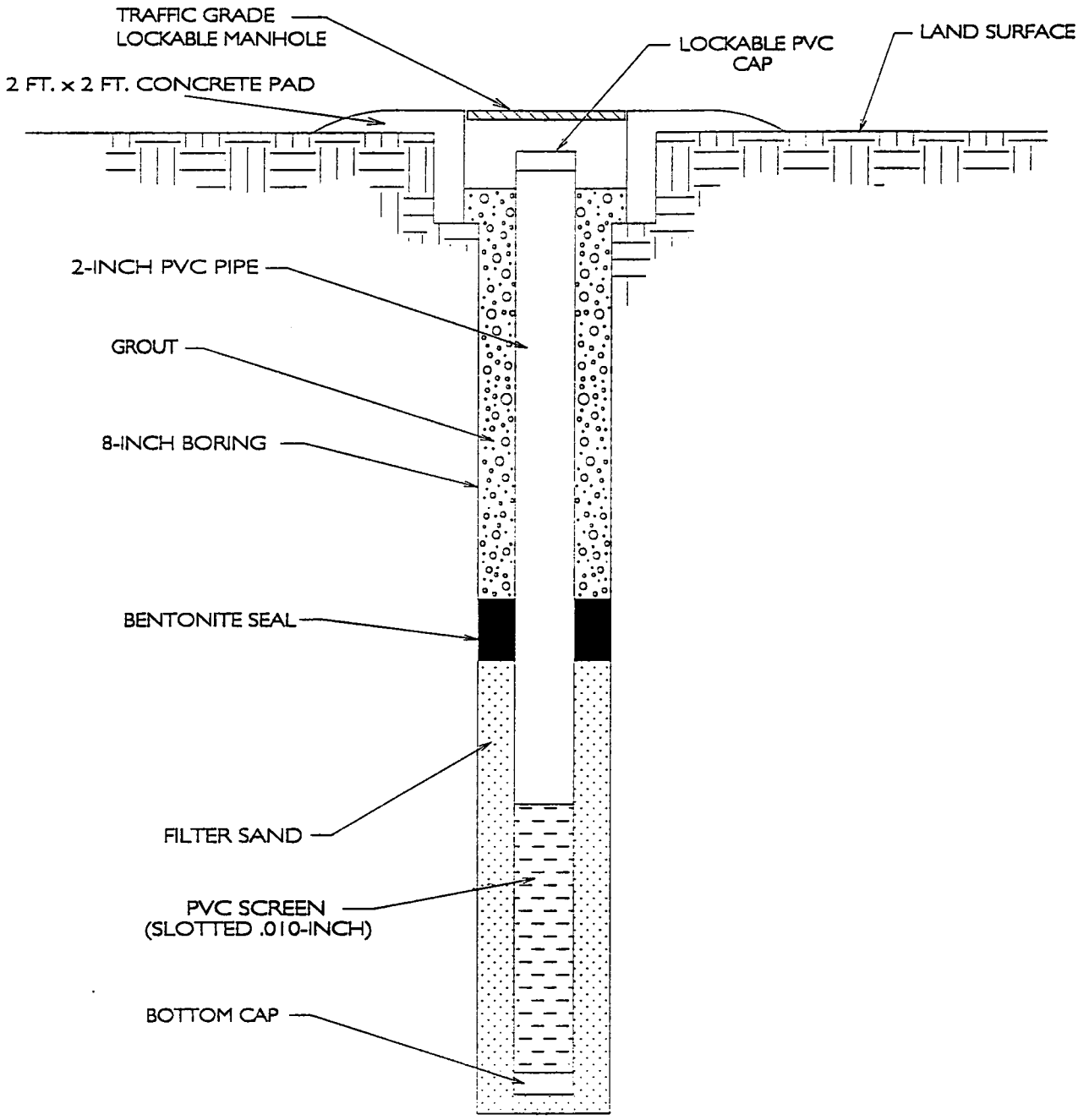

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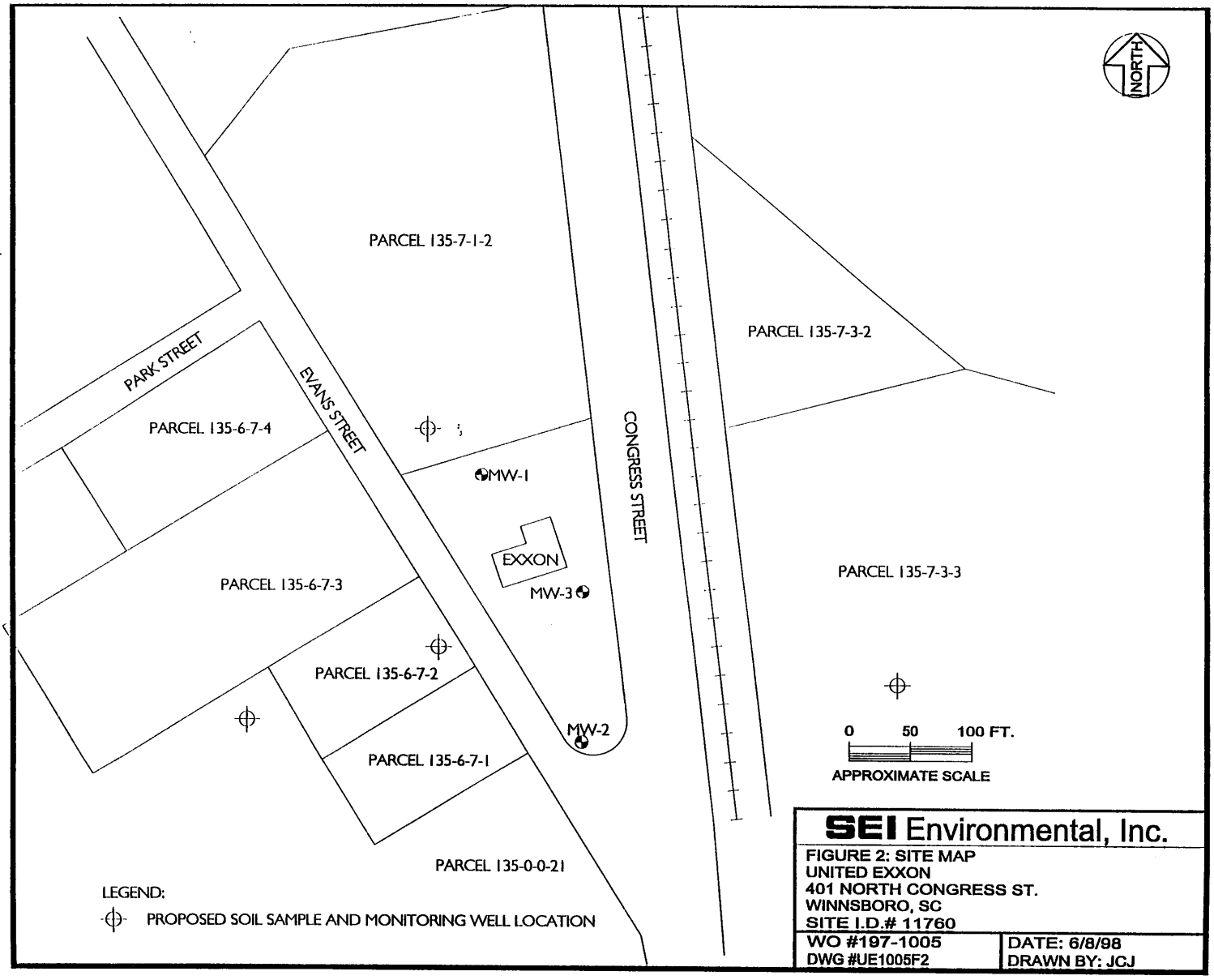
WO # DWG #WELTYPII	DATE: 11/20/96 DRAWN BY: JCJ



SEI Environmental, Inc.

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401 NORTH CONGRESS ST.
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SITE I.D.# 11760

WO #197-1005	DATE: 6/8/98
DWG #UE1005F2	DRAWN BY: JCJ

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

UST
AUG 19 2009
PROGRAM

August 18, 2009

Mr. Brian Dolphin, Geologist
SCDHEC – UST Program
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201

Re: Groundwater Assessment Report
Former United Exxon
Fairfield County
UST Permit #11760

Dear Mr. Dolphin:

Attached is the Groundwater Assessment Report for the former United Exxon facility. Should you have any questions or require additional information, please contact me at 735-0003.

Sincerely,
ATC Associates Inc.

Robert G. Bolton, Jr.
Environmental Division Manager

Attachment

cc: Mr. Billy Keenan, Keenan Energy Company, Inc.

UST
DOCKET
9/lan

ATC ASSOCIATES INC.
Engineering Individual Solutions

400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
803-735-0003
Fax 803-735-0443
www.atcassociates.com

GROUNDWATER ASSESSMENT REPORT

Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
Fairfield County
UST Permit #11760

PREPARED FOR:

Mr. Billy Keenan
Keenan Energy Company, Inc.
Post Office Box 3218
Columbia, South Carolina

PREPARED BY:

ATC Associates Inc.
400 Northeast Drive, Unit Q
Columbia, South Carolina 29203
(803) 735-0003

Robert G. Bolton, Jr.
Environmental Division Manager

Frederick P. Lyke, P.G. #1055

August 18, 2009

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4.0 CONCLUSIONS AND RECOMMENDATIONS 4

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APPENDIX C	Groundwater Sampling Field Measurements
APPENDIX D	Laboratory Analytical Results and Chain-of-Custody
APPENDIX E	Disposal Manifests

1.0 INTRODUCTION

Mr. Billy Keenan contracted ATC Associates Inc. (ATC) to conduct groundwater assessment activities, that included four aggressive fluid vapor recovery (AFVR) events, at the former United Exxon facility located at 401 North Congress Street in Winnsboro, South Carolina. A site location map is presented as Figure 1. The groundwater assessment activities were approved by SCDHEC in correspondence to Keenan Energy Company, Inc. dated April 22, 2009. A copy of the SCDHEC correspondence is provided in Appendix A.

2.0 METHODOLOGY

2.1 AFVR Events

On April 28, 2009, ATC personnel oversaw AFVR activities with off-gas treatment at Monitor Well MW-2 by A&D Environmental Services LLC (A&D) personnel. This AFVR event was conducted for eight hours, and approximately 168 gallons of liquid were removed from the monitor well. On May 20, 2009, ATC personnel oversaw AFVR activities with off-gas treatment at Monitor Well MW-2 by A&D personnel. The AFVR event was conducted for eight hours with approximately 840 gallons of liquid being removed from this monitor well. On June 2, 2009, ATC personnel oversaw AFVR activities with off-gas treatment at Monitor Well MW-16 by A&D personnel. This AFVR event was conducted for eight hours with approximately 234 gallons of liquid being removed from the monitor well. On June 16, 2009, ATC personnel oversaw AFVR activities with off-gas treatment at Monitor Well MW-10 by A&D personnel. This AFVR event was conducted for eight hours with approximately 487 gallons of liquid being removed from this monitor well. Detailed summaries of the AFVR events are presented in Appendix B.

2.2 Site Hydrogeology

During the July 16, 2009, gauging event, approximately 1.57 feet, 0.25 feet, and 0.29 feet of liquid phase hydrocarbons (LPH) were detected at Monitor Wells MW-2, MW-10, and MW-13, respectively. Groundwater flow direction is toward the south and east with a hydraulic gradient of 0.0265 feet per foot, as measured between Monitor Wells MW-8 and MW-26. Groundwater measurements are summarized in Table I, and a groundwater elevation contour map is depicted in Figure 3.

2.3 Groundwater Sampling and Analysis

On July 16-17, 2009, ATC personnel obtained groundwater samples from Monitor Wells MW-1, MW-4R, MW-5, MW-6R, MW-8, MW-9R, MW-11, MW-12, MW-14 through MW-26, DW-1, and DW-2. A surface water sample, identified as CK-1, was collected from the headwaters of McCulley Creek. Specifically, this sample was collected near Monitor Well MW-25. Samples were not collected from Monitor Wells MW-3, MW-4, and MW-7 since these wells were dry or not enough water was present for sample collection. Also, samples were not collected from Monitor Wells MW-2, MW-10, and MW-13 due to the presence of LPH at these wells. New, disposable nitrile gloves were used to maintain sample integrity during the sampling process. A new, disposable polyethylene bailer was used for the collection of the water samples from the monitor wells. The samples from Monitor Wells DW-1 and DW-2 were obtained after pH and temperature values had equilibrated unless petroleum odor was emanating from the well. If petroleum odors were observed in the monitor well, the groundwater sample was obtained after three well volumes were purged. The remaining samples were collected using the no-purge method since each well's screen properly bracketed the water table. Field measurements are presented in Appendix C. The groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped via FedEx to SPL, Inc. in Scott, Louisiana for proper analysis. Proper preservation methods and chain-of-custody procedures were followed throughout the sampling process. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), methyl-tert-butyl-ether (MTBE), naphthalene,

and 1,2-dichloroethane (1,2-DCA) by EPA method 8260B; and 1,2-dibromoethane (EDB) by EPA method 504.1.

3.0 GROUNDWATER ANALYTICAL RESULTS

Groundwater analytical results for the samples collected during the current assessment activities detected benzene concentrations at Monitor Wells MW-4R, MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, MW-21 through MW-24, and DW-2. Toluene concentrations were detected at Monitor Wells MW-11, MW-14, MW-15, MW-16, and MW-18. Toluene concentrations may exist at Monitor Wells MW-12 and MW-23; however, high dilution factors yielded results less than detection limits at these wells. Ethylbenzene concentrations were detected at Monitor Wells MW-11, MW-12, MW-15, MW-16, and MW-18. It should be noted that ethylbenzene concentrations may exist at Monitor Wells MW-14 and MW-23; however, high dilution factors at these wells yielded results less than detection limits. Xylenes concentrations were detected at Monitor Wells MW-4R, MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, and MW-22. Xylenes concentrations may exist at Monitor Wells MW-21 and MW-23; however, high dilution factors at these wells yielded results less than detection limits. MTBE concentrations were detected at Monitor Wells MW-11, MW-12, MW-15, MW-18, MW-21, MW-22, MW-23, and DW-2. In addition, MTBE concentrations were detected at Sample CK-1. MTBE concentrations may exist at Monitor Wells MW-14 and MW-16; however, high dilution factors caused results to be less than detection limits at these locations. Naphthalene concentrations were detected at Monitor Wells MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, MW-22 and DW-2. Naphthalene concentrations may exist at Monitor Wells MW-21 and MW-23; however, high dilution factors at these wells caused results to be less than detection limits. 1,2-DCA concentrations were detected at Monitor Wells MW-18 and MW-21. EDB concentrations were detected at Monitor Well MW-18.

Benzene concentrations were detected greater than its risk based screening level (RBSL) of 5 μg/l at Monitor Wells MW-4R, MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, and MW-21 through MW-24. Toluene, ethylbenzene, and xylenes concentrations were detected

greater than their respective RBSLs of 1000 μg/l, 700 μg/l, and 10000 μg/l at Monitor Wells MW-11 and MW-16. MTBE concentrations were detected greater than its RBSL of 40 μg/l at Monitor Wells MW-12, MW-18, and MW-21. It is probable that MTBE concentrations exist greater than its RBSL at Monitor Well MW-16 due to a high dilution factor that yielded results less than 100 μg/l. Naphthalene concentrations were detected greater than its RBSL of 25 μg/l at Monitor Wells MW-11, MW-12, MW-14, MW-15, MW-16, MW-18, and MW-22. It is likely that naphthalene concentrations exist greater than its RBSL at Monitor Well MW-23 due to a high dilution factor that yielded results less than 50 μg/l. EDB concentrations were detected greater than its RBSL of 0.05 μg/l at Monitor Well MW-18. Groundwater laboratory analytical results are summarized in Table II and Figures 4A-4C. Laboratory analytical results and chain-of-custody are presented in Appendix D.

4.0 CONCLUSIONS AND RECOMMENDATIONS

- During the current assessment activities, four AFVR events were conducted at Monitor Wells MW-2, MW-10, and/or MW-16.
- Groundwater flow at the site is in a southern to eastern direction with a hydraulic gradient of 0.0265 feet per foot, as measured between Monitor Wells MW-8 and MW-26.
- During the July 16, 2009, approximately 1.57 feet, 0.25 feet, and 0.29 feet of liquid phase hydrocarbons were detected at Monitor Wells MW-2, MW-10, and MW-13, respectively.
- During the current assessment activities, a groundwater sample (identified as CK-1) was collected from the headwaters of McCulley Creek that is located hydraulically down-gradient from the site. Analytical results for this sample detected MTBE concentrations of 13 μg/l.
- Total BTEX concentrations have increased at Monitor Wells MW-4R, MW-12, MW-14, MW-18, MW-22, and DW-2 since the previous sampling event of September 2008; however, total BTEX concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. MTBE concentrations have increased at Monitor Wells MW-12, MW-22, MW-23 and Sample CK-1 since the previous sampling event; however, MTBE concentrations have decreased or remained

below detection limits at the remaining sampled locations for the same period. Naphthalene concentrations have increased at Monitor Wells MW-12, MW-22, and DW-2 since the previous sampling event. However, naphthalene concentrations have decreased or remained below detection limits at the remaining sampled locations for the same period. EDB concentrations have increased at Monitor Well MW-18 since the previous sampling event; however, EDB concentrations decreased or remained below detection limits at the remaining sampled locations for the same period.

Based on the continued presence of liquid phase hydrocarbons at Monitor Well MW-2, which appears to be near its source, ATC Associates Inc. recommends the installation of three monitor wells near MW-2. These three wells would be used as extraction points for additional AFVR events in this area. Following the installation of the three monitor wells, three AFVR events (approximately three weeks apart) should be conducted simultaneously at these four wells in an attempt to reduce the liquid phase hydrocarbons that are migrating from this area in the direction of Monitor Well MW-11 that is located across Congress Street.

5.0 REPORT LIMITATIONS

This investigation is intended to be a non-biased assessment of on-site environmental conditions proximate to the location of the former UST system. Subsurface investigative methodologies are in accordance with all applicable state and federal regulatory requirements. The information presented in this report is based upon site-specific observations, generally accepted geological practices, and analytical results for environmental samples collected at the time of the field investigation. All data is believed to represent subsurface conditions at the facility, however, data may not be completely representative of all subsurface conditions.

REFERENCES

ATC Associates Inc., October 22, 2008, *Groundwater Assessment Report – Former United Exxon*, Columbia, South Carolina.

SCDHEC, May 15, 2001, *Risk-Based Corrective Action for Petroleum Releases*, Columbia, South Carolina.

TABLES

TABLE I Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-1	07/16/2009	96.54	43.20	0	48	15	53.34
MW-2	07/16/2009	98.17	52.31*	1.57	54	15	45.86
MW-3	07/16/2009	95.81	44.82	0	45	15	50.99
MW-4	07/16/2009	98.52	Dry	0	45	15	Not Applicable
MW-4R	07/16/2009	98.14	49.24	0	60	20	48.90
MW-5	07/16/2009	94.41	43.17	0	45	15	51.24
MW-6R	07/16/2009	103.91	58.04	0	65	20	45.87
MW-7	07/16/2009	102.34	Dry	0	52	15	Not Applicable
MW-8	07/16/2009	97.63	43.04	0	45	15	54.59
MW-9R	07/16/2009	101.13	54.27	0	65	20	46.86
MW-10	07/16/2009	88.26	47.10*	0.25	50	15	41.16
MW-11	07/16/2009	70.63	33.22	0	38	15	37.41
MW-12	07/16/2009	81.21	40.59	0	50	15	40.62
MW-13	07/16/2009	81.02	42.25*	0.29	50	15	38.77
MW-14	07/16/2009	69.55	34.58	0	40	20	34.97
MW-15	07/16/2009	72.06	36.21	0	40	20	35.85
MW-16	07/16/2009	85.19	44.12	0	50	20	41.07
MW-17	07/16/2009	85.66	38.64	0	50	15	47.02
MW-18	07/16/2009	80.83	40.60	0	50	15	40.23

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE I (continued) Groundwater Elevation Data Former United Exxon / Winnsboro, South Carolina							
Monitor Well Number	Gauging Date	Top of Casing Elevation (feet)	Depth to Water (feet)	LPH Thickness (feet)	Depth of Well (feet)	Screen Length (feet)	Water Table Elevation (feet)
MW-19	07/16/2009	82.27	41.39	0	46	15	40.88
MW-20	07/16/2009	81.44	41.30	0	46	15	40.14
MW-21	07/16/2009	67.40	27.58	0	40	15	39.82
MW-22	07/16/2009	65.12	32.32	0	40	20	32.80
MW-23	07/16/2009	62.15	32.06	0	40	20	30.09
MW-24	07/16/2009	49.50	19.01	0	25	15	30.49
MW-25	07/16/2009	41.63	14.43	0	23	15	27.20
MW-26	07/16/2009	43.83	18.23	0	35	20	25.60
DW-1	07/16/2009	98.62	52.89	0	80	5	45.73
DW-2	07/16/2009	65.10	33.09	0	80	5	32.01

LPH = Liquid Phase Hydrocarbons

* Corrected depth to water = depth to water – [(LPH thickness) x 0.78)]

TABLE II Groundwater Analytical Results, dated July 16-17, 2009 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-1 (µg/l)	MW-2 (µg/l)	MW-3 (µg/l)	MW-4 (µg/l)	MW-4R (µg/l)	MW-5 (µg/l)	MW-6R (µg/l)	MW-7 (µg/l)	MW-8 (µg/l)	MW-9R (µg/l)
Free Product Thickness	NA	None	1.57'	None	NA	None	None	None	NA	None	None
Benzene	5	<1	NS	NS	NS	**7.6**	<1	<1	NS	<1	<1
Toluene	1000	<1	NS	NS	NS	<1	<1	<1	NS	<1	<1
Ethylbenzene	700	<1	NS	NS	NS	<1	<1	<1	NS	<1	<1
Xylenes	10000	<2	NS	NS	NS	2.5	<2	<2	NS	<2	<2
Total BTEX	NA	<5	NA	NA	NA	<12.1	<5	<5	NA	<5	<5
MTBE	40	<1	NS	NS	NS	<1	<1	<1	NS	<1	<1
Naphthalene	25	<5	NS	NS	NS	<5	<5	<5	NS	<5	<5
EDB	0.05	<0.022	NS	NS	NS	<0.021	<0.021	<0.023	NS	<0.021	<0.021
1,2-DCA	NA	<1	NS	NS	NS	<1	<1	<1	NS	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled.

TABLE II (continued) Groundwater Analytical Results, dated July 16-17, 2009 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-10 (µg/l)	MW-11 (µg/l)	MW-12 (µg/l)	MW-13 (µg/l)	MW-14 (µg/l)	MW-15 (µg/l)	MW-16 (µg/l)	MW-17 (µg/l)	MW-18 (µg/l)	MW-19 (µg/l)
Free Product Thickness	NA	0.25'	None	None	0.29'	None	None	None	None	None	None
Benzene	5	NS	**6100**	**3300**	NS	**4400**	**2300**	**5500**	<1	**280**	<1
Toluene	1000	NS	**16000**	<10	NS	76	42	**22000**	<1	560	<1
Ethylbenzene	700	NS	**3100**	16	NS	<20	11	**4600**	<1	92	<1
Xylenes	10000	NS	**15800**	66	NS	68	25	**27500**	<2	560	<2
Total BTEX	NA	NA	41000	<3392	NA	<4564	2378	59600	<5	1492	<5
MTBE	40	NS	28	**100**	NS	<20	11	**<100**	<1	**2300**	<1
Naphthalene	25	NS	**1400**	**310**	NS	**280**	**150**	**2700**	<5	**67**	<5
EDB	0.05	NS	<0.021	<0.021	NS	<0.022	<0.022	<0.022	<0.022	**0.092**	<0.022
1,2-DCA	NA	NS	<10	<10	NS	<20	<10	<100	<1	15	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled.

TABLE II (continued) Groundwater Analytical Results, dated July 16-17, 2009 Former United Exxon / Winnsboro, South Carolina											
Chemical of Concern	RBSL (µg/l)	MW-20 (µg/l)	MW-21 (µg/l)	MW-22 (µg/l)	MW-23 (µg/l)	MW-24 (µg/l)	MW-25 (µg/l)	MW-26 (µg/l)	DW-1 (µg/l)	DW-2 (µg/l)	CK-1 (µg/l)
Free Product Thickness	NA	None	None	None	None	None	None	None	None	None	None
Benzene	5	<1	**33**	**1600**	**1400**	**97**	<1	<1	<1	**83**	<1
Toluene	1000	<1	<5	<5	<10	<1	<1	<1	<1	<1	<1
Ethylbenzene	700	<1	<5	<5	<10	<1	<1	<1	<1	<1	<1
Xylenes	10000	<2	<10	12	<20	<2	<2	<2	<2	<1	<2
Total BTEX	NA	<5	<53	<1622	<1440	<101	<5	<5	<5	<86	<5
MTBE	40	<1	**460**	13	15	<1	<1	<1	<1	8.3	13
Naphthalene	25	<5	<25	**110**	**<50**	<5	<5	<5	<5	6.2	<5
EDB	0.05	<0.021	<0.022	<0.022	<0.022	<0.023	<0.022	<0.021	<0.022	<0.023	<0.022
1,2-DCA	NA	<1	6.2	<5	<10	<1	<1	<1	<1	<1	<1

Bold concentrations represent those greater than the respective RBSL.
NA = Not Applicable; NS = Not Sampled.

TABLE III
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-1	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	15	<30	<5	**42**	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	7.77	<10.77	<5.0	23.8	<0.05
MW-2	07/16/2009	1.57	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.18	NS	NS	NS	NS	NA	NS	NS	NS
	01/15/2008	0.27	**14000**	**48000**	**5900**	**33000**	100900	**43000**	**<2500**	**54**
	04/19/2007	0.03	**11000**	**31000**	**4400**	**24400**	70800	**34000**	**1400**	**52**
	08/21/2006	0.30	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.20	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**15900**	**90700**	**4800**	**26700**	138100	**82000**	**840**	**127**
	11/02/1998	0.00	**23100**	**89000**	**5380**	**27380**	144860	**227000**	**2140**	**78.65**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-3	07/16/2009	NA	Not Sampled – Not enough water for sample collection.							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/20/2007	0.00	**28**	1.3	<1	2.11	<32.41	<1	<5	<0.02
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	0.00	**110**	<5	<5	<5	<125	<5	<5	<0.019
	03/08/2005	0.00	**123**	10	18	16	167	<5	<5	<0.02
	08/20/2003	0.00	**385**	<25	<25	<25	<460	<25	<25	<0.02
	01/11/2001	0.00	**434**	288	182	146	1050	**89.9**	12.9	**<1.0**
	11/02/1998	0.00	**2260**	52.7	215	889	3416.7	**<50**	<50	<0.02
MW-4	07/16/2009	NA	Not Sampled – Dry Well							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/20/2007	NA	Not Sampled – Dry Well							
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	NA	Not Sampled – Dry Well							
	03/08/2005	NA	Not Sampled – Dry Well							
	08/20/2003	NA	Not Sampled – Dry Well							
	01/11/2001	NA	Not Sampled – Dry Well							
	11/02/1998	0.00	**1781**	610	311	1921	4623	<10	**40**	**<10**
MW-4R	07/17/2009	0.00	**7.6**	<1	<1	2.5	<12.1	<1	<5	<0.021
	09/22/2008	0.00	4.2	<1	<1	<1	<7.2	<1	<5	<0.021
	01/15/2008	0.00	**9.8**	<1	1.4	1.8	<14.0	<1	<5	<0.02
	04/19/2007	0.00	2.4	<1	1.2	2	<6.6	4.4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-5	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	1.8	<1	1.43	<5.23	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5	<5	<5	<15	<30	<1.0	<5.0	**<1.0**
MW-6	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	2.4	19.3	2.6	8.3	32.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-6R	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.023
	09/22/2008	0.00	<1	6.3	1.5	5.3	<14.1	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-7	07/16/2009	NA	Not Sampled – Dry Well							
	09/22/2008	NA	Not Sampled – Dry Well							
	01/15/2008	NA	Not Sampled – Dry Well							
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	NA	Not Sampled – Dry Well							
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.4	13.0	3.1	5.0	22.5	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-8	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.2	1.9	3.5	15.6	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<1	<1	<1	<1	<4	<1	<5	**<1.0**
MW-9	06/27/2005	Well Abandoned 05/17/2006								
	03/08/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	11/02/1998	0.00	<1.0	2.1	<1.0	<1.0	<5.1	<1.0	<5.0	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-9R	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
	01/15/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/19/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
MW-10	07/16/2009	0.25	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.33	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.00	**8400**	**9000**	**3300**	**10100**	30800	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**5400**	22	<20	238	<5680	**170**	**350**	<0.02
	08/21/2006	0.00	**5800**	**3700**	**1700**	3620	14820	**<100**	**410**	<0.02
	06/27/2005	0.00	**6000**	**2400**	**1900**	3300	13600	**<1000**	**<1000**	<0.019
	03/08/2005	0.42	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	Sheen	**8010**	**8770**	**2310**	7200	26290	**<250**	**774**	<0.02
	01/11/2001	0.00	**8950**	**49000**	**8550**	**49000**	115500	22	**3300**	**<500**
	11/02/1998	0.00	**11200**	**30800**	**3360**	**15500**	60860	**<100**	**766**	**<100**
MW-11	07/16/2009	0.00	**6100**	**16000**	**3100**	**15800**	41000	28	**1400**	<0.021
	09/22/2008	0.04	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.02	**8700**	**21000**	**4600**	**24600**	58900	**<500**	**<2500**	<0.02
	04/19/2007	0.00	**6500**	**13000**	**2800**	**16100**	38400	**790**	**1700**	<0.02
	08/21/2006	0.02	NS	NS	NS	NS	NA	NS	NS	NS
	06/27/2005	0.00	**5900**	**25000**	**5100**	**31400**	67400	**<2500**	**3000**	**0.34**
	03/08/2005	0.15	NS	NS	NS	NS	NA	NS	NS	NS
	08/20/2003	1.95	NS	NS	NS	NS	NA	NS	NS	NS
	01/11/2001	0.00	**8000**	**11800**	**3470**	**16400**	39670	31	**1440**	**<100**
	11/02/1998	0.00	**6280**	**15600**	**2390**	**10800**	35070	**<100**	**617**	**<50**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-12	07/16/2009	0.00	**3300**	<10	16	66	<3392	**100**	**310**	<0.021
	09/22/2008	0.00	**370**	<1	<1	8.8	<380.8	12	**35**	<0.021
	01/14/2008	0.00	**5700**	<100	<100	140	<6040	**<100**	**<500**	<0.02
	04/19/2007	0.00	**6600**	**4800**	**2500**	7800	21700	<20	**970**	<0.02
	08/21/2006	0.00	**5800**	<100	<100	<100	<6100	**<100**	**250**	<0.02
	06/27/2005	0.00	**8200**	7.7	6.9	52.2	8266.8	**210**	**410**	<0.019
	03/08/2005	0.00	**7680**	264	52	315	8311	**195**	**173**	<0.02
MW-13	07/16/2009	0.29	NS	NS	NS	NS	NA	NS	NS	NS
	09/22/2008	0.11	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.23	**9900**	**27000**	**3500**	**24800**	65200	**<2000**	**<10000**	**0.073**
	04/19/2007	0.00	**8300**	**23000**	**3200**	**22100**	56600	**410**	**1500**	<0.02
	08/21/2006	0.00	**7300**	**36000**	**3400**	**20600**	67300	**<100**	**1200**	**0.19**
	06/27/2005	0.00	**8600**	**61000**	**2100**	**13000**	84700	**<250**	**620**	<0.019
	03/08/2005	0.00	**13300**	**33600**	**2880**	**16600**	66380	**<100**	**700**	**0.08**
MW-14	07/16/2009	0.00	**4400**	76	<20	68	<4564	<20	**280**	<0.022
	09/22/2008	0.00	**4100**	59	<20	<20	<4199	<20	**290**	<0.021
	01/14/2008	0.00	**4500**	74	<50	51	<4675	**<50**	**300**	<0.02
	04/19/2007	0.00	**5100**	100	<20	74	<5294	<20	**300**	<0.019
	08/21/2006	0.00	**6100**	<100	<100	<100	<6400	**<100**	**260**	<0.02
	06/27/2005	0.00	**4500**	<100	<100	<100	<4800	**<100**	**170**	**0.11**
	03/08/2005	0.00	**6390**	<125	<125	<125	<6765	**<125**	**234**	<0.02
MW-15	07/16/2009	0.00	**2300**	42	11	25	2378	11	**150**	<0.022
	09/22/2008	0.00	**2800**	54	18	<10	<2882	18	**270**	<0.021
	01/14/2008	0.00	**2900**	<50	<50	<50	<3050	**<50**	**250**	<0.02
	04/19/2007	0.00	**3300**	52	3.5	29.5	3385	<1	**240**	<0.02
	08/21/2006	0.00	**2400**	49	5.2	63	2517.2	<5	**120**	<0.02
	06/27/2005	0.00	**680**	13	<5	9.4	<707.4	<5	**63**	<0.019
	03/08/2005	0.00	**11400**	182	<50	96	<11728	**<50**	**485**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued)
Historical Groundwater Analytical Results
Former United Exxon / Winnsboro, South Carolina

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-16	07/16/2009	0.00	**5500**	**22000**	**4600**	**27500**	59600	**<100**	**2700**	<0.022
	09/22/2008	0.06	NS	NS	NS	NS	NA	NS	NS	NS
	01/14/2008	0.00	**8100**	**14000**	**4400**	**27100**	53600	**<1000**	**<5000**	<0.02
	04/19/2007	0.00	**7200**	**14000**	**4000**	**23000**	48200	**410**	**2300**	<0.02
	08/21/2006	0.00	**6700**	<100	<100	<100	<7000	**<100**	**230**	<0.02
	06/27/2005	0.00	**9400**	**28000**	**4800**	**31700**	73900	**<2500**	**3200**	<0.019
	03/08/2005	0.04	NS	NS	NS	NS	NA	NS	NS	NS
MW-17	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	3.9	<1	<1	<1	<6.9	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	5.7	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-18	07/16/2009	0.00	**280**	560	92	560	1492	**2300**	**67**	**0.092**
	09/22/2008	0.00	**270**	390	85	340	1085	**2600**	**98**	<0.022
	01/14/2008	0.00	**630**	**1800**	270	1440	4140	**2700**	**<500**	0.033
	04/19/2007	0.00	**1700**	**1800**	470	2750	6720	**3200**	**250**	**0.055**
	08/21/2006	0.00	**550**	610	49	570	1779	**1200**	**66**	**0.1**
MW-19	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	1.3	<4.3	5.1	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
MW-20	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/22/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	4.2	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL. *denotes estimated result.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-21	07/16/2009	0.00	**33**	<5	<5	<10	<53	**460**	<25	<0.022
	09/23/2008	0.00	**74**	<10	<10	<10	<104	**890**	**49***	<0.022
	01/14/2008	0.00	**210**	14	3	10.8	237.8	**1100**	**77**	<0.02
	04/20/2007	0.00	**70**	<50	<50	177	<347	**440**	**<250**	<0.02
	08/21/2006	0.00	**240**	19	<5	26.2	<290.2	**910**	**110**	<0.02
MW-22	07/16/2009	0.00	**1600**	<5	<5	12	<1622	13	**110**	<0.022
	09/23/2008	0.00	**980**	<10	<10	<10	<1010	12	**64**	<0.022
	01/14/2008	0.00	**1700**	<50	<50	<50	<1850	**<50**	**<250**	<0.02
	04/20/2007	0.00	**1400**	5.6	1.2	17.5	1424.3	9.7	**68**	<0.02
	08/21/2006	0.00	**5000**	<100	<100	<100	<5300	**<100**	**180**	<0.02
MW-23	07/16/2009	0.00	**1400**	<10	<10	<20	<1440	15	**<50**	<0.022
	09/23/2008	0.00	**1800**	<10	<10	<10	<1830	13	**94**	<0.022
	01/14/2008	0.00	**3100**	<50	<50	<50	<3250	**<50**	**<250**	<0.02
	04/20/2007	0.00	**3100**	<1	1	7.17	<3109.17	12	**110**	<0.02
	08/21/2006	0.00	**230**	<5	<5	<5	<245	<5	<5	<0.02
MW-24	07/16/2009	0.00	**97**	<1	<1	<2	<101	<1	<5	<0.023
	09/23/2008	0.00	**230**	<1	<1	<1	<233	<1	17	<0.022
	01/14/2008	0.00	**400**	<1	<1	<1	<403	<1	21	<0.02
	04/20/2007	0.00	**240**	<1	<1	1.7	<243.7	<1	**31**	<0.02
	08/21/2006	0.00	**390**	<5	<5	<5	<405	<5	**26**	<0.02
MW-25	07/16/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/23/2008	0.00	**660**	<5	<5	<5	<675	<5	**47**	<0.022
	01/14/2008	0.00	**400**	<10	<10	<10	<430	<10	**<50**	<0.02
	04/20/2007	0.00	**430**	<1	<1	1	<433	<1	**26**	<0.02
	08/21/2006	0.00	**700**	<5	<5	7.7	<717.7	<5	**35**	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l; * = estimated results.
Bold concentrations represent those greater than the respective RBSL.

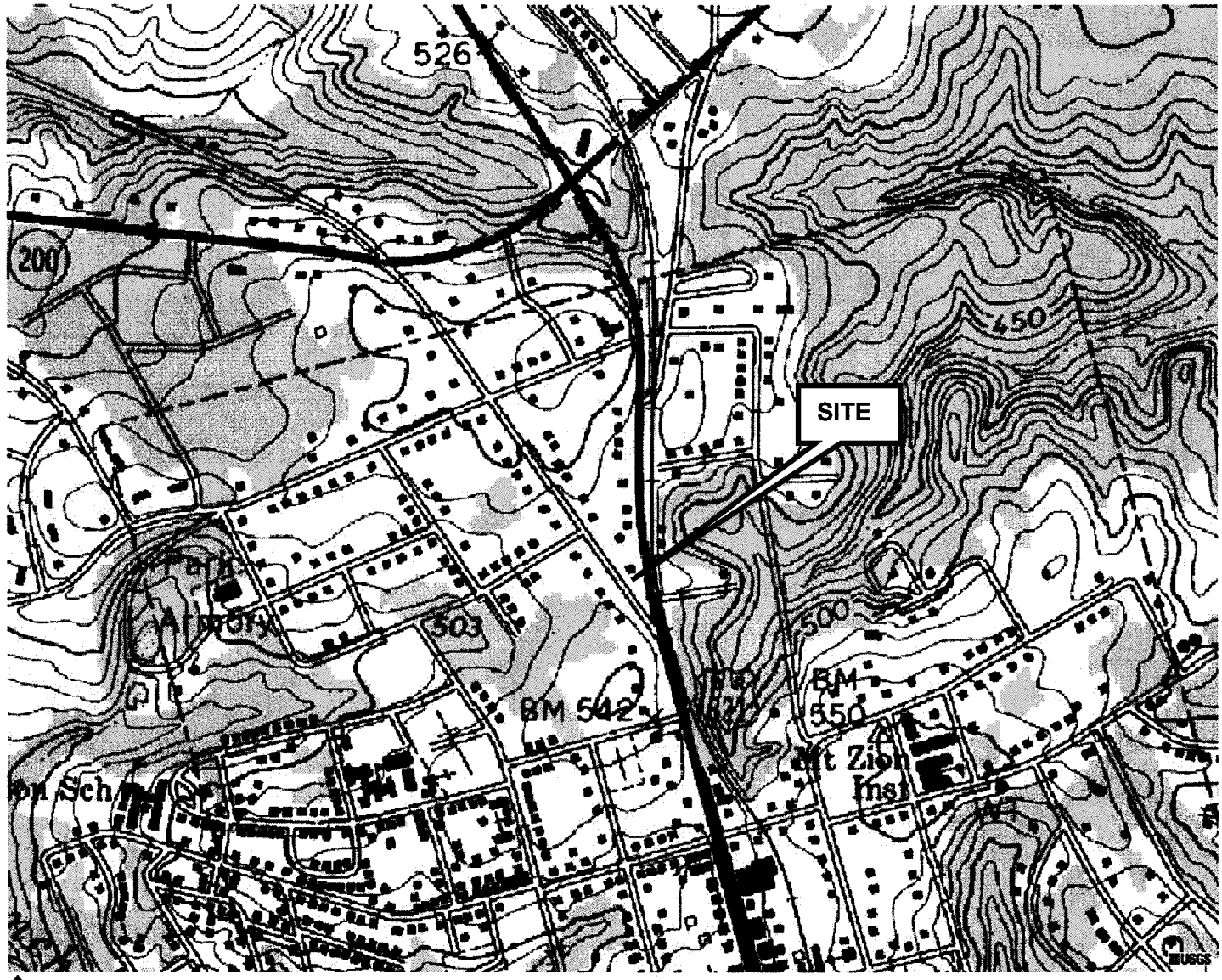
TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
MW-26	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.021
	09/23/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	<1	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	<1	<5	<0.021
DW-1	07/17/2009	0.00	<1	<1	<1	<2	<5	<1	<5	<0.022
	09/22/2008	0.00	1.1	20	4.7	29.3	55.1	<1	<5	<0.022
	01/15/2008	0.00	<1	140	130	720	<991	<1	**110**	**0.086**
	04/19/2007	0.00	<1	<1	<1	<1	<4	4	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	<5	<5	<5	<5	<20	<5	<5	<0.019
	03/08/2005	0.00	<5	8	<5	<5	<23	<5	<5	<0.02
	08/20/2003	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	01/11/2001	0.00	1.0	9.9	<1.0	3.1	<15.0	<5.0	<5.0	**<1.0**
	11/02/1998	0.00	<5.0	<5.0	<5.0	<15	<30.0	<5.0	<5.0	**<5.0**
DW-2	07/16/2009	0.00	**83**	<1	<1	<1	<86	8.3	6.2	<0.023
	09/23/2008	0.00	<1	<1	<1	<1	<4	8.6	<5	<0.022
	01/15/2008	0.00	**34**	<1	<1	<1	<37	7.7	<5	<0.02
	04/20/2007	0.00	**440**	<1	<1	<1	<443	11	**27**	<0.02
	08/21/2006	0.00	**450**	<5	<5	<5	<465	5.9	25	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

TABLE III (continued) Historical Groundwater Analytical Results Former United Exxon / Winnsboro, South Carolina										
Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	MTBE	Naphthalene	EDB
CK-1	07/17/2009	0.00	<1	<1	<1	<2	<5	13	<5	<0.022
	09/23/2008	0.00	<1	<1	<1	<1	<4	5.8	<5	<0.022
	01/14/2008	0.00	<1	<1	<1	<1	<4	16	<5	<0.02
	04/20/2007	0.00	<1	<1	<1	<1	<4	15	<5	<0.02
	08/21/2006	0.00	<5	<5	<5	<5	<20	<5	<5	<0.02
	06/27/2005	0.00	NS	NS	NS	NS	NA	NS	NS	NS
	03/08/2005	0.00	<5	<5	<5	<5	<20	8	<5	<0.02
	08/20/2003	0.00	**15**	<5	<5	<5	<30	**295**	<5	<0.02
	01/11/2001	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	1.2	<5.0	**<1.0**
	11/02/1998	0.00	<1.0	<1.0	<1.0	<1.0	<4.0	<1.0	<5.0	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**NA**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.
Bold concentrations represent those greater than the respective RBSL.

FIGURES



↑N

Figure 1: Site Location Map
Former United Exxon
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

ATC ASSOCIATES INC.

400 Northeast Drive, Unit Q
Columbia, South Carolina

P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

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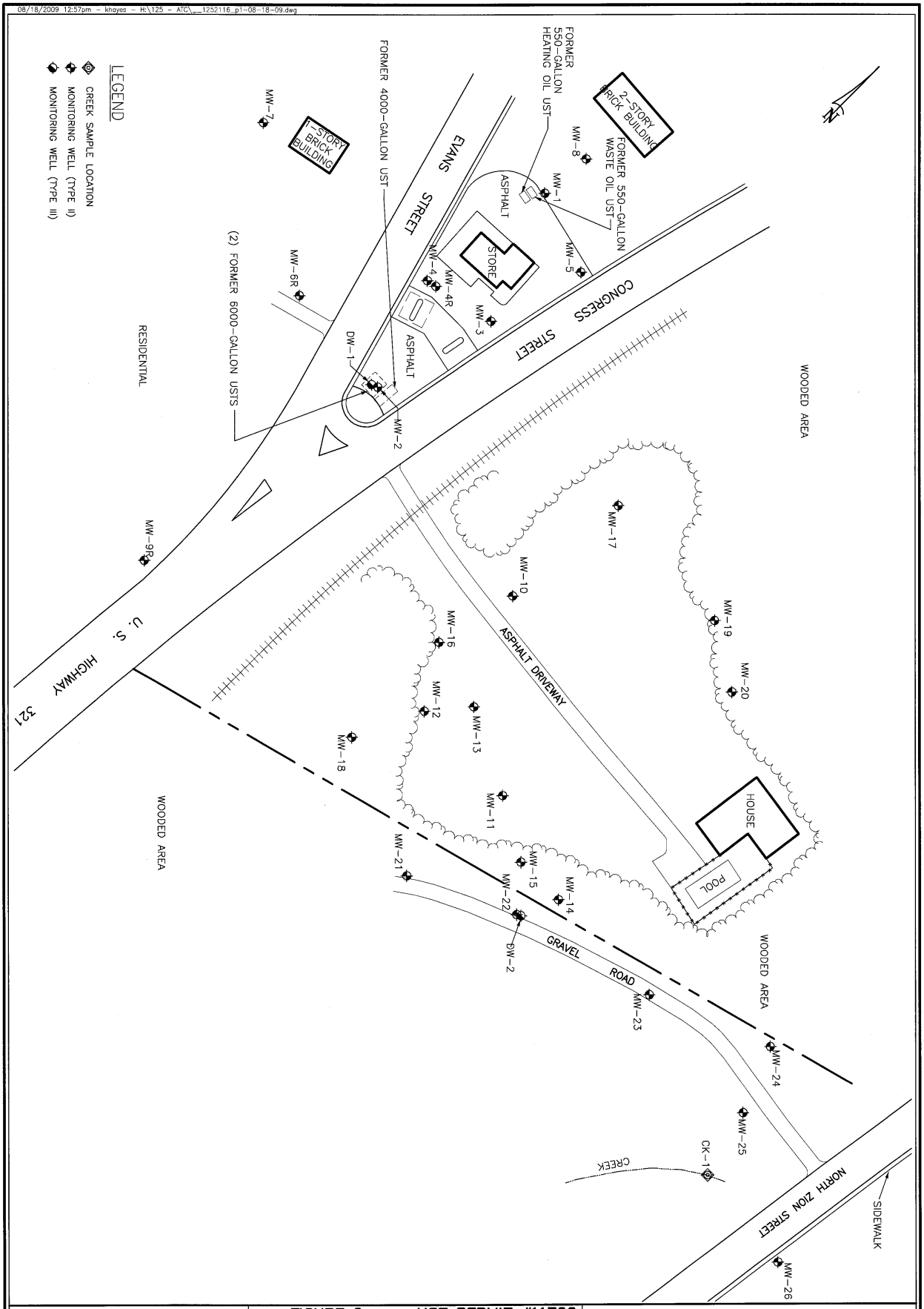


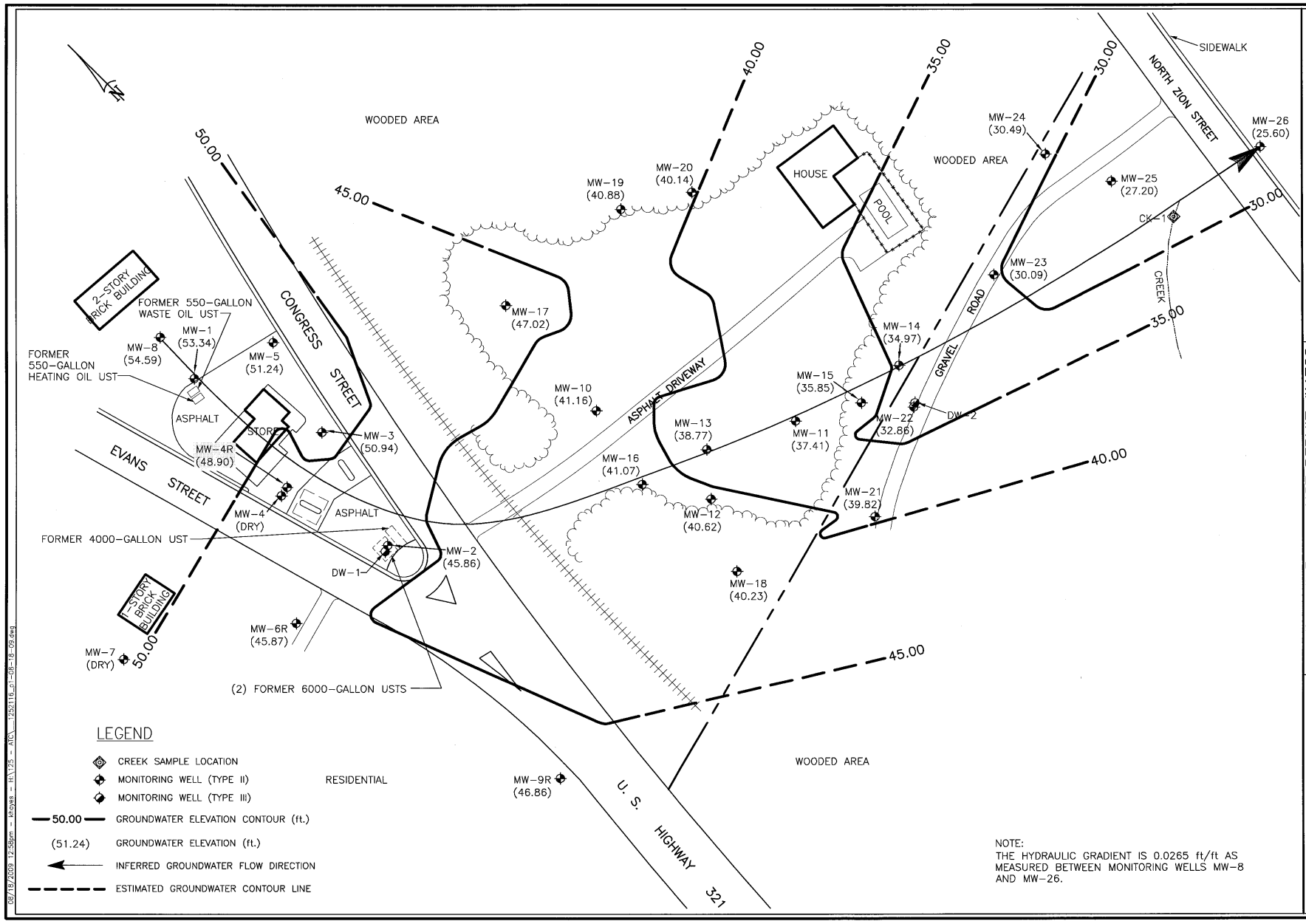
NOTES:

TITLE **FIGURE 2** **UST PERMIT #11760**

SITE MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		BB		1"=80'	08-18-2009	14.25384.0012



ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

TITLE **FIGURE 3** **UST PERMIT #11760**
GROUNDWATER ELEVATION CONTOUR MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
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NOTES:

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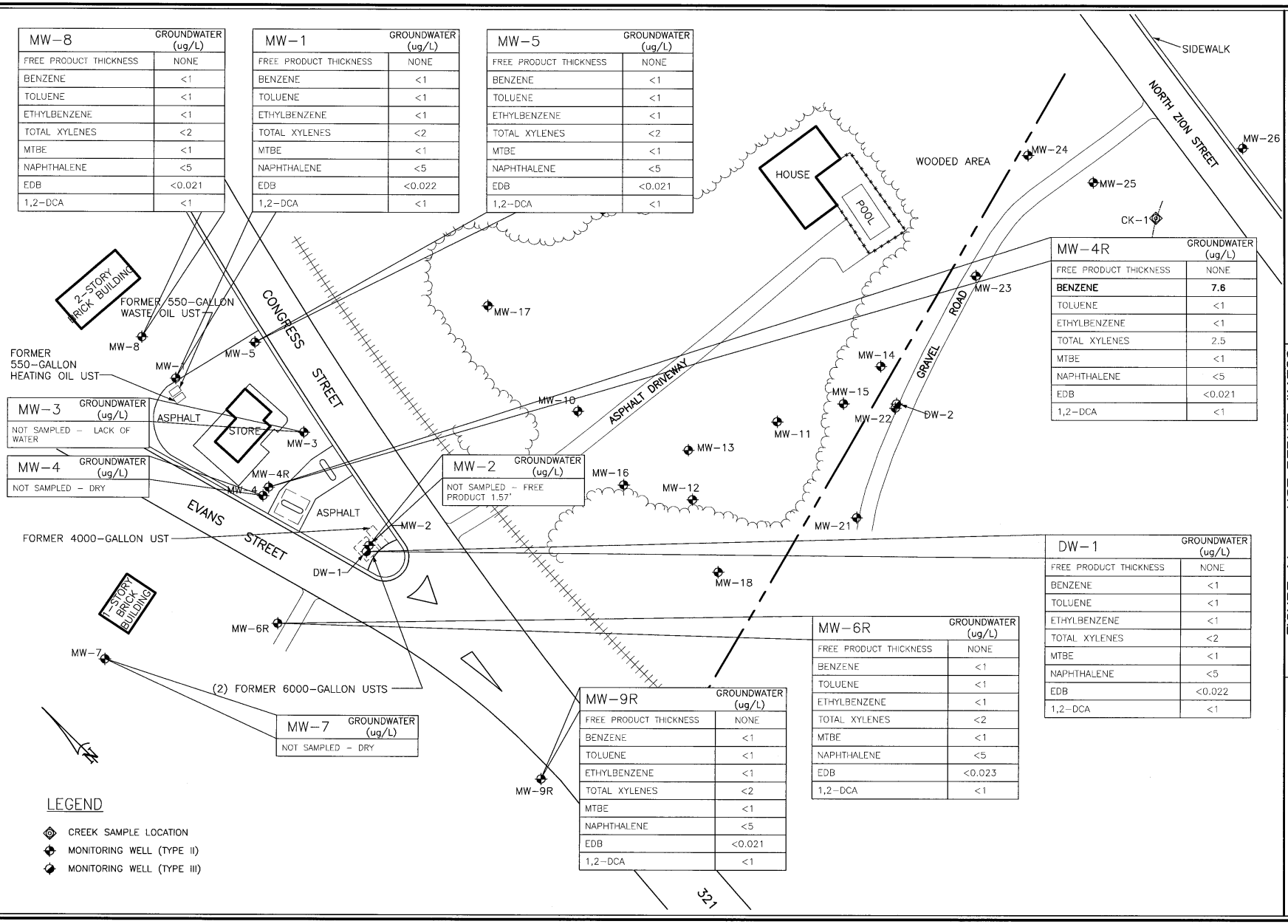

MW-8	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-5	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-4R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**7.6**
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	2.5
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-3	GROUNDWATER (ug/L)
NOT SAMPLED - LACK OF WATER	

MW-4	GROUNDWATER (ug/L)
NOT SAMPLED - DRY	

MW-2	GROUNDWATER (ug/L)
NOT SAMPLED - FREE PRODUCT 1.57'	

DW-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-6R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.023
1,2-DCA	<1

MW-9R	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-7	GROUNDWATER (ug/L)
NOT SAMPLED - DRY	

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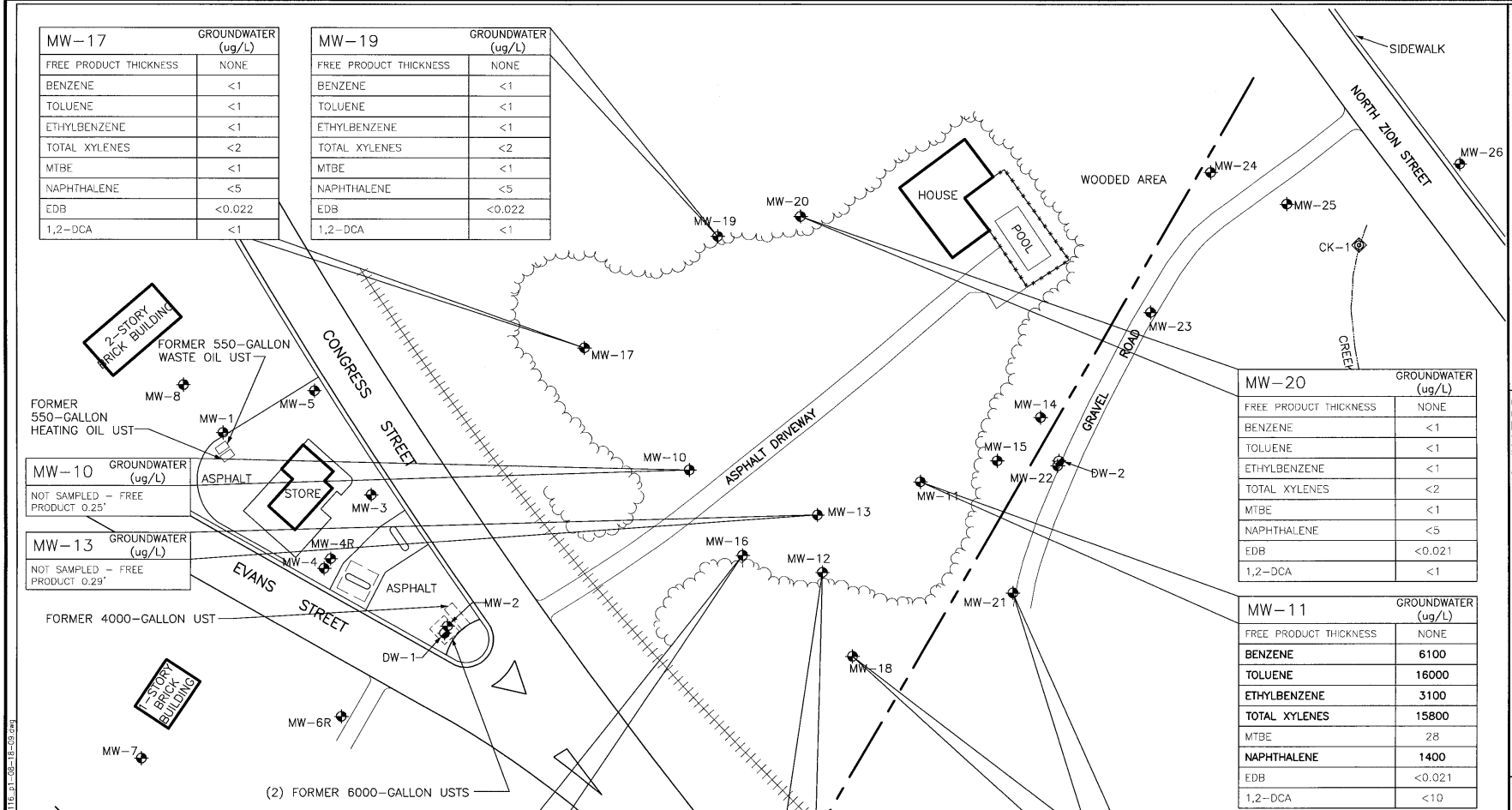
NOTES:

TITLE **FIGURE 4A UST PERMIT #11760**
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		BB		1"=80'	08-18-2009	14.25384.0012

08/18/2009 12:38pm - dhayes - H:\125 - ATC_1252116 p1-08-18-09.dwg



MW-17	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-19	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-10	GROUNDWATER (ug/L)
NOT SAMPLED – FREE PRODUCT 0.25'	

MW-13	GROUNDWATER (ug/L)
NOT SAMPLED – FREE PRODUCT 0.29'	

MW-20	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-11	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**6100**
TOLUENE	**16000**
ETHYLBENZENE	**3100**
TOTAL XYLENES	**15800**
MTBE	28
NAPHTHALENE	**1400**
EDB	<0.021
1,2-DCA	<10

MW-16	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**5500**
TOLUENE	**22000**
ETHYLBENZENE	**4600**
TOTAL XYLENES	**27500**
MTBE	**<100**
NAPHTHALENE	**2700**
EDB	<0.022
1,2-DCA	<100

MW-12	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**3300**
TOLUENE	<10
ETHYLBENZENE	16
TOTAL XYLENES	66
MTBE	**100**
NAPHTHALENE	**310**
EDB	<0.021
1,2-DCA	<10

MW-18	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**280**
TOLUENE	560
ETHYLBENZENE	92
TOTAL XYLENES	560
MTBE	**2300**
NAPHTHALENE	**67**
EDB	**0.092**
1,2-DCA	15

MW-21	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**33**
TOLUENE	<5
ETHYLBENZENE	<5
TOTAL XYLENES	<10
MTBE	**460**
NAPHTHALENE	<25
EDB	<0.022
1,2-DCA	6.2

LEGEND

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

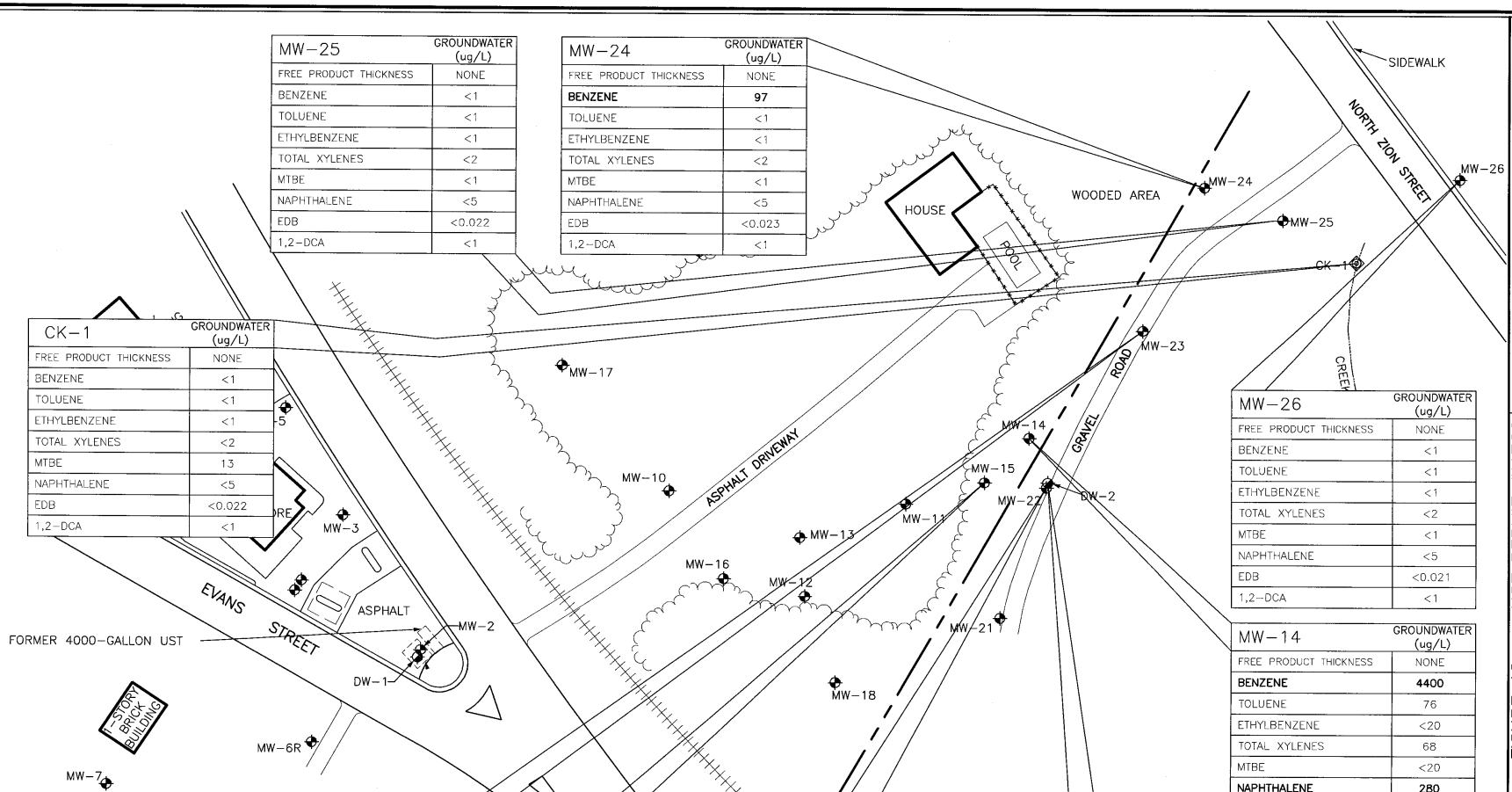
NOTES:

TITLE **FIGURE 4B UST PERMIT #11760**
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		BB		1"=80'	08-18-2009	14.25384.0012

08/18/2009 12:59pm – kbayes – H:\125 – ATC\...\1252116_p1_08-18-09.dwg



MW-25	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-24	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**97**
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.023
1,2-DCA	<1

CK-1	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	13
NAPHTHALENE	<5
EDB	<0.022
1,2-DCA	<1

MW-26	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	<1
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	<1
NAPHTHALENE	<5
EDB	<0.021
1,2-DCA	<1

MW-14	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**4400**
TOLUENE	76
ETHYLBENZENE	<20
TOTAL XYLENES	68
MTBE	<20
NAPHTHALENE	**280**
EDB	<0.022
1,2-DCA	<20

MW-23	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**1400**
TOLUENE	<10
ETHYLBENZENE	<10
TOTAL XYLENES	<20
MTBE	15
NAPHTHALENE	**<50**
EDB	<0.022
1,2-DCA	<10

MW-15	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**2300**
TOLUENE	42
ETHYLBENZENE	11
TOTAL XYLENES	25
MTBE	11
NAPHTHALENE	**150**
EDB	<0.022
1,2-DCA	<10

MW-22	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**1600**
TOLUENE	<5
ETHYLBENZENE	<5
TOTAL XYLENES	12
MTBE	13
NAPHTHALENE	**110**
EDB	<0.022
1,2-DCA	<5

DW-2	GROUNDWATER (ug/L)
FREE PRODUCT THICKNESS	NONE
BENZENE	**83**
TOLUENE	<1
ETHYLBENZENE	<1
TOTAL XYLENES	<2
MTBE	8.3
NAPHTHALENE	6.2
EDB	<0.023
1,2-DCA	<1

LEGEND

- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTES:

TITLE **FIGURE 4C** **UST PERMIT #11760**
CHEMICALS ON CONCERN IN GROUNDWATER MAP
UNITED EXXON
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

ATC ASSOCIATES INC.
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		BB		1"=80'	08-18-2009	14.25384.0012

08/18/2009 12:39pm – hkayes – H:\125 – ATC_1252116_p1-08-18-09.dwg

APPENDIX A

SCDHEC Correspondence

D H E C
PROMOTE PROTECT PROSPER
C. Earl Hunter, Commissioner
Promoting and protecting the health of the public and the environment.

APR 22 2009

MR BILLY KEENAN
KEENAN ENERGY COMPANY INC
P O BOX 3218
COLUMBIA SC 29230

Re: AFVR and GWS Directive
United Exxon, 401 N. Congress Street, Winnsboro, SC
UST Permit # 11760; CA# 35632 and # 35633
Release # 2 and # 3 reported August 1, 1997
AFVR Report received February 18, 2009
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing ATC Associates, Inc. The Program has reviewed the referenced report and determined the next necessary scope of work to be four Aggressive Fluid Vapor Recovery (AFVR) events to remove free phase product from MW-2, MW-10, and MW-16 followed by a comprehensive groundwater sampling event. The first two AFVR events should be conducted on MW-2 approximately three weeks apart. The third AFVR event should be performed on MW-16 approximately two weeks after the second AFVR event. The fourth AFVR event should be performed on MW-10 approximately two weeks after the third AFVR event.

Cost Agreements # **35632** and # **35633** has been approved in the amount shown on the enclosed cost agreement for the AFVR events and comprehensive sampling event for all monitoring wells associated with the release.

- The first 8-hour AFVR event should be conducted within 30 days of the date of this letter.
- Groundwater samples from all monitoring wells associated with the release and the nearby creek should be collected no earlier than 30 days after the fourth AFVR event and analyzed for BTEX, Naphthalene, MTBE, and 1,2-DCA by EPA method 8260B and EDB by EPA method 8011.

The AFVR portion of the report should include the following:

- A narrative portion documenting the AFVR events noting site conditions, the name of the AFVR contractor, field personnel, date, time the AFVR events started and ended, ambient air temperature, and general weather conditions during the AFVR events.
- A brief description of the completed work scope and any relevant descriptions pertaining to the data tables.
- A table summarizing the airflow (in CFM) and volatile air emissions concentrations collected from the stack of the truck every thirty minutes through the duration of the event. The table shall also document which well(s) were being recovered from during that time interval.
- A table summarizing the magnehelic gauge measurements from all applicable wells on a thirty-minute time interval.
- The total volume of water recovered (gallons).
- The total volume of free phase product recovered (typically measured with a product/water interface device inserted into the top of the tanker at the completion of the event and then converted to an approximate volume).

- The total weight of petroleum removed as vapor. This is calculated based on the airflow rate and the concentration of vapor.
- A table documenting the free product thickness in each well before and after the recovery event.
- Scaled base map depicting the location of the extraction wells and the surrounding wells equipped with magnehelic gauges.
- Recovered free phase petroleum and groundwater must be accepted by a permitted treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report.

Groundwater sampling results should be in a monitoring report containing the following items:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall be presented in tabular format.
- Should any monitoring wells or water supply wells not be sampled, note the reason for which the sampling was not conducted on such wells.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well.
- Manifests for any contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer currently registered in the State of South Carolina.

ATC Associates, Inc. can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

A Report of Findings and the invoice is due within 120 days from the date of this letter and with in 45 days from the sampling date. Interim invoices may not be submitted for this scope of work. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Department is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Department for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and to audit project records at any time during the project or after completion of work.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation-derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations, based on laboratory analysis, are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence or inquiries regarding this project, please reference UST Permit # **11760**. If you have any questions, please feel free to contact me by phone at (803) 896-4085, by fax at (803) 896-6649, or by email at dolphibm@dhec.sc.gov.

Regards,

Brian Dolphin, Geologist
Corrective Action Section
Assessment and Corrective Action Division
Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved Cost Agreement
cc: ATC Associates, Inc., 400 Northeast Drive, Unit Q, Columbia, SC 29203 (w/enc)
Technical file (w/enc)

APPENDIX B

AFVR Summary Reports

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

April 28, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On April 28, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-2 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 7:00am and ending at 3:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 168 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client:ATC Columbia Facility: United Exxon Technician: Chris Driver

Facility Address: 401 North Congress St. Winnsboro, SC Date: 28 Apr 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-2	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
7:00am	4	9				54.0	1626	690	78.0
7:30am	4	9				56.0	1585	650	78.2
8:00am	4	9				54.3	1738	890	101.1
8:30am	4	9				47.2	1723	1190	109.2
9:00am	4	9				47.0	1686	970	111.0
9:30am	4	9				43.0	1644	1020	114.0
10:00am	4	9				42.5	1560	1020	119.3
10:30am	4	9				38.5	1421	1000	125.6
11:00am	4	9				38.0	1262	1000	120.5
11:30am	4	9				39.9	1581	700	123.0
12:00pm	4	9				37.0	1460	810	125.0
12:30pm	4	9				34.0	1582	500	128.1
1:00pm	4	9				34.0	1450	580	131.1
1:30pm	4	9				35.5	1510	600	137.2
2:00pm	4	9				34.0	1480	560	142.0
2:30pm	4	9				31.5	1351	720	146.5
3:00pm	4	9				32.0	1433	700	152.0

Well Gauging Data:			Before AFVR Event			After AFVR Event			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-2			52.24	53.20		52.84	53.89		

Comments: 8 hour AFVR with Carbon unit

Total of 168 gallons of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 28 Apr 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-2	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Chris Driver		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	7:00am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0		1626	600	19.9	10.0
	7:30am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1585	566	18.3	9.2
	8:00am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1738	774	27.5	13.7
	8:30am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1723	1035	36.4	36.4
	9:00am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1686	844	29.1	29.1
	9:30am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1644	887	29.8	29.8
	10:00am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1560	887	28.3	14.1
	10:30am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1421	870	25.2	12.6
	11:00am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1262	870	22.4	11.2
	11:30am	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1581	609	19.7	9.8
	12:00pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1460	705	21.0	10.5
	12:30pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1582	435	14.1	7.0
	1:00pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1450	505	14.9	7.5
	1:30pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1510	522	16.1	8.0
	2:00pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1480	487	14.7	7.4
	2:30pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1351	626	17.3	8.6
	3:00pm	4	9	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1433	609	17.8	8.9

Extraction Well	Stinger Depth	Breather Port
MW-2		

Hydrocarbons Removed (vapor):	234	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	30	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	168	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 168 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number 28951

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name
A&D Environmental Services (SC), LLC (fka) HuWay Environmental Services, LLC
U.S. EPA ID Number

7. Transporter 2 Company Name
U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073
U.S. EPA ID Number SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL City water	001	TT	168	G.	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information
In Case of Emergency Call: 803-957-9175 A&D (SC Job #88/93

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature
Month 04 Day 28 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: Chris Driver
Signature
Month 04 Day 28 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

DESIGNATED FACILITY

17. Discrepancy
17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection
Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number
Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name: James Lovette
Signature
Month 4 Day 28 Year 09

GENERATOR

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

May 20, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On May 20, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-2 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 7:30am and ending at 3:30pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 840 gallons of liquids were removed during the event.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Clay Sims

Facility Address: 401 North Congress St. Winnsboro, SC Date: 20 May 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-2	MW-	MW-	MW-	HUM	PPM	FLOW	TEMP
7:30am	4	15				66.8	1211	120	94.1
8:00am	4	15				60.5	1352	144	104.4
8:30am	4	15				67.3	1388	156	109.9
9:00am	4	15				38.7	1343	346	122.6
9:30am	4	15				47.8	1297	241	119.4
10:00am	4	15				40.1	1411	240	127.1
10:30am	4	15				48.3	1588	194	118.1
11:00am	4	15				51.1	1513	202	124.3
11:30am	4	15				47.3	1577	241	121.0
12:00pm	4	15				51.4	1466	231	132.8
12:30pm	4	15				60.2	1241	262	129.7
1:00pm	4	15				54.7	1302	211	141.3
1:30pm	4	15				61.3	1461	246	128.7
2:00pm	4	15				57.6	1237	210	137.6
2:30pm	4	15				68.4	1389	276	136.4
3:00pm	4	15				53.6	1321	222	121.6
3:30pm	4	15				62.6	1368	211	128.7

Well Gauging Data:			Before AFVR Event		After AFVR Event			
Well No.	Diam.	TD ft	DTP ft	DTW	DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-2			52.0	54.63	0	51.10		

Comments: 8 hour AFVR with Carbon unit

Total of 840 gallons of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date:20 May 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-2	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Clay Sims		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	7:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0		1211	104	2.6	1.3
	8:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1352	125	3.5	1.7
	8:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1388	136	3.8	1.9
	9:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1343	301	8.3	8.3
	9:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1297	210	5.6	5.6
	10:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1411	209	6.0	6.0
	10:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1588	169	5.5	2.7
	11:00am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1513	176	5.4	2.7
	11:30am	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1577	210	6.8	3.4
	12:00pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1466	201	6.0	3.0
	12:30pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1241	228	5.8	2.9
	1:00pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1302	184	4.9	2.4
	1:30pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1461	214	6.4	3.2
	2:00pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1237	183	4.6	2.3
	2:30pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1389	240	6.8	3.4
	3:00pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1321	193	5.2	2.6
	3:30pm	4	15	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1368	184	5.1	2.6

Extraction Well	Stinger Depth	Breather Port
MW-2		

Hydrocarbons Removed (vapor):	56	Pounds
Hydrocarbons Removed (liquids):		Gallons
Total Hydrocarbons Removed:	7	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	840	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 840 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:

2. Page 1 of 1

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 29052

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name:

U.S. EPA ID Number:

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	1	TT	840 est	
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC Job #88794

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng Signature: Month 5 Day 20 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Clay Sims Signature: Month 5 Day 20 Year 09

Transporter 2 Printed/Typed Name: Signature: Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette Signature: Month 5 Day 20 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 8/06) DESIGNATED FACILITY TO GENERATOR

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

June 2, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On June 2, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-16 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:15am and ending at 4:15pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 234 gallons of liquids were removed during the event. Of that approximately 18 gallons was free product.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Carlton Sawyer

Facility Address: 401 North Congress St. Winnsboro, SC Date: 2 Jun 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-16	MW	MW-	MW-	HUM	PPM	FLOW	TEMP
8:15am	4	24				73.6	876	180	76.2
8:45am	4	24				61.1	2314	270	89.8
9:15am	4	24				56.7	2184	290	94.2
9:45am	4	24				52.6	1671	290	99.8
10:15am	4	24				51.9	1729	280	102.5
10:45am	4	24				53.6	1987	270	106.3
11:15am	4	24				56.7	2119	260	109.1
11:45am	4	24				51.2	1976	280	120.4
12:15pm	4	24				53.8	1824	270	131.6
12:45pm	4	24				55.1	1699	270	148.1
1:15pm	4	24				56.7	1733	270	158.0
1:45pm	4	24				54.3	1667	260	158.0
2:15pm	4	24				53.1	1429	280	158.0
2:45pm	4	24				52.9	1721	270	158.0
3:15pm	4	24				51.6	1676	290	158.0
3:45pm	4	24				52.7	1564	270	158.0
4:15pm	4	24				51.4	1723	290	158.0

Well Gauging Data:			**Before AFVR Event**		**After AFVR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW	DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-16			44.96	45.36	0	46.32		

Comments: 8 hour AFVR with Carbon unit

Total of gallons 234 of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 2 Jun 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-16	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Carlton Sawyer		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0		876	157	2.8	1.4
	8:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2314	235	11.1	5.5
	9:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2184	252	11.3	5.6
	9:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1671	252	8.6	8.6
	10:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1729	244	8.6	8.6
	10:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1987	235	9.5	9.5
	11:15am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	2119	226	9.8	4.9
	11:45am	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1976	244	9.8	4.9
	12:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1824	235	8.7	4.4
	12:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1699	235	8.1	4.1
	1:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1733	235	8.3	4.2
	1:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1667	226	7.7	3.9
	2:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1429	244	7.1	3.6
	2:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1721	235	8.3	4.1
	3:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1676	252	8.6	4.3
	3:45pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1564	235	7.5	3.8
	4:15pm	4	24	0	0	0	0	0	0	0	0	0	0	0	0	0	>	1723	252	8.9	4.4

Extraction Well	Stinger Depth	Breather Port
MW-16		

Hydrocarbons Removed (vapor):	86	Pounds
Hydrocarbons Removed (liquids):	18	Gallons
Total Hydrocarbons Removed:	29	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	234	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 234 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone: 803-957-9175
4. Waste Tracking Number: 29097

5. Generator's Name and Mailing Address: United Exxon, 401 North Congress Street, Winnsboro, SC

Generator's Site Address (if different than mailing address): ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name: A&D Environmental Services (SC), LLC — U.S. EPA ID Number: SCD987598331

8. Designated Facility Name and Site Address: A&D Environmental Services (SC) LLC, 1741 Calks Ferry Road, Lexington, SC 29073 — U.S. EPA ID Number

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL			APPR 234	GAL	
2.	Oily water					
3.						
4.						

13. Special Handling Instructions and Additional Information: 18 gals free product

In Case of Emergency Call: 803-957-9175 — A&D (SC Job #88795

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng — Signature — Month 6 Day 2 Year 09

15. International Shipments: ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Carlton B. Sawyer — Signature — Month 6 Day 2 Year 09

Transporter 2 Printed/Typed Name — Signature — Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space: ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator) — Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette — Signature — Month 6 Day 2 Year 09

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

Lexington Office
1741 Calks Ferry Rd.
Lexington, SC 29073

Branch Office
305 South Main Street
Mauldin, SC 29662

Branch Office
1915 Brentwood Street
High Point, NC 27260

June 16, 2009

Mr. Bob Bolton
ATC and Associates
400 Northeast Drive, Suite Q
Columbia, SC 29203

RE: Aggressive Fluid Vapor Recovery (AFVR)
United Exxon, 401 North Congress Street
Winnsboro, SC

Dear Mr. Bolton:

On June 16, 2009 A&D Environmental Services (SC) LLC performed an Aggressive Fluid Vapor Recovery (AFVR) event at the above referenced location. The AFVR was performed for 8 hours on monitoring well MW-10 with off-gas treatment. The well was gauged before and after the event. Readings were taken every 30 minutes beginning at 8:00am and ending at 4:00pm.

Prior to the event and upon completion of the event the product and water levels were checked in the well. Approximately 487 gallons of liquids were removed during the event. No free product recovered.

Enclosed is the field data sheet along with the calculation spreadsheet for the event. A copy of the disposal manifest is also enclosed.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at 803-957-9175.

Sincerely,
A&D Environmental Services (SC) LLC

Bill Aikins

Bill Aikins
Project Manager

Client: ATC Columbia Facility: United Exxon Technician: Clay Sims

Facility Address: 401 North Congress St. Winnsboro, SC Date: 16 Jun 09

Extraction Well Head Vacuum (in.Hg)

TIME:	IN LT	MW-10	MW	MW-	MW-	HUM	PPM	FLOW	TEMP
8:00am	4	12				67.6	234	190	148.7
8:30am	4	12				69.4	286	205	158.7
9:00am	4	12				64.3	226	205	161.0
9:30am	4	12				70.9	312	210	158.0
10:00am	4	12				62.3	268	205	149.8
10:30am	4	12				67.4	364	205	157.4
11:00am	4	12				80.1	24.3	208	149.4
11:30am	4	12				18.6	38.5	539	164.0
12:00pm	4	12				19.4	48.6	440	152
12:30pm	4	12				30.1	32.4	400	159
1:00pm	4	12				17.6	41.3	420	167
1:30pm	4	12				18.9	57.3	512	162
2:00pm	4	12				27.6	80.1	359	165
2:30pm	4	12				28.8	43.6	381	163
3:00pm	4	12				19.6	56.1	411	198
3:30pm	4	12				23.1	37.6	588	176
4:00pm	4	12				29.8	51.6	488	162

Well Gauging Data:			**Before AFVR Event**			**After AFVR Event**			
Well No.	Diam.	TD ft	DTP ft	DTW		DTP	DTW (ft)	SPH (ft)	Corr. DTW Change (ft)
MW-10			0	47.0		0	45.10		

Comments: 8 hour AFVR with Carbon unit

Total of 487 gallons of liquids generated this event.

A&D (SC) FIELD DATA SHEET

Client: ATC Columbia	Site: United Exxon, 401 North Congress St., Winnsboro, SC	Date: 16 Jun 09	Event #

Extraction Well(s)	Time hh:mm	Extraction Well-head Vacuum (in Hg)																Vacuum Truck Exhaust			
		Inlet	MW-10	0	0	0	0	0	0	0	0	0	0	0	0	0		Concent-ration PPM	Flow Rate CFM	Removal Rate LBS/HR	Interval Removal LBS
Technician: Clay Sims		Vacuum Truck # 117																Tank Capacity: 2,600		Stack Diameter: 4"	
	8:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0		234	165	0.8	0.4
	8:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	286	178	1.0	0.5
	9:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	226	178	0.8	0.4
	9:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	312	183	1.2	1.2
	10:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	268	178	1.0	1.0
	10:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	364	178	1.3	1.3
	11:00am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	24.3	181	0.1	0.0
	11:30am	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	38.5	469	0.4	0.2
	12:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	48.6	383	0.4	0.2
	12:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	32.4	348	0.2	0.1
	1:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	41.3	365	0.3	0.2
	1:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	57.3	445	0.5	0.3
	2:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	80.1	312	0.5	0.3
	2:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	43.6	331	0.3	0.1
	3:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	56	358	0.4	0.2
	3:30pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	38	512	0.4	0.2
	4:00pm	4	10	0	0	0	0	0	0	0	0	0	0	0	0	0	>	51.6	425	0.4	0.2

Extraction Well	Stinger Depth	Breather Port
MW-10		

Hydrocarbons Removed (vapor):	7	Pounds
Hydrocarbons Removed (liquids):	0	Gallons
Total Hydrocarbons Removed:	1	Equiv. Gal
Molecular Weight Utilized:	130	g/mole
Disposal Facility: Onsite*		
Total Liquids Removed:	487	Gallons

Comments: 8 hr AFVR with off-gas treatment

Total of 487 gallons of liquids generated this event.

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 29167

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SCD987598331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	1	TT	487 gal		No product
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175 A&D (SC Job #88796

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng

Signature

Month 6 Day 16 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Clay Sims (Clay Sims)

Signature

Month 6 Day 16 Year 09

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette

Signature

Month 6 Day 16 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

APPENDIX C

Groundwater Sampling Field Measurements

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	43.20	feet
Total Well Depth (TWD)	48.0	feet
Length of the water column (LWC=TWD-DGW)	4.80	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1300	
pH (s.u.)							5.13	
Specific Conductivity (µmhos/cm)							245	
Water Temperature (°C)							12.71	
Dissolved Oxygen							6.89	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW[redacted]
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	1.57	feet
Depth to Free Product (DFP)	51.96	feet
Depth to Ground Water (DGW)	53.53	feet
Total Well Depth (TWD)	54.0	feet
Length of the water column (LWC=TWD-DGW)	0.47	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NOT SAMPLED - PRODUCT

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW3
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	44.82	feet
Total Well Depth (TWD)	45.0	feet
Length of the water column (LWC=TWD-DGW)	0.18	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NOT ENOUGH WATER IN WELL TO OBTAIN SAMPLE

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW4R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	49.24	feet
Total Well Depth (TWD)	60.0	feet
Length of the water column (LWC=TWD-DGW)	10.76	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1200	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NO ENOUGH TO OBTAIN READING

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW5
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 43.17 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 1.83 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1100	
pH (s.u.)							4.93	
Specific Conductivity (µmhos/cm)							141	
Water Temperature (°C)							23.58	
Dissolved Oxygen							727	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW6R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 58.04 feet
Total Well Depth (TWD) 65.0 feet
Length of the water column (LWC=TWD-DGW) 6.94 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							930	
pH (s.u.)							5.81	
Specific Conductivity (µmhos/cm)							142	
Water Temperature (°C)							21.80	
Dissolved Oxygen							9.05	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW7
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) — feet
Total Well Depth (TWD) 52.0 feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW8
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 43.04 feet
Total Well Depth (TWD) 45.0 feet
Length of the water column (LWC=TWD-DGW) 1.94 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1130	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NOT ENOUGH WATER IN WELL TO OBTAIN READING

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW9R
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	54.27	feet
Total Well Depth (TWD)	65.0	feet
Length of the water column (LWC=TWD-DGW)	10.73	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							9.00	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: No reading; Silted in; Little water

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW10
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.25	feet
Depth to Free Product (DFP)	47.04	feet
Depth to Ground Water (DGW)	47.29	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)		feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: 0.25' of Free Product

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW11
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 33.22 feet
Total Well Depth (TWD) 38.0 feet
Length of the water column (LWC=TWD-DGW) 5.78 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1115	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW12
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	40.59	feet
Total Well Depth (TWD)	50.00	feet
Length of the water column (LWC=TWD-DGW)	9.41	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1025	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODN

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time _____ Received by Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW13
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:	0.29	feet
Depth to Free Product (DFP)	42.19	feet
Depth to Ground Water (DGW)	42.48	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	7.52	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: NOT SAMPLED - PRODUCT

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW14
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 3.58 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 5.42 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1210	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW15
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 36.21 feet
Total Well Depth (TWD) 40.0 feet
Length of the water column (LWC=TWD-DGW) 3.79 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1145	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW16
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 44.12 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 5.88 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1005	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW17
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 38.64 feet
Total Well Depth (TWD) 50.0 feet
Length of the water column (LWC=TWD-DGW) 11.36 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0945	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW18
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	40.60	feet
Total Well Depth (TWD)	50.0	feet
Length of the water column (LWC=TWD-DGW)	9.40	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1050	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: DOON

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by Date/Time Received by Date/Time

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW19
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	41.39	feet
Total Well Depth (TWD)	46.0	feet
Length of the water column (LWC=TWD-DGW)	4.61	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0925	
pH (s.u.)							5.26	
Specific Conductivity (µmhos/cm)							176	
Water Temperature (°C)							20.11	
Dissolved Oxygen							2.10	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW20
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 4.31 feet
Total Well Depth (TWD) 46.0 feet
Length of the water column (LWC=TWD-DGW) 4.69 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							0905	
pH (s.u.)							5.39	
Specific Conductivity (µmhos/cm)							129.	
Water Temperature (°C)							20.66	
Dissolved Oxygen							6.43	
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-21
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 27.58 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 12.42 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							12:30	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-22
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 32.32 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 7.68 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1305	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-23
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 32.06 feet
Total Well Depth (TWD) 40.00 feet
Length of the water column (LWC=TWD-DGW) 7.94 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1340	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-24
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 19.01 feet
Total Well Depth (TWD) 46.00 feet
Length of the water column (LWC=TWD-DGW) 26.99 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1505	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-25
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) 14.43 feet
Total Well Depth (TWD) 25.00 feet
Length of the water column (LWC=TWD-DGW) 10.57 feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1540	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: odor

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # MW-26
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	18.23	feet
Total Well Depth (TWD)	35.0	feet
Length of the water column (LWC=TWD-DGW)	16.77	feet

1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling NP gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)								830
pH (s.u.)								6.01
Specific Conductivity (µmhos/cm)								248
Water Temperature (°C)								20.87
Dissolved Oxygen								9.44
PID readings, if required								

Remarks: _____

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # DW1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	52.89	feet
Total Well Depth (TWD)	80.0	feet
Length of the water column (LWC=TWD-DGW)	27.11	feet
1 casing volume (CV=LWC X C)= ____ X ____	= 4.00	gals
3 casing volume (3 X CV)= 12.0 gals (standard purge volume)		

Total Volume of Water Purged Before Sampling 12 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1030	
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: ODOR

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # DW-2
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): 3.14 x $(D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness:		feet
Depth to Free Product (DFP)		feet
Depth to Ground Water (DGW)	33.09	feet
Total Well Depth (TWD)	80.00	feet
Length of the water column (LWC=TWD-DGW)	46.91	feet

1 casing volume (CV=LWC X C)= 46.91 X .163 = 8 gals
3 casing volume (3 X CV)= 24 gals (standard purge volume)

Total Volume of Water Purged Before Sampling 18.0 gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							1430	
pH (s.u.)	6.84	7.02					7.24	
Specific Conductivity (µmhos/cm)	168	171					162	
Water Temperature (°C)	21.31	19.08					18.55	
Dissolved Oxygen	5.62	7.77					4.62	
PID readings, if required								

Remarks: BAILED DRY

South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management Underground Storage Tank Program

Field Data Information Sheet for Groundwater Sampling

Date (mm/dd/yy): 7/16/09
Field Personnel: CINDY, NG JOHN MONEGHAN
General Weather Conditions: CLEAR, HOT

Ambient Air Temperature: _____ °C

Quality Assurance

pH Meter		Conductivity Meter	
serial no.		serial no.	
pH=4.0		standard	
pH=7.0		standard	
pH=10.0		standard	

Chain of Custody

Relinquished by _____ Date/Time _____ Received by _____ Date/Time _____

Facility Name: UNITED EXXON
Site ID#: _____ Monitoring Well # CK-1
Water Supply Well Public _____ Private _____

Monitoring Well Diameter (D): 2" feet

Conversion Factor (C): $3.14 \times (D/2)^2$ for a 2 inch well C=0.163
for a 4 inch well C=0.652

* Free Product Thickness: _____ feet
Depth to Free Product (DFP) _____ feet
Depth to Ground Water (DGW) _____ feet
Total Well Depth (TWD) _____ feet
Length of the water column (LWC=TWD-DGW) _____ feet
1 casing volume (CV=LWC X C)= _____ X _____ = _____ gals
3 casing volume (3 X CV)= _____ gals (standard purge volume)

Total Volume of Water Purged Before Sampling _____ gals.
*If free product is present over 1/8 inch, sampling will not be required.

Cumulative Volume Purged (gallons)	Inital	1st Vol	2nd Vol	3rd Vol	4th Vol	5th Vol	Post Sampling	
Time (military)							~~1605~~	802
pH (s.u.)								
Specific Conductivity (µmhos/cm)								
Water Temperature (°C)								
Dissolved Oxygen								
PID readings, if required								

Remarks: _____

APPENDIX D

Laboratory Analytical Results and Chain-of-Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

09070781

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	7/27/2009	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: _____ PAGES

8/13/2009

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

09070781

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 7/27/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	09070781-01	Water	7/17/2009 1:00:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-4R	09070781-02	Water	7/17/2009 12:00:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-5	09070781-03	Water	7/17/2009 11:00:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-6R	09070781-04	Water	7/17/2009 9:30:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-8	09070781-05	Water	7/17/2009 11:30:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-9R	09070781-06	Water	7/17/2009 9:00:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-11	09070781-07	Water	7/16/2009 11:15:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-12	09070781-08	Water	7/16/2009 10:25:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-14	09070781-09	Water	7/16/2009 12:10:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-15	09070781-10	Water	7/16/2009 11:45:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-16	09070781-11	Water	7/16/2009 10:05:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-17	09070781-12	Water	7/16/2009 9:45:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-18	09070781-13	Water	7/16/2009 10:50:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-19	09070781-14	Water	7/16/2009 9:25:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-20	09070781-15	Water	7/16/2009 9:05:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-21	09070781-16	Water	7/16/2009 12:30:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-22	09070781-17	Water	7/16/2009 1:05:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-23	09070781-18	Water	7/16/2009 1:40:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-24	09070781-19	Water	7/16/2009 3:05:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-25	09070781-20	Water	7/16/2009 3:40:00 PM	7/18/2009 9:00:00 AM	282603-282605	☐
MW-26	09070781-21	Water	7/17/2009 8:30:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
DW-1	09070781-22	Water	7/17/2009 10:30:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐
CK-1	09070781-23	Water	7/17/2009 8:00:00 AM	7/18/2009 9:00:00 AM	282603-282605	☐

8/13/2009

Alberto E. Granados
Project Manager

Date

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-1 **Collected:** 07/17/2009 13:00 **SPL Sample ID:** 09070781-01

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/21/09 23:27	LDD	3177534
Surr: 1-Chloro-2-fluorobenzene	91.1		%	33-151	1	07/21/09 23:27	LDD	3177534

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.08

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 2:50	MCB	3172816
Benzene	ND			1	1	07/21/09 2:50	MCB	3172816
Ethylbenzene	ND			1	1	07/21/09 2:50	MCB	3172816
Methyl tert-butyl ether	ND			1	1	07/21/09 2:50	MCB	3172816
Naphthalene	ND			5	1	07/21/09 2:50	MCB	3172816
Toluene	ND			1	1	07/21/09 2:50	MCB	3172816
m,p-Xylene	ND			2	1	07/21/09 2:50	MCB	3172816
o-Xylene	ND			2	1	07/21/09 2:50	MCB	3172816
Xylenes,Total	ND			2	1	07/21/09 2:50	MCB	3172816
Surr: 1,2-Dichloroethane-d4	91.8		%	75-120	1	07/21/09 2:50	MCB	3172816
Surr: 4-Bromofluorobenzene	97.6		%	89-109	1	07/21/09 2:50	MCB	3172816
Surr: Toluene-d8	97.7		%	89-110	1	07/21/09 2:50	MCB	3172816

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: MW-4R **Collected:** 07/17/2009 12:00 **SPL Sample ID:** 09070781-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/21/09 23:46	LDD	3177535
Surr: 1-Chloro-2-fluorobenzene	94.7		%	33-151	1	07/21/09 23:46	LDD	3177535

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.06

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 3:15	MCB	3172817
Benzene	7.6			1	1	07/21/09 3:15	MCB	3172817
Ethylbenzene	ND			1	1	07/21/09 3:15	MCB	3172817
Methyl tert-butyl ether	ND			1	1	07/21/09 3:15	MCB	3172817
Naphthalene	ND			5	1	07/21/09 3:15	MCB	3172817
Toluene	ND			1	1	07/21/09 3:15	MCB	3172817
m,p-Xylene	2.5			2	1	07/21/09 3:15	MCB	3172817
o-Xylene	ND			2	1	07/21/09 3:15	MCB	3172817
Xylenes,Total	2.5			2	1	07/21/09 3:15	MCB	3172817
Surr: 1,2-Dichloroethane-d4	93.0		%	75-120	1	07/21/09 3:15	MCB	3172817
Surr: 4-Bromofluorobenzene	95.6		%	89-109	1	07/21/09 3:15	MCB	3172817
Surr: Toluene-d8	97.5		%	89-110	1	07/21/09 3:15	MCB	3172817

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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Client Sample ID: MW-5 **Collected:** 07/17/2009 11:00 **SPL Sample ID:** 09070781-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/22/09 0:07	LDD	3177536
Surr: 1-Chloro-2-fluorobenzene	95.5		%	33-151	1	07/22/09 0:07	LDD	3177536

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.06

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 3:41	MCB	3172818
Benzene	ND			1	1	07/21/09 3:41	MCB	3172818
Ethylbenzene	ND			1	1	07/21/09 3:41	MCB	3172818
Methyl tert-butyl ether	ND			1	1	07/21/09 3:41	MCB	3172818
Naphthalene	ND			5	1	07/21/09 3:41	MCB	3172818
Toluene	ND			1	1	07/21/09 3:41	MCB	3172818
m,p-Xylene	ND			2	1	07/21/09 3:41	MCB	3172818
o-Xylene	ND			2	1	07/21/09 3:41	MCB	3172818
Xylenes,Total	ND			2	1	07/21/09 3:41	MCB	3172818
Surr: 1,2-Dichloroethane-d4	91.7		%	75-120	1	07/21/09 3:41	MCB	3172818
Surr: 4-Bromofluorobenzene	95.7		%	89-109	1	07/21/09 3:41	MCB	3172818
Surr: Toluene-d8	98.2		%	89-110	1	07/21/09 3:41	MCB	3172818

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: MW-6R **Collected:** 07/17/2009 9:30 **SPL Sample ID:** 09070781-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.023	1	07/22/09 0:26	LDD	3177537
Surr: 1-Chloro-2-fluorobenzene	93.8		%	33-151	1	07/22/09 0:26	LDD	3177537

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.13

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 4:33	MCB	3172820
Benzene	ND			1	1	07/21/09 4:33	MCB	3172820
Ethylbenzene	ND			1	1	07/21/09 4:33	MCB	3172820
Methyl tert-butyl ether	ND			1	1	07/21/09 4:33	MCB	3172820
Naphthalene	ND			5	1	07/21/09 4:33	MCB	3172820
Toluene	ND			1	1	07/21/09 4:33	MCB	3172820
m,p-Xylene	ND			2	1	07/21/09 4:33	MCB	3172820
o-Xylene	ND			2	1	07/21/09 4:33	MCB	3172820
Xylenes,Total	ND			2	1	07/21/09 4:33	MCB	3172820
Surr: 1,2-Dichloroethane-d4	92.8		%	75-120	1	07/21/09 4:33	MCB	3172820
Surr: 4-Bromofluorobenzene	96.3		%	89-109	1	07/21/09 4:33	MCB	3172820
Surr: Toluene-d8	97.3		%	89-110	1	07/21/09 4:33	MCB	3172820

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
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Client Sample ID: MW-8 **Collected:** 07/17/2009 11:30 **SPL Sample ID:** 09070781-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/22/09 0:46	LDD	3177538
Surr: 1-Chloro-2-fluorobenzene	95.1		%	33-151	1	07/22/09 0:46	LDD	3177538

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.03

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 4:07	MCB	3172819
Benzene	ND			1	1	07/21/09 4:07	MCB	3172819
Ethylbenzene	ND			1	1	07/21/09 4:07	MCB	3172819
Methyl tert-butyl ether	ND			1	1	07/21/09 4:07	MCB	3172819
Naphthalene	ND			5	1	07/21/09 4:07	MCB	3172819
Toluene	ND			1	1	07/21/09 4:07	MCB	3172819
m,p-Xylene	ND			2	1	07/21/09 4:07	MCB	3172819
o-Xylene	ND			2	1	07/21/09 4:07	MCB	3172819
Xylenes,Total	ND			2	1	07/21/09 4:07	MCB	3172819
Surr: 1,2-Dichloroethane-d4	93.1		%	75-120	1	07/21/09 4:07	MCB	3172819
Surr: 4-Bromofluorobenzene	97.1		%	89-109	1	07/21/09 4:07	MCB	3172819
Surr: Toluene-d8	97.3		%	89-110	1	07/21/09 4:07	MCB	3172819

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: MW-9R **Collected:** 07/17/2009 9:00 **SPL Sample ID:** 09070781-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/22/09 1:06	LDD	3177539
Surr: 1-Chloro-2-fluorobenzene	94.7		%	33-151	1	07/22/09 1:06	LDD	3177539

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.07

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 4:59	MCB	3172821
Benzene	ND			1	1	07/21/09 4:59	MCB	3172821
Ethylbenzene	ND			1	1	07/21/09 4:59	MCB	3172821
Methyl tert-butyl ether	ND			1	1	07/21/09 4:59	MCB	3172821
Naphthalene	ND			5	1	07/21/09 4:59	MCB	3172821
Toluene	ND			1	1	07/21/09 4:59	MCB	3172821
m,p-Xylene	ND			2	1	07/21/09 4:59	MCB	3172821
o-Xylene	ND			2	1	07/21/09 4:59	MCB	3172821
Xylenes,Total	ND			2	1	07/21/09 4:59	MCB	3172821
Surr: 1,2-Dichloroethane-d4	93.3		%	75-120	1	07/21/09 4:59	MCB	3172821
Surr: 4-Bromofluorobenzene	97.2		%	89-109	1	07/21/09 4:59	MCB	3172821
Surr: Toluene-d8	97.1		%	89-110	1	07/21/09 4:59	MCB	3172821

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-11 **Collected:** 07/16/2009 11:15 **SPL Sample ID:** 09070781-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021	1	07/22/09 1:25	LDD	3177540
Surr: 1-Chloro-2-fluorobenzene	85.9		% 33-151	1	07/22/09 1:25	LDD	3177540

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.06

VOLATILE ORGANICS METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND		10	10	07/21/09 18:37	MCB	3174704
Benzene	6100		50	50	07/22/09 11:57	NDG	3176873
Ethylbenzene	3100		10	10	07/21/09 18:37	MCB	3174704
Methyl tert-butyl ether	28		10	10	07/21/09 18:37	MCB	3174704
Naphthalene	1400		50	10	07/21/09 18:37	MCB	3174704
Toluene	16000		50	50	07/22/09 11:57	NDG	3176873
m,p-Xylene	11000		100	50	07/22/09 11:57	NDG	3176873
o-Xylene	4800		100	50	07/22/09 11:57	NDG	3176873
Xylenes,Total	15800		100	50	07/22/09 11:57	NDG	3176873
Surr: 1,2-Dichloroethane-d4	93.0		% 75-120	50	07/22/09 11:57	NDG	3176873
Surr: 1,2-Dichloroethane-d4	95.2		% 75-120	10	07/21/09 18:37	MCB	3174704
Surr: 4-Bromofluorobenzene	97.9		% 89-109	50	07/22/09 11:57	NDG	3176873
Surr: 4-Bromofluorobenzene	97.4		% 89-109	10	07/21/09 18:37	MCB	3174704
Surr: Toluene-d8	98.3		% 89-110	50	07/22/09 11:57	NDG	3176873
Surr: Toluene-d8	99.8		% 89-110	10	07/21/09 18:37	MCB	3174704

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
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(337) 237-4775

Client Sample ID: MW-12 **Collected:** 07/16/2009 10:25 **SPL Sample ID:** 09070781-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021	1	07/22/09 2:05	LDD	3177542
Surr: 1-Chloro-2-fluorobenzene	82.3		% 33-151	1	07/22/09 2:05	LDD	3177542

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.06

VOLATILE ORGANICS METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND		10	10	07/21/09 19:03	MCB	3174705
Benzene	3300		50	50	07/22/09 13:20	NDG	3176876
Ethylbenzene	16		10	10	07/21/09 19:03	MCB	3174705
Methyl tert-butyl ether	100		10	10	07/21/09 19:03	MCB	3174705
Naphthalene	310		50	10	07/21/09 19:03	MCB	3174705
Toluene	ND		10	10	07/21/09 19:03	MCB	3174705
m,p-Xylene	66		20	10	07/21/09 19:03	MCB	3174705
o-Xylene	ND		20	10	07/21/09 19:03	MCB	3174705
Xylenes,Total	66		20	10	07/21/09 19:03	MCB	3174705
Surr: 1,2-Dichloroethane-d4	92.1		% 75-120	50	07/22/09 13:20	NDG	3176876
Surr: 1,2-Dichloroethane-d4	94.3		% 75-120	10	07/21/09 19:03	MCB	3174705
Surr: 4-Bromofluorobenzene	98.4		% 89-109	50	07/22/09 13:20	NDG	3176876
Surr: 4-Bromofluorobenzene	96.5		% 89-109	10	07/21/09 19:03	MCB	3174705
Surr: Toluene-d8	99.6		% 89-110	50	07/22/09 13:20	NDG	3176876
Surr: Toluene-d8	98.0		% 89-110	10	07/21/09 19:03	MCB	3174705

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-14 **Collected:** 07/16/2009 12:10 **SPL Sample ID:** 09070781-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1				**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.022	1	07/22/09 2:25	LDD	3177543
Surr: 1-Chloro-2-fluorobenzene	82.9		% 33-151	1	07/22/09 2:25	LDD	3177543

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.09

VOLATILE ORGANICS METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND		20	20	07/22/09 15:44	TDD	3176227
Benzene	4400		20	20	07/22/09 15:44	TDD	3176227
Ethylbenzene	ND		20	20	07/22/09 15:44	TDD	3176227
Methyl tert-butyl ether	ND		20	20	07/22/09 15:44	TDD	3176227
Naphthalene	280		100	20	07/22/09 15:44	TDD	3176227
Toluene	76		20	20	07/22/09 15:44	TDD	3176227
m,p-Xylene	68		40	20	07/22/09 15:44	TDD	3176227
o-Xylene	ND		40	20	07/22/09 15:44	TDD	3176227
Xylenes,Total	68		40	20	07/22/09 15:44	TDD	3176227
Surr: 1,2-Dichloroethane-d4	93.5		% 75-120	20	07/22/09 15:44	TDD	3176227
Surr: 4-Bromofluorobenzene	99.6		% 89-109	20	07/22/09 15:44	TDD	3176227
Surr: Toluene-d8	99.4		% 89-110	20	07/22/09 15:44	TDD	3176227

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-15 **Collected:** 07/16/2009 11:45 **SPL Sample ID:** 09070781-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 2:45	LDD	3177544
Surr: 1-Chloro-2-fluorobenzene	87.7		%	33-151	1	07/22/09 2:45	LDD	3177544

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.11

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			10	10	07/22/09 16:12	TDD	3176228
Benzene	2300			10	10	07/22/09 16:12	TDD	3176228
Ethylbenzene	11			10	10	07/22/09 16:12	TDD	3176228
Methyl tert-butyl ether	11			10	10	07/22/09 16:12	TDD	3176228
Naphthalene	150			50	10	07/22/09 16:12	TDD	3176228
Toluene	42			10	10	07/22/09 16:12	TDD	3176228
m,p-Xylene	25			20	10	07/22/09 16:12	TDD	3176228
o-Xylene	ND			20	10	07/22/09 16:12	TDD	3176228
Xylenes,Total	25			20	10	07/22/09 16:12	TDD	3176228
Surr: 1,2-Dichloroethane-d4	93.5		%	75-120	10	07/22/09 16:12	TDD	3176228
Surr: 4-Bromofluorobenzene	98.0		%	89-109	10	07/22/09 16:12	TDD	3176228
Surr: Toluene-d8	98.6		%	89-110	10	07/22/09 16:12	TDD	3176228

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: MW-16 **Collected:** 07/16/2009 10:05 **SPL Sample ID:** 09070781-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/25/09 1:59	LDD	3179369
Surr: 1-Chloro-2-fluorobenzene	102		%	33-151	1	07/25/09 1:59	LDD	3179369

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/24/2009 8:58	JT	1.10

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			100	100	07/23/09 15:37	DN	3177398
Benzene	5500			100	100	07/23/09 15:37	DN	3177398
Ethylbenzene	4600			100	100	07/23/09 15:37	DN	3177398
Methyl tert-butyl ether	ND			100	100	07/23/09 15:37	DN	3177398
Naphthalene	2700			500	100	07/23/09 15:37	DN	3177398
Toluene	22000			100	100	07/23/09 15:37	DN	3177398
m,p-Xylene	19000			200	100	07/23/09 15:37	DN	3177398
o-Xylene	8500			200	100	07/23/09 15:37	DN	3177398
Xylenes,Total	27500			200	100	07/23/09 15:37	DN	3177398
Surr: 1,2-Dichloroethane-d4	90.4		%	75-120	100	07/23/09 15:37	DN	3177398
Surr: 4-Bromofluorobenzene	98.0		%	89-109	100	07/23/09 15:37	DN	3177398
Surr: Toluene-d8	96.8		%	89-110	100	07/23/09 15:37	DN	3177398

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-17 **Collected:** 07/16/2009 9:45 **SPL Sample ID:** 09070781-12

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 3:25	LDD	3177545
Surr: 1-Chloro-2-fluorobenzene	90.7		%	33-151	1	07/22/09 3:25	LDD	3177545

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.08

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 14:58	DN	3174666
Benzene	ND			1	1	07/21/09 14:58	DN	3174666
Ethylbenzene	ND			1	1	07/21/09 14:58	DN	3174666
Methyl tert-butyl ether	ND			1	1	07/21/09 14:58	DN	3174666
Naphthalene	ND			5	1	07/21/09 14:58	DN	3174666
Toluene	ND			1	1	07/21/09 14:58	DN	3174666
m,p-Xylene	ND			2	1	07/21/09 14:58	DN	3174666
o-Xylene	ND			2	1	07/21/09 14:58	DN	3174666
Xylenes,Total	ND			2	1	07/21/09 14:58	DN	3174666
Surr: 1,2-Dichloroethane-d4	95.3		%	75-120	1	07/21/09 14:58	DN	3174666
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 14:58	DN	3174666
Surr: Toluene-d8	98.7		%	89-110	1	07/21/09 14:58	DN	3174666

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: MW-18 **Collected:** 07/16/2009 10:50 **SPL Sample ID:** 09070781-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	0.092			0.021	1	07/22/09 3:45	LDD	3177546
Surr: 1-Chloro-2-fluorobenzene	84.9		%	33-151	1	07/22/09 3:45	LDD	3177546

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.07

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	15			10	10	07/22/09 17:08	TDD	3176230
Benzene	280			10	10	07/22/09 17:08	TDD	3176230
Ethylbenzene	92			10	10	07/22/09 17:08	TDD	3176230
Methyl tert-butyl ether	2300			10	10	07/22/09 17:08	TDD	3176230
Naphthalene	67			50	10	07/22/09 17:08	TDD	3176230
Toluene	560			10	10	07/22/09 17:08	TDD	3176230
m,p-Xylene	330			20	10	07/22/09 17:08	TDD	3176230
o-Xylene	230			20	10	07/22/09 17:08	TDD	3176230
Xylenes,Total	560			20	10	07/22/09 17:08	TDD	3176230
Surr: 1,2-Dichloroethane-d4	91.9		%	75-120	10	07/22/09 17:08	TDD	3176230
Surr: 4-Bromofluorobenzene	94.8		%	89-109	10	07/22/09 17:08	TDD	3176230
Surr: Toluene-d8	97.4		%	89-110	10	07/22/09 17:08	TDD	3176230

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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(337) 237-4775

Client Sample ID: MW-19 **Collected:** 07/16/2009 9:25 **SPL Sample ID:** 09070781-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 4:05	LDD	3177547
Surr: 1-Chloro-2-fluorobenzene	90.1		%	33-151	1	07/22/09 4:05	LDD	3177547

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.08

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 19:18	NDG	3175059
Benzene	ND			1	1	07/21/09 19:18	NDG	3175059
Ethylbenzene	ND			1	1	07/21/09 19:18	NDG	3175059
Methyl tert-butyl ether	ND			1	1	07/21/09 19:18	NDG	3175059
Naphthalene	ND			5	1	07/21/09 19:18	NDG	3175059
Toluene	ND			1	1	07/21/09 19:18	NDG	3175059
m,p-Xylene	ND			2	1	07/21/09 19:18	NDG	3175059
o-Xylene	ND			2	1	07/21/09 19:18	NDG	3175059
Xylenes,Total	ND			2	1	07/21/09 19:18	NDG	3175059
Surr: 1,2-Dichloroethane-d4	102		%	75-120	1	07/21/09 19:18	NDG	3175059
Surr: 4-Bromofluorobenzene	102		%	89-109	1	07/21/09 19:18	NDG	3175059
Surr: Toluene-d8	100		%	89-110	1	07/21/09 19:18	NDG	3175059

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-20 **Collected:** 07/16/2009 9:05 **SPL Sample ID:** 09070781-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/22/09 4:26	LDD	3177548
Surr: 1-Chloro-2-fluorobenzene	92.2		%	33-151	1	07/22/09 4:26	LDD	3177548

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.07

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 19:44	NDG	3175060
Benzene	ND			1	1	07/21/09 19:44	NDG	3175060
Ethylbenzene	ND			1	1	07/21/09 19:44	NDG	3175060
Methyl tert-butyl ether	ND			1	1	07/21/09 19:44	NDG	3175060
Naphthalene	ND			5	1	07/21/09 19:44	NDG	3175060
Toluene	ND			1	1	07/21/09 19:44	NDG	3175060
m,p-Xylene	ND			2	1	07/21/09 19:44	NDG	3175060
o-Xylene	ND			2	1	07/21/09 19:44	NDG	3175060
Xylenes,Total	ND			2	1	07/21/09 19:44	NDG	3175060
Surr: 1,2-Dichloroethane-d4	102		%	75-120	1	07/21/09 19:44	NDG	3175060
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 19:44	NDG	3175060
Surr: Toluene-d8	101		%	89-110	1	07/21/09 19:44	NDG	3175060

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 07/16/2009 12:30 **SPL Sample ID:** 09070781-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 4:45	LDD	3177549
Surr: 1-Chloro-2-fluorobenzene	89.7		%	33-151	1	07/22/09 4:45	LDD	3177549

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.08

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	6.2			5	5	07/22/09 15:06	NDG	3176880
Benzene	33			5	5	07/22/09 15:06	NDG	3176880
Ethylbenzene	ND			5	5	07/22/09 15:06	NDG	3176880
Methyl tert-butyl ether	460			5	5	07/22/09 15:06	NDG	3176880
Naphthalene	ND			25	5	07/22/09 15:06	NDG	3176880
Toluene	ND			5	5	07/22/09 15:06	NDG	3176880
m,p-Xylene	ND			10	5	07/22/09 15:06	NDG	3176880
o-Xylene	ND			10	5	07/22/09 15:06	NDG	3176880
Xylenes,Total	ND			10	5	07/22/09 15:06	NDG	3176880
Surr: 1,2-Dichloroethane-d4	94.0		%	75-120	5	07/22/09 15:06	NDG	3176880
Surr: 4-Bromofluorobenzene	96.8		%	89-109	5	07/22/09 15:06	NDG	3176880
Surr: Toluene-d8	98.3		%	89-110	5	07/22/09 15:06	NDG	3176880

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 07/16/2009 13:05 **SPL Sample ID:** 09070781-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 5:05	LDD	3177550
Surr: 1-Chloro-2-fluorobenzene	94.7		%	33-151	1	07/22/09 5:05	LDD	3177550

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.11

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			5	5	07/22/09 15:32	NDG	3176881
Benzene	1600			5	5	07/22/09 15:32	NDG	3176881
Ethylbenzene	ND			5	5	07/22/09 15:32	NDG	3176881
Methyl tert-butyl ether	13			5	5	07/22/09 15:32	NDG	3176881
Naphthalene	110			25	5	07/22/09 15:32	NDG	3176881
Toluene	ND			5	5	07/22/09 15:32	NDG	3176881
m,p-Xylene	12			10	5	07/22/09 15:32	NDG	3176881
o-Xylene	ND			10	5	07/22/09 15:32	NDG	3176881
Xylenes,Total	12			10	5	07/22/09 15:32	NDG	3176881
Surr: 1,2-Dichloroethane-d4	94.8		%	75-120	5	07/22/09 15:32	NDG	3176881
Surr: 4-Bromofluorobenzene	98.8		%	89-109	5	07/22/09 15:32	NDG	3176881
Surr: Toluene-d8	100		%	89-110	5	07/22/09 15:32	NDG	3176881

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 07/16/2009 13:40 **SPL Sample ID:** 09070781-18

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 5:46	LDD	3177552
Surr: 1-Chloro-2-fluorobenzene	94.0		%	33-151	1	07/22/09 5:46	LDD	3177552

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.09

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			10	10	07/21/09 19:29	MCB	3174706
Benzene	1400			10	10	07/21/09 19:29	MCB	3174706
Ethylbenzene	ND			10	10	07/21/09 19:29	MCB	3174706
Methyl tert-butyl ether	15			10	10	07/21/09 19:29	MCB	3174706
Naphthalene	ND			50	10	07/21/09 19:29	MCB	3174706
Toluene	ND			10	10	07/21/09 19:29	MCB	3174706
m,p-Xylene	ND			20	10	07/21/09 19:29	MCB	3174706
o-Xylene	ND			20	10	07/21/09 19:29	MCB	3174706
Xylenes,Total	ND			20	10	07/21/09 19:29	MCB	3174706
Surr: 1,2-Dichloroethane-d4	93.5		%	75-120	10	07/21/09 19:29	MCB	3174706
Surr: 4-Bromofluorobenzene	97.7		%	89-109	10	07/21/09 19:29	MCB	3174706
Surr: Toluene-d8	98.6		%	89-110	10	07/21/09 19:29	MCB	3174706

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 07/16/2009 15:05 **SPL Sample ID:** 09070781-19

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.023	1	07/22/09 6:06	LDD	3177553
Surr: 1-Chloro-2-fluorobenzene	90.5		%	33-151	1	07/22/09 6:06	LDD	3177553

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.14

VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND			1	1	07/21/09 17:03	NDG	3175054
Benzene	97			1	1	07/21/09 17:03	NDG	3175054
Ethylbenzene	ND			1	1	07/21/09 17:03	NDG	3175054
Methyl tert-butyl ether	ND			1	1	07/21/09 17:03	NDG	3175054
Naphthalene	ND			5	1	07/21/09 17:03	NDG	3175054
Toluene	ND			1	1	07/21/09 17:03	NDG	3175054
m,p-Xylene	ND			2	1	07/21/09 17:03	NDG	3175054
o-Xylene	ND			2	1	07/21/09 17:03	NDG	3175054
Xylenes,Total	ND			2	1	07/21/09 17:03	NDG	3175054
Surr: 1,2-Dichloroethane-d4	97.4		%	75-120	1	07/21/09 17:03	NDG	3175054
Surr: 4-Bromofluorobenzene	102		%	89-109	1	07/21/09 17:03	NDG	3175054
Surr: Toluene-d8	102		%	89-110	1	07/21/09 17:03	NDG	3175054

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: MW-25 **Collected:** 07/16/2009 15:40 **SPL Sample ID:** 09070781-20

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 6:26	LDD	3177554
Surr: 1-Chloro-2-fluorobenzene	86.1		%	33-151	1	07/22/09 6:26	LDD	3177554

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 8:47	JT	1.11

VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND			1	1	07/21/09 17:30	NDG	3175055
Benzene	ND			1	1	07/21/09 17:30	NDG	3175055
Ethylbenzene	ND			1	1	07/21/09 17:30	NDG	3175055
Methyl tert-butyl ether	ND			1	1	07/21/09 17:30	NDG	3175055
Naphthalene	ND			5	1	07/21/09 17:30	NDG	3175055
Toluene	ND			1	1	07/21/09 17:30	NDG	3175055
m,p-Xylene	ND			2	1	07/21/09 17:30	NDG	3175055
o-Xylene	ND			2	1	07/21/09 17:30	NDG	3175055
Xylenes,Total	ND			2	1	07/21/09 17:30	NDG	3175055
Surr: 1,2-Dichloroethane-d4	102		%	75-120	1	07/21/09 17:30	NDG	3175055
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 17:30	NDG	3175055
Surr: Toluene-d8	103		%	89-110	1	07/21/09 17:30	NDG	3175055

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: MW-26 **Collected:** 07/17/2009 8:30 **SPL Sample ID:** 09070781-21

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021	1	07/22/09 8:44	LDD	3177562
Surr: 1-Chloro-2-fluorobenzene	85.5		%	33-151	1	07/22/09 8:44	LDD	3177562

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 10:20	JT	1.07

VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND			1	1	07/21/09 17:57	NDG	3175056
Benzene	ND			1	1	07/21/09 17:57	NDG	3175056
Ethylbenzene	ND			1	1	07/21/09 17:57	NDG	3175056
Methyl tert-butyl ether	ND			1	1	07/21/09 17:57	NDG	3175056
Naphthalene	ND			5	1	07/21/09 17:57	NDG	3175056
Toluene	ND			1	1	07/21/09 17:57	NDG	3175056
m,p-Xylene	ND			2	1	07/21/09 17:57	NDG	3175056
o-Xylene	ND			2	1	07/21/09 17:57	NDG	3175056
Xylenes,Total	ND			2	1	07/21/09 17:57	NDG	3175056
Surr: 1,2-Dichloroethane-d4	102		%	75-120	1	07/21/09 17:57	NDG	3175056
Surr: 4-Bromofluorobenzene	102		%	89-109	1	07/21/09 17:57	NDG	3175056
Surr: Toluene-d8	102		%	89-110	1	07/21/09 17:57	NDG	3175056

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

LAFAYETTE LABORATORY
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Client Sample ID: DW-1 **Collected:** 07/17/2009 10:30 **SPL Sample ID:** 09070781-22

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 9:03	LDD	3177563
Surr: 1-Chloro-2-fluorobenzene	88.4		%	33-151	1	07/22/09 9:03	LDD	3177563

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 10:20	JT	1.09

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 18:24	NDG	3175057
Benzene	ND			1	1	07/21/09 18:24	NDG	3175057
Ethylbenzene	ND			1	1	07/21/09 18:24	NDG	3175057
Methyl tert-butyl ether	ND			1	1	07/21/09 18:24	NDG	3175057
Naphthalene	ND			5	1	07/21/09 18:24	NDG	3175057
Toluene	ND			1	1	07/21/09 18:24	NDG	3175057
m,p-Xylene	ND			2	1	07/21/09 18:24	NDG	3175057
o-Xylene	ND			2	1	07/21/09 18:24	NDG	3175057
Xylenes,Total	ND			2	1	07/21/09 18:24	NDG	3175057
Surr: 1,2-Dichloroethane-d4	95.9		%	75-120	1	07/21/09 18:24	NDG	3175057
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 18:24	NDG	3175057
Surr: Toluene-d8	101		%	89-110	1	07/21/09 18:24	NDG	3175057

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Client Sample ID: CK-1 **Collected:** 07/17/2009 8:00 **SPL Sample ID:** 09070781-23

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022	1	07/22/09 9:23	LDD	3177564
Surr: 1-Chloro-2-fluorobenzene	83.7		%	33-151	1	07/22/09 9:23	LDD	3177564

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 10:20	JT	1.10

VOLATILE ORGANICS METHOD 8260B					MCL	SW8260B	Units: ug/L	
1,2-Dichloroethane	ND			1	1	07/21/09 18:51	NDG	3175058
Benzene	ND			1	1	07/21/09 18:51	NDG	3175058
Ethylbenzene	ND			1	1	07/21/09 18:51	NDG	3175058
Methyl tert-butyl ether	13			1	1	07/21/09 18:51	NDG	3175058
Naphthalene	ND			5	1	07/21/09 18:51	NDG	3175058
Toluene	ND			1	1	07/21/09 18:51	NDG	3175058
m,p-Xylene	ND			2	1	07/21/09 18:51	NDG	3175058
o-Xylene	ND			2	1	07/21/09 18:51	NDG	3175058
Xylenes,Total	ND			2	1	07/21/09 18:51	NDG	3175058
Surr: 1,2-Dichloroethane-d4	100		%	75-120	1	07/21/09 18:51	NDG	3175058
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 18:51	NDG	3175058
Surr: Toluene-d8	102		%	89-110	1	07/21/09 18:51	NDG	3175058

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 09070781
Lab Batch ID: 81601

Method Blank

RunID: PCBB_090721A-3177531 Units: ug/L
Analysis Date: 07/21/2009 22:28 Analyst: LDD
Preparation Date: 07/21/2009 8:47 Prep By: JT Method: E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	96.6	33-151

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-01B	MW-1
09070781-02B	MW-4R
09070781-03B	MW-5
09070781-04B	MW-6R
09070781-05B	MW-8
09070781-06B	MW-9R
09070781-07B	MW-11
09070781-08B	MW-12
09070781-09B	MW-14
09070781-10B	MW-15
09070781-12B	MW-17
09070781-13B	MW-18
09070781-14B	MW-19
09070781-15B	MW-20
09070781-16B	MW-21
09070781-17B	MW-22
09070781-18B	MW-23
09070781-19B	MW-24
09070781-20B	MW-25

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_090721A-3177532 Units: ug/L
Analysis Date: 07/21/2009 22:47 Analyst: LDD
Preparation Date: 07/21/2009 8:47 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.686	120	0.570	0.672	118	2.1	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	132	92.4	143	138	96.2	4.1	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 09070781
Lab Batch ID: 81608

Method Blank

RunID: PCBB_090721B-3177557 Units: ug/L
Analysis Date: 07/22/2009 7:05 Analyst: LDD
Preparation Date: 07/21/2009 10:20 Prep By: JT Method: E504

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-21B	MW-26
09070781-22B	DW-1
09070781-23B	CK-1

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	85.0	33-151

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_090721B-3177558 Units: ug/L
Analysis Date: 07/22/2009 7:25 Analyst: LDD
Preparation Date: 07/21/2009 10:20 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.622	109	0.570	0.647	113	3.9	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	133	93.2	143	132	92.3	0.9	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 09070781
Lab Batch ID: 81719

Method Blank

RunID: PCBB_090724A-3179366 Units: ug/L
Analysis Date: 07/25/2009 0:58 Analyst: LDD
Preparation Date: 07/24/2009 8:58 Prep By: JT Method: E504

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-11B	MW-16

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	105.8	33-151

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_090724A-3179367 Units: ug/L
Analysis Date: 07/25/2009 1:19 Analyst: LDD
Preparation Date: 07/24/2009 8:58 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.665	117	0.570	0.709	124	6.4	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	152	106	143	158	110	3.7	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211020

Method Blank

RunID: HA_090720E-3172808 Units: ug/L
Analysis Date: 07/20/2009 22:57 Analyst: MCB

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	92.8	75-120
Surr: 4-Bromofluorobenzene	97.2	89-109
Surr: Toluene-d8	96.3	89-110

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-01A	MW-1
09070781-02A	MW-4R
09070781-03A	MW-5
09070781-04A	MW-6R
09070781-05A	MW-8
09070781-06A	MW-9R

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_090720E-3172806 Units: ug/L
Analysis Date: 07/20/2009 21:39 Analyst: MCB

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	48.4	96.9	50.0	47.9	95.8	1.1	21	80	124
Benzene	50.0	47.8	95.6	50.0	46.8	93.6	2.1	23	88	117
Ethylbenzene	50.0	51.6	103	50.0	50.4	101	2.2	16	90	114
Methyl tert-butyl ether	50.0	47.6	95.3	50.0	46.8	93.6	1.8	23	80	124
Naphthalene	50.0	45.7	91.4	50.0	46.0	92.0	0.7	27	68	131
Toluene	50.0	54.4	109	50.0	52.5	105	3.5	21	84	118
m,p-Xylene	100	106	106	100	103	103	3.2	20	86	114
o-Xylene	50.0	51.3	103	50.0	49.7	99.4	3.0	17	87	117
Xylenes,Total	150.0	157.3	104.9	150.0	152.7	101.7	3.1	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	46.4	92.7	50.0	46.3	92.7	0.0	30	75	120
Surr: 4-Bromofluorobenzene	50.0	48.9	97.7	50.0	49.1	98.2	0.5	30	89	109
Surr: Toluene-d8	50.0	48.9	97.7	50.0	48.9	97.8	0.1	30	89	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: **Volatile Organics Method 8260B** **WorkOrder:** **09070781**
Method: **SW8260B** **Lab Batch ID:** **R211020**

Sample Spiked: 09070775-05
RunID: HA_090720E-3172988 Units: ug/Kg
Analysis Date: 07/21/2009 6:16 Analyst: MCB
Preparation Date: 07/18/2009 10:01 Prep By: HBO Method: SW5035

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	2660	2850	107	2660	2410	90.7	16.7	30	50	150
Benzene	ND	2660	2770	104	2660	2360	88.8	15.8	22	39	150
Ethylbenzene	ND	2660	2980	112	2660	2560	96.2	15.3	30	50	150
Methyl tert-butyl ether	ND	2660	2680	101	2660	2270	85.4	16.7	30	50	150
Naphthalene	ND	2660	2610	98.2	2660	2210	83.1	16.7	30	50	150
Toluene	ND	2660	3100	116	2660	2630	98.8	16.3	39	23	135
m,p-Xylene	ND	5320	6190	116	5320	5270	99.1	16.0	30	50	150
o-Xylene	ND	2660	2970	112	2660	2560	96.1	14.8	30	50	150
Xylenes,Total	ND	7980	9160	115	7980	7830	98.1	15.7	30	50	150
Surr: 1,2-Dichloroethane-d4	ND	2660	2780	105	2660	2400	90.3	14.6	30	62	134
Surr: 4-Bromofluorobenzene	ND	2660	3060	115	2660	2640	99.3	14.7	30	75	128
Surr: Toluene-d8	ND	2660	2990	112	2660	2620	98.5	13.2	30	78	120

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211128

Method Blank

RunID: QB_090721A-3174661 Units: ug/L
Analysis Date: 07/21/2009 12:27 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-12A	MW-17

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	97.7	75-120
Surr: 4-Bromofluorobenzene	101.0	89-109
Surr: Toluene-d8	95.4	89-110

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: QB_090721A-3174659 Units: ug/L
Analysis Date: 07/21/2009 10:56 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	49.9	99.8	50.0	52.4	105	4.8	21	80	124
Benzene	50.0	48.6	97.1	50.0	51.3	103	5.4	23	88	117
Ethylbenzene	50.0	52.6	105	50.0	54.2	108	3.0	16	90	114
Methyl tert-butyl ether	50.0	47.6	95.1	50.0	51.4	103	7.8	23	80	124
Naphthalene	50.0	52.7	105	50.0	56.4	113	6.6	27	68	131
Toluene	50.0	49.2	98.4	50.0	51.1	102	3.7	21	84	118
m,p-Xylene	100	108	108	100	111	111	2.4	20	86	114
o-Xylene	50.0	53.3	107	50.0	54.7	109	2.7	17	87	117
Xylenes,Total	150.0	161.3	107.6	150.0	165.7	110.3	2.5	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	47.8	95.6	50.0	49.3	98.7	3.2	30	75	120
Surr: 4-Bromofluorobenzene	50.0	51.9	104	50.0	50.0	100	3.5	30	89	109
Surr: Toluene-d8	50.0	47.9	95.9	50.0	48.8	97.6	1.8	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070781**
Method:	**SW8260B**	**Lab Batch ID:**	**R211128**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211129

Method Blank

RunID: HA_090721B-3174696 Units: ug/L
Analysis Date: 07/21/2009 12:27 Analyst: MCB

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-07A	MW-11
09070781-08A	MW-12
09070781-18A	MW-23

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	94.1	75-120
Surr: 4-Bromofluorobenzene	99.2	89-109
Surr: Toluene-d8	98.0	89-110

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_090721B-3174694 Units: ug/L
Analysis Date: 07/21/2009 11:01 Analyst: MCB

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	47.7	95.3	50.0	46.0	92.0	3.5	30	80	124
Benzene	50.0	46.4	92.7	50.0	44.1	88.2	5.0	21	88	117
Ethylbenzene	50.0	49.6	99.2	50.0	48.7	97.3	1.9	30	90	114
Methyl tert-butyl ether	50.0	47.6	95.2	50.0	46.4	92.8	2.6	30	80	124
Naphthalene	50.0	50.8	102	50.0	48.9	97.7	4.0	30	68	131
Toluene	50.0	51.8	104	50.0	50.0	100	3.6	20	84	118
m,p-Xylene	100	103	103	100	99.0	99.0	4.3	30	86	114
o-Xylene	50.0	49.1	98.2	50.0	47.5	95.0	3.3	30	87	117
Xylenes,Total	150.0	152.1	101.6	150.0	146.5	97.65	4.0	30	86	117
Surr: 1,2-Dichloroethane-d4	50.0	47.3	94.6	50.0	47.4	94.7	0.2	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.8	99.6	50.0	49.9	99.8	0.2	30	89	109
Surr: Toluene-d8	50.0	49.6	99.3	50.0	49.1	98.3	1.0	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070781**
Method:	**SW8260B**	**Lab Batch ID:**	**R211129**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211145

Method Blank

RunID: GA_090721B-3175048 Units: ug/L
Analysis Date: 07/21/2009 11:39 Analyst: NDG

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	93.5	75-120
Surr: 4-Bromofluorobenzene	102.3	89-109
Surr: Toluene-d8	98.6	89-110

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-14A	MW-19
09070781-15A	MW-20
09070781-19A	MW-24
09070781-20A	MW-25
09070781-21A	MW-26
09070781-22A	DW-1
09070781-23A	CK-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: GA_090721B-3175047 Units: ug/L
Analysis Date: 07/21/2009 10:45 Analyst: NDG

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	48.5	97.0	50.0	48.5	97.0	0.0	21	80	124
Benzene	50.0	46.3	92.5	50.0	46.3	92.5	0.0	23	88	117
Ethylbenzene	50.0	48.4	96.9	50.0	48.4	96.9	0.0	16	90	114
Methyl tert-butyl ether	50.0	50.2	100	50.0	50.2	100	0.0	23	80	124
Naphthalene	50.0	58.2	116	50.0	58.2	116	0.0	27	68	131
Toluene	50.0	47.7	95.3	50.0	47.7	95.3	0.0	21	84	118
m,p-Xylene	100	96.3	96.3	100	96.3	96.3	0.0	20	86	114
o-Xylene	50.0	48.2	96.3	50.0	48.2	96.3	0.0	17	87	117
Xylenes,Total	150.0	144.5	96.29	150.0	144.5	96.29	0.0	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	49.2	98.5	50.0	49.2	98.5	0.0	30	75	120
Surr: 4-Bromofluorobenzene	50.0	50.8	102	50.0	50.8	102	0.0	30	89	109
Surr: Toluene-d8	50.0	50.1	100	50.0	50.1	100	0.0	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070781**
Method:	**SW8260B**	**Lab Batch ID:**	**R211145**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211217

Method Blank

RunID: XA_090722A-3176218 Units: ug/L
Analysis Date: 07/22/2009 11:29 Analyst: TDD

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-09A	MW-14
09070781-10A	MW-15
09070781-13A	MW-18

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	91.0	75-120
Surr: 4-Bromofluorobenzene	98.9	89-109
Surr: Toluene-d8	99.4	89-110

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_090722A-3176216 Units: ug/L
Analysis Date: 07/22/2009 10:01 Analyst: TDD

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	47.9	95.9	50.0	47.7	95.5	0.4	21	80	124
Benzene	50.0	51.4	103	50.0	50.7	101	1.3	23	88	117
Ethylbenzene	50.0	53.3	107	50.0	51.2	102	4.0	16	90	114
Methyl tert-butyl ether	50.0	48.0	96.1	50.0	47.3	94.7	1.5	23	80	124
Naphthalene	50.0	53.7	107	50.0	53.5	107	0.3	27	68	131
Toluene	50.0	53.5	107	50.0	51.6	103	3.8	21	84	118
m,p-Xylene	100	105	105	100	102	102	3.7	20	86	114
o-Xylene	50.0	52.7	105	50.0	50.5	101	4.2	17	87	117
Xylenes,Total	150.0	157.7	105.4	150.0	152.5	101.4	3.9	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	46.3	92.7	50.0	45.4	90.8	2.1	30	75	120
Surr: 4-Bromofluorobenzene	50.0	50.8	102	50.0	49.7	99.4	2.2	30	89	109
Surr: Toluene-d8	50.0	49.6	99.1	50.0	49.6	99.1	0.0	30	89	110

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: **Volatile Organics Method 8260B** **WorkOrder:** **09070781**
Method: **SW8260B** **Lab Batch ID:** **R211217**

Sample Spiked: 09070801-04
RunID: XA_090722A-3176238 Units: ug/L
Analysis Date: 07/22/2009 19:57 Analyst: TDD

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	50	41.8	83.6	50	41.7	83.5	0.191	21	50	150
Benzene	ND	50	47.8	93.9	50	48.0	94.3	0.413	23	77	127
Ethylbenzene	ND	50	46.3	92.5	50	46.1	92.3	0.227	16	50	150
Methyl tert-butyl ether	ND	50	42.7	85.4	50	42.4	84.7	0.718	23	50	150
Naphthalene	ND	50	44.8	89.6	50	46.5	93.0	3.76	27	50	150
Toluene	ND	50	47.6	95.1	50	47.5	95.0	0.116	21	71	135
m,p-Xylene	ND	100	90.0	90.0	100	91.0	91.0	1.20	20	50	150
o-Xylene	ND	50	45.4	90.8	50	45.8	91.5	0.838	17	50	150
Xylenes,Total	ND	150	135.4	90.23	150	136.8	91.21	1.080	20	50	150
Surr: 1,2-Dichloroethane-d4	ND	50	48.3	96.6	50	44.9	89.8	7.34	30	75	120
Surr: 4-Bromofluorobenzene	ND	50	50.3	101	50	50.2	100	0.160	30	89	109
Surr: Toluene-d8	ND	50	50.9	102	50	49.8	99.7	2.04	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211251

Method Blank

RunID: HA_090722B-3176871 Units: ug/L
Analysis Date: 07/22/2009 11:02 Analyst: NDG

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	95.7	75-120
Surr: 4-Bromofluorobenzene	98.1	89-109
Surr: Toluene-d8	98.9	89-110

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-07A	MW-11
09070781-08A	MW-12
09070781-16A	MW-21
09070781-17A	MW-22

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: HA_090722B-3176869 Units: ug/L
Analysis Date: 07/22/2009 9:36 Analyst: NDG

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	51.5	103	50.0	51.6	103	0.2	21	80	124
Benzene	50.0	50.1	100	50.0	51.2	102	2.1	23	88	117
Ethylbenzene	50.0	52.2	104	50.0	53.9	108	3.3	16	90	114
Methyl tert-butyl ether	50.0	49.1	98.2	50.0	50.1	100	2.0	23	80	124
Naphthalene	50.0	50.4	101	50.0	50.7	101	0.6	27	68	131
Toluene	50.0	54.9	110	50.0	56.2	112	2.3	21	84	118
m,p-Xylene	100	107	107	100	110	110	2.9	20	86	114
o-Xylene	50.0	51.2	102	50.0	53.4	107	4.2	17	87	117
Xylenes,Total	150.0	158.2	105.6	150.0	163.4	109.1	3.3	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	47.6	95.2	50.0	46.6	93.3	2.0	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.5	99.0	50.0	49.4	98.8	0.2	30	89	109
Surr: Toluene-d8	50.0	49.2	98.4	50.0	48.9	97.8	0.7	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070781**
Method:	**SW8260B**	**Lab Batch ID:**	**R211251**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070781
Lab Batch ID: R211297

Method Blank

RunID: XA_090723A-3177394 Units: ug/L
Analysis Date: 07/23/2009 11:12 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070781-11A	MW-16

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	92.3	75-120
Surr: 4-Bromofluorobenzene	97.7	89-109
Surr: Toluene-d8	98.6	89-110

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_090723A-3177392 Units: ug/L
Analysis Date: 07/23/2009 9:43 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	45.2	90.4	50.0	45.9	91.8	1.6	21	80	124
Benzene	50.0	49.0	98.0	50.0	49.3	98.5	0.5	23	88	117
Ethylbenzene	50.0	50.9	102	50.0	50.1	100	1.5	16	90	114
Methyl tert-butyl ether	50.0	47.1	94.2	50.0	47.3	94.6	0.4	23	80	124
Naphthalene	50.0	50.0	100	50.0	51.5	103	2.8	27	68	131
Toluene	50.0	51.1	102	50.0	49.8	99.5	2.7	21	84	118
m,p-Xylene	100	99.8	99.8	100	102	102	1.9	20	86	114
o-Xylene	50.0	50.0	99.9	50.0	50.2	100	0.6	17	87	117
Xylenes,Total	150.0	149.8	99.84	150.0	152.2	101.3	1.5	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	47.7	95.5	50.0	46.5	93.0	2.6	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.3	98.7	50.0	50.7	101	2.8	30	89	109
Surr: Toluene-d8	50.0	49.9	99.7	50.0	50.8	102	1.9	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070781**
Method:	**SW8260B**	**Lab Batch ID:**	**R211297**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**09070781**	Received By:	**EMB**
Date and Time Received:	**7/18/2009 9:00:00 AM**	Carrier name:	**FedEx-Pri Saturday Del**
Temperature:	**3.5°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 09070781

282605

page ___ of ___

Client Name: [illegible]

Address: [illegible]

City: Columbia State: SC Zip: 29205

Phone/Fax: (803) 737-[illegible]

Client Contact: [illegible] Email:

Project Name/No.: [illegible]

Site Name: [illegible]

Site Location: [illegible]

Invoice To: PO:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil Oil=oil A=air S=sludge T=tissue X=other)	bottle (P=plastic A=amber glass C=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	Requested Analysis: [illegible]	SOC					
[illegible]	[illegible]	[illegible]		✓	W	P	40	HX	2	✓	✓					

Client/Consultant Remarks:

Laboratory remarks: [illegible] HW4-5 [illegible] BW-41 (8)

Intact? Y N

Ice? Y N

Temp: 3.5/1.5

Requested TAT

☐ 1 Business Day ☐ Contract

☐ 2 Business Days ☐ Standard

☐ 3 Business Days

☐ Other ___

Rush TAT requires prior notice

Special Reporting Requirements: Results: Fax ☐ Email ☐ FDF ☐

Special Detection Limits (specify):

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

PM review (initials):

1. Relinquished by Sampler:	date:	time:	2. Received by: [illegible]
3. Relinquished by: [illegible]	date: 7/18/09	time: 830	4. Received by: [illegible]
5. Relinquished by: [illegible]	date: 7/18/09	time: 900	6. Received by Laboratory: [illegible]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 282604

07070791

page ____ of ____

Client Name: ATC ASSOCIATES

Address: 700 MONTGOMERY DR. Unit 12

City: COLUMBIA State: SC Zip: 29203

Phone/Fax: (803) 781-0005

Client Contact: Chris Bowen Email:

Project Name/No.: FA 25324.0001

Site Name: Univar Exxon

Site Location: Wandsboro, SC

Invoice To: PO:

SAMPLE ID	DATE	TIME	comp	grab	matrix: W=water S=soil C=oil A=air SL=sludge L=liquid X=other	bottle: P=plastic A=amber glass G=glass V=vial X=other	size: 1=1 liter 4=4oz 40=40 vial 8=8oz 16=16oz X=other	pres.: 2=HNO3 1=HCL 3=H2SO4 X=other	Number of Containers	Requested Analysis: ASTM, MADEP/EPH	EPH					
[illegible]	[illegible]	[illegible]		✓	W	V	40	HCL	6	X	X					

Client/Consultant Remarks:

Laboratory remarks: CLP QC

Intact? Y N

Ice? Y N

Temp: 3.5 C

Requested TAT

- 1 Business Day
- Contract
- 2 Business Days
- Standard
- 3 Business Days
- Other ____

Rush TAT requires prior notice

Special Reporting Requirements: Results: Fax ☐ Email ☐ Mail ☐

Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initials):

1. Relinquished by Sampler:	date	time	2. Received by: [illegible]
3. Relinquished by: [illegible]	date 7/18/07	time 0930	4. Received by: [illegible]
5. Relinquished by: [illegible]	date 7/18/07	time 0900	6. Received by Laboratory: [illegible]

☐ 8880 Interchange Drive
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☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

SPL, Inc.
Analysis Request & Chain of Custody Record

SPL Workorder No. 282603

09070781

page ___ of ___

Client Name: RTC ASSOCIATES
Address: 4400 NORTHEAST DR UNIT G
City: COLUMBIA State: SC Zip: 29223
Phone/Fax: (803) 735-0003
Client Contact: BOB BARNA Email:
Project Name/No.: 14 DAYS 8010 ONLY
Site Name: UNITED EXPRESS
Site Location: ORANGEBURG, SC
Invoice To: PO:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water, S=soil, O=oil, A=air, SL=sludge, F=tissue, X=other)	bottle (P=plastic, C=glass, V=vial, X=other)	size (1=1 liter, 4=4oz, 2=vial, 8=8oz, 16=16oz, X=other)	pres. (1=HCL, 2=HNO3, 3=H2SO4, X=other)	Number of Containers	Requested Analysis: 8010, semi purge	8015						
[illegible]	[illegible]	[illegible]		✓	W	✓	4G	1/3	02	✓	✓	✓					

Client/Consultant Remarks:

Laboratory remarks: C/S OK

Intact? Y N
Ice? Y N
Temp: 3.5 °C

Requested TAT
- 1 Business Day
- Contract
- 2 Business Days
- Standard
- 3 Business Days
- Other

Rush TAT requires prior notice

Special Reporting Requirements: Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initials):

1. Relinquished by Sampler:	date	time	2. Received by: RTC
3. Relinquished by: RTC	date 7/15/09	time 830	4. Received by: [illegible]
5. Relinquished by: [illegible]	date 7/16/09	time 980	6. Received by Laboratory: [illegible]

☐ 3890 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx. US Airbill 8696 8042 9362

Express

8696 8042 9362

From: This portion can be removed for recipient's records.

FedEx Express Tracking Number

Date: 7/17/04

Name: John Monahan

Phone: 803 755-0003

Sender's Name:

Company: ATC Associates

Address: 900 Northeast Dr

City: Columbia

State: SC

ZIP: 29205

RECIPIENT: PEEL HERE

2 Your Internal Billing Reference

3 To

Recipient's Name:

Company:

Recipient's Address:

Address:

City:

State:

ZIP:

0215

4a Express Package Service [redacted]

FedEx Priority Overnight

FedEx 2Day

FedEx Express Saver

Packages up to 150 lbs.

FedEx First Overnight

Packages over 150 lbs.

FedEx 3Day Freight

4b Express Freight Service

FedEx 1Day Freight

FedEx 2Day Freight

5 Packaging

FedEx Envelope

FedEx Pak

FedEx Box

FedEx Tube

Other

6 Special Handling [redacted]

HOLD Weekday

HOLD Saturday

Does this shipment contain dangerous goods?

No

Yes

Dry Ice

Cargo Aircraft Only

7 Payment Bill to:

Sender

Recipient

Third Party

Credit Card

Cash/Check

[redacted]

Total Packages

Total Weight

8 Residential Delivery Signature Options

No Signature Specified

Direct Signature

Indirect Signature

51

8696 8042 9362

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

09070776

Report To:		Project Name:	14.25384.0012	
ATC ASSOCIATES, INC.		Site:	UNITED EXXON	
Bob Bolton		Site Address:		
400 NORTHEAST DRIVE			WINNSBORO	SC
UNIT Q		PO Number:		
COLUMBIA		State:	South Carolina	
SC		State Cert. No.:	73004001	
29203-		Date Reported:	7/27/2009	
ph: (803) 735-0003	fax:			

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Results are reported on a Wet Weight Basis unless otherwise noted in the sample unit field as -dry.

The collection of samples using encores, terracores or other field collection devices may result in inconsistent initial sample weights for the parent sample and MS/MSD samples.

The MS/MSD recovery and precision data are calculated based on detected spike concentrations that are adjusted for initial sample weights. As a result of the variability between initial sample weights, the calculated RPD may have increased bias.

EXCEPTION:
Volatile Organics-Method 8260B: Recovery of Ethylbenzene and m,p-Xylene in the LCS sample for Lab Batch ID: R211047 exceeded the UCLs and as such indicates potential positive bias for associated samples in the analytical batch. The LCSD sample recoveries were all within SPLs derived advisory QC limits. Analytes with ND values are reported since positive bias is not indicated for these analytes.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

TOTAL NUMBER OF PAGES IN THIS REPORT: _____ PAGES

7/27/2009

Alberto E. Granados
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

ATC ASSOCIATES, INC.

Certificate of Analysis Number:

09070776

Report To: ATC ASSOCIATES, INC.
Bob Bolton
400 NORTHEAST DRIVE
UNIT Q
COLUMBIA
SC
29203-
ph: (803) 735-0003 fax: (803) 735-0443

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:
WINNSBORO SC
PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 7/27/2009

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
DW-2	09070776-01	Water	7/16/2009 2:30:00 PM	7/18/2009 9:00:00 AM	272241	☐

7/27/2009
Date

Alberto E. Granados
Project Manager

Ron Benjamin
Laboratory Director

Tristan Davis
Quality Assurance Officer

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 07/16/2009 14:30 **SPL Sample ID:** 09070776-01

Site: **UNITED EXXON**

Analyses/Method	Result	QUAL		Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METHOD 504.1					**MCL**	**E504.1**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.023	1	07/22/09 8:24	LDD	3177561
Surr: 1-Chloro-2-fluorobenzene	78.4		%	33-151	1	07/22/09 8:24	LDD	3177561

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	07/21/2009 10:20	JT	1.14

VOLATILE ORGANICS METHOD 8260B					**MCL**	**SW8260B**	**Units: ug/L**	
1,2-Dichloroethane	ND			1	1	07/21/09 8:48	DN	3173268
Benzene	83			1	1	07/21/09 8:48	DN	3173268
Ethylbenzene	ND			1	1	07/21/09 8:48	DN	3173268
Methyl tert-butyl ether	8.3			1	1	07/21/09 8:48	DN	3173268
Naphthalene	6.2			5	1	07/21/09 8:48	DN	3173268
Toluene	ND			1	1	07/21/09 8:48	DN	3173268
m,p-Xylene	ND			1	1	07/21/09 8:48	DN	3173268
o-Xylene	ND			1	1	07/21/09 8:48	DN	3173268
Xylenes,Total	ND			1	1	07/21/09 8:48	DN	3173268
Surr: 1,2-Dichloroethane-d4	98.0		%	75-120	1	07/21/09 8:48	DN	3173268
Surr: 4-Bromofluorobenzene	101		%	89-109	1	07/21/09 8:48	DN	3173268
Surr: Toluene-d8	96.4		%	89-110	1	07/21/09 8:48	DN	3173268

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

Quality Control Documentation

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: METHOD 504.1
Method: E504.1

WorkOrder: 09070776
Lab Batch ID: 81608

Method Blank

RunID: PCBB_090721B-3177557 Units: ug/L
Analysis Date: 07/22/2009 7:05 Analyst: LDD
Preparation Date: 07/21/2009 10:20 Prep By: JT Method: E504

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070776-01B	DW-2

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	85.0	33-151

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_090721B-3177558 Units: ug/L
Analysis Date: 07/22/2009 7:25 Analyst: LDD
Preparation Date: 07/21/2009 10:20 Prep By: JT Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.622	109	0.570	0.647	113	3.9	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	133	93.2	143	132	92.3	0.9	30	33	151

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis: Volatile Organics Method 8260B
Method: SW8260B

WorkOrder: 09070776
Lab Batch ID: R211047

Method Blank

RunID: QB_090720D-3173257 Units: ug/L
Analysis Date: 07/21/2009 0:16 Analyst: DN

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
09070776-01A	DW-2

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	1.0
Benzene	ND	1.0
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
Toluene	ND	1.0
m,p-Xylene	ND	1.0
o-Xylene	ND	1.0
Xylenes,Total	ND	1.0
Surr: 1,2-Dichloroethane-d4	97.3	75-120
Surr: 4-Bromofluorobenzene	97.4	89-109
Surr: Toluene-d8	95.9	89-110

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: QB_090720D-3173255 Units: ug/L
Analysis Date: 07/20/2009 22:45 Analyst: DN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	50.0	54.3	109	50.0	50.4	101	7.3	21	80	124
Benzene	50.0	54.5	109	50.0	49.9	99.8	8.8	23	88	117
Ethylbenzene	50.0	58.2	116 *	50.0	54.3	109	7.0	16	90	114
Methyl tert-butyl ether	50.0	50.6	101	50.0	47.0	94.0	7.5	23	80	124
Naphthalene	50.0	52.8	106	50.0	51.5	103	2.6	27	68	131
Toluene	50.0	54.7	109	50.0	49.7	99.4	9.5	21	84	118
m,p-Xylene	100	118	118 *	100	108	108	8.8	20	86	114
o-Xylene	50.0	57.3	115	50.0	52.2	104	9.2	17	87	117
Xylenes,Total	150.0	175.3	116.7	150.0	160.2	106.8	8.9	20	86	117
Surr: 1,2-Dichloroethane-d4	50.0	48.4	96.8	50.0	48.7	97.3	0.5	30	75	120
Surr: 4-Bromofluorobenzene	50.0	49.9	99.8	50.0	51.3	103	2.8	30	89	109
Surr: Toluene-d8	50.0	48.9	97.7	50.0	48.9	97.7	0.0	30	89	110

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

ATC ASSOCIATES, INC.

14.25384.0012

Analysis:	**Volatile Organics Method 8260B**	**WorkOrder:**	**09070776**
Method:	**SW8260B**	**Lab Batch ID:**	**R211047**

Qualifiers:

ND/U - Not Detected at the Reporting Limit
B/V - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

Sample Receipt Checklist

And

Chain of Custody

LAFAYETTE LABORATORY
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**09070776**	Received By:	**EMB**
Date and Time Received:	**7/18/2009 9:00:00 AM**	Carrier name:	**FedEx-Pri Saturday Del**
Temperature:	**4°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

SPL Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

SPL, Inc.

Analysis Request & Chain of Custody Record

SPL Workorder No. 272243

C9070776

page ___ of ___

Client Name: A.D. Associates
Address: 400 Ne Dr
Phone/Fax: 405-235-0003
Client Contact: [illegible] Email: [illegible]
Project Name/No.: [illegible]
Site Name: [illegible]
Site Location: [illegible]
Invoice To: Ph:

SAMPLE ID	DATE	TIME	comp	grab	matrix (W=water S=soil O=oil SL=sludge X=other)	bottle (P=plastic A=amber glass G=glass V=vial X=other)	size (1=1 liter 4=4oz 40=vial 8=8oz 16=16oz X=other)	pres. (1=HCl 2=HNO3 3=H2SO4 X=other)	Number of Containers	[illegible]	[illegible]	[illegible]						
Dup-2	7/1/09	1430		G	W	V	40	V	6	X	X	X						

Requested Analysis

Client/Consultant Remarks:

Laboratory remarks: Clear Filed 35 (8) RS-87 (75)

Intact? Y N
Ice? Y N
Temp: 4.0 (6)

Requested TAT

Contract ☐ 72hr ☐
24hr ☐ Standard ☐
48hr ☐
Other ☐ _____

Special Reporting Requirements Results: Fax ☐ Email ☐ PDF ☐
Standard QC ☐ Level 3 QC ☐ Level 4 QC ☐ TX TRRP ☐ LA RECAP ☐

Special Detection Limits (specify):

PM review (initial):

1. Relinquished by Sampler: [illegible]	date [illegible]	time	2. Received by: [illegible]
3. Relinquished by: [illegible]	date 7/1/09	time 0830	4. Received by: [illegible]
5. Relinquished by: [illegible]	date 7/1/09	time 0900	6. Received by Laboratory: [illegible]

☐ 8880 Interchange Drive
Houston, TX 77054 (713) 660-0901

☐ 500 Ambassador Caffery Parkway
Scott, LA 70583 (337) 237-4775

☐ 459 Hughes Drive
Traverse City, MI 49686 (231) 947-5777

FedEx Express — US Airbill

FedEx Tracking Number 8698 0515 8100

0215

From This portion can be removed for the sender's records

Date 7/14/09 FedEx Tracking Number 869805158100

Sender's Name [illegible] Phone [illegible]

Company AIC Associates

Address 900 Montana Ave

City Columbia State SC ZIP [illegible]

Your Internal Billing Reference 14-25580 [illegible]

To

Recipient's Name Phone [illegible]

Company SOUTHERN PETROLEUM LAC

Recipient's Address 3112 AMBASSADOR CAFFERY PKWY

Address

City LAFAYETTE State LA ZIP 70503-[illegible]

4a Express Package Service — Packages up to 150 lbs.

- [X] FedEx Priority Overnight
- [redacted]
- [ ] FedEx First Overnight
- [ ] FedEx 2Day
- [ ] FedEx Express Saver

4b Express Freight Service — Packages over 150 lbs.

- [ ] FedEx 1Day Freight
- [ ] FedEx 2Day Freight
- [ ] FedEx 5Day Freight

5 Packaging

- [ ] FedEx Envelope
- [ ] FedEx Pak
- [ ] FedEx Box
- [ ] FedEx Tube
- [X] Other

6 Special Handling

- [redacted]
- [ ] HOLD Weekday at FedEx Location
- [X] HOLD Saturday at FedEx Location

Does this shipment contain dangerous goods?

- [X] No
- [ ] Yes
- [ ] Yes Shipper's Declaration not required
- [ ] Dry Ice

Cargo Aircraft Only

7 Payment

- [ ] Sender
- [ ] Recipient
- [ ] Third Party
- [ ] Credit Card
- [ ] Cash/Check

Total Packages Total Weight [redacted]

8 Residential Delivery Signature Options

- [ ] No Signature Required
- [ ] Direct Signature
- [ ] Indirect Signature

519

8698 0515 8100

FedEx 561229

APPENDIX E

Disposal Manifests

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of 1
3. Emergency Response Phone 803-557-6175
4. Waste Tracking Number 28951

5. Generator's Name and Mailing Address
United Exxon
301 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name
A&D Environmental Services (SC), LLC (Tax) NuWay Environmental Services, LLC

U.S. EPA ID Number

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
4741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number SCD987558331

Facility's Phone: 803-957-6175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	001	TT	168	G.	
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-6175 A&D (SC Job #08/09

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature
Month 04 Day 28 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Chris Driver
Signature
Month 04 Day 28 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)
U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette
Signature
Month 4 Day 28 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of 1

3. Emergency Response Phone 803-957-9175

4. Waste Tracking Number 29052

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name
A&D Environmental Services (SC), LLC

U.S. EPA ID Number
SCD987598331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number
SCD987598331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	1. NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	1	TT	840 est		
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

A&D (SC Job #58794

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng
Signature:
Month 5 Day 20 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Clay Sims
Signature:
Month 5 Day 20 Year 09

Transporter 2 Printed/Typed Name
Signature
Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)
Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette
Signature:
Month 5 Day 20 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 290977

GENERATOR

5. Generator's Name and Mailing Address
United Exxon
401 North Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name

U.S. EPA ID Number

7. Transporter 2 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SC0057098221

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL			APPR 234	GAL	
2.	Oily water					
3.						
4.						

13. Special Handling Instructions and Additional Information: 18 gals free product

In Case of Emergency Call: 803-957-9175 A&D ISC Job #38795

14. GENERATOR'S CERTIFICATION: I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Na

Signature

Month 6 Day 2 Year 09

INT'L

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Carlton B. Sawyer

Signature

Month 6 Day 2 Year 09

Transporter 2 Printed/Typed Name

Signature

Month Day Year

DESIGNATED FACILITY

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette

Signature

Month 6 Day 2 Year 09

169-BLC-O 6 10498 (Rev. 8/06)

DESIGNATED FACILITY TO GENERATOR

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number:

2. Page 1 of 1

3. Emergency Response Phone: 803-957-9175

4. Waste Tracking Number: 29167

5. Generator's Name and Mailing Address
United Exxon
401 north Congress Street
Winnsboro, SC

Generator's Site Address (if different than mailing address)
ATC Columbia

Generator's Phone:

6. Transporter 1 Company Name: A&D Environmental Services (SC), LLC

U.S. EPA ID Number: SCD987599331

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
A&D Environmental Services (SC) LLC
1741 Calks Ferry Road
Lexington, SC 29073

U.S. EPA ID Number: SCD987599331

Facility's Phone: 803-957-9175

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS NON-REGULATED MATERIAL Oily water	1	TT	487 941		No product
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

In Case of Emergency Call: 803-957-9175

A&D (SC Job #88756

14. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to federal regulations for reporting proper disposal of Hazardous Waste.

Generator's/Offeror's Printed/Typed Name: Cindy Ng

Signature

Month 6 Day 16 Year 09

15. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:

Transporter Signature (for exports only): Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Clay Sims (Clay Sims)

Signature

Month 6 Day 16 Year 09

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: James Lovette

Signature

Month 6 Day 16 Year 09

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

169-BLC-O 6 10498 (Rev. 8/06)

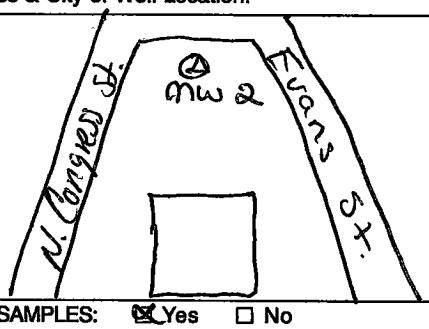
DESIGNATED FACILITY TO GENERATOR

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield
System Name:
Latitude:
Longitude:
Distance and Direction from Road Intersections: 401 N. Congress St. Winnsboro SC
Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Brn, SI	27	27
Tn, W, SI	20	47

RECEIVED
JUN 04 1998
Groundwater Management Section

UST PROGRAM DOCKETING # 90 Tech

*Indicate Water Bearing Zones
(Use a 2nd sheet if needed)

3. REMARKS: MW#2 #11760
Bentonite Seal from 23'-27'

4. OWNER OF WELL: Keenan Energy Company
Address: PO Box 3218
Telephone No.: Columbia, SC 29230

Engineer: SEI environmental, Inc.
Address: 3021 McNaughton Drive, Suite 9
Telephone No.: Columbia, SC 29223 (803) 788-2535

5. WELL DEPTH (completed) 54 ft.
Date Started:
Date Completed: 5-12-98

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other NSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 29 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface N/A ft.
Weight ____ lb./ft.
Drive Shoe? ☐ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: 010 Length: 25'
Set Between: 29 ft. and 54 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 45' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
N/A ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

12. WATER QUALITY
N/A Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 27' ft. to 54' ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0.3 ft. to 23' ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
N/A Type well disinfected upon completion ☐ Yes ☐ No Type: ____ Amount: ____

16. PUMP: Date installed: ____ Not installed ☐
N/A Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 5-15-98
Address: PO Box 703 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1333
Authorized Representative

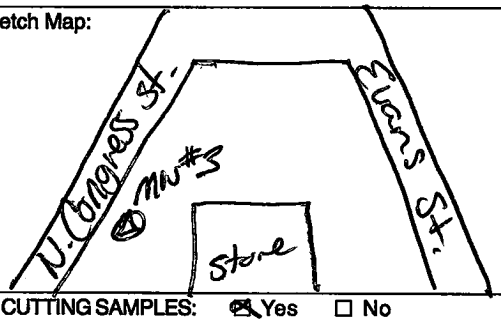
DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

DHEC
PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 734-5300

1. LOCATION OF WELL:
County: Fairfield
System Name:
Latitude:
Longitude:
Distance and Direction from Road Intersections: 401 N. Congress St.
Street Address & City of Well Location: Winnsboro SC

Sketch Map:



2. CUTTING SAMPLES: ☒ Yes ☐ No

Geophysical Logs: ☐ Yes (please enclose) ☐ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Brn, SI	27	27
Tn, W, SI	18	45

*Indicate Water Bearing Zones
(Use a 2nd sheet if needed)

3. REMARKS: MW#3 #11760
Bentonite Seal from 26-28'

RECEIVED
JUN 04 1998
Groundwater Management Section

4. OWNER OF WELL: Keenan Energy Company
Address: PO Box 3218
Telephone No.: Columbia, SC 29230
Engineer: SEI environmental, Inc (803)
Address: 3021 McNaughton Drive, Suite 9 788-2535
Telephone No.: Columbia, SC 29223

5. WELL DEPTH (completed) 45 ft. Date Started: 5-12-98 Date Completed:

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug
☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE:
☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry
☐ Irrigation ☐ Air Conditioning ☐ Commercial
☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded
Diam.: 2"
Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 30 ft. depth
____ in. to ____ ft. depth
Height: Above/Below Surface N/A ft.
Weight ____ lb./ft.
Drive Shoe? ☒ Yes ☐ No

9. SCREEN
Type: PVC Diam.: 2"
Slot/Gauge: .010 Length: 15'
Set Between: 30 ft. and 45 ft.
____ ft. and ____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 38.5 ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.
N/A ft. after ____ hrs. Pumping ____ G.P.M.
Pumping Test: ☐ Yes (please enclose) ☐ No
Yield: ____

12. WATER QUALITY
N/A Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No
Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No
Installed from 28 ft. to 45 ft.
Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No
☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____
Depth: From 0.3 ft. to 26 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction
N/A Type well disinfected ☐ Yes Type: ____
upon completion ☐ No Amount: ____

16. PUMP: Date installed: ____ Not installed ☐
N/A Mfr. Name: ____ Model No.: ____
H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm
TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
Registered Business Name: ECS Inc Date: 5-15-98
Address: PO Box 705 Matthews NC 28106
Signed: Chris Bender Cert. No.: 1335
Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

DIVISION OF UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

MAY 01 1998

Keenan Energy Company
Mr. Billy Keenan
P.O. Box 3218
Columbia, SC 29230

Re: United Exxon
Site ID: #11760, Cost Proposal #04881; Release #2 and Cost Proposal #04882; Release #3
Rapid Assessment Plan received April 16, 1998
Fairfield County

Dear Mr. Keenan:

The Division of Underground Storage Tank Management of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Rapid Assessment Plan and the Cost Proposal submitted by SEI Environmental, Inc.. Rehabilitation activities at the site should be resumed immediately upon receipt of this letter. Characterization of all exposure points should be completed using field screening points. Based on the field screening results, monitoring wells should be installed in appropriate locations to monitor the migration of chemicals of concern (COC) along these pathways and for rehabilitation. Please contact the department prior to well installation for concurrence regarding the final well locations.

According to our records, the release was reported to the SCDHEC subsequent to the early detection incentive program. Therefore, in accordance with Section 44-2-40(B) of the Act, you are responsible for the first $25,000 for site rehabilitation. To insure that any expenditures you make apply to the $25,000 deductible for each release, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the $25,000 deductible, for each release will be paid directly to your environmental contractor as indicated on your owner/operator information sheet, can be compensated from the SUPERB Account.

The Cost Agreements are approved for **$32,046.48 for each release and a total of $64,092.96.** This includes the adjustment of the following rates and/or site rehabilitation activities proposed in the cost proposal to ensure compliance with current SUPERB program criteria per Section 44-2-20(2):

- Item 4A: Two equipment mobilizations are approved. Since field screening activities define the plume and determine monitoring well locations, no further equipment mobilizations will be approved.
- Item 4B: Personnel mobilizations have been decreased from nine to five.

UST PROGRAM
DOCKETING # 91 Tech

SCDHEC/UST/SLFS/CJW/980429

The Division grants preapproval for transportation of 30 drums of virgin petroleum contaminated soil and 5 drums of wastewater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or ground water must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or ground water on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water.

All applicable S.C. certification requirements apply to the laboratory services, well installation and report preparation. All rehabilitation activities associated with a UST release must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98 A Rapid Assessment Report, as outlined in the Rapid Assessment document and associated invoice (form enclosed) should be submitted **with 90 days of the date of this correspondence.** If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please note that payment from the SUPERB account will be made upon review of the report and confirmation that all work performed was technically justified.

On all correspondence regarding this site, please reference site **ID #11760 and CP #04881 for release #2, and CP #04882 for release #3.** If you have any questions concerning this correspondence, please contact Chuck Williams at 803-734-5455 or 1 (800) 826-5435 (within South Carolina).

Sincerely,
State Lead and Field Services Section
Assessment & Corrective Action Branch
Division of Underground Storage Tank Management

Charles J. Williams, III, Hydrologist

Christopher S. Doll, P.G., Manager

enc: Approved Assessment Component Cost Proposal w/ Assessment Component Invoice form
Monitoring Well Approval

cc: Financial Section
Technical File
Bob Bolton, 3021 McNaughton Drive, Suite 9, Columbia, SC 29223 (w/ enc.)

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

Monitoring Well Installation Approval Form

MAY 01 1998

Date of Issue: April 29, 1998 Approval No.: 9543
Approval is hereby granted to: SEI Environmental
Site ID: #11760
County: Fairfield

This approval is for the construction of eight Type II and one Type III monitoring wells in accordance with the South Carolina Well Standards and Regulations. The wells are to be constructed within the aquifer for the intended purpose of monitoring ground-water quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built)construction details for each well will be submitted with the technical report.

2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.

3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.

4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Chuck Williams at (803) 734-5455 or Williacj@columb26.dhec.state.sc.us.

5. Please provide ground-water quality analytical data (chemical analysis and/or water level(s)) and associated measurements (i.e., in-situ field measurements) to me with the technical report.

6. Monitoring wells will be installed by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

7. Monitoring wells will be abandoned, when no longer required, by or under the direct supervision of a licensed well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71. Please remember to have a copy of this approval on the site during well installation.

Approved by:

Charles J. Williams, III, Hydrogeologist
State Lead and Field Services Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

cc: Central Midlands District EQC
Mr. Billy Keenan, P.O. Box 3218, Columbia, SC 29230

SCDHEC/UST/SLFS/CJW/980429

D H E C
PROMOTE PROTECT PROSPER

DIVISION OF
UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

2600 Bull Street
Columbia, SC 29201-1708

Keenan Energy Company
Mr. Billy Keenan
P.O. Box 3218
Columbia, SC 29230

MAR 25 1998

Re: United Exxon
Site ID: #11760; Release #2 and #3
Initial Groundwater Assessments received March 16, 1998
Fairfield County

Dear Mr. Keenan:

The Division of Underground Storage Tank (UST) Management of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced re[ports. The referenced reports indicate concentrations of chemicals of concern in the groundwater. To determine what risk the release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of the scope of work as outlined in the enclosed Rapid Assessment (RA) document is necessary. The Division requests that a Rapid Assessment Plan be submitted within thirty days of this letter.

According to our records, the releases were reported to the SCDHEC subsequent to the early detection incentive program. Therefore, in accordance with Section 44-2-40(B) of the Act, you are responsible for the first $25,000 for site rehabilitation for each release. To insure that any expenditures you make apply to this $25,000 deductible it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the $25,000 deductible can be compensated from the SUPERB Account.

On all correspondence regarding this site and scope of work, please reference Site ID #11760. If you have any questions concerning this correspondence, please contact Chuck Williams at (803) 734-5626 or 1-800-826-5435.

Sincerely,
State Lead and Field Services Section
Assessment and Corrective Action Branch
Division of Underground Storage Tank Management

Charles J. Williams, III, Hydrogeologist

Christopher S. Doll, P.G., Manager

UST PROGRAM
DOCKETING # 92 Tech

enc: Rapid Assessment Document

cc: Fred Lyke, SEI Environmental, Inc., 3021 McNaughton Dr., Suite 9, Columbia, SC 29223
Technical File
Read File

SCDHEC/UST/SLFS/CJW/980323

DHEC

PROMOTE PROTECT PROSPER

Water Well Record
Bureau of Water
; Columbia, SC 29201-1708; (803) 734-5300

Wellhead

#11760

1. LOCATION OF WELL:

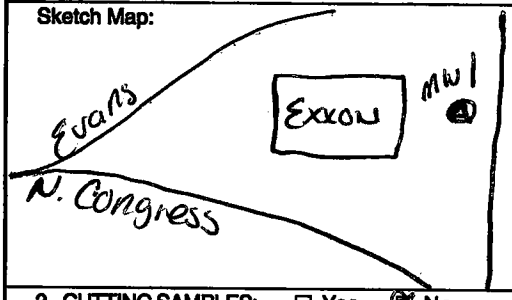
County: Fairfield, Syste

Latitude: Long

Distance and Direction from Road Intersections: 401 N. Congress St. Winnsboro SC

Street Address & City of Well Location:

Sketch Map:



2. CUTTING SAMPLES: ☐ Yes ☒ No

Geophysical Logs: ☐ Yes (please enclose) ☒ No

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Brn, Sl	25	25
Tn, W, Sl	10	35
Weathered	15	50

RECEIVED

MAR 1 6 1998

Groundwater Management Section

UST PROGRAM DOCKETING # 93Tech

*Indicate Water Bearing Zones

(Use a 2nd sheet if needed)

3. REMARKS: MW #1

Bentonite Seal from 29'-31'

ER OF WELL: Keenan Energy Company

ress: PO Box 3218

phone No.: Columbia, SC 29230

neer: SEI Environmental, Inc

ress: 3021 McNaughton Drive Suite 9

Telephone No.: Columbia, SC 29223 803 788 2535

5. WELL DEPTH (completed) 48 ft. Date Started: 2-27-98 Date Completed:

6. ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☒ Other HSA

7. USE: ☐ Domestic ☐ Public Supply–Permit No. ____ ☐ Industry ☐ Irrigation ☐ Air Conditioning ☐ Commercial ☐ Test Well ☒ Monitor Well ☐ ____

8. CASING: ☒ Threaded ☐ Welded

Diam.: 2"

Type: ☒ PVC ☐ Galvanized ☐ Steel ☐ Other

0 in. to 33 ft. depth

____ in. to ____ ft. depth

Height: Above/Below Surface ____ ft.

Weight N/A lb./ft.

Drive Shoe? ☐ Yes ☐ No

9. SCREEN

Type: PVC Diam.: 2"

Slot/Gauge: 1010 Length: 15

Set Between: 33 ft. and 48 ft.

____ ft. and ____ ft.

NOTE: MULTIPLE SCREENS USE SECOND SHEET

Sieve Analysis ☐ Yes (please enclose) ☒ No

10. STATIC WATER LEVEL 42' ft. below land surface after 24 hours

11. PUMPING LEVEL Below Land Surface.

N/A ft. after ____ hrs. Pumping ____ G.P.M.

Pumping Test: ☐ Yes (please enclose) ☐ No

Yield: ____

12. WATER QUALITY

N/A Chemical Analysis ☐ Yes ☐ No Bacterial Analysis ☐ Yes ☐ No

Please enclose lab results.

13. ARTIFICIAL FILTER (gravel pack) ☒ Yes ☐ No

Installed from 31 ft. to 48 ft.

Effective size 20/30 Uniformity Coefficient Silica Sand

14. WELL GROUTED? ☒ Yes ☐ No

☒ Neat Cement ☐ Sand Cement ☐ Concrete ☐ Other ____

Depth: From 0.5 ft. to 29 ft.

15. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ____ ft. ____ direction

N/A Type well disinfected upon completion ☐ Yes ☐ No Type: ____ Amount: ____

16. PUMP: Date installed: ____ Not installed ☐

Mfr. Name: ____ Model No.: ____

N/A H.P. ____ Volts ____ Length of drop pipe ____ ft. Capacity ____ gpm

TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal

17. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Registered Business Name: ECS Inc Date: 3-11-98

Address: PO Box 703 Matthews NC 28106

Signed: Chris Bender Cert. No. 1333

Authorized Representative

DHEC 1903 (10/96) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

SEI
Environmental, Inc.

3021 McNaughton Drive
Suite 9
Columbia, SC 29223
800.377.2826
803.788.2535
Fax 788.2399

February 19, 1998

Mr. Charles J. Williams, III
Bureau of UST Management
SCDHEC
2600 Bull Street
Columbia, SC 29201

RE: Site ID# 11760/United Exxon

Dear Mr. Williams:

Attached please find the insurance forms and Owner/Operator information sheets for the above referenced site. Bob Bolton from our office will contact you with the drilling date. If you have any questions, please contact us at 788-2535.

Sincerely
SEI Environmental

Dee DeBerry

UST PROGRAM
DOCKETING # 94 Tech

RECEIVED
FEB 20 1998
Bureau of Underground
Storage Tank Management

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of Site #11760, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐<specify scope> IGWA
☒All future assessment scopes. **

Name of Contractor/Person(s) SEI Environmental
Address 3021 McNaughton Dr STE-9
Columbia SC 29223

Telephone Number 803-788-2535

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessent activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? _____ Yes ✓ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancee.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

_____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

✓ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature [signature]

Date 2/12/98

RECEIVED
FEB 20 1998
Storage Tank Management

SCDHEC/UST/SLFS/CJW/980202

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of Site #11760, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ <specify scope> IGWA
☑ All future assessment scopes. **

Name of Contractor/Person(s) SEE Environmental
Address 3021 McNaughton Dr STE-9
Columbia SC 29223

Telephone Number 803 788-2525

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessent activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? _____ Yes ✓ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancee.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

_____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

✓ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature [signature]

Date 2/12/98

SCDHEC/UST/SLFS/CJW/980202

INSURANCE STATEMENT FORM

Site ID #11760, release #3, is potentially eligible to receive state monies to assist you in site rehabilitation, if required. Before eligibility for State Underground Petroleum Environmental Response Bank (SUPERB) funds can be determined, written confirmation of the existence or nonexistence of an environmental insurance policy for this site is required. Please complete the following information:

✓ I do not have any insurance that would cover releases from underground storage tanks.

___ I have an insurance policy that covers releases from underground storage tanks.

My policy provider is: _____
The policy deductible is: _____
The policy limit is: _____

If you have this type of insurance, please include a copy of the policy with this report.

Signature: [illegible]

Date: 2/11/98

To be Completed by Notary Public:

Sworn before me this 19th day of February 1998.

Vicki L. Dearlove
(Name)

Notary Public for the state of S. C.

My commission expires February 24, 2007

Please affix State Seal if you are commissioned outside South Carolina.

SCDHEC/UST/SLFS/CJW/980202

INSURANCE STATEMENT FORM

Site ID #11760, release #2, is potentially eligible to receive state monies to assist you in site rehabilitation, if required. Before eligibility for State Underground Petroleum Environmental Response Bank (SUPERB) funds can be determined, written confirmation of the existence or nonexistence of an environmental insurance policy for this site is required. Please complete the following information:

✓ I do not have any insurance that would cover releases from underground storage tanks.

____ I have an insurance policy that covers releases from underground storage tanks.

My policy provider is: _____
The policy deductible is: _____
The policy limit is: _____

If you have this type of insurance, please include a copy of the policy with this report.

Signature: [illegible]

Date: 2/12/99

To be Completed by Notary Public:

Sworn before me this 19th day of February 1998

Vicki L. Dearlove
(Name)

Notary Public for the state of S.C.

My commission expires February 24, 2007

Please affix State Seal if you are commissioned outside South Carolina.

SCDHEC/UST/SLFS/CJW/980202

D - H E C

PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

BUREAU OF
UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

Keenan Energy Company
Mr. Billy Keenan
P.O. Box 3218
Columbia, SC 29230

FEB 06 1998

Re: United Exxon
Site ID: #11760, Cost Proposal #04298; Release #2
Release/Assessment Report received August 1, 1997
Fairfield County

Dear Mr. Keenan:

The Bureau of Underground Storage Tank (UST) Management of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced Assessment. The referenced report indicates concentration of chemicals of concern in the soil. To determine what risk the release may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of the scope of work as outlined in the enclosed Initial Groundwater Assessment (IGWA) document is necessary. Since the above scope of work is detailed in the IGWA document, a separate plan is not required.

According to our records, the release was reported to the SCDHEC subsequent to the early detection incentive program. Therefore, in accordance with Section 44-2-40(B) of the Act, you are responsible for the first $25,000 for site rehabilitation. To insure that any expenditures you make apply to this $25,000 deductible, should the release become qualified to receive SUPERB funds, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the $25,000 deductible can be compensated from the SUPERB Account.

To proceed with the qualification process for the State Underground Petroleum Environmental Response Bank (SUPERB) Act, the following information is required:

- Written confirmation of the existence or nonexistence of an environmental insurance policy for this site. **This information must be signed by the responsible party and a notary public.** For your convenience, an insurance statement form has been enclosed. If an environmental insurance policy existed at the time of the release, a copy of the policy with all endorsements must be submitted with the insurance statement.

Please complete and return the enclosed insurance information form within 14 days from the date of this letter. Please note that the maximum approvable amount for the IGWA is **$1,320.00**. Upon receipt of the signed IGWA Invoice, IGWA Report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, up to **$1,320.00** may be applied toward your deductible.

UST PROGRAM
DOCKETING # 95 Tech

SCDHEC/UST/SLFS/CJW/980202

Please complete and return the enclosed Owner/Operator Information Sheet within 14 days from the date of this letter (note that all rehabilitation activities associated with a UST release must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98). Cost proposal #04298 has been established to track the allowable costs associated with this IGWA. Please include the cost proposal number when submitting your invoice.

Implementation of the IGWA should proceed upon receipt of this correspondence. The required monitoring well approval is enclosed. **The report should be submitted within 90 days from the date of this letter.** The Bureau grants preapproval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. All contaminated investigated derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

On all correspondence regarding this site and scope of work, please reference Site ID #11760 and cost proposal #04298. If you have any questions concerning this correspondence, please contact Chuck Williams at (803) 734-5626 or 1-800-826-5435.

Sincerely,
State Lead and Field Services Section
Assessment and Corrective Action Division
Bureau of Underground Storage Tank Management

Charles J. Williams, III, Hydrogeologist

Christopher S. Doll, P.G., Manager

enc: Copy of Monitoring Well Approval
Information Sheet
Initial Groundwater Assessment document
Insurance Information Form

cc: Technical File (Copy of Monitoring Well Approval)
Financial File
Read File

SCDHEC/UST/SLFS/CJW/980202

D H E C
PROMOTE PROTECT PROSPER
2600 Bull Street
Columbia, SC 29201-1708

Monitoring Well Installation Approval Form

Date of Issue: February 2, 1998 Approval No.: 9114

Approval is hereby granted to: Keenan Energy Company
Site ID: #11760
County: Fairfield

This approval is for the construction of one shallow monitoring well in accordance with the South Carolina Well Standards and Regulations. The well are to be constructed within the aquifer for the intended purpose of monitoring groundwater quality and/or water level(s) at the referenced facility. Approval is provided with the following conditions:

1. The latitude and longitude, surveyed elevations, boring and/or geologist logs and actual (as built) construction details for each well be submitted to my attention within thirty (30) days of completion (of last well(s) installed).

2. Each well will be labeled with an identification plate constructed of a durable material affixed to the casing or surface pad where it is readily visible. The plate will provide monitoring well I.D.#, date of construction, static water level, and driller name and state certification #.

3. Well construction and sampling derived waste including, but not necessarily limited to, drill cuttings, drilling fluids, development and purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regard to contents, source, and date of activity.

4. A minimum of forty-eight (48) hours prior to initiation of drilling activities, please provide notice to Chuck Williams, (803-734-5455).

5. Please provide groundwater quality analytical data (chemical analysis and/or water level(s)) associated measurements (i.e., in-situ field measurements) to my attention within thirty (30) days of receipt from laboratory.

6. Monitoring wells will be installed by a well driller certified by the State of South Carolina.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and the Department of Health and Environmental Control Regulations R.61-71.

Approved by:

Charles J. Williams, III, Hydrogeologist
State Lead and Field Services Section
Assessment and Corrective Action Division
Bureau of Underground Storage Tank Management

cc: Central Midlands District EQC

SCDHEC/UST/SLFS/CJW/980202

D H E C

PROMOTE PROTECT PROSPER

2600 Bull Street
Columbia, SC 29201-1708

BUREAU OF
UNDERGROUND STORAGE TANK MANAGEMENT

Phone (803) 734-5455 Fax (803) 734-3604

Keenan Energy Company
Mr. Billy Keenan
P.O. Box 3218
Columbia, SC 29230

FEB 06 1998

Re: United Exxon
Site ID: #11760, Cost Proposal #04298; Release #2
Release/Assessment Report received August 1, 1997
Fairfield County

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According to our records, the release was reported to the SCDHEC subsequent to the early detection incentive program. Therefore, in accordance with Section 44-2-40(B) of the Act, you are responsible for the first $25,000 for site rehabilitation. To insure that any expenditures you make apply to this $25,000 deductible, should the release become qualified to receive SUPERB funds, it is prudent for this agency to pre-approve such costs along with your technical plan of action. By law, the SUPERB account cannot compensate any costs that are not pre-approved. Eligible costs exceeding the $25,000 deductible can be compensated from the SUPERB Account.

To proceed with the qualification process for the State Underground Petroleum Environmental Response Bank (SUPERB) Act, the following information is required:

- Written confirmation of the existence or nonexistence of an environmental insurance policy for this site. **This information must be signed by the responsible party and a notary public.** For your convenience, an insurance statement form has been enclosed. If an environmental insurance policy existed at the time of the release, a copy of the policy with all endorsements must be submitted with the insurance statement.

Please complete and return the enclosed insurance information form within 14 days from the date of this letter. Please note that the maximum approvable amount for the IGWA is **$1,320.00**. Upon receipt of the signed IGWA Invoice, IGWA Report, and a copy of your canceled check (front and back) or a notarized statement from the contractor verifying payment for this scope of work, up to **$1,320.00** may be applied toward your deductible.

SCDHEC/UST/SLFS/CJW/980202

Please complete and return the enclosed Owner/Operator Information Sheet within 14 days from the date of this letter (note that all rehabilitation activities associated with a UST release must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98). Cost proposal #04298 has been established to track the allowable costs associated with this IGWA. Please include the cost proposal number when submitting your invoice.

Implementation of the IGWA should proceed upon receipt of this correspondence. The required monitoring well approval is enclosed. **The report should be submitted within 90 days from the date of this letter.** The Bureau grants preapproval for the transportation of the investigative derived waste (virgin petroleum contaminated soil and groundwater) from the referenced site to a permitted treatment facility. All investigative derived waste must be properly stored in labeled containers or covered with plastic as appropriate. All contaminated investigated derived waste must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and approval letter from the receiving facility must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below treatment levels, please contact the project manager for approval to dispose of the investigative waste on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or ground water. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria. The SCDHEC reserves the authority to only apply costs to your deductible for work properly performed and/or technically justified in accordance with established criteria.

On all correspondence regarding this site and scope of work, please reference Site ID #11760 and cost proposal #04298. If you have any questions concerning this correspondence, please contact Chuck Williams at (803) 734-5626 or 1-800-826-5435.

Sincerely,
State Lead and Field Services Section
Assessment and Corrective Action Division
Bureau of Underground Storage Tank Management

Charles J. Williams, III, Hydrogeologist

Christopher S. Doll, P.G., Manager

enc: Copy of Monitoring Well Approval
Information Sheet
Initial Groundwater Assessment document
Insurance Information Form

cc: Technical File (Copy of Monitoring Well Approval)
Financial File
Read File

SCDHEC/UST/SLFS/CJW/980202

Cardno ATC
Shaping the Future

Cardno ATC

400 Northeast Drive
Unit Q
Columbia, SC 29203

Phone +1 803 735 0003
Fax +1 803 735 0443
www.cardno.com

www.cardnoatc.com

UST
OCT 3 1 2013
DIVISION

October 25, 2013

Mr. Read S. Miner, P.G., Hydrogeologist
South Carolina Department of Health and Environmental Control
Corrective Action Section
Bureau of Land and Waste Management
UST Management Division
2600 Bull Street
Columbia, South Carolina 29201

UST
96 tech
DOCKETING

RE: Groundwater Monitoring Report
Former United Oil
401 North Congress Street, Winnsboro, South Carolina
Fairfield County
UST Permit ID #11760; CA #46151
Cardno ATC Project No. 14.25384.0012

Dear Mr. Miner:

Cardno ATC, on behalf of Keenan Energy Company, Inc. is submitting the enclosed Groundwater Monitoring Report for the **Former United Oil**. This report is in accordance with the South Carolina Department of Health and Environmental Control (SCDHEC) directive letter dated July 15, 2013, and documents investigative procedures, field activities, and laboratory analytical results for the September 5, 2013 groundwater sampling event. If you have any questions or require additional information, please contact the Cardno ATC project manager for the site, Jesse Keeffe, at (803) 735-0003.

Sincerely,
Cardno ATC

for
Braden Belding
Staff Geologist
for Cardno ATC
Direct Line +1 866 735 0003 ext. 107
Email: braden.belding@cardno.com

Jesse L. Keeffe, Jr., P.G. #2308
Project Manager
for Cardno ATC
Direct Line +1 866 735 0003 ext. 109
Email: jesse.keeffe@cardno.com

cc: Mr. Billy Keenan, President, Keenan Energy Company, Inc.

UST Management Division
October 25, 2013

Cardno ATC
Shaping the Future

Groundwater Monitoring Report
Former United Oil
401 North Congress Street, Winnsboro, South Carolina
UST Permit ID #11760; CA #46151
Cardno ATC Project No. 14.25384.0012

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Underground Storage Tank Site Rehabilitation Contractor Certification No. 313

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1.0 INTRODUCTION

Cardno ATC was retained by Keenan Energy Company, Inc. to perform environmental consulting services at the Former United Oil (site). Cardno ATC has completed monitoring and sampling activities at the site located at 401 North Congress Street, Winnsboro, Fairfield County, South Carolina (UST Permit #11760). A site topographic map is presented as ***Figure 1*** and a site map depicting pertinent features is presented as ***Figure 2***. The activities were authorized by the South Carolina Department of Health and Environmental Control's (SCDHEC) issuance of a sampling directive for the site dated July 15, 2013. The scope of services included a groundwater sampling event, laboratory testing, and report preparation. The results of the groundwater sampling event, along with recommendations, are included herein.

2.0 SITE DESCRIPTION

2.1 Site Characterization

The site is currently a retail propane gas dealer (Superior Gas, Inc.). No operating USTs are present at the site. The site is owned by Pope Oil Company of P.O. Box 727, Winnsboro, South Carolina 29180 (Phone: 803-635-4426 and parcel number: 126-01-06-010-000). The site is located at the northern intersection of Evans Street and Congress Street in Winnsboro, Fairfield County, South Carolina. The surrounding area includes developed commercial properties, residential properties, and wooded areas.

2.2 Site Background

The release was reported on August 1, 1997. Following confirmation of the release, soil and groundwater assessments were conducted. Most recently, SCDHEC issued a directive for the preparation of a Quality Assurance Program Plan (QAPP) contractor addendum (QAPPA) for a comprehensive sampling event. On June 25, 2013, Cardno ATC submitted the QAPPA which was approved by SCDHEC on July 9, 2013. On July 15, 2013, SCDHEC issued a Groundwater Sampling Directive requesting the completion of a groundwater sampling event at the site. Per SCDHEC's request, this report documents a groundwater sampling event conducted on September 5, 2013.

3.0 GROUNDWATER CHARACTERIZATION

3.1 Groundwater Levels

On September 5, 2013, groundwater levels were gauged in monitoring wells 11760 MW-1, 11760 MW-2, 11760 MW-3, 11760 MW-4, 11760 MW-4R, 11760 MW-5, 11760 MW-6R, 11760 MW-7, 11760 MW-8, 11760 MW-9R, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-17, 11760 MW-18, 11760 MW-19, 11760 MW-20, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-26, 11760 MW-27, 11760 MW-28, 11760 MW-29, 11760 DW-1, and 11760 DW-2. An oil/water interface probe was used to measure the depths to water and free-phase product, which was present at the time of the gauging event in monitoring wells 11760 MW-2 and 11760 MW-29 at a thickness of 0.09 and 0.03 feet, respectively. Depths were measured from the top of the well casings. The locations of the monitoring wells are shown in ***Figure 2.*** Monitoring well construction details and current groundwater elevation data are included in ***Table 1.*** Groundwater elevation contour maps are based on the September 5, 2013 data is presented as ***Figure 3.*** Groundwater flow direction is in a south to southeast direction across the site. The Hydraulic Gradient as measured between monitoring wells 11760 MW-5 and 11760 MW-10 is estimated to be 0.0786 feet per foot.

3.2 Groundwater Quality

On September 5, 2013, groundwater samples were collected from monitoring wells 11760 MW-1, 11760 MW-3, 11760 MW-4R, 11760 MW-5, 11760 MW-6R, 11760 MW-8, 11760 MW-9R, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-17,11760 MW-18, 11760 MW-19, 11760 MW-20, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-26, 11760 MW-27, 11760 MW-28, 11760 DW-1, and 11760 DW-2. Monitoring wells 11760 MW-4 and 11760 MW-7 were dry and monitoring well 11760 MW-16 could not be located. New disposable polyethylene bailers were used for the collection of the groundwater samples from monitoring wells. The groundwater monitoring wells were purged of three casing volumes, bailed for dryness, or purged until field parameters reached ten percent equilibrium prior to sample collection. During groundwater collection, Cardno ATC collected pH, specific conductivity, water temperature, and dissolved oxygen measurements. These measurements for each well are recorded in the field data information sheets included in ***Appendix A.*** A surface water sample (identified as 11760 CK-1) was obtained from a nearby creek (located southeast and hydraulically

down gradient of the site). New disposable nitrile gloves were used to maintain sample integrity during the sampling process.

The groundwater and quality assurance samples were transported under chain of custody to Accutest Laboratories [500 Ambassador Caffery Parkway, Scott, Louisiana 70583, South Carolina Laboratory Certification Number 73004001, (337) 237-4775]. The groundwater samples were analyzed for the volatile organic compounds benzene, toluene, ethylbenzene, total xylenes (BTEX), methyl tert-butyl ether (MTBE), naphthalene, 1,2-dichloroethane (1,2-DCA) and the 8 oxygenates by EPA Method 8260B; and additionally analyzed for 1,2-dibromoethane (EDB) by EPA method 8011. Copies of the laboratory analytical results for groundwater quality and chain-of-custody documentation are included in ***Appendix B.***

Groundwater analytical results for the September 5, 2013 sampling event are summarized in ***Table 2.*** The groundwater samples that exceeded the SCDHEC RBSLs are summarized as follows:

- Benzene — 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-27, and 11760 MW-28;
- Toluene — 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-27, and 11760 MW-28;
- Ethylbenzene — 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-27, and 11760 MW-28;
- Total Xylenes — 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-27, and 11760 MW-28;
- naphthalene — 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-22, 11760 MW-23, 11760 MW-27, and 11760 MW-28;
- MTBE — 11760 MW-12, 11760 MW-14, 11760 MW-18, 11760 MW-21, 11760 MW-27, and 11760 MW-28;
- EDB — 11760 MW-28;
- 1,2 DCA — 11760 MW-18 and 11760 11760 MW-21;

- Tert-Amyl alcohol 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21. 11760 MW-22, 11760 MW-23, 11760 MW-27, 11760 MW-28, and 11760 DW-2;
- Tert-Butyl alcohol 11760 MW-3, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-15, 11760 MW-18, 11760 MW-27, and 11760 MW-28;
- Di-isopropyl ether 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-25, 11760 MW-27, and 11760 MW-28.

A chemicals of concern (CoC) in groundwater map is included as ***Figure 4.*** Historical groundwater analytical results are summarized in ***Table 3.*** All purge water was filtered through a granular activated carbon unit for proper disposal. A waste disposal certificate for the purge water is included in ***Appendix C.***

4.0 DATA VALIDATION AND USABILITY

4.1 Data Validation

To ensure adherence to the methodologies described in the QAPPA, a contractor checklist (SCDHEC Programmatic QAPP Appendix K) was completed and is included in ***Appendix D.***

4.2 Quality Assurance Analysis

The project sample design, field procedures, and laboratory data were reviewed for quality assurance and data usability using the six data quality indicators (DQIs) described in Section A7 of the SCDHEC Programmatic QAPP requirements. The results of the quality assurance analysis are described below.

4.3 Precision

The precision of the laboratory data was evaluated by comparing the relative percent difference (RPD) between using a sample and a field duplicate sample. The sample locations were selected based on previous analytical results. The field duplicate sample DUP-01 was collected from monitoring well 11760 MW-28 as well as duplicate sample DUP-02 from monitoring well 11760 MW-15 and submitted for analysis of BTEX, MTBE, naphthalene, 1,2-DCA , and the 8 oxygenates. The RPD was calculated using the formula:

$$PD\ (\%) = Absolute\ value\ of \left(\frac{(C_S - C_D)}{((C_S - C_D)/2)}\right) x\ 100$$

Where: C_S = Concentration of the sample

C_D = Concentration of the duplicate sample

The RPDs were compared to the limits established in Appendix E of the SCDHEC Programmatic QAPP. The results of the Precision Analysis are included in ***Table 4.*** The RPD indicates benzene, toluene, ethylbenzene, xylenes, naphthalene, and EDB in DUP-01; and tert-amyl alcohol and tert-butyl alcohol in DUP-02 are above the acceptable range between the well samples and respective duplicate samples. Please see ***Appendix E*** for the Project Status Update Form regarding the exceeded the RPD limit for the respective chemicals of concern.

4.4 Bias

Bias analysis of the data can indicate accuracy of the laboratory measurement system. The results of the analysis of the trip blank indicate that there were no sources of error in the sampling process, preservation, handling, sample preparation and analytical techniques. The results of the bias analysis of the field and trip blanks are included in ***Table 4***.

4.5 Representativeness

The site monitoring well network was designed to allow representative samples to be collected from the site and the surrounding area. Field personnel have been instructed to log data, label containers, and enter samples on the chains-of-custody immediately upon collection to reduce potential for sample location or other representativeness errors. Proper preservation techniques, including preservative use and immediate icing of samples are also employed. Samples were collected and analyzed in accordance with the QAPPA. The data collected and presented in this report meet the QAPP criteria for representativeness.

4.6 Completeness

The dataset meets the completeness criteria based on the purpose of the sampling event because each available monitoring well that did not contain free product and which could be located was sampled. The purpose of the sampling event was to monitoring the petroleum impact to groundwater.

4.7 Comparability

The results of laboratory analysis of groundwater at the site between November 2, 1998 and September 5, 2013 are included in this report. The samples were collected using the same field protocols, analyzed using the same EPA Methods, and the data is reported in micrograms per Liter (µg/L) to allow for easy comparison. In general, trends of impact conditions show that effects of natural migration and attenuation of impact are consistent with a petroleum release in the South Carolina geographic setting. Concentrations between individual monitoring events show modest changes reflective of natural attenuation or reasonable data fluctuations from sorption and desorption effects during water level changes or from other natural variations. The comparability criteria have generally been met.

4.8 Method Sensitivity

Laboratory method detection limits and reporting limits were reviewed and compared to the limits established in Appendix E of the SCDHEC Programmatic QAPP. The results of the Method Sensitivity analysis are included in ***Table 4***. The analytical dataset met the QAPP sensitivity limits. The analytical dataset met the QAPP sensitivity limits.

5.0 SUMMARY

During this reporting period Cardno ATC conducted monitoring well sampling at the site. Based on field activities and laboratory results Cardno ATC concludes the following:

- Groundwater flow direction is in south to southeastern direction across the site with an estimated hydraulic gradient of 0.0786 feet per foot;
- Free product was detected during the September 5, 2013 sampling event in Monitoring Wells 11760 MW-2 and 11760 MW-29 with a thickness of 0.09 and 0.03 feet, respectively;
- Benzene exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-24, 11760 MW-25, 11760 MW-27, and 11760 MW-28;
- Toluene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-27, and 11760 MW-28;
- Ethylbenzene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-15, 11760 MW-27, and 11760 MW-28;
- Total xylenes exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-13, 11760 MW-27, and 11760 MW-28;
- MTBE exceeded its RBSL in monitoring wells 11760 MW-12, 11760 MW-14, 11760 MW-18, 11760 MW-21, 11760 MW-27, and 11760 MW-28;
- Naphthalene exceeded its RBSL in monitoring wells 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-22, 11760 MW-23, 11760 MW-27, and 11760 MW-28;
- EDB exceeded its RBSL in monitoring well 11760 MW-28;
- 1,2-DCA exceeded its RBSL in monitoring wells 11760 MW-8 and 11760 11760 MW-21;
- Tert-Amyl alcohol exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21. 11760 MW-22, 11760 MW-23, 11760 MW-27, 11760 MW-28, and 11760 DW-2;
- Tert-Amyl methyl ether exceeded its RBSL in none of the wells;
- Tert-Butyl alcohol exceeded its RBSL in 11760 MW-3, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-15, 11760 MW-18, 11760 MW-27, and 11760 MW-28;

- Di-isopropyl ether exceeded its RBSL in monitoring wells 11760 MW-3, 11760 MW-10, 11760 MW-11, 11760 MW-12, 11760 MW-13, 11760 MW-14, 11760 MW-15, 11760 MW-18, 11760 MW-21, 11760 MW-22, 11760 MW-23, 11760 MW-25, 11760 MW-27, and 11760 MW-28.

Cardno ATC recommends continued groundwater sampling on an annual basis to monitoring contaminant concentrations and a series of aggressive vapor fluid recovery (AFVR) events to reduce or remove the free phase hydrocarbons from the site.

TABLES

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-1	09/05/13	96.54	48	33-48	NP	NP	40.52	56.02
	02/24/10				NP	NP	42.53	54.01
	07/16/09				NP	NP	43.2	53.34
	09/22/08				NP	NP	44.34	52.20
	01/14/08				NP	NP	43.59	52.95
	04/19/07				NP	NP	40.79	55.75
	08/21/06				NP	NP	43.28	53.26
	06/27/05				NP	NP	41.56	54.98
	3/62005				NP	NP	42.33	54.21
11760 MW-2	09/05/13	98.17	54	39-54	50.94	0.09	51.03	45.51
	02/24/10				NP	NP	51.69	46.48
	07/16/09				NP	NP	52.31	45.86
	09/22/08				NP	NP	52.66	45.51
	01/14/08				NP	NP	51.81	46.36
	04/19/07				NP	NP	49.93	48.24
	08/21/06				NP	NP	51.76	46.41
	06/27/05				NP	NP	50.12	48.05
	3/62005				NP	NP	50.87	47.30
11760 MW-3	09/05/13	95.81	45	30-45	NP	NP	42.22	53.59
	02/24/10				NP	NP	44.24	51.57
	07/16/09				NP	NP	44.82	50.99
	09/22/08				NP	NP	Dry	NA
	01/14/08				NP	NP	Dry	NA
	04/19/07				NP	NP	42.51	53.30
	08/21/06				NP	NP	44.78	51.03
	06/27/05				NP	NP	42.98	52.83
	3/62005				NP	NP	43.74	52.07
11760 MW-4	09/05/13	100.46	45	30-45	NP	NP	Dry	NA
	02/24/10				NP	NP	Dry	NA
	07/16/09				NP	NP	Dry	NA
	09/22/08				NP	NP	Dry	NA
	01/14/08				NP	NP	Dry	NA
	04/19/07				NP	NP	Dry	NA
	08/21/06				NP	NP	Dry	NA
	06/27/05				NP	NP	Dry	NA
	03/08/05				NP	NP	Dry	NA
11760 MW-4R	09/05/13	98.14	60	40-60	NP	NP	47.12	51.02
	02/24/10				NP	NP	48.56	49.58
	07/16/09				NP	NP	49.24	48.90
	09/22/08				NP	NP	49.94	48.20
	01/14/08				NP	NP	49.18	48.96
	04/19/07				NP	NP	46.97	51.17
	08/21/06				NP	NP	49.06	49.08
	06/27/05				NP	NP	47.34	50.80
11760 MW-5	09/05/13	94.41	45	30-45	NP	NP	40.31	54.10
	02/24/10				NP	NP	42.43	51.98
	07/16/09				NP	NP	43.17	51.24
	09/22/08				NP	NP	44.05	50.36
	01/14/08				NP	NP	43.23	51.18
	04/19/07				NP	NP	40.69	53.72
	08/21/06				NP	NP	43.07	51.34
	06/27/05				NP	NP	41.23	53.18
	03/08/05				NP	NP	41.91	52.50
11760 MW-6R	09/05/13	103.91	65	45-65	NP	NP	56.76	47.15
	02/24/10				NP	NP	57.27	46.64
	07/16/09				NP	NP	58.04	45.87
	09/22/08				NP	NP	58.37	45.54
	01/14/08				NP	NP	57.44	46.47
	04/19/07				NP	NP	55.45	48.46
	08/21/06				NP	NP	57.37	46.54
	06/27/05				NP	NP	55.67	48.24
11760 MW-7	09/05/13	102.34	52	37-52	NP	NP	Dry	NA
	02/24/10				NP	NP	Dry	NA
	07/16/09				NP	NP	Dry	NA
	09/22/08				NP	NP	Dry	NA
	01/14/08				NP	NP	Dry	NA
	04/19/07				NP	NP	50.60	51.74
	08/21/06				NP	NP	Dry	NA
	06/27/05				NP	NP	50.68	51.66
	03/08/05				NP	NP	51.54	50.80

(1): Depth to water measured from top of casing;
(2): Depth to water corrected for presence of product using density corrective factor of 0.73 g/cc
(3): NP: free product not present
(4): Unk = Unknown
(5): NL = Not Located

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-8	09/05/13	97.63	45	30-45	NP	NP	40.34	57.29
	02/24/10				NP	NP	42.34	55.29
	07/16/09				NP	NP	43.04	54.59
	09/22/08				NP	NP	44.05	53.58
	01/14/08				NP	NP	43.30	54.33
	04/19/07				NP	NP	40.62	57.01
	08/21/06				NP	NP	43.01	54.62
	06/27/05				NP	NP	41.43	56.20
	03/08/05				NP	NP	42.22	55.41
11760 MW-9R	09/05/13	101.13	65	45-65	NP	NP	53.18	47.95
	02/24/10				NP	NP	53.66	47.47
	07/16/09				NP	NP	54.27	46.86
	09/22/08				NP	NP	54.59	46.54
	01/14/08				NP	NP	43.30	54.33
	04/19/07				NP	NP	51.80	49.33
	08/21/06				NP	NP	53.47	47.66
	06/27/05				NP	NP	51.75	49.38
11760 MW-10	09/05/13	88.26	50	35-50	NP	NP	45.95	42.31
	02/24/10				NP	NP	46.90	41.36
	07/16/09				NP	0.25	47.10	41.16
	09/22/08				NP	0.33	47.66	40.60
	01/14/08				NP	NP	47.23	41.03
	04/19/07				NP	NP	45.71	42.55
	08/21/06				NP	NP	46.98	41.28
	06/27/05				NP	NP	45.46	42.80
	03/08/05				NP	0.42	46.33	41.93
11760 MW-11	09/05/13	70.63	38	23-28	NP	NP	31.60	39.03
	02/24/10				NP	NP	32.67	37.96
	07/16/09				NP	NP	33.22	37.41
	09/22/08				NP	0.04	33.51	37.12
	01/14/08				NP	0.02	33.01	37.62
	04/19/07				NP	NP	31.53	39.10
	08/21/06				NP	0.02	32.69	37.94
	06/27/05				NP	NP	31.42	39.21
	03/08/05				NP	0.15	32.02	38.61
11760 MW-12	09/05/13	81.21	50	35-50	NP	NP	39.70	41.51
	02/24/10				NP	NP	40.13	41.08
	07/16/09				NP	NP	40.59	40.62
	09/22/08				NP	NP	40.87	40.34
	01/14/08				NP	NP	40.04	41.17
	04/19/07				NP	NP	38.66	42.55
	08/21/06				NP	NP	40.11	41.10
	06/27/05				NP	NP	38.64	42.57
	03/08/05				NP	NP	39.28	41.93
11760 MW-13	09/05/13	81.02	50	35-50	NP	NP	40.89	40.13
	02/24/10				NP	0.13	41.91	39.11
	07/16/09				NP	0.29	42.25	38.77
	09/22/08				NP	0.11	42.75	38.27
	01/14/08				NP	0.23	42.15	38.87
	04/19/07				NP	NP	40.74	40.28
	08/21/06				NP	NP	41.96	39.06
	06/27/05				NP	NP	40.64	40.38
	03/08/05				NP	NP	41.26	39.76
11760 MW-14	09/05/13	69.55	40	20-40	NP	NP	33.31	36.24
	02/24/10				NP	NP	34.19	35.36
	07/16/09				NP	NP	34.58	34.97
	09/22/08				NP	NP	34.99	34.56
	01/14/08				NP	NP	34.55	35.00
	04/19/07				NP	NP	33.34	36.21
	08/21/06				NP	NP	34.23	35.32
	06/27/05				NP	NP	33.17	36.38
	03/08/05				NP	NP	33.53	36.02
11760 MW-15	09/05/13	72.06	40	20-40	NP	NP	31.82	40.24
	02/24/10				NP	NP	35.82	36.24
	07/16/09				NP	NP	36.21	35.85
	09/22/08				NP	NP	36.64	35.42
	01/14/08				NP	NP	36.21	35.85
	04/19/07				NP	NP	34.89	37.17
	08/21/06				NP	NP	35.94	36.12
	06/27/05				NP	NP	34.86	37.20
	03/08/05				NP	NP	35.31	36.75
11760 MW-16	09/05/13	85.19	50	30-50	NP	NP	NL	NA
	02/24/10				NP	NP	43.29	41.90
	07/16/09				NP	NP	44.12	41.07
	09/22/08				NP	0.06	44.44	40.75
	01/14/08				NP	NP	43.60	41.59
	04/19/07				NP	NP	42.16	43.03
	08/21/06				NP	NP	45.60	39.59
	06/27/05				NP	NP	41.81	43.38
	03/08/05				NP	0.04	42.77	42.42

(1): Depth to water measured from top of casing;
(2): Depth to water corrected for presence of product using density corrective factor of 0.73 g/cc
(3): NP: free product not present
(4): Unk = Unknown
(5): NL = Not Located

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-17	09/05/13	85.66	50	35-50	NP	NP	35.65	50.01
	02/24/10				NP	NP	37.59	48.07
	07/16/09				NP	NP	38.64	47.02
	09/22/08				NP	NP	39.47	46.19
	01/14/08				NP	NP	38.39	47.27
	04/19/07				NP	NP	36.08	49.58
	08/21/06				NP	NP	38.44	47.22
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-18	09/05/13	80.83	50	35-50	NP	NP	39.77	41.06
	02/24/10				NP	NP	39.68	41.15
	07/16/09				NP	NP	40.6	40.23
	09/22/08				NP	NP	40.92	39.91
	01/14/08				NP	NP	40.03	40.80
	04/19/07				NP	NP	38.65	42.18
	08/21/06				NP	NP	40.16	40.67
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-19	09/05/13	82.27	46	31-46	NP	NP	38.55	43.72
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	41.39	40.88
	09/22/08				NP	NP	42.18	40.09
	01/14/08				NP	NP	41.14	41.13
	04/19/07				NP	NP	38.97	43.30
	08/21/06				NP	NP	41.28	40.99
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-20	09/05/13	81.44	46	31-46	NP	NP	38.55	42.89
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	41.3	40.14
	09/22/08				NP	NP	42.1	39.34
	01/14/08				NP	NP	41.08	40.36
	04/19/07				NP	NP	39.02	42.42
	08/21/06				NP	NP	41.21	40.23
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-21	09/05/13	67.4	40	25-40	NP	NP	26.82	40.58
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	27.58	39.82
	09/22/08				NP	NP	27.88	39.52
	01/14/08				NP	NP	27.11	40.29
	04/19/07				NP	NP	25.74	41.66
	08/21/06				NP	NP	27.14	40.26
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-22	09/05/13	65.12	40	20-40	NP	NP	31.18	33.94
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	32.32	32.80
	09/22/08				NP	NP	32.69	32.43
	01/14/08				NP	NP	32.29	32.83
	04/19/07				NP	NP	31.31	33.81
	08/21/06				NP	NP	32.11	33.01
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-23	09/05/13	62.15	40	20-40	NP	NP	30.31	31.84
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	32.06	30.09
	09/22/08				NP	NP	31.4	30.75
	01/14/08				NP	NP	31.11	31.04
	04/19/07				NP	NP	30.37	31.78
	08/21/06				NP	NP	30.98	31.17
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-24	09/05/13	49.5	25	10-25	NP	NP	18.21	31.29
	02/24/10				NA	NA	19.01	30.49
	07/16/09				NP	NP	19.01	30.49
	09/22/08				NP	NP	19.32	30.18
	01/14/08				NP	NP	18.89	30.61
	04/19/07				NP	NP	18.21	31.29
	08/21/06				NP	NP	18.93	30.57
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA

(1): Depth to water measured from top of casing;
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(3): NP: free product not present
(4): Unk = Unknown
(5): NL = Not Located

Table 1
Groundwater Elevation Data
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product , ft (1)	Product Thickness, ft	Depth to Water, ft (2)	Groundwater Elevation, ft
11760 MW-25	09/05/13	41.63	23	8-23	NP	NP	13.44	28.19
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	14.43	27.20
	09/22/08				NP	NP	14.52	27.11
	01/14/08				NP	NP	14.29	27.34
	04/19/07				NP	NP	13.69	27.94
	08/21/06				NP	NP	14.26	27.37
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-26	09/05/13	43.83	35	15-35	NP	NP	17.79	26.04
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	18.23	25.60
	09/22/08				NP	NP	18.29	25.54
	01/14/08				NP	NP	18.36	25.47
	04/19/07				NP	NP	17.94	25.89
	08/21/06				NA	NA	NA	NA
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA
11760 MW-27	09/05/13	98.43	60	40-60	NP	NP	52.03	46.40
	02/24/10				52.62	0.08	52.54	45.89
11760 MW-28	09/05/13	97.11	60	40-60	NP	NP	49.92	47.19
	02/24/10				NP	NP	49.59	47.52
11760 MW-29	09/05/13	97.88	60	40-60	50.54	0.03	50.57	47.31
	02/24/10				51.22	0.02	51.2	46.68
11760 DW-1	09/05/13	98.62	80	75-80	NP	NP	51.63	46.99
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	52.89	45.73
	09/22/08				NP	NP	53.27	45.35
	01/14/08				NP	NP	52.1	46.52
	04/19/07				NP	NP	50.61	48.01
	08/21/06				NP	NP	52.24	46.38
	06/27/05				NA	NA	50.63	47.99
	03/08/05				NA	NA	51.31	47.31
11760 DW-2	09/05/13	65.1	80	75-80	NP	NP	32.03	33.07
	02/24/10				NA	NA	NA	NA
	07/16/09				NP	NP	33.09	32.01
	09/22/08				NP	NP	33.42	31.68
	01/14/08				NP	NP	32.96	32.14
	04/19/07				NP	NP	33.02	32.08
	08/21/06				NP	NP	32.83	32.27
	06/27/05				NA	NA	NA	NA
	03/08/05				NA	NA	NA	NA

(1): Depth to water measured from top of casing;
(2): Depth to water corrected for presence of product using density corrective factor of 0.73 g/cc
(3): NP: free product not present
(4): Unk = Unknown
(5): NL = Not Located

Table 2
Groundwater Analytical Results
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well ID	Sample Date	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	Naph-thalene	EDB	1,2-DCA	tert-Amyl alcohol	tert-Amyl methyl ether	tert-Butyl alcohol	tert-Butyl formate	3,3-Dimethyl-1-butanol	Ethanol	Ethyl tert-butyl ether	di-Isopropyl ether
11760 MW-1	9/5/2013	<1	<1	<1	<2	<1	<5	<0.021	<0.021	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-3	9/5/2013	**110**	<1	1.6	3.6	1.4	<5	<0.022	<5	560	<5	1400	<1	<10	<100	<5	180
11760 MW-4R	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-5	9/5/2013	<1	<1	<1	<2	<1	>5	<0.021	<5	<10	<1	<10	<1	<10	<100	<5	<5
11760 MW-6R	9/5/2013	<1	1.2	<1	<2	1	<5	<0.026	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-8	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-9R	9/5/2013	<1	1.7	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-10	9/5/2013	**9300**	**33000**	**8300**	**34700**	<100	**2400**	<0.022	<500	**6000**	<500	<1000	<100	<1000	<10000	<500	**3600**
11760 MW-11	9/5/2013	**8500**	**7100**	**3800**	**15800**	<50	**960**	<0.021	<250	**11000**	<250	**2200**	<50	<500	<5000	<250	**6500**
11760 MW-12	9/5/2013	**1300**	130	130	720	**83**	**190**	<0.022	<50	**10000**	<50	**2500**	<10	<100	<1000	<50	**3200**
11760 MW-13	9/5/2013	**6500**	**21000**	**5700**	**22600**	**39**	**2200**	<0.022	<100	**16000**	<100	**3200**	<20	<200	<2000	<100	**7400**
11760 MW-14	9/5/2013	**4900**	69	<10	41	**14**	**260**	<0.022	<50	**4200**	96	1100	<10	<100	<1000	<50	**3600**
11760 MW-15	9/5/2013	**5400**	**6600**	**890**	6000	<20	**710**	<0.025	<100	**5800**	<100	**1800**	<20	<200	<2000	<100	**3700**
11760 MW-17	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-18	9/5/2013	**370**	150	260	1280	**2300**	**71**	<0.021	**13**	**8400**	71	**1400**	<1	<10	<100	<5	**1600**
11760 MW-19	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-20	9/5/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-21	9/6/2013	**12**	1.5	1	<2	**840**	11	<0.022	8.5	**3200**	63	570	<1	<10	<100	<5	**930**
11760 MW-22	9/6/2013	**1700**	13	1.3	13.8	16	**120**	<0.021	<5	**2800**	<5	800	<1	<10	<100	<5	**2000**
11760 MW-23	9/6/2013	**1900**	<1	<1	<2	21	**73**	<0.021	<5	**2500**	<5	810	<1	<10	<100	<5	**3200**
11760 MW-24	9/6/2013	**60**	<5	<5	<5	<5	<5	<0.021	<5	66	<5	22	<5	<10	<200	<5	83
11760 MW-25	9/6/2013	**260**	<5	<5	<10	<5	<25	<0.021	<25	<50	<25	92	<5	<50	<500	<25	**760**
11760 MW-26	9/6/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 MW-27	9/6/2013	**14000**	**3200**	**2700**	5300	**14000**	**720**	<0.021	<250	**190000**	<250	**36000**	<50	<500	<5000	<250	**16000**
11760 MW-28	9/6/2013	**14000**	**45000**	**8700**	**48000**	**18000**	**4000**	**12**	<500	**150000**	<500	**27000**	<100	<1000	<10000	<500	**13000**
11760 DW-1	9/6/2013	<1	4.3	<1	4.6	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760 DW-2	9/6/2013	<1	<1	<1	<2	4.6	<5	<0.021	<5	**300**	<5	<10	<1	<10	<100	<5	<10
11760 CK-1	9/6/2013	<5	<5	<5	<5	15	<5	<0.021	<5	<10	<5	<10	<5	<10	<200	<5	<5
RBSL		**5**	**1,000**	**700**	**10,000**	**40**	**25**	**0.05**	**5**	**240**	**128**	**1,400**	**NE**	**NE**	**10,000**	**47**	**150**

Notes:
1. Units = µg/L
2. MTBE = Methyl Tertiary Butyl Ether
3. "<" = Not detected at or above the laboratory reporting limit
4. J = Result is less than the Reporting Limit but greater than or equal to the Method detection limit
5. RBSL = May 15, 2001 Risk Based Screening Level
6. Bold concentrations equal or exceed the corresponding RBSL
7. NE = Not established
8. EDB = 1,2-Dibromoethane

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-1	9/5/2013		<1	<1	<1	<2	<1	<5	<0.021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.03
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	<5	<5	15	<5	**42**	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	**<1.0**
	11/2/1998	0	<1.0	<1.0	<1.0	7.77	<5.0	23.8	<0.05
MW-2	9/5/2013	0.09	Not Sampled - Free Product						
	2/24/2010	0.32	NS	NS	NS	NS	NS	NS	NS
	7/16/2009	1.57	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0.18	NS	NS	NS	NS	NS	NS	NS
	1/15/2008	0.27	**14000**	**48000**	**5900**	**33000**	**43000**	**<2500**	**54**
	4/19/2007	0.03	**11000**	**31000**	**4400**	**24400**	**34000**	**1400**	**52**
	8/21/2006	0.3	NS	NS	NS	NS	NS	NS	NS
	6/27/2005	0.02	NS	NS	NS	NS	NS	NS	NS
	3/8/2005	0.2	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0.33	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	**15900**	**90700**	**4800**	**26700**	**82000**	**840**	**127**
	11/2/1998	0	**23100**	**89000**	**5380**	**27380**	**227000**	**2140**	**78.65**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-3	9/5/2013	0	**110**	<1	1.6	3.6	1.4	<5	<0.022
	2/24/2010	0	3.4	<1	<1	<2	<1	<5	<0.04
	7/16/2009	NA	Not Sampled – Not enough water for sample collection.						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/20/2007	0	**28**	1.3	<1	2.11	<1	<5	<0.02
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	0	**110**	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	**123**	10	18	16	<5	<5	<0.02
	8/20/2003	0	**385**	<25	<25	<25	<25	<25	<0.02
	1/11/2001	0	**434**	288	182	146	**89.9**	12.9	**<1.0**
	11/2/1998	0	**2260**	52.7	215	889	**<50**	<50	<0.02
MW-4	9/5/2013	NA	Not Sampled – Dry Well						
	2/24/2010	NA	Not Sampled – Dry Well						
	7/16/2009	NA	Not Sampled – Dry Well						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/20/2007	NA	Not Sampled – Dry Well						
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	NA	Not Sampled – Dry Well						
	3/8/2005	NA	Not Sampled – Dry Well						
	8/20/2003	NA	Not Sampled – Dry Well						
	1/11/2001	NA	Not Sampled – Dry Well						
	11/2/1998	0	**1781**	610	311	1921	<10	**40**	**<10**
MW-4R	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	3.7	<1	0.56	<2	<1	<5	<0.04
	7/17/2009	0	**7.6**	<1	<1	2.5	<1	<5	<0.021
	9/22/2008	0	4.2	<1	<1	<1	<1	<5	<0.021
	1/15/2008	0	**9.8**	<1	1.4	1.8	<1	<5	<0.02
	4/19/2007	0	2.4	<1	1.2	2	4.4	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-5	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	1.8	<1	1.43	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	**<1.0**
	11/2/1998	0	<5	<5	<5	<15	<1.0	<5.0	**<1.0**
MW-6	9/5/2013	Well Abandoned 05/17/2006							
	6/27/2005	Well Abandoned 05/17/2006							
	3/8/2005	0	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	2.4	19.3	2.6	8.3	<5.0	<5.0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**
MW-6R	9/5/2013	0	<1	1.2	<1	<2	1	<5	<0.026
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.023
	9/22/2008	0	<1	6.3	1.5	5.3	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-7	9/5/2013	NA	Not Sampled – Dry Well						
	2/24/2010	NA	Not Sampled – Dry Well						
	7/16/2009	NA	Not Sampled – Dry Well						
	9/22/2008	NA	Not Sampled – Dry Well						
	1/15/2008	NA	Not Sampled – Dry Well						
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	NA	Not Sampled – Dry Well						
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1.4	13	3.1	5	<5.0	<5.0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**
MW-8	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	<5	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1	9.2	1.9	3.5	<5.0	<5.0	**<1.0**
	11/2/1998	0	<1	<1	<1	<1	<1	<5	**<1.0**
MW-9	9/5/2013	Well Abandoned 05/17/2006							
	6/27/2005	Well Abandoned 05/17/2006							
	3/8/2005	0	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	0	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	NS	NS	NS	NS	NS	NS	NS
	11/2/1998	0	<1.0	2.1	<1.0	<1.0	<1.0	<5.0	**<1.0**
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-9R	9/5/2013	0	<1	1.7	<1	<2	<1	<5	<0.022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.021
	1/15/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/19/2007	0	<1	<1	<1	<1	<1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
MW-10	9/5/2013	0	**9300**	**33000**	**8300**	**34700**	<100	**2400**	<0.022
	2/24/2010	0	**5200**	**3900**	**2400**	5500	<20	**590**	<0.04
	7/16/2009	0.25	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0.33	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0	**8400**	**9000**	**3300**	**10100**	**<500**	**<2500**	<0.02
	4/19/2007	0	**5400**	22	<20	238	**170**	**350**	<0.02
	8/21/2006	0	**5800**	**3700**	**1700**	3620	**<100**	**410**	<0.02
	6/27/2005	0	**6000**	**2400**	**1900**	3300	**<1000**	**<1000**	<0.019
	3/8/2005	0.42	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	Sheen	**8010**	**8770**	**2310**	7200	**<250**	**774**	<0.02
	1/11/2001	0	**8950**	**49000**	**8550**	**49000**	22	**3300**	**<500**
	11/2/1998	0	**11200**	**30800**	**3360**	**15500**	**<100**	**766**	**<100**
MW-11	9/5/2013	0	**8500**	**7100**	**3800**	**15800**	<50	**960**	<0.021
	2/24/2010	0	**6500**	**13,000**	**2100**	8900	**<100**	**720**	<0.04
	7/16/2009	0	**6100**	**16000**	**3100**	**15800**	28	**1400**	<0.021
	9/22/2008	0.04	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0.02	**8700**	**21000**	**4600**	**24600**	**<500**	**<2500**	<0.02
	4/19/2007	0	**6500**	**13000**	**2800**	**16100**	**790**	**1700**	<0.02
	8/21/2006	0.02	NS	NS	NS	NS	NS	NS	NS
	6/27/2005	0	**5900**	**25000**	**5100**	**31400**	**<2500**	**3000**	**0.34**
	3/8/2005	0.15	NS	NS	NS	NS	NS	NS	NS
	8/20/2003	1.95	NS	NS	NS	NS	NS	NS	NS
	1/11/2001	0	**8000**	**11800**	**3470**	**16400**	31	**1440**	**<100**
	11/2/1998	0	**6280**	**15600**	**2390**	**10800**	**<100**	**617**	**<50**
RBSL		NA	5	1000	700	10000	40	25	0.05

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-12	9/5/2013	0	**1300**	130	130	720	**83**	**190**	<0.022
	2/24/2010	0	**1600**	5.5	6.7	20	**86**	**160**	<0.04
	7/16/2009	0	**3300**	<10	16	66	**100**	**310**	<0.021
	9/22/2008	0	**370**	<1	<1	8.8	12	**35**	<0.021
	1/14/2008	0	**5700**	<100	<100	140	<100	**<500**	<0.02
	4/19/2007	0	**6600**	**4800**	**2500**	7800	<20	**970**	<0.02
	8/21/2006	0	**5800**	<100	<100	<100	<100	**250**	<0.02
	6/27/2005	0	**8200**	7.7	6.9	52.2	**210**	**410**	<0.019
	3/8/2005	0	**7680**	264	52	315	**195**	**173**	<0.02
MW-13	9/5/2013	0	**6500**	**21000**	**5700**	**22600**	39	**2200**	<0.022
	2/24/2010	0.13	NS	NS	NS	NS	NS	NS	NS
	7/16/2009	0.29	NS	NS	NS	NS	NS	NS	NS
	9/22/2008	0.11	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0.23	**9900**	**27000**	**3500**	**24800**	**<2000**	**<10000**	**0.073**
	4/19/2007	0	**8300**	**23000**	**3200**	**22100**	**410**	**1500**	<0.02
	8/21/2006	0	**7300**	**36000**	**3400**	**20600**	<100	**1200**	**0.19**
	6/27/2005	0	**8600**	**61000**	**2100**	**13000**	<250	**620**	<0.019
	3/8/2005	0	**13300**	**33600**	**2880**	**16600**	<100	**700**	**0.08**
MW-14	9/5/2013	0							
	2/24/2010	0	**4400**	45	<20	<40	14	**240**	<0.04
	7/16/2009	0	**4400**	76	<20	68	<20	**280**	<0.022
	9/22/2008	0	**4100**	59	<20	<20	<20	**290**	<0.021
	1/14/2008	0	**4500**	74	<50	51	<50	**300**	<0.02
	4/19/2007	0	**5100**	100	<20	74	<20	**300**	<0.019
	8/21/2006	0	**6100**	<100	<100	<100	<100	**260**	<0.02
	6/27/2005	0	**4500**	<100	<100	<100	<100	**170**	**0.11**
	3/8/2005	0	**6390**	<125	<125	<125	<125	**234**	<0.02
MW-15	9/5/2013	0	**4900**	69	<10	41	**14**	**260**	<0.022
	2/24/2010	0	**2600**	42	15	<20	11	**140**	<0.04
	7/16/2009	0	**2300**	42	11	25	11	**150**	<0.022
	9/22/2008	0	**2800**	54	18	<10	18	**270**	<0.021
	1/14/2008	0	**2900**	<50	<50	<50	<50	**250**	<0.02
	4/19/2007	0	**3300**	52	3.5	29.5	<1	**240**	<0.02
	8/21/2006	0	**2400**	49	5.2	63	<5	**120**	<0.02
	6/27/2005	0	**680**	13	<5	9.4	<5	**63**	<0.019
	3/8/2005	0	**11400**	182	<50	96	<50	**485**	<0.02
RBSL		NA	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-16	9/5/2013	NA	Could Not Locate						
	2/24/2010	0	**5600**	**5100**	**1400**	**10,200**	27	**790**	<0.04
	7/16/2009	0	**5500**	**22000**	**4600**	**27500**	**<100**	**2700**	<0.022
	9/22/2008	0.06	NS	NS	NS	NS	NS	NS	NS
	1/14/2008	0	**8100**	**14000**	**4400**	**27100**	**<1000**	**<5000**	<0.02
	4/19/2007	0	**7200**	**14000**	**4000**	**23000**	**410**	**2300**	<0.02
	8/21/2006	0	**6700**	<100	<100	<100	**<100**	**230**	<0.02
	6/27/2005	0	**9400**	**28000**	**4800**	**31700**	**<2500**	**3200**	<0.019
	3/8/2005	0.04	NS	NS	NS	NS	NS	NS	NS
MW-17	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	<1	<1	<1	<2	<1	1.5	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	3.9	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	5.7	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
MW-18	9/5/2013	0	**370**	150	260	1280	**2300**	**71**	<0.021
	2/24/2010	0	**630**	**1100**	190	2090	**2600**	**77**	<0.04
	7/16/2009	0	**280**	560	92	560	**2300**	**67**	**0.092**
	9/22/2008	0	**270**	390	85	340	**2600**	**98**	<0.022
	1/14/2008	0	**630**	**1800**	270	1440	**2700**	<500	0.033
	4/19/2007	0	**1700**	**1800**	470	2750	**3200**	**250**	**0.055**
	8/21/2006	0	**550**	610	49	570	**1200**	**66**	**0.1**
MW-19	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.022
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	1.3	5.1	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
MW-20	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/24/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/22/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	4.2	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL. *denotes estimated result.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
MW-21	9/5/2013	0	**12**	1.5	1	<2	**840**	11	<0.022
	2/25/2010	0	**7.3**	9.6	36	199	**100**	**140**	<0.04
	7/16/2009	0	**33**	<5	<5	<10	**460**	<25	<0.022
	9/23/2008	0	**74**	<10	<10	<10	**890**	**49***	<0.022
	1/14/2008	0	**210**	14	3	10.8	**1100**	**77**	<0.02
	4/20/2007	0	**70**	<50	<50	177	**440**	**<250**	<0.02
	8/21/2006	0	**240**	19	<5	26.2	**910**	**110**	<0.02
MW-22	9/5/2013	0	**1700**	13	1.3	13.8	16	**120**	<0.021
	2/25/2010	0	**1700**	<10	<10	<20	11	**120**	<0.04
	7/16/2009	0	**1600**	<5	<5	12	13	**110**	<0.022
	9/23/2008	0	**980**	<10	<10	<10	12	**64**	<0.022
	1/14/2008	0	**1700**	<50	<50	<50	**<50**	**<250**	<0.02
	4/20/2007	0	**1400**	5.6	1.2	17.5	9.7	**68**	<0.02
	8/21/2006	0	**5000**	<100	<100	<100	**<100**	**180**	<0.02
MW-23	9/5/2013	0	**1900**	<1	<1	<2	21	**73**	<0.021
	2/25/2010	0	**1500**	<1	<1	<2	13	**50**	<0.04
	7/16/2009	0	**1400**	<10	<10	<20	15	**<50**	<0.022
	9/23/2008	0	**1800**	<10	<10	<10	13	**94**	<0.022
	1/14/2008	0	**3100**	<50	<50	<50	**<50**	**<250**	<0.02
	4/20/2007	0	**3100**	<1	1	7.17	12	**110**	<0.02
	8/21/2006	0	**230**	<5	<5	<5	<5	<5	<0.02
MW-24	9/5/2013	0	**60**	<5	<5	<5	<5	<5	<0.021
	2/25/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/16/2009	0	**97**	<1	<1	<2	<1	<5	<0.023
	9/23/2008	0	**230**	<1	<1	<1	<1	17	<0.022
	1/14/2008	0	**400**	<1	<1	<1	<1	21	<0.02
	4/20/2007	0	**240**	<1	<1	1.7	<1	**31**	<0.02
	8/21/2006	0	**390**	<5	<5	<5	<5	**26**	<0.02
MW-25	9/5/2013	0	**260**	<5	<5	<10	<5	<25	<0.021
	2/25/2010	0	**34**	<1	<1	<2	<1	6.6	<0.04
	7/16/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/23/2008	0	**660**	<5	<5	<5	<5	**47**	<0.022
	1/14/2008	0	**400**	<10	<10	<10	<10	**<50**	<0.02
	4/20/2007	0	**430**	<1	<1	1	<1	**26**	<0.02
	8/21/2006	0	**700**	<5	<5	7.7	<5	**35**	<0.02
MW-26	9/5/2013	0	<1	<1	<1	<2	<1	<5	<0.021
	2/25/2010	0	<1	<1	<1	<2	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.021
	9/23/2008	0	<1	<1	<1	<1	<1	<5	<0.022
	1/14/2008	0	<1	<1	<1	<1	<1	<5	<0.02
	4/20/2007	0	<1	<1	<1	<1	<1	<5	<0.021
MW-27	9/5/2013	0	**14000**	**3200**	**2700**	5300	**14000**	**720**	<0.021
	2/25/2010	0.08	Not Sampled - Free Product						
MW-28	9/5/2013	0	**14000**	**45000**	**8700**	**48000**	**18000**	**4000**	**12**
	2/25/2010	0	**13,000**	**64,000**	**9100**	**51,000**	**38,000**	**4400**	**5.2**
MW-29	9/5/2013	0.03	Not Sampled - Free Product						
	2/25/2010	0.02	Not Sampled - Free Product						
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

TABLE 3
Historical Groundwater Analytical results
Former United Oil - Winnsboro, South Carolina
UST Permit #11760

Sample Location	Date	LPH Thickness (feet)	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene	EDB
DW-1	9/5/2013	0	<1	4.3	<1	4.6	<1	<5	<0.021
	2/25/2010	0	0.62	14	2.8	55	<1	<5	<0.04
	7/17/2009	0	<1	<1	<1	<2	<1	<5	<0.022
	9/22/2008	0	1.1	20	4.7	29.3	<1	<5	<0.022
	1/15/2008	0	<1	140	130	720	<1	**110**	**0.086**
	4/19/2007	0	<1	<1	<1	<1	4	<5	<0.02
	8/21/2006	0	<5	<5	<5	<5	<5	<5	<0.02
	6/27/2005	0	<5	<5	<5	<5	<5	<5	<0.019
	3/8/2005	0	<5	8	<5	<5	<5	<5	<0.02
	8/20/2003	0	<5	<5	<5	<5	<5	<5	<0.02
	1/11/2001	0	1	9.9	<1.0	3.1	<5.0	<5.0	<1.0
	11/2/1998	0	<5.0	<5.0	<5.0	<15	<5.0	<5.0	<5.0
DW-2	9/5/2013	0	<1	<1	<1	<2	4.6	<5	<0.021
	2/25/2010	0	4.3	<1	<1	<2	9	6.9	<0.04
	7/16/2009	0	**83**	<1	<1	<1	8.3	6.2	<0.023
	9/23/2008	0	<1	<1	<1	<1	8.6	<5	<0.022
	1/15/2008	0	**34**	<1	<1	<1	7.7	<5	<0.02
	4/20/2007	0	**440**	<1	<1	<1	11	**27**	<0.02
	8/21/2006	0	**450**	<5	<5	<5	5.9	25	<0.02
RBSL		**NA**	**5**	**1000**	**700**	**10000**	**40**	**25**	**0.05**

RBSL = Risk Based Screening Levels; NA = Not Applicable; NS = Not Sampled; Results in µg/l.

Bold concentrations represent those greater than the respective RBSL.

Table 4
Data Quality Indicator Analysis
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Well Location	Sample Date	Petroleum Constituents (ug/L)								Oxygenates (ug/L)								Comments / Notes
		Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Naphthalene (8260)	1,2 - Dibromoethane (EDB)	1,2 - Dichloroethane	tert-Amyl alcohol	tert-Amyl methyl ether	t-Butyl alcohol	tert-Butyl formate	3,3-Dimethyl-1-butanol	Ethanol	ethyl tert-Butyl ether	Diisopropyl ether	
Precision Analysis																		
Precision Limit (RPD %)		**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	**20**	Benzene, Toulene, Ethylbenzene, Xylenes, Naphthalene, EDB, Tert-Amyl alcohol, and Tert-Butyl alcohol constituents above 20% RPD
11760 MW-15	9/5/2013	5400	6600	890	6000	<20	710	<0.025	<100	5800	<100	1800	<20	<200	<2000	<100	3700	
DUP-02	9/5/2013	5200	5900	810	5100	<20	610	<0.021	<100	3900	<100	650	<20	<200	<2000	<100	3700	
RPD (%)		4%	11%	9%	16%	—	15%	—	—	39%	—	94%	—	—	—	—	0%	
11760 MW-28	9/6/2013	14000	45000	8700	48000	18000	4000	12	<500	150000	<500	27000	<100	<1000	<10000	<500	13000	
DUP-01	9/6/2013	11000	33000	5000	28200	19000	2400	<0.021	<500	150000	<500	27000	<100	<1000	<10000	<500	11000	
RPD (%)		24%	31%	54%	52%	5%	50%	199%	—	0%	—	0%	—	—	—	—	17%	
Bias Analysis																		
Trip Blank	9/5/2013	<1	<1	<1	<2	<1	<5	NA	<5	<10	<5	12	<1	<10	<100	<5	<5	No Errors Indicated
Field Blank	9/17/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	870	<5	<5	No Errors Indicated
Field Blank	9/6/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	770	<5	<5	No Errors Indicated
Method Sensitivity																		
Sensitivity Limits (GW - µg/L)		**<1**	**<1**	**<1**	**<2**	**<1**	**<5**	**<0.021**	**<5**	**<10**	**<5**	**<10**	**<1**	**<10**	**<100**	**<5**	**<5**	
11760 MW-1	9/5/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-3	9/5/2013	110	<1	1.6	3.6	1.4	<5	<0.022	<5	560	<5	1400	<1	<10	<100	<5	180	
11760 MW-4R	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-5	9/5/2013	<1	<1	<1	<2	<1	>5	<0.021	<5	<10	<1	<10	<1	<10	<100	<5	<5	
11760 MW-6R	9/5/2013	<1	1.2	<1	<2	1	<5	<0.026	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-8	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-9R	9/5/2013	<1	1.7	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-10	9/5/2013	9300	33000	8300	34700	<100	2400	<0.022	<500	6000	<500	<1000	<100	<1000	<10000	<500	3600	100X Dilution Factor
11760 MW-11	9/5/2013	8500	7100	3800	15800	<50	960	<0.021	<250	11000	<250	2200	<50	<500	<5000	<250	6500	50X Dilution Factor
11760 MW-12	9/5/2013	1300	130	130	720	83	190	<0.022	<50	10000	<50	2500	<10	<100	<1000	<50	3200	10X Dilution Factor
11760 MW-13	9/5/2013	6500	21000	5700	22600	39	2200	<0.022	<100	16000	<100	3200	<20	<200	<2000	<100	7400	20X Dilution Factor
11760 MW-14	9/5/2013	4900	69	<10	41	14	260	<0.022	<50	4200	96	1100	<10	<100	<1000	<50	3600	10X,20X Dilution Factor
11760 MW-15	9/5/2013	5400	6600	890	6000	<20	710	<0.025	<100	5800	<100	1800	<20	<200	<2000	<100	3700	20X Dilution Factor
11760 MW-17	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-18	9/5/2013	370	150	260	1280	2300	71	<0.021	13	8400	71	1400	<1	<10	<100	<5	1600	1X,5X,10X Dilution Factor
11760 MW-19	9/5/2013	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-20	9/5/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-21	9/6/2013	12	1.5	1	<2	840	11	<0.022	8.5	3200	63	570	<1	<10	<100	<5	930	1X,5X Dilution Factor
11760 MW-22	9/6/2013	1700	13	1.3	13.8	16	120	<0.021	<5	2800	<5	800	<1	<10	<100	<5	2000	1X,50X Dilution Factor
11760 MW-23	9/6/2013	1900	<1	<1	<2	21	73	<0.021	<5	2500	<5	810	<1	<10	<100	<5	3200	1X, 20X Dilution Factor
11760 MW-24	9/6/2013	60	<5	<5	<5	<5	<5	<0.021	<5	66	<5	22	<5	<10	<200	<5	83	
11760 MW-25	9/6/2013	260	<5	<5	<10	<5	<25	<0.021	<25	<50	<25	92	<5	<50	<500	<25	760	5X Dilution Factor
11760 MW-26	9/6/2013	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 MW-27	9/6/2013	14000	3200	2700	5300	14000	720	<0.021	<250	190000	<250	36000	<50	<500	<5000	<250	16000	50X Dilution Factor
11760 MW-28	9/6/2013	14000	45000	8700	48000	18000	4000	12	<500	150000	<500	27000	<100	<1000	<10000	<500	13000	100X Dilution Factor
11760 DW-1	9/6/2013	<1	4.3	<1	4.6	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5	
11760 DW-2	9/6/2013	<1	<1	<1	<2	4.6	<5	<0.021	<5	300	<5	<10	<1	<10	<100	<5	<10	
11760 CK-1	9/6/2013	<5	<5	<5	<5	15	<5	<0.021	<5	<10	<5	<10	<5	<10	<200	<5	<5	

NA = Not Analyzed

FIGURES

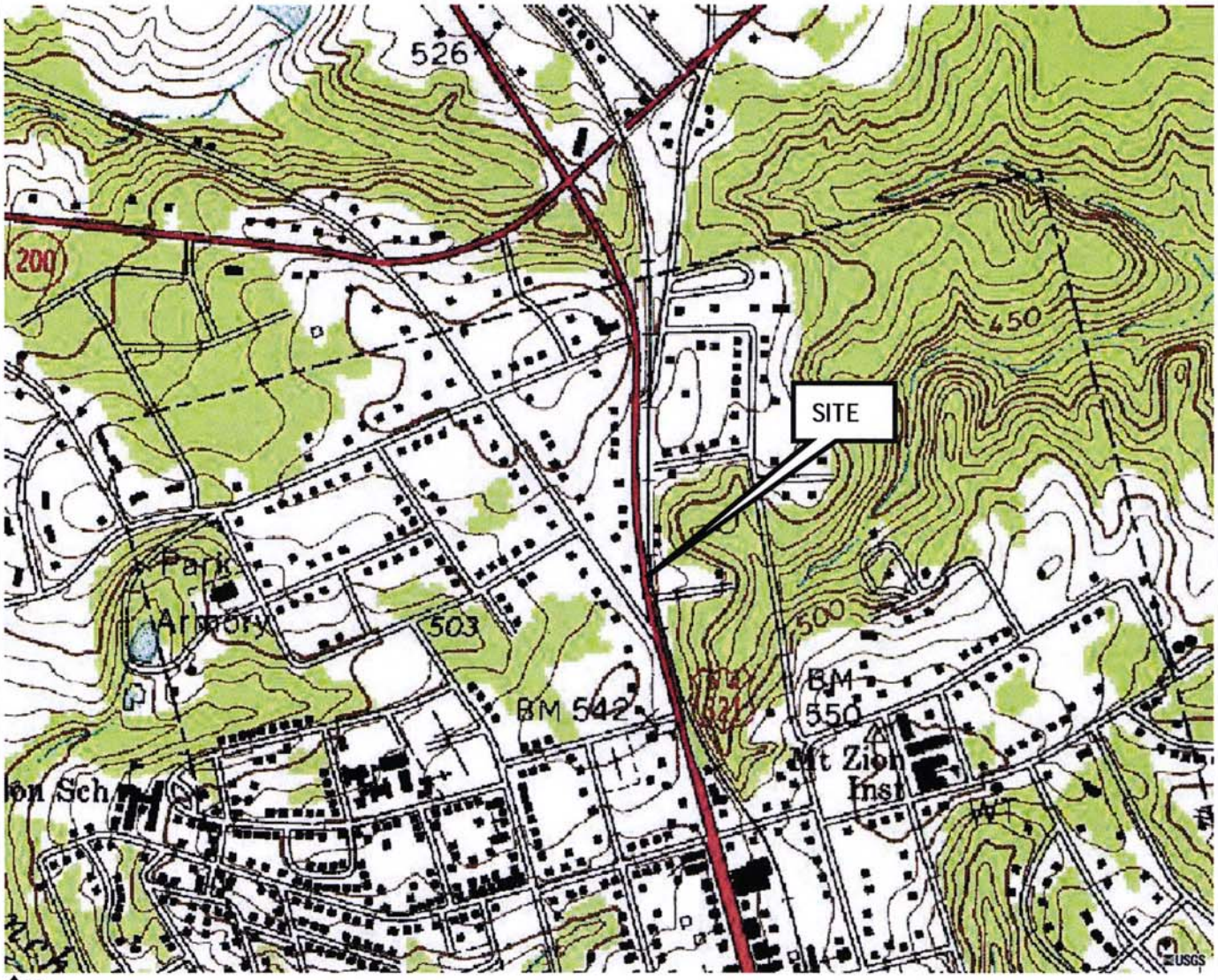

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Figure 1: Site Location Map
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

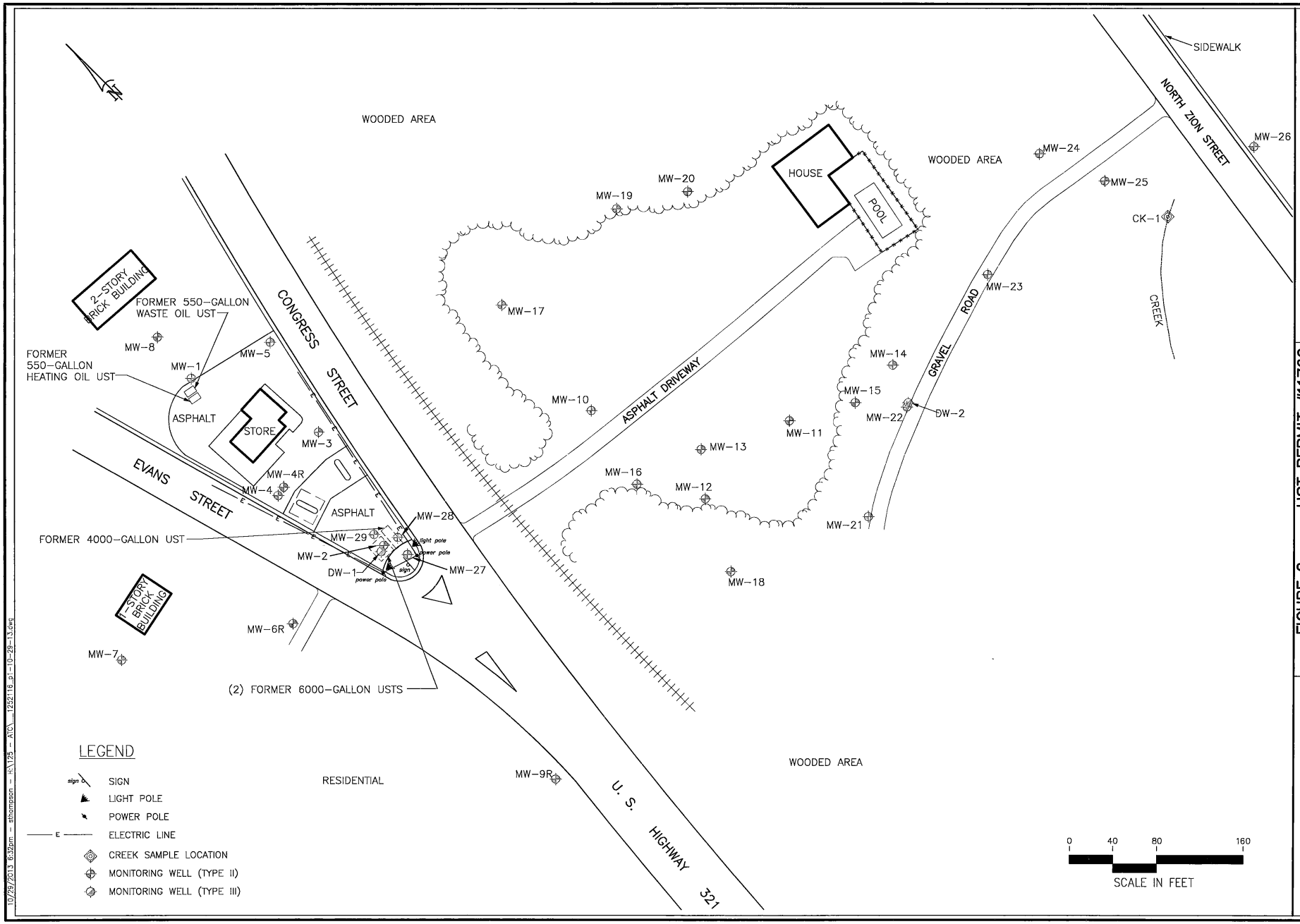
Cardno ATC
Shaping the Future

400 Northeast Drive, Unit Q
Columbia, South Carolina
P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'



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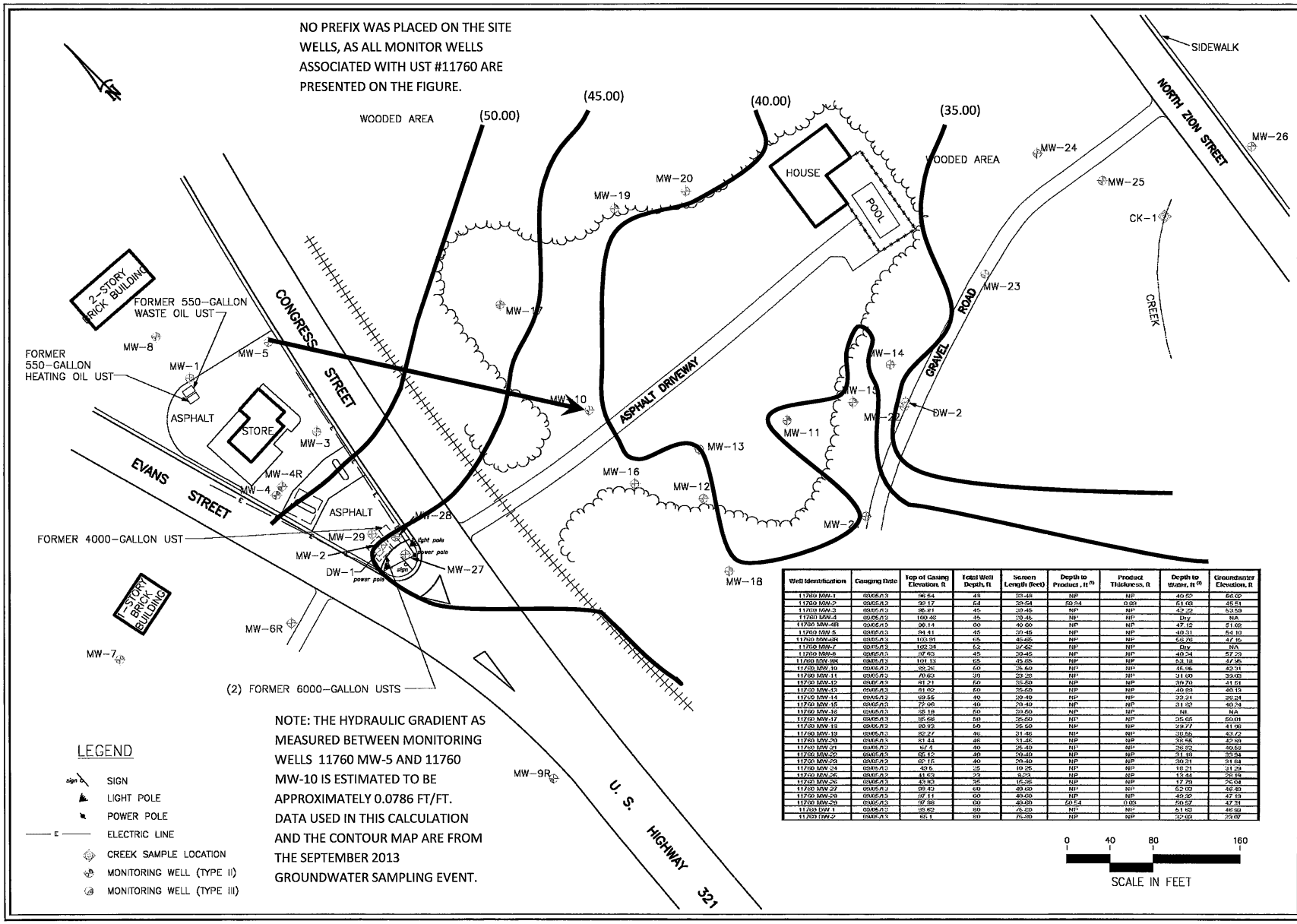
Cardno ATC
Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

TITLE FIGURE 2 UST PERMIT #11760
SITE MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

CAD FILE	TYPE CODE	PREP. BY	REV. BY	SCALE	DATE	PROJECT NO.
1252116.dwg		JK		1"=80'	10-29-2013	14.25384.0012

NOTES:



Well Identification	Gauging Date	Top of Casing Elevation, ft	Total Well Depth, ft	Screen Length (feet)	Depth to Product, ft [1]	Product Thickness, ft	Depth to Water, ft [2]	Groundwater Elevation, ft
11760 MW-1	09/05/13	96.54	45	33-45	NP	NP	40.65	55.89
11760 MW-2	09/05/13	93.17	54	39-54	50.04	0.09	51.03	45.51
11760 MW-3	09/05/13	95.81	45	30-45	NP	NP	42.22	53.59
11760 MW-4	09/05/13	100.48	45	30-45	NP	NP	Dry	NA
11760 MW-4R	09/05/13	98.14	60	40-60	NP	NP	47.12	51.02
11760 MW-5	09/05/13	94.41	45	30-45	NP	NP	40.31	54.10
11760 MW-6R	09/05/13	103.91	65	45-65	NP	NP	56.76	47.15
11760 MW-7	09/05/13	102.38	52	37-52	NP	NP	Dry	NA
11760 MW-8	09/05/13	97.63	45	30-45	NP	NP	40.34	57.29
11760 MW-9R	09/05/13	101.12	65	45-65	NP	NP	53.18	47.95
11760 MW-10	09/05/13	88.26	50	35-50	NP	NP	45.95	42.31
11760 MW-11	09/05/13	70.62	30	23-28	NP	NP	31.69	39.93
11760 MW-12	09/05/13	91.21	50	35-50	NP	NP	39.70	51.51
11760 MW-13	09/05/13	81.02	50	35-50	NP	NP	46.83	46.13
11760 MW-14	09/05/13	59.55	40	20-40	NP	NP	33.21	26.34
11760 MW-15	09/05/13	72.96	40	20-40	NP	NP	31.92	40.74
11760 MW-16	09/05/13	85.19	50	30-50	NP	NP	NI	NA
11760 MW-17	09/05/13	85.68	50	35-50	NP	NP	35.65	50.03
11760 MW-18	09/05/13	80.93	50	35-50	NP	NP	39.77	41.16
11760 MW-19	09/05/13	82.27	40	31-46	NP	NP	38.55	43.72
11760 MW-20	09/05/13	81.44	46	31-46	NP	NP	38.55	42.89
11760 MW-21	09/05/13	67.4	40	25-40	NP	NP	26.82	40.58
11760 MW-22	09/05/13	65.12	40	20-40	NP	NP	31.18	33.94
11760 MW-23	09/05/13	65.16	40	20-40	NP	NP	30.21	34.94
11760 MW-24	09/05/13	43.6	35	10-25	NP	NP	18.21	21.39
11760 MW-25	09/05/13	41.63	35	8-23	NP	NP	13.44	28.19
11760 MW-26	09/05/13	43.83	35	15-35	NP	NP	17.79	26.04
11760 MW-27	09/05/13	98.42	60	40-60	NP	NP	52.00	46.42
11760 MW-28	09/05/13	97.11	60	40-60	NP	NP	49.39	47.72
11760 MW-29	09/05/13	97.88	60	40-60	50.54	0.05	50.57	47.31
11760 DW-1	09/05/13	95.62	80	75-80	NP	NP	51.82	43.80
11760 DW-2	09/05/13	65.1	80	75-80	NP	NP	32.03	33.07

LEGEND

- SIGN
- LIGHT POLE
- POWER POLE
- ELECTRIC LINE
- CREEK SAMPLE LOCATION
- MONITORING WELL (TYPE II)
- MONITORING WELL (TYPE III)

NOTE: THE HYDRAULIC GRADIENT AS MEASURED BETWEEN MONITORING WELLS 11760 MW-5 AND 11760 MW-10 IS ESTIMATED TO BE APPROXIMATELY 0.0786 FT/FT. DATA USED IN THIS CALCULATION AND THE CONTOUR MAP ARE FROM THE SEPTEMBER 2013 GROUNDWATER SAMPLING EVENT.

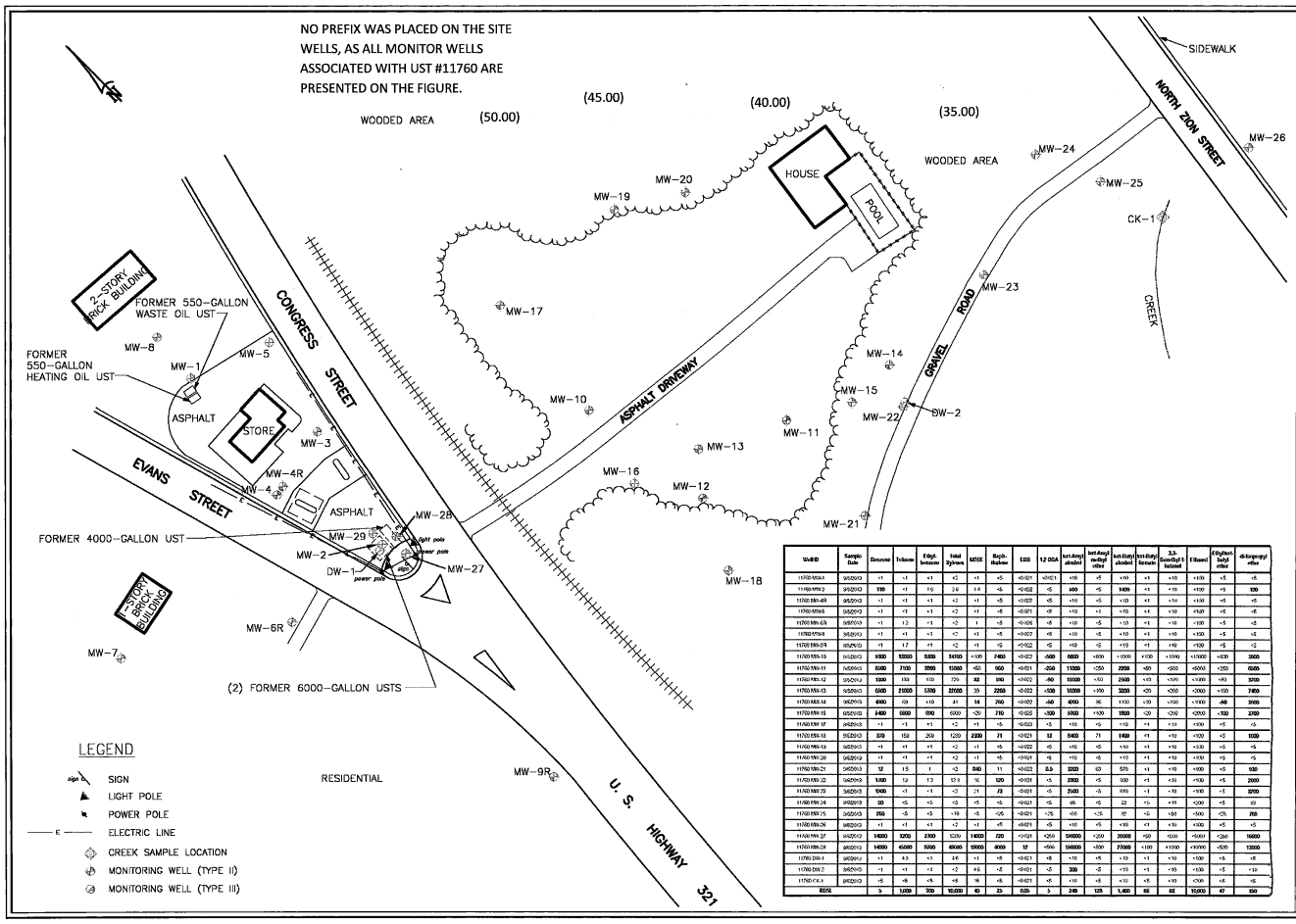
Cardno ATC
400 NORTHEAST DRIVE
COLUMBIA, SOUTH CAROLINA (803) 735-0003

TITLE FIGURE 3 UST PERMIT #11760
GROUNDWATER ELEVATION MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

SCALE 1" = 80'
DATE 10-7-13
PROJECT NUMBER 014.25384.0012

PREP BY BB
REV BY JK

NOTE:



WellID	Sample Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Naph-thalene	EDB	1,2 DCA	Isopropylbenzene	Isopropylbenzene	n-Butylbenzene	n-Butylbenzene	3,5-Dimethylbenzene	1,2-Dibromo	Ethylbenzene	sec-butylbenzene
11760-MW-1	9/5/2012	<1	<1	<1	<2	<1	<5	<0.021	<0.021	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-2	9/5/2012	110	<1	1.6	2.6	1.4	<5	<0.022	<5	460	<5	1400	<1	<10	<100	<5	130
11760-MW-4R	9/5/2012	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-5	9/5/2012	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<1	<10	<1	<10	<100	<5	<5
11760-MW-6R	9/5/2012	<1	1.2	<1	<2	1	<5	<0.026	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-7	9/5/2012	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-8R	9/5/2012	<1	1.7	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-10	9/5/2012	1100	12000	5300	34000	<100	2400	<0.022	-500	6600	<100	<1000	<100	<1000	<10000	<500	2600
11760-MW-11	9/5/2012	5500	7100	2900	15000	<50	950	<0.021	-250	11000	<250	2900	<50	<500	<5000	<250	6500
11760-MW-12	9/5/2012	1300	150	110	770	32	390	<0.022	-50	10000	<10	2500	<10	<100	<1000	<50	3700
11760-MW-13	9/5/2012	5400	21000	5700	27000	35	2200	<0.022	-500	10000	<100	3200	<20	<200	<2000	<100	7400
11760-MW-14	9/5/2012	4900	69	<10	41	14	260	<0.022	-50	4000	96	1100	<10	<100	<1000	-50	1600
11760-MW-15	9/5/2012	1400	6600	890	6000	<20	710	<0.022	-300	2800	<100	1800	<20	<200	<2000	<100	2700
11760-MW-17	9/5/2012	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-18	9/5/2012	370	150	200	1200	2200	71	<0.021	12	5400	71	1900	<1	<10	<100	<2	1100
11760-MW-19	9/5/2012	<1	<1	<1	<2	<1	<5	<0.022	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-20	9/5/2012	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-21	9/5/2012	12	15	1	<2	540	11	<0.022	0.5	2200	63	570	<1	<10	<100	<5	130
11760-MW-22	9/5/2012	1100	12	1.3	17.8	16	120	<0.021	<5	2800	<5	500	<1	<10	<100	<5	2600
11760-MW-23	9/5/2012	1900	<1	<1	<2	21	22	<0.021	<5	2500	<5	810	<1	<10	<100	<5	2200
11760-MW-24	9/5/2012	69	<5	<5	<5	<5	<5	<0.021	<5	66	<5	22	<5	<50	<500	<5	69
11760-MW-25	9/5/2012	710	<5	<5	<15	<5	<5	<0.021	<25	50	<25	37	<5	<50	<500	<25	710
11760-MW-26	9/5/2012	<1	<1	<1	<2	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-MW-27	9/5/2012	14000	3200	2300	5200	14000	720	<0.021	<250	56000	<250	20000	<50	<500	<5000	<250	16000
11760-MW-29	9/5/2012	14000	45000	5200	60000	17000	4000	12	<500	154000	<500	77000	<100	<1000	<10000	<500	12000
11760-DW-1	9/5/2012	<1	4.3	<1	2.6	<1	<5	<0.021	<5	<10	<5	<10	<1	<10	<100	<5	<5
11760-DW-2	9/5/2012	<1	<1	<1	<2	4.6	<5	<0.021	<5	200	<5	<10	<1	<10	<100	<5	<10
11760-CK-1	9/5/2012	<5	<5	<5	<9	16	<5	<0.021	<5	<10	<5	<10	<5	<10	<100	<5	<5
RSL		5	1,000	700	10,000	40	25	0.05	5	240	125	1,400	65	65	10,000	47	150

Cardno ATC
400 NORTHEAST DRIVE
COLUMBIA, SOUTH CAROLINA (803) 735-0003

PROJECT NUMBER 014.25384.0012
DATE 10-7-13
SCALE 1" = 80'

TITLE FIGURE 4
GROUNDWATER CONCENTRATION MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

UST PERMIT #11760

PREP BY BB
REV BY JK

NOTE:

APPENDIX A

FIELD DATA INFORMATION SHEETS

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HANELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW1

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 48 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 40.52 ft.

Length of Water Column (LWC=TWD-DGW) 7.48 ft.

1 Csg. Volume (LWC*C)= 7.48 X 0.163 = 1.22 gals.
3 Csg. Volumes = 3 X 1.22 = 3.66 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 35 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0951
pH (s.u.)	4.64	4.57	4.46	4.31			4.25	
Specific Cond. (umhos/cm)	178	194	194	198			199	
Water Temp (°C)	20.22	19.97	19.93	19.51			19.31	
Turbidity (*)	5	10	20	20			20	
D.O. Reading	.66	.63	.62	.60			.60	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOWLER, LINDA HANNELSON, JOHN MONGEGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW2

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 54 ft.
Depth to Free Product (DFP) 50.94 ft.
Depth to GW (DGW) 51.03 ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Well Had Product

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGE, LINDA HARVELSON, JOHN MONGEHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW3

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 45 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 42.22 ft.

Length of Water Column (LWC=TWD-DGW) 2.78 ft.

1 Csg. Volume (LWC*C)= 2.78 X 0.163 = .45 gals.
3 Csg. Volumes = 3 X .45 = 1.35 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 0.25 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)	1050							1032
pH (s.u.)	4.83						4.82	
Specific Cond. (umhos/cm)	511						513	
Water Temp (°C)	22.21						22.20	
Turbidity (*)	10						10	
D.O. Reading	.165						.166	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Bailed dry after .25 gal

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLCE, LINDA HANNELSON, JOHN MONGSTAD
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW4

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 25 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) _____ ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Well Dry

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORTSE, LINDA HANNELSON
JOHN PONDEGRAF
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW4R

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 47.12 ft.

Length of Water Column (LWC=TWD-DGW) 12.88 ft.

1 Csg. Volume (LWC*C)= 12.88 X 0.163 = 2.09 gals.
3 Csg. Volumes = 3 X 2.09 = 6.27 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1022
pH (s.u.)	4.93	4.85	4.85	4.73			4.56	
Specific Cond. (umhos/cm)	101	100	100	99			99	
Water Temp (°C)	21.28	20.83	20.58	20.38			20.29	
Turbidity (*)	15	15	20	20			20	
D.O. Reading	.87	.61	.69	.70			.70	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGEE, LINDA HARVELSON, JOHN MONAGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW 5

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 45 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 40.81 ft.

Length of Water Column (LWC=TWD-DGW) 4.69 ft.

1 Csg. Volume (LWC*C)= 4.69 X 0.163 = .76 gals.
3 Csg. Volumes = 3 X .76 = 2.28 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 2.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1001
pH (s.u.)	4.22	3.97	3.83	3.74			3.71	
Specific Cond. (umhos/cm)	126	127	129	130			130	
Water Temp (°C)	20.62	20.63	20.49	20.27			20.37	
Turbidity (*)	5	15	20	20			20	
D.O. Reading	.66	.66	.68	.69			.71	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORTE, LINDA HANNELSON, JOHN MONGERAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW6R

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 65.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 56.76 ft.

Length of Water Column (LWC=TWD-DGW) 8.24 ft.

1 Csg. Volume (LWC*C)= 8.24 X 0.163 = 2.0 gals.
3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 6.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								1100
Time (military)								
pH (s.u.)	6.12	5.93	5.73	5.60				5.25
Specific Cond. (umhos/cm)	152	188		154				160
Water Temp (°C)	20.66	20.57	18.73	19.58				19.96
Turbidity (*)	5	40	50	70				100
D.O. Reading	8.03	5.19	9.13	10.81				7.76

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HANNELSON, JOHN MONGEHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW7

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 52 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) _____ ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Well Dry

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW8

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 25 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 20.34 ft.

Length of Water Column (LWC=TWD-DGW) 4.66 ft.

1 Csg. Volume (LWC*C)= 4.66 X 0.163 = .75 gals.
3 Csg. Volumes = 3 X .75 = 2.25 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 0.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								931
pH (s.u.)	4.61	3.06					2.99	
Specific Cond. (umhos/cm)	126	123					123	
Water Temp (°C)	19.12	19.50					19.49	
Turbidity (*)	5	10					10	
D.O. Reading	1.30	.59					.60	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HARRELSON, JOHN MONCHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW 9R

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 65.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 53.18 ft.

Length of Water Column (LWC=TWD-DGW) 11.82 ft.

1 Csg. Volume (LWC*C)= 11.82 X 0.163 = 2.0 gals.
3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1035
pH (s.u.)	6.31	5.89						5.72
Specific Cond. (umhos/cm)	81	87						94
Water Temp (°C)	19.92	17.53						19.87
Turbidity (*)	5	55						70
D.O. Reading	11.90	7.96						951

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control

Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13

Field Personnel WILLIAM FOLTSE, LINDA HARVELSON, JOHN MONGERMAN

General Weather Conditions CLEAR

Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____

Date / Time _____ Date / Time _____

Well #: MW10

Well Diameter (D) 2 inch or _____ feet

conversion factor (C): 3.143*(D/2)^2

for a 2 inch well C= 0.163

for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.

Depth to Free Product (DFP) _____ ft.

Depth to GW (DGW) 45.95 ft.

Length of Water Column (LWC=TWD-DGW) 4.05 ft.

1 Csg. Volume (LWC*C)= 4.05 X 0.163 = .66 gals.

3 Csg. Volumes = 3 X .66 = 2 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1335
pH (s.u.)	4.99	5.03	5.03	5.05				5.05
Specific Cond. (umhos/cm)	534	546	549	551				544
Water Temp (°C)	18.75	18.36	18.25	18.18				18.17
Turbidity (*)	5	5	10	20				10
D.O. Reading	.40	.54	.47	.56				.61

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORGE, LINDA HARVELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW11

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 38.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.60 ft.

Length of Water Column (LWC=TWD-DGW) 6.40 ft.

1 Csg. Volume (LWC*C)= 6.40 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1355
pH (s.u.)	5.60	5.53	5.41	5.26				5.32
Specific Cond. (umhos/cm)	699	696	692	683				693
Water Temp (°C)	19.74	18.83	18.09	12.41				18.21
Turbidity (*)	5	20	30	40				40
D.O. Reading	13.04	9.26	10.57	9.51				7.41

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HENDELSON, JOHN MONAGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW12

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 39.70 ft.

Length of Water Column (LWC=TWD-DGW) 10.30 ft.

1 Csg. Volume (LWC*C)= 10.30 X 0.163 = 2.0 gals.
3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1400
pH (s.u.)	5.23	5.07	4.99	4.97				4.93
Specific Cond. (umhos/cm)	268	267	269	271				271
Water Temp (°C)	18.70	18.30	18.21	18.17				17.98
Turbidity (*)	5	10	15	20				20
D.O. Reading	.60	.49	.42	.43				.47

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HARVELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW13

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 40.89 ft.

Length of Water Column (LWC=TWD-DGW) 9.11 ft.

1 Csg. Volume (LWC*C)= 9.11 X 0.163 = 1.5 gals.
3 Csg. Volumes = 3 X 1.5 = 4.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1450
pH (s.u.)	5.64	5.69	5.51	5.37				5.28
Specific Cond. (umhos/cm)	563	557	544	553				558
Water Temp (°C)	19.72	18.92	12.59	17.33				18.43
Turbidity (*)	5	10	30	30				40
D.O. Reading	7.86	4.14	7.11	6.02				4.97

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGE, LINDA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW14

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 33.31 ft.

Length of Water Column (LWC=TWD-DGW) 6.69 ft.

1 Csg. Volume (LWC*C)= 6.69 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1340
pH (s.u.)	5.91	5.47	5.27	5.18				5.49
Specific Cond. (umhos/cm)	388	332	357	384				392
Water Temp (°C)	19.51	18.19	17.56	17.89				18.66
Turbidity (*)	5	40	60	70				80
D.O. Reading	14.21	8.41	6.72	9.92				8.64

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORGE, LINDA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW15

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.82 ft.

Length of Water Column (LWC=TWD-DGW) 8.18 ft.

1 Csg. Volume (LWC*C)= 8.18 X 0.163 = 1.0 gals.
3 Csg. Volumes = 3 X 1.0 = 3.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								1310
Time (military)								
pH (s.u.)	5.33	5.53	5.77	5.91				6.15
Specific Cond. (umhos/cm)	228	309	472	526				534
Water Temp (°C)	19.53	18.41	17.86	17.31				17.68
Turbidity (*)	5	20	30	30				40
D.O. Reading	11.61	6.07	8.46	8.59				9.41

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW 11e

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) _____ ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) _____ ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: Could not Locate even with medal detector

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE; LINDA HANNELSON
JOHN MONTGOMERY
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody
Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW17

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 50 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 35.65 ft.

Length of Water Column (LWC=TWD-DGW) 14.35 ft.

1 Csg. Volume (LWC*C)= 14.35 X 0.163 = 2.34 gals.
3 Csg. Volumes = 3 X 2.34 = 7 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1310
pH (s.u.)	4.75	4.90	4.89	4.93				4.91
Specific Cond. (umhos/cm)	192	195	199	197				202
Water Temp (°C)	18.70	18.34	18.17	18.02				18.01
Turbidity (*)	5	15	25	30				25
D.O. Reading	.77	.68	.68	.68				.71

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control

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Bureau of Underground Storage Tank Management

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13

Field Personnel WILLIAM FOLTZE, LINDA HARVELSON, JOHN MONEGHAN

General Weather Conditions CLEAR

Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____

Date / Time _____ Date / Time _____

Well #: MW18

Well Diameter (D) 2 inch or _____ feet

conversion factor (C): 3.143*(D/2)^2

for a 2 inch well C= 0.163

for a 4 inch well C= 0.652

Total Well Depth (TWD) 50.0 ft.

Depth to Free Product (DFP) _____ ft.

Depth to GW (DGW) 39.77 ft.

Length of Water Column (LWC=TWD-DGW) 10.23 ft.

1 Csg. Volume (LWC*C)= 10.23 X 0.163 = 2.0 gals.

3 Csg. Volumes = 3 X 2.0 = 6.0 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1425
pH (s.u.)	5.02	4.99	4.98	4.75				5.03
Specific Cond. (umhos/cm)	561	560	561	563				563
Water Temp (°C)	18.04	17.98	17.95	17.96				17.63
Turbidity (*)	5	5	10	15				10
D.O. Reading	1.06	1.10	1.08	1.15				.71

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOWLER, LAURA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW19

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 46 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.55 ft.

Length of Water Column (LWC=TWD-DGW) 7.45 ft.

1 Csg. Volume (LWC*C)= 7.45 X 0.163 = 1.21 gals.
3 Csg. Volumes = 3 X 1.21 = 4 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1245
pH (s.u.)	4.95	4.81	4.75	4.69			4.57	
Specific Cond. (umhos/cm)	61	61	61	56			56	
Water Temp (°C)	18.20	18.15	18.01	17.98			17.74	
Turbidity (*)	5	10	10	10			25	
D.O. Reading	.58	.53	.51	.49			.49	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGE, LINDA HAMELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW 20

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 44 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 38.55 ft.

Length of Water Column (LWC=TWD-DGW) 7.45 ft.

1 Csg. Volume (LWC*C)= 7.45 X 0.163 = 1.21 gals.
3 Csg. Volumes = 3 X 1.21 = 4 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1220 ~~1220~~
pH (s.u.)	5.51	5.43	5.39	5.28			5.26	
Specific Cond. (umhos/cm)	189	187	184	184			183	
Water Temp (°C)	18.17	17.54	17.36	17.21			17.19	
Turbidity (*)	5	10	10	20			20	
D.O. Reading	.92	.67	.63	.60			.60	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGE, LINDA HANNELSON, JOHN MONEGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial.no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW21

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 26.82 ft.

Length of Water Column (LWC=TWD-DGW) 13.18 ft.

1 Csg. Volume (LWC*C)= 13.18 X 0.163 = 2.15 gals.
3 Csg. Volumes = 3 X 2.15 = 6.45 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 6.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0720
pH (s.u.)	5.83	5.73	5.15	5.21			5.33	
Specific Cond. (umhos/cm)	159	299	421	419			417	
Water Temp (°C)	17.86	17.63	17.20	17.17			17.18	
Turbidity (*)	5	15	20	30			40	
D.O. Reading	7.80	7.80	7.81	8.36			8.86	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZ, LINDA HANNELSON, JOHN MONGE HAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW22

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 31.18 ft.

Length of Water Column (LWC=TWD-DGW) 8.82 ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = 1.44 gals.
3 Csg. Volumes = 3 X _____ = 4.31 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0745
pH (s.u.)	5.91	5.75	5.44	5.36			5.21	
Specific Cond. (umhos/cm)	162	175	186	195			203	
Water Temp (°C)	17.59	17.41	17.22	17.16			17.12	
Turbidity (*)	5	15	20	20			40	
D.O. Reading	7.79	7.83	7.77	7.86			7.91	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HAMELSON, JOHN MONSEHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW23

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 40 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 30.31 ft.

Length of Water Column (LWC=TWD-DGW) 9.69 ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = 1.58 gals.
3 Csg. Volumes = 3 X _____ = 4.75 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 5.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0810
pH (s.u.)	6.65	6.06	5.60	5.81			5.54	
Specific Cond. (umhos/cm)	239	242	2.39	236			238	
Water Temp (°C)	17.36	17.08		16.03			17.13	
Turbidity (*)	5	20	28	30			40	
D.O. Reading	5.57	6.30		7.40			7.68	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HANNELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW24

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 25 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 18.21 ft.

Length of Water Column (LWC=TWD-DGW) 6.79 ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = 1.11 gals.
3 Csg. Volumes = 3 X _____ = 3.32 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0835
pH (s.u.)	5.54	5.57	5.69	5.73			5.77	
Specific Cond. (umhos/cm)	479	493	530	525			491	
Water Temp (°C)	19.12	18.75	17.01	16.50			16.89	
Turbidity (*)	10	20	30	30			40	
D.O. Reading	7.03	7.10	7.12	6.81			6.41	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LAURA HENDELSON, JOHN MONAGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW25

Well Diameter (D) 2 inch or [illegible] feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 23 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 13.44 ft.

Length of Water Column (LWC=TWD-DGW) 9.56 ft.

1 Csg. Volume (LWC*C)= 1.56 X 0.163 = 0.25 gals.
3 Csg. Volumes = 3 X 0.25 = 0.76 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 0.75 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0900
pH (s.u.)	6.11	5.89	5.34	5.32			5.30	
Specific Cond. (umhos/cm)	443	442	442	436			426	
Water Temp (°C)	19.65	18.32	17.55	17.50			17.46	
Turbidity (*)	5	10	20	30			40	
D.O. Reading	18.35	8.94	7.61	6.86			6.22	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HAMELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW26

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 35 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 17.79 ft.

Length of Water Column (LWC=TWD-DGW) 17.21 ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = 2.81 gals.
3 Csg. Volumes = 3 X _____ = 8.42 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 8.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								0925
pH (s.u.)	5.90	5.73	5.63	5.79			5.94	
Specific Cond. (umhos/cm)	267	321	342	305			297	
Water Temp (°C)	20.61	19.76	18.51	17.44			16.32	
Turbidity (*)	10	20	30	40			50	
D.O. Reading	8.34	7.62	7.90	7.26			7.39	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

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Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLGE, LINDA HAWKELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW [redacted]7

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 52.03 ft.

Length of Water Column (LWC=TWD-DGW) 7.97 ft.

1 Csg. Volume (LWC*C)= 7.97 X 0.163 = 1.30 gals.
3 Csg. Volumes = 3 X 1.30 = [redacted] gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 4.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1155
pH (s.u.)	6.16	6.07	5.91	5.75			5.73	
Specific Cond. (umhos/cm)	788	783	793	791			788	
Water Temp (°C)	23.05	21.49	21.39	20.98			20.77	
Turbidity (*)	20	25	30	35			35	
D.O. Reading	8.26	7.17	8.94	8.71			8.70	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORTUNE, LINDA HARMELSON, JOHN MONTGOMERY
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW28

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60.0 ft.
Depth to Free Product (DFP) — ft.
Depth to GW (DGW) 49.92 ft.

Length of Water Column (LWC=TWD-DGW) 10.08 ft.

1 Csg. Volume (LWC*C)= 10.08 X 0.163 = 1.50 gals.
3 Csg. Volumes = 3 X 1.50 = 4.50 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 3.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1125
pH (s.u.)	6.24	6.34	6.01					6.01
Specific Cond. (umhos/cm)	519	601	648					684
Water Temp (°C)	22.56	22.04	21.48					22.81
Turbidity (*)	10	15	20					25
D.O. Reading	8.61	6.75	9.51					8.32

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HARRELSON, JOHN MONEGHAN
General Weather Conditions CLEAN
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: MW 29

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 60 ft.
Depth to Free Product (DFP) 50.54 ft.
Depth to GW (DGW) 50.57 ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

Free Product

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORTUNE, LINDA HENDELSON, JOHN MONAGHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: DW1

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 80.0 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 51.63 ft.

Length of Water Column (LWC=TWD-DGW) 28.37 ft.

1 Csg. Volume (LWC*C)= 28.37 X 0.163 = 4.5 gals.
3 Csg. Volumes = 3 X 4.5 = 13.5 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 6.5 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1010
pH (s.u.)	6.26	5.93					5.31	
Specific Cond. (umhos/cm)	132	127					112	
Water Temp (°C)	22.26	20.43					21.12	
Turbidity (*)	5	25					70	
D.O. Reading	11.34	9.72					8.39	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FOLTZE, LINDA HANNELSON, JOHN MONGEHAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	x	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: DW 2

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) 80 ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) 32.03 ft.

Length of Water Column (LWC=TWD-DGW) 47.97 ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = [redacted] gals.
3 Csg. Volumes = 3 X _____ = 7.82 gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling 8.0 gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1030
pH (s.u.)	7.75	8.21	8.07	8.41			8.52	
Specific Cond. (umhos/cm)	181	179	180	180			183	
Water Temp (°C)	19.36	18.41	17.25	16.54			17.29	
Turbidity (*)	5	15	25	30			40	
D.O. Reading	6.07	6.24	6.14	6.70			6.32	

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks:

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management

Page

Field Data Information Sheet for Ground Water Sampling

Date (mm/dd/yy) 09/05/13
Field Personnel WILLIAM FORTSE, LINDA HANNELSON, JOHN MONGOMAN
General Weather Conditions CLEAR
Ambient Air Temperature 90's °F

Facility Name Former United Exxon Site ID # 11760

Quality Assurance:

pH Meter		Conductivity Meter	
serial no.	11e100177	serial no.	11e100177
pH = 4.0	X	Standard	4.49
pH = 7.0		Standard	
pH = 10.0		Standard	

Chain of Custody

Relinquished by _____ Received by _____
Date / Time _____ Date / Time _____

Well #: CK-1

Well Diameter (D) 2 inch or _____ feet
conversion factor (C): 3.143*(D/2)^2
for a 2 inch well C= 0.163
for a 4 inch well C= 0.652

Total Well Depth (TWD) _____ ft.
Depth to Free Product (DFP) _____ ft.
Depth to GW (DGW) _____ ft.

Length of Water Column (LWC=TWD-DGW) _____ ft.

1 Csg. Volume (LWC*C)= _____ X 0.163 = _____ gals.
3 Csg. Volumes = 3 X _____ = _____ gals. (Std. Purge Volume)

Total Volume of Water Purged Before Sampling _____ gals.

circle if well was Destroyed Dry Inaccessable Not located Not Purged

	Initial	1st vol.	2nd Vol.	3rd vol.	4th vol.	5th vol.	Post	Sampling
Volume Purged (gallons)								
Time (military)								1055
pH (s.u.)								
Specific Cond. (umhos/cm)								
Water Temp (°C)								
Turbidity (*)								
D.O. Reading								

*subjective (1) Clear (2) Slight (3) Moderate (4) High

circle if well Bailed Dry Equilibrated (10%) Duplicate taken

Remarks: CREEK Sample

APPENDIX B

LABORATORY ANALYTICAL RESULTS

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Case Narrative for:

CARDNO ATC

Certificate of Analysis Number:

L0034054

Report To:		Project Name:	14.25384.0012
CARDNO ATC		Site:	UNITED EXXON
JESSE KEEFFE		Site Address:	
400 NORTHEAST DR, UNIT Q			
		PO Number:	
COLUMBIA		State:	South Carolina
SC		State Cert. No.:	73004001
29203-		Date Reported:	9/20/2013
ph: (803) 735-0003	fax:		

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data for those samples spiked by the laboratory and may be applicable to other samples of similar matrix from the site. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group.

The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process. If insufficient sample is supplied for MS/MSD, a Laboratory Control Sample (LCS) and a Laboratory Control Sample Duplicate (LCSD) are reported with the analytical batch and serve as the batch quality control (QC).

Exception: SW8260B Volatile Organics- Batch R318238, R318257, R318340: The target analytes Ethanol, t-Butyl alcohol, Diisopropyl ether and/ or tert-Amyl alcohol, exceeded the UCL in the LCS and/or LCSD samples. The MS and MSD samples were analyzed with the batch and all recoveries for the compound of concern were within the LCS/LCSD control limits. According to NELAC guidelines (Ch 5; D.1.1.2.1) the batch QC is acceptable.

Exception: SW8260B Volatile Organics- Batch R318340: The target analyte, t-Butyl alcohol, was detected above the laboratory reporting limit in the method blank sample. Associated field sample results possibly affected are reported with a "B" qualifier. The amount of this analyte in the method blank was less than ten percent of the amount in the sample indicating a negligible contribution effect from the blank contamination.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

Accutest Gulf Coast is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Cristina C. Thibeaux

9/22/2013

Cristina Thibeaux
Project Manager

Date

Test results meet all requirements of NELAC, unless specified in the narrative.

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

CARDNO ATC

Certificate of Analysis Number:

L0034054

Report To: CARDNO ATC
JESSE KEEFFE
400 NORTHEAST DR, UNIT Q

COLUMBIA
SC
29203-
ph: (803) 735-0003 fax:

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:

PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 9/20/2013

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-1	L0034054-01	Water	09/05/2013 9:51	9/9/2013 10:30:00 AM		☐
MW-3	L0034054-02	Water	09/05/2013 10:32	9/9/2013 10:30:00 AM		☐
MW-4R	L0034054-03	Water	09/05/2013 10:22	9/9/2013 10:30:00 AM		☐
MW-5	L0034054-04	Water	09/05/2013 10:01	9/9/2013 10:30:00 AM		☐
MW-6R	L0034054-05	Water	09/05/2013 11:00	9/9/2013 10:30:00 AM		☐
MW-8	L0034054-06	Water	09/05/2013 9:31	9/9/2013 10:30:00 AM		☐
MW-9R	L0034054-07	Water	09/05/2013 10:35	9/9/2013 10:30:00 AM		☐
MW-10	L0034054-08	Water	09/05/2013 13:35	9/9/2013 10:30:00 AM		☐
MW-11	L0034054-09	Water	09/05/2013 13:55	9/9/2013 10:30:00 AM		☐
MW-12	L0034054-10	Water	09/05/2013 14:00	9/9/2013 10:30:00 AM		☐
MW-13	L0034054-11	Water	09/05/2013 14:50	9/9/2013 10:30:00 AM		☐
MW-14	L0034054-12	Water	09/05/2013 12:40	9/9/2013 10:30:00 AM		☐
MW-15	L0034054-13	Water	09/05/2013 13:10	9/9/2013 10:30:00 AM		☐
MW-17	L0034054-14	Water	09/05/2013 13:10	9/9/2013 10:30:00 AM		☐
MW-18	L0034054-15	Water	09/05/2013 14:25	9/9/2013 10:30:00 AM		☐
MW-19	L0034054-16	Water	09/05/2013 12:45	9/9/2013 10:30:00 AM		☐
MW-20	L0034054-17	Water	09/05/2013 12:20	9/9/2013 10:30:00 AM		☐
MW-21	L0034054-18	Water	09/06/2013 7:20	9/9/2013 10:30:00 AM		☐
MW-22	L0034054-19	Water	09/06/2013 7:45	9/9/2013 10:30:00 AM		☐
MW-23	L0034054-20	Water	09/06/2013 8:10	9/9/2013 10:30:00 AM		☐
MW-24	L0034054-21	Water	09/06/2013 8:35	9/9/2013 10:30:00 AM		☐
MW-25	L0034054-22	Water	09/06/2013 9:00	9/9/2013 10:30:00 AM		☐

Cristina C. Thibeaux

Cristina Thibeaux
Project Manager

9/20/2013
Date

Ron Benjamin
Laboratory Director

Rebecca Haryett
Quality Assurance Officer

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

CARDNO ATC

Certificate of Analysis Number:

L0034054

Report To: CARDNO ATC
JESSE KEEFFE
400 NORTHEAST DR, UNIT Q

COLUMBIA
SC
29203-
ph: (803) 735-0003 fax:

Fax To:

Project Name: 14.25384.0012
Site: UNITED EXXON
Site Address:

PO Number:
State: South Carolina
State Cert. No.: 73004001
Date Reported: 9/20/2013

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
MW-26	L0034054-23	Water	09/06/2013 9:35	9/9/2013 10:30:00 AM		☐
MW-27	L0034054-24	Water	09/05/2013 11:55	9/9/2013 10:30:00 AM		☐
MW-28	L0034054-25	Water	09/05/2013 11:25	9/9/2013 10:30:00 AM		☐
DW-1	L0034054-26	Water	09/05/2013 10:10	9/9/2013 10:30:00 AM		☐
DW-2	L0034054-27	Water	09/06/2013 10:30	9/9/2013 10:30:00 AM		☐
DUP-01	L0034054-28	Water	09/05/2013 11:30	9/9/2013 10:30:00 AM		☐
DUP-02	L0034054-29	Water	09/05/2013 13:15	9/9/2013 10:30:00 AM		☐
FIELD BLANK	L0034054-30	Water	09/05/2013 12:00	9/9/2013 10:30:00 AM		☐
FIELD BLANK	L0034054-31	Water	09/06/2013 9:00	9/9/2013 10:30:00 AM		☐
TRIP BLANK	L0034054-32	Water	09/05/2013 0:00	9/9/2013 10:30:00 AM		☐
CK-1	L0034054-33	Water	09/06/2013 10:55	9/9/2013 10:30:00 AM		☐

Cristina C. Thibeaux

Cristina Thibeaux
Project Manager

9/20/2013
Date

Ron Benjamin
Laboratory Director

Rebecca Haryett
Quality Assurance Officer

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-1 **Collected:** 09/05/2013 9:51 **Lab Sample ID:** L0034054-01

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/16/13 17:43	SJA	5207478
Surr: 1-Chloro-2-fluorobenzene	110		% 32-169		1	09/16/13 17:43	SJA	5207478

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.07

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 3:18	SNV	5206781
Diisopropyl ether	ND		5	150	1	09/15/13 3:18	SNV	5206781
Ethanol	ND		100	1000	1	09/15/13 3:18	SNV	5206781
t-Butyl alcohol	ND		10	1400	1	09/15/13 3:18	SNV	5206781
tert-Amyl alcohol	ND		10	240	1	09/15/13 3:18	SNV	5206781
tert-Amyl methyl ether	ND		5	128	1	09/15/13 3:18	SNV	5206781
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 3:18	SNV	5206781
tert-Butyl formate	ND		1	100	1	09/15/13 3:18	SNV	5206781
1,2-Dichloroethane	ND		5		1	09/15/13 3:18	SNV	5206781
Benzene	ND		1		1	09/15/13 3:18	SNV	5206781
Ethylbenzene	ND		1		1	09/15/13 3:18	SNV	5206781
Methyl tert-butyl ether	ND		1		1	09/15/13 3:18	SNV	5206781
Naphthalene	ND		5		1	09/15/13 3:18	SNV	5206781
Toluene	ND		1		1	09/15/13 3:18	SNV	5206781
m,p-Xylene	ND		2		1	09/15/13 3:18	SNV	5206781
o-Xylene	ND		2		1	09/15/13 3:18	SNV	5206781
Xylenes,Total	ND		2		1	09/15/13 3:18	SNV	5206781
Surr: 1,2-Dichloroethane-d4	114		% 84-124		1	09/15/13 3:18	SNV	5206781
Surr: 4-Bromofluorobenzene	97.3		% 89-111		1	09/15/13 3:18	SNV	5206781
Surr: Toluene-d8	97.8		% 83-115		1	09/15/13 3:18	SNV	5206781

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:36 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-3 **Collected:** 09/05/2013 10:32 **Lab Sample ID:** L0034054-02

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.022		1	09/16/13 10:17	SJA	5207457
Surr: 1-Chloro-2-fluorobenzene	106		% 32-169		1	09/16/13 10:17	SJA	5207457

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.09

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/17/13 2:47	NN	5208323
Diisopropyl ether	**180**	**>MCL**	**5**	**150**	**1**	**09/17/13 2:47**	**NN**	**5208323**
Ethanol	ND		100	1000	1	09/17/13 2:47	NN	5208323
t-Butyl alcohol	1400	B	10	1400	1	09/17/13 2:47	NN	5208323
tert-Amyl alcohol	**560**	**>MCL**	**10**	**240**	**1**	**09/17/13 2:47**	**NN**	**5208323**
tert-Amyl methyl ether	ND		5	128	1	09/17/13 2:47	NN	5208323
tert-Butyl ethyl ether	ND		5	47	1	09/17/13 2:47	NN	5208323
tert-Butyl formate	ND		1	100	1	09/17/13 2:47	NN	5208323
1,2-Dichloroethane	ND		5		1	09/17/13 2:47	NN	5208323
Benzene	110		1		1	09/17/13 2:47	NN	5208323
Ethylbenzene	1.6		1		1	09/17/13 2:47	NN	5208323
Methyl tert-butyl ether	1.4		1		1	09/17/13 2:47	NN	5208323
Naphthalene	ND		5		1	09/17/13 2:47	NN	5208323
Toluene	ND		1		1	09/17/13 2:47	NN	5208323
m,p-Xylene	3.6		2		1	09/17/13 2:47	NN	5208323
o-Xylene	ND		2		1	09/17/13 2:47	NN	5208323
Xylenes,Total	3.6		2		1	09/17/13 2:47	NN	5208323
Surr: 1,2-Dichloroethane-d4	102		% 84-124		1	09/17/13 2:47	NN	5208323
Surr: 4-Bromofluorobenzene	100		% 89-111		1	09/17/13 2:47	NN	5208323
Surr: Toluene-d8	96.3		% 83-115		1	09/17/13 2:47	NN	5208323

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:38 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-4R **Collected:** 09/05/2013 10:22 **Lab Sample ID:** L0034054-03

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 10:38	SJA	5207458
Surr: 1-Chloro-2-fluorobenzene	115		%	32-169		1	09/16/13 10:38	SJA	5207458

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.08

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 4:17	SNV	5206783
Diisopropyl ether	ND			5	150	1	09/15/13 4:17	SNV	5206783
Ethanol	ND			100	1000	1	09/15/13 4:17	SNV	5206783
t-Butyl alcohol	ND			10	1400	1	09/15/13 4:17	SNV	5206783
tert-Amyl alcohol	ND			10	240	1	09/15/13 4:17	SNV	5206783
tert-Amyl methyl ether	ND			5	128	1	09/15/13 4:17	SNV	5206783
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 4:17	SNV	5206783
tert-Butyl formate	ND			1	100	1	09/15/13 4:17	SNV	5206783
1,2-Dichloroethane	ND			5		1	09/15/13 4:17	SNV	5206783
Benzene	ND			1		1	09/15/13 4:17	SNV	5206783
Ethylbenzene	ND			1		1	09/15/13 4:17	SNV	5206783
Methyl tert-butyl ether	ND			1		1	09/15/13 4:17	SNV	5206783
Naphthalene	ND			5		1	09/15/13 4:17	SNV	5206783
Toluene	ND			1		1	09/15/13 4:17	SNV	5206783
m,p-Xylene	ND			2		1	09/15/13 4:17	SNV	5206783
o-Xylene	ND			2		1	09/15/13 4:17	SNV	5206783
Xylenes,Total	ND			2		1	09/15/13 4:17	SNV	5206783
Surr: 1,2-Dichloroethane-d4	115		%	84-124		1	09/15/13 4:17	SNV	5206783
Surr: 4-Bromofluorobenzene	99.2		%	89-111		1	09/15/13 4:17	SNV	5206783
Surr: Toluene-d8	98.7		%	83-115		1	09/15/13 4:17	SNV	5206783

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:40 PM

Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-5 **Collected:** 09/05/2013 10:01 **Lab Sample ID:** L0034054-04

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/16/13 11:00	SJA	5207459
Surr: 1-Chloro-2-fluorobenzene	100		% 32-169		1	09/16/13 11:00	SJA	5207459

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.07

VOLATILE ORGANICS:METHOD 8260B				**MCL**		**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 2:20	SNV	5206779
Diisopropyl ether	ND		5	150	1	09/15/13 2:20	SNV	5206779
Ethanol	ND		100	1000	1	09/15/13 2:20	SNV	5206779
t-Butyl alcohol	ND		10	1400	1	09/15/13 2:20	SNV	5206779
tert-Amyl alcohol	ND		10	240	1	09/15/13 2:20	SNV	5206779
tert-Amyl methyl ether	ND		5	128	1	09/15/13 2:20	SNV	5206779
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 2:20	SNV	5206779
tert-Butyl formate	ND		1	100	1	09/15/13 2:20	SNV	5206779
1,2-Dichloroethane	ND		5		1	09/15/13 2:20	SNV	5206779
Benzene	ND		1		1	09/15/13 2:20	SNV	5206779
Ethylbenzene	ND		1		1	09/15/13 2:20	SNV	5206779
Methyl tert-butyl ether	ND		1		1	09/15/13 2:20	SNV	5206779
Naphthalene	ND		5		1	09/15/13 2:20	SNV	5206779
Toluene	ND		1		1	09/15/13 2:20	SNV	5206779
m,p-Xylene	ND		2		1	09/15/13 2:20	SNV	5206779
o-Xylene	ND		2		1	09/15/13 2:20	SNV	5206779
Xylenes,Total	ND		2		1	09/15/13 2:20	SNV	5206779
Surr: 1,2-Dichloroethane-d4	112		% 84-124		1	09/15/13 2:20	SNV	5206779
Surr: 4-Bromofluorobenzene	96.5		% 89-111		1	09/15/13 2:20	SNV	5206779
Surr: Toluene-d8	97.5		% 83-115		1	09/15/13 2:20	SNV	5206779

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-6R **Collected:** 09/05/2013 11:00 **Lab Sample ID:** L0034054-05

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.026		1	09/16/13 11:21	SJA	5207460
Surr: 1-Chloro-2-fluorobenzene	130		% 32-169		1	09/16/13 11:21	SJA	5207460

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.29

VOLATILE ORGANICS:METHOD 8260B				**MCL**		**SW8260B**	**Units: ug/L**	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 2:49	SNV	5206780
Diisopropyl ether	ND		5	150	1	09/15/13 2:49	SNV	5206780
Ethanol	ND		100	1000	1	09/15/13 2:49	SNV	5206780
t-Butyl alcohol	ND		10	1400	1	09/15/13 2:49	SNV	5206780
tert-Amyl alcohol	ND		10	240	1	09/15/13 2:49	SNV	5206780
tert-Amyl methyl ether	ND		5	128	1	09/15/13 2:49	SNV	5206780
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 2:49	SNV	5206780
tert-Butyl formate	ND		1	100	1	09/15/13 2:49	SNV	5206780
1,2-Dichloroethane	ND		5		1	09/15/13 2:49	SNV	5206780
Benzene	ND		1		1	09/15/13 2:49	SNV	5206780
Ethylbenzene	ND		1		1	09/15/13 2:49	SNV	5206780
Methyl tert-butyl ether	ND		1		1	09/15/13 2:49	SNV	5206780
Naphthalene	ND		5		1	09/15/13 2:49	SNV	5206780
Toluene	1.2		1		1	09/15/13 2:49	SNV	5206780
m,p-Xylene	ND		2		1	09/15/13 2:49	SNV	5206780
o-Xylene	ND		2		1	09/15/13 2:49	SNV	5206780
Xylenes,Total	ND		2		1	09/15/13 2:49	SNV	5206780
Surr: 1,2-Dichloroethane-d4	113		% 84-124		1	09/15/13 2:49	SNV	5206780
Surr: 4-Bromofluorobenzene	98.9		% 89-111		1	09/15/13 2:49	SNV	5206780
Surr: Toluene-d8	98.3		% 83-115		1	09/15/13 2:49	SNV	5206780

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:44 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-8 **Collected:** 09/05/2013 9:31 **Lab Sample ID:** L0034054-06

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	MCL	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP						**SW8011**	**Units: ug/L**		
1,2-Dibromoethane	ND			0.022		1	09/16/13 11:42	SJA	5207461
Surr: 1-Chloro-2-fluorobenzene	151		%	32-169		1	09/16/13 11:42	SJA	5207461

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.10

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 3:48	SNV	5206782
Diisopropyl ether	ND			5	150	1	09/15/13 3:48	SNV	5206782
Ethanol	ND			100	1000	1	09/15/13 3:48	SNV	5206782
t-Butyl alcohol	ND			10	1400	1	09/15/13 3:48	SNV	5206782
tert-Amyl alcohol	ND			10	240	1	09/15/13 3:48	SNV	5206782
tert-Amyl methyl ether	ND			5	128	1	09/15/13 3:48	SNV	5206782
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 3:48	SNV	5206782
tert-Butyl formate	ND			1	100	1	09/15/13 3:48	SNV	5206782
1,2-Dichloroethane	ND			5		1	09/15/13 3:48	SNV	5206782
Benzene	ND			1		1	09/15/13 3:48	SNV	5206782
Ethylbenzene	ND			1		1	09/15/13 3:48	SNV	5206782
Methyl tert-butyl ether	ND			1		1	09/15/13 3:48	SNV	5206782
Naphthalene	ND			5		1	09/15/13 3:48	SNV	5206782
Toluene	ND			1		1	09/15/13 3:48	SNV	5206782
m,p-Xylene	ND			2		1	09/15/13 3:48	SNV	5206782
o-Xylene	ND			2		1	09/15/13 3:48	SNV	5206782
Xylenes,Total	ND			2		1	09/15/13 3:48	SNV	5206782
Surr: 1,2-Dichloroethane-d4	116		%	84-124		1	09/15/13 3:48	SNV	5206782
Surr: 4-Bromofluorobenzene	95.5		%	89-111		1	09/15/13 3:48	SNV	5206782
Surr: Toluene-d8	97.8		%	83-115		1	09/15/13 3:48	SNV	5206782

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:45 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-9R **Collected:** 09/05/2013 10:35 **Lab Sample ID:** L0034054-07

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit	MCL	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP						**SW8011**	**Units: ug/L**		
1,2-Dibromoethane	ND			0.022		1	09/16/13 12:03	SJA	5207462
Surr: 1-Chloro-2-fluorobenzene	172	MI	%	32-169		1	09/16/13 12:03	SJA	5207462

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.08

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/17/13 17:09	SNV	5210977
Diisopropyl ether	ND			5	150	1	09/17/13 17:09	SNV	5210977
Ethanol	ND			100	1000	1	09/17/13 17:09	SNV	5210977
t-Butyl alcohol	ND			10	1400	1	09/17/13 17:09	SNV	5210977
tert-Amyl alcohol	ND			10	240	1	09/17/13 17:09	SNV	5210977
tert-Amyl methyl ether	ND			5	128	1	09/17/13 17:09	SNV	5210977
tert-Butyl ethyl ether	ND			5	47	1	09/17/13 17:09	SNV	5210977
tert-Butyl formate	ND			1	100	1	09/17/13 17:09	SNV	5210977
1,2-Dichloroethane	ND			5		1	09/17/13 17:09	SNV	5210977
Benzene	ND			1		1	09/17/13 17:09	SNV	5210977
Ethylbenzene	ND			1		1	09/17/13 17:09	SNV	5210977
Methyl tert-butyl ether	ND			1		1	09/17/13 17:09	SNV	5210977
Naphthalene	ND			5		1	09/17/13 17:09	SNV	5210977
Toluene	1.7			1		1	09/17/13 17:09	SNV	5210977
m,p-Xylene	ND			2		1	09/17/13 17:09	SNV	5210977
o-Xylene	ND			2		1	09/17/13 17:09	SNV	5210977
Xylenes,Total	ND			2		1	09/17/13 17:09	SNV	5210977
Surr: 1,2-Dichloroethane-d4	109		%	84-124		1	09/17/13 17:09	SNV	5210977
Surr: 4-Bromofluorobenzene	99.0		%	89-111		1	09/17/13 17:09	SNV	5210977
Surr: Toluene-d8	96.3		%	83-115		1	09/17/13 17:09	SNV	5210977

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:47 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-10 **Collected:** 09/05/2013 13:35 **Lab Sample ID:** L0034054-08

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.022		1	09/16/13 12:45	SJA	5207464
Surr: 1-Chloro-2-fluorobenzene	96.0		% 32-169		1	09/16/13 12:45	SJA	5207464

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.09

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		1000		100	09/17/13 18:06	SNV	5210979
Diisopropyl ether	**3600**	**>MCL**	**500**	**150**	**100**	**09/17/13 18:06**	**SNV**	**5210979**
Ethanol	ND		10000	1000	100	09/17/13 18:06	SNV	5210979
t-Butyl alcohol	ND		1000	1400	100	09/17/13 18:06	SNV	5210979
tert-Amyl alcohol	**6000**	**>MCL**	**1000**	**240**	**100**	**09/17/13 18:06**	**SNV**	**5210979**
tert-Amyl methyl ether	ND		500	128	100	09/17/13 18:06	SNV	5210979
tert-Butyl ethyl ether	ND		500	47	100	09/17/13 18:06	SNV	5210979
tert-Butyl formate	ND		100	100	100	09/17/13 18:06	SNV	5210979
1,2-Dichloroethane	ND		500		100	09/17/13 18:06	SNV	5210979
Benzene	9300		100		100	09/17/13 18:06	SNV	5210979
Ethylbenzene	8300		100		100	09/17/13 18:06	SNV	5210979
Methyl tert-butyl ether	ND		100		100	09/17/13 18:06	SNV	5210979
Naphthalene	2400		500		100	09/17/13 18:06	SNV	5210979
Toluene	33000		100		100	09/17/13 18:06	SNV	5210979
m,p-Xylene	25000		200		100	09/17/13 18:06	SNV	5210979
o-Xylene	9700		200		100	09/17/13 18:06	SNV	5210979
Xylenes,Total	34700		200		100	09/17/13 18:06	SNV	5210979
Surr: 1,2-Dichloroethane-d4	111		% 84-124		100	09/17/13 18:06	SNV	5210979
Surr: 4-Bromofluorobenzene	101		% 89-111		100	09/17/13 18:06	SNV	5210979
Surr: Toluene-d8	96.9		% 83-115		100	09/17/13 18:06	SNV	5210979

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:48 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-11 **Collected:** 09/05/2013 13:55 **Lab Sample ID:** L0034054-09

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/16/13 13:06	SJA	5207465
Surr: 1-Chloro-2-fluorobenzene	80.7		% 32-169		1	09/16/13 13:06	SJA	5207465

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.07

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		500		50	09/17/13 6:41	NN	5208331
Diisopropyl ether	**6500**	**>MCL**	**250**	**150**	**50**	**09/17/13 6:41**	**NN**	**5208331**
Ethanol	ND		5000	1000	50	09/17/13 6:41	NN	5208331
t-Butyl alcohol	**2200**	**B>MC**	**500**	**1400**	**50**	**09/17/13 6:41**	**NN**	**5208331**
tert-Amyl alcohol	**11000**	**>MCL**	**500**	**240**	**50**	**09/17/13 6:41**	**NN**	**5208331**
tert-Amyl methyl ether	ND		250	128	50	09/17/13 6:41	NN	5208331
tert-Butyl ethyl ether	ND		250	47	50	09/17/13 6:41	NN	5208331
tert-Butyl formate	ND		50	100	50	09/17/13 6:41	NN	5208331
1,2-Dichloroethane	ND		250		50	09/17/13 6:41	NN	5208331
Benzene	8500		50		50	09/17/13 6:41	NN	5208331
Ethylbenzene	3800		50		50	09/17/13 6:41	NN	5208331
Methyl tert-butyl ether	ND		50		50	09/17/13 6:41	NN	5208331
Naphthalene	960		250		50	09/17/13 6:41	NN	5208331
Toluene	7100		50		50	09/17/13 6:41	NN	5208331
m,p-Xylene	11000		100		50	09/17/13 6:41	NN	5208331
o-Xylene	4800		100		50	09/17/13 6:41	NN	5208331
Xylenes,Total	15800		100		50	09/17/13 6:41	NN	5208331
Surr: 1,2-Dichloroethane-d4	105		% 84-124		50	09/17/13 6:41	NN	5208331
Surr: 4-Bromofluorobenzene	99.9		% 89-111		50	09/17/13 6:41	NN	5208331
Surr: Toluene-d8	99.0		% 83-115		50	09/17/13 6:41	NN	5208331

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:50 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-12 **Collected:** 09/05/2013 14:00 **Lab Sample ID:** L0034054-10

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 13:28	SJA	5207466
Surr: 1-Chloro-2-fluorobenzene	86.2		%	32-169		1	09/16/13 13:28	SJA	5207466

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.11

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			100		10	09/14/13 21:57	SNV	5206762
Diisopropyl ether	**3200**	**>MCL**		**50**	**150**	**10**	**09/14/13 21:57**	**SNV**	**5206762**
Ethanol	ND			1000	1000	10	09/14/13 21:57	SNV	5206762
t-Butyl alcohol	**2500**	**>MCL**		**100**	**1400**	**10**	**09/14/13 21:57**	**SNV**	**5206762**
tert-Amyl alcohol	**10000**	**>MCL**		**100**	**240**	**10**	**09/14/13 21:57**	**SNV**	**5206762**
tert-Amyl methyl ether	ND			50	128	10	09/14/13 21:57	SNV	5206762
tert-Butyl ethyl ether	ND			50	47	10	09/14/13 21:57	SNV	5206762
tert-Butyl formate	ND			10	100	10	09/14/13 21:57	SNV	5206762
1,2-Dichloroethane	ND			50		10	09/14/13 21:57	SNV	5206762
Benzene	1300			10		10	09/14/13 21:57	SNV	5206762
Ethylbenzene	130			10		10	09/14/13 21:57	SNV	5206762
Methyl tert-butyl ether	83			10		10	09/14/13 21:57	SNV	5206762
Naphthalene	190			50		10	09/14/13 21:57	SNV	5206762
Toluene	130			10		10	09/14/13 21:57	SNV	5206762
m,p-Xylene	510			20		10	09/14/13 21:57	SNV	5206762
o-Xylene	210			20		10	09/14/13 21:57	SNV	5206762
Xylenes,Total	720			20		10	09/14/13 21:57	SNV	5206762
Surr: 1,2-Dichloroethane-d4	107		%	84-124		10	09/14/13 21:57	SNV	5206762
Surr: 4-Bromofluorobenzene	97.6		%	89-111		10	09/14/13 21:57	SNV	5206762
Surr: Toluene-d8	96.4		%	83-115		10	09/14/13 21:57	SNV	5206762

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-13 **Collected:** 09/05/2013 14:50 **Lab Sample ID:** L0034054-11

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 13:49	SJA	5207467
Surr: 1-Chloro-2-fluorobenzene	88.3		%	32-169		1	09/16/13 13:49	SJA	5207467

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.08

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			200		20	09/14/13 17:37	SNV	5206753
Diisopropyl ether	**7400**	**>MCL**		**100**	**150**	**20**	**09/14/13 17:37**	**SNV**	**5206753**
Ethanol	ND			2000	1000	20	09/14/13 17:37	SNV	5206753
t-Butyl alcohol	**3200**	**>MCL**		**200**	**1400**	**20**	**09/14/13 17:37**	**SNV**	**5206753**
tert-Amyl alcohol	**16000**	**>MCL**		**200**	**240**	**20**	**09/14/13 17:37**	**SNV**	**5206753**
tert-Amyl methyl ether	ND			100	128	20	09/14/13 17:37	SNV	5206753
tert-Butyl ethyl ether	ND			100	47	20	09/14/13 17:37	SNV	5206753
tert-Butyl formate	ND			20	100	20	09/14/13 17:37	SNV	5206753
1,2-Dichloroethane	ND			100		20	09/14/13 17:37	SNV	5206753
Benzene	6500			20		20	09/14/13 17:37	SNV	5206753
Ethylbenzene	5700			20		20	09/14/13 17:37	SNV	5206753
Methyl tert-butyl ether	39			20		20	09/14/13 17:37	SNV	5206753
Naphthalene	2200			100		20	09/14/13 17:37	SNV	5206753
Toluene	21000			100		100	09/17/13 19:03	SNV	5210981
m,p-Xylene	15000			200		100	09/17/13 19:03	SNV	5210981
o-Xylene	7600			200		100	09/17/13 19:03	SNV	5210981
Xylenes,Total	22600			200		100	09/17/13 19:03	SNV	5210981
Surr: 1,2-Dichloroethane-d4	107		%	84-124		20	09/14/13 17:37	SNV	5206753
Surr: 1,2-Dichloroethane-d4	109		%	84-124		100	09/17/13 19:03	SNV	5210981
Surr: 4-Bromofluorobenzene	95.5		%	89-111		20	09/14/13 17:37	SNV	5206753
Surr: 4-Bromofluorobenzene	96.8		%	89-111		100	09/17/13 19:03	SNV	5210981
Surr: Toluene-d8	95.2		%	83-115		100	09/17/13 19:03	SNV	5210981
Surr: Toluene-d8	95.0		%	83-115		20	09/14/13 17:37	SNV	5206753

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:55 PM

Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-14 **Collected:** 09/05/2013 12:40 **Lab Sample ID:** L0034054-12

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 14:10	SJA	5207468
Surr: 1-Chloro-2-fluorobenzene	77.5		%	32-169		1	09/16/13 14:10	SJA	5207468

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.09

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			100		10	09/14/13 18:05	SNV	5206754
Diisopropyl ether	**3600**	**>MCL**		**50**	**150**	**10**	**09/14/13 18:05**	**SNV**	**5206754**
Ethanol	ND			1000	1000	10	09/14/13 18:05	SNV	5206754
t-Butyl alcohol	1100			100	1400	10	09/14/13 18:05	SNV	5206754
tert-Amyl alcohol	**4200**	**>MCL**		**100**	**240**	**10**	**09/14/13 18:05**	**SNV**	**5206754**
tert-Amyl methyl ether	96			50	128	10	09/14/13 18:05	SNV	5206754
tert-Butyl ethyl ether	ND			50	47	10	09/14/13 18:05	SNV	5206754
tert-Butyl formate	ND			10	100	10	09/14/13 18:05	SNV	5206754
1,2-Dichloroethane	ND			50		10	09/14/13 18:05	SNV	5206754
Benzene	4900			20		20	09/17/13 19:32	SNV	5210982
Ethylbenzene	ND			10		10	09/14/13 18:05	SNV	5206754
Methyl tert-butyl ether	14			10		10	09/14/13 18:05	SNV	5206754
Naphthalene	260			50		10	09/14/13 18:05	SNV	5206754
Toluene	69			20		20	09/17/13 19:32	SNV	5210982
m,p-Xylene	41			40		20	09/17/13 19:32	SNV	5210982
o-Xylene	ND			40		20	09/17/13 19:32	SNV	5210982
Xylenes,Total	41			40		20	09/17/13 19:32	SNV	5210982
Surr: 1,2-Dichloroethane-d4	104		%	84-124		10	09/14/13 18:05	SNV	5206754
Surr: 1,2-Dichloroethane-d4	111		%	84-124		20	09/17/13 19:32	SNV	5210982
Surr: 4-Bromofluorobenzene	97.4		%	89-111		10	09/14/13 18:05	SNV	5206754
Surr: 4-Bromofluorobenzene	99.7		%	89-111		20	09/17/13 19:32	SNV	5210982
Surr: Toluene-d8	95.7		%	83-115		20	09/17/13 19:32	SNV	5210982
Surr: Toluene-d8	98.2		%	83-115		10	09/14/13 18:05	SNV	5206754

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:20:57 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-15 **Collected:** 09/05/2013 13:10 **Lab Sample ID:** L0034054-13

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.025		1	09/16/13 14:31	SJA	5207469
Surr: 1-Chloro-2-fluorobenzene	92.7		% 32-169		1	09/16/13 14:31	SJA	5207469

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.27

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		200		20	09/17/13 3:17	NN	5208324
Diisopropyl ether	**3700**	**>MCL**	**100**	**150**	**20**	**09/17/13 3:17**	**NN**	**5208324**
Ethanol	ND		2000	1000	20	09/17/13 3:17	NN	5208324
t-Butyl alcohol	**1800**	**B>MC**	**200**	**1400**	**20**	**09/17/13 3:17**	**NN**	**5208324**
tert-Amyl alcohol	**5800**	**>MCL**	**200**	**240**	**20**	**09/17/13 3:17**	**NN**	**5208324**
tert-Amyl methyl ether	ND		100	128	20	09/17/13 3:17	NN	5208324
tert-Butyl ethyl ether	ND		100	47	20	09/17/13 3:17	NN	5208324
tert-Butyl formate	ND		20	100	20	09/17/13 3:17	NN	5208324
1,2-Dichloroethane	ND		100		20	09/17/13 3:17	NN	5208324
Benzene	5400		20		20	09/17/13 3:17	NN	5208324
Ethylbenzene	890		20		20	09/17/13 3:17	NN	5208324
Methyl tert-butyl ether	ND		20		20	09/17/13 3:17	NN	5208324
Naphthalene	710		100		20	09/17/13 3:17	NN	5208324
Toluene	6600		20		20	09/17/13 3:17	NN	5208324
m,p-Xylene	4300		40		20	09/17/13 3:17	NN	5208324
o-Xylene	1700		40		20	09/17/13 3:17	NN	5208324
Xylenes,Total	6000		40		20	09/17/13 3:17	NN	5208324
Surr: 1,2-Dichloroethane-d4	99.5		% 84-124		20	09/17/13 3:17	NN	5208324
Surr: 4-Bromofluorobenzene	101		% 89-111		20	09/17/13 3:17	NN	5208324
Surr: Toluene-d8	97.6		% 83-115		20	09/17/13 3:17	NN	5208324

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:00 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-17 **Collected:** 09/05/2013 13:10 **Lab Sample ID:** L0034054-14

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 14:53	SJA	5207470
Surr: 1-Chloro-2-fluorobenzene	110		%	32-169		1	09/16/13 14:53	SJA	5207470

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.09

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 6:13	SNV	5206787
Diisopropyl ether	ND			5	150	1	09/15/13 6:13	SNV	5206787
Ethanol	ND			100	1000	1	09/15/13 6:13	SNV	5206787
t-Butyl alcohol	ND			10	1400	1	09/15/13 6:13	SNV	5206787
tert-Amyl alcohol	ND			10	240	1	09/15/13 6:13	SNV	5206787
tert-Amyl methyl ether	ND			5	128	1	09/15/13 6:13	SNV	5206787
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 6:13	SNV	5206787
tert-Butyl formate	ND			1	100	1	09/15/13 6:13	SNV	5206787
1,2-Dichloroethane	ND			5		1	09/15/13 6:13	SNV	5206787
Benzene	ND			1		1	09/15/13 6:13	SNV	5206787
Ethylbenzene	ND			1		1	09/15/13 6:13	SNV	5206787
Methyl tert-butyl ether	ND			1		1	09/15/13 6:13	SNV	5206787
Naphthalene	ND			5		1	09/15/13 6:13	SNV	5206787
Toluene	ND			1		1	09/15/13 6:13	SNV	5206787
m,p-Xylene	ND			2		1	09/15/13 6:13	SNV	5206787
o-Xylene	ND			2		1	09/15/13 6:13	SNV	5206787
Xylenes,Total	ND			2		1	09/15/13 6:13	SNV	5206787
Surr: 1,2-Dichloroethane-d4	114		%	84-124		1	09/15/13 6:13	SNV	5206787
Surr: 4-Bromofluorobenzene	95.9		%	89-111		1	09/15/13 6:13	SNV	5206787
Surr: Toluene-d8	97.1		%	83-115		1	09/15/13 6:13	SNV	5206787

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:02 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-18 **Collected:** 09/05/2013 14:25 **Lab Sample ID:** L0034054-15

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/16/13 15:14	SJA	5207471
Surr: 1-Chloro-2-fluorobenzene	141		% 32-169		1	09/16/13 15:14	SJA	5207471

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.05

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 6:42	SNV	5206788
Diisopropyl ether	**1600**	**>MCL**	**25**	**150**	**5**	**09/17/13 3:46**	**NN**	**5208325**
Ethanol	ND		100	1000	1	09/15/13 6:42	SNV	5206788
t-Butyl alcohol	1400		10	1400	1	09/15/13 6:42	SNV	5206788
tert-Amyl alcohol	**8400**	**>MCL**	**50**	**240**	**5**	**09/17/13 3:46**	**NN**	**5208325**
tert-Amyl methyl ether	71		5	128	1	09/15/13 6:42	SNV	5206788
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 6:42	SNV	5206788
tert-Butyl formate	ND		1	100	1	09/15/13 6:42	SNV	5206788
1,2-Dichloroethane	13		5		1	09/15/13 6:42	SNV	5206788
Benzene	370		5		5	09/17/13 3:46	NN	5208325
Ethylbenzene	260		1		1	09/15/13 6:42	SNV	5206788
Methyl tert-butyl ether	2300		10		10	09/18/13 5:14	IHK	5210572
Naphthalene	71		5		1	09/15/13 6:42	SNV	5206788
Toluene	150		1		1	09/15/13 6:42	SNV	5206788
m,p-Xylene	760		10		5	09/17/13 3:46	NN	5208325
o-Xylene	520		10		5	09/17/13 3:46	NN	5208325
Xylenes,Total	1280		10		5	09/17/13 3:46	NN	5208325
Surr: 1,2-Dichloroethane-d4	101		% 84-124		5	09/17/13 3:46	NN	5208325
Surr: 1,2-Dichloroethane-d4	110		% 84-124		10	09/18/13 5:14	IHK	5210572
Surr: 1,2-Dichloroethane-d4	117		% 84-124		1	09/15/13 6:42	SNV	5206788
Surr: 4-Bromofluorobenzene	100		% 89-111		10	09/18/13 5:14	IHK	5210572
Surr: 4-Bromofluorobenzene	100		% 89-111		5	09/17/13 3:46	NN	5208325
Surr: 4-Bromofluorobenzene	96.3		% 89-111		1	09/15/13 6:42	SNV	5206788
Surr: Toluene-d8	95.7		% 83-115		10	09/18/13 5:14	IHK	5210572
Surr: Toluene-d8	100		% 83-115		1	09/15/13 6:42	SNV	5206788
Surr: Toluene-d8	95.7		% 83-115		5	09/17/13 3:46	NN	5208325

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:03 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-19 **Collected:** 09/05/2013 12:45 **Lab Sample ID:** L0034054-16

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 15:35	SJA	5207472
Surr: 1-Chloro-2-fluorobenzene	118		%	32-169		1	09/16/13 15:35	SJA	5207472

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.08

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 8:09	SNV	5206791
Diisopropyl ether	ND			5	150	1	09/15/13 8:09	SNV	5206791
Ethanol	ND			100	1000	1	09/15/13 8:09	SNV	5206791
t-Butyl alcohol	ND			10	1400	1	09/15/13 8:09	SNV	5206791
tert-Amyl alcohol	ND			10	240	1	09/15/13 8:09	SNV	5206791
tert-Amyl methyl ether	ND			5	128	1	09/15/13 8:09	SNV	5206791
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 8:09	SNV	5206791
tert-Butyl formate	ND			1	100	1	09/15/13 8:09	SNV	5206791
1,2-Dichloroethane	ND			5		1	09/15/13 8:09	SNV	5206791
Benzene	ND			1		1	09/15/13 8:09	SNV	5206791
Ethylbenzene	ND			1		1	09/15/13 8:09	SNV	5206791
Methyl tert-butyl ether	ND			1		1	09/15/13 8:09	SNV	5206791
Naphthalene	ND			5		1	09/15/13 8:09	SNV	5206791
Toluene	ND			1		1	09/15/13 8:09	SNV	5206791
m,p-Xylene	ND			2		1	09/15/13 8:09	SNV	5206791
o-Xylene	ND			2		1	09/15/13 8:09	SNV	5206791
Xylenes,Total	ND			2		1	09/15/13 8:09	SNV	5206791
Surr: 1,2-Dichloroethane-d4	118		%	84-124		1	09/15/13 8:09	SNV	5206791
Surr: 4-Bromofluorobenzene	96.0		%	89-111		1	09/15/13 8:09	SNV	5206791
Surr: Toluene-d8	97.6		%	83-115		1	09/15/13 8:09	SNV	5206791

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:05 PM

Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-20 **Collected:** 09/05/2013 12:20 **Lab Sample ID:** L0034054-17

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/16/13 15:57	SJA	5207473
Surr: 1-Chloro-2-fluorobenzene	122		%	32-169		1	09/16/13 15:57	SJA	5207473

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.06

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 8:38	SNV	5206792
Diisopropyl ether	ND			5	150	1	09/15/13 8:38	SNV	5206792
Ethanol	ND			100	1000	1	09/15/13 8:38	SNV	5206792
t-Butyl alcohol	ND			10	1400	1	09/15/13 8:38	SNV	5206792
tert-Amyl alcohol	ND			10	240	1	09/15/13 8:38	SNV	5206792
tert-Amyl methyl ether	ND			5	128	1	09/15/13 8:38	SNV	5206792
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 8:38	SNV	5206792
tert-Butyl formate	ND			1	100	1	09/15/13 8:38	SNV	5206792
1,2-Dichloroethane	ND			5		1	09/15/13 8:38	SNV	5206792
Benzene	ND			1		1	09/15/13 8:38	SNV	5206792
Ethylbenzene	ND			1		1	09/15/13 8:38	SNV	5206792
Methyl tert-butyl ether	ND			1		1	09/15/13 8:38	SNV	5206792
Naphthalene	ND			5		1	09/15/13 8:38	SNV	5206792
Toluene	ND			1		1	09/15/13 8:38	SNV	5206792
m,p-Xylene	ND			2		1	09/15/13 8:38	SNV	5206792
o-Xylene	ND			2		1	09/15/13 8:38	SNV	5206792
Xylenes,Total	ND			2		1	09/15/13 8:38	SNV	5206792
Surr: 1,2-Dichloroethane-d4	117		%	84-124		1	09/15/13 8:38	SNV	5206792
Surr: 4-Bromofluorobenzene	96.0		%	89-111		1	09/15/13 8:38	SNV	5206792
Surr: Toluene-d8	97.5		%	83-115		1	09/15/13 8:38	SNV	5206792

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:07 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-21 **Collected:** 09/06/2013 7:20 **Lab Sample ID:** L0034054-18

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.022		1	09/16/13 16:39	SJA	5207475
Surr: 1-Chloro-2-fluorobenzene	93.0		% 32-169		1	09/16/13 16:39	SJA	5207475

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.08

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 9:06	SNV	5206793
Diisopropyl ether	**930**	**>MCL**	**25**	**150**	**5**	**09/17/13 4:15**	**NN**	**5208326**
Ethanol	ND		100	1000	1	09/15/13 9:06	SNV	5206793
t-Butyl alcohol	570		10	1400	1	09/15/13 9:06	SNV	5206793
tert-Amyl alcohol	**3200**	**>MCL**	**10**	**240**	**1**	**09/15/13 9:06**	**SNV**	**5206793**
tert-Amyl methyl ether	63		5	128	1	09/15/13 9:06	SNV	5206793
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 9:06	SNV	5206793
tert-Butyl formate	ND		1	100	1	09/15/13 9:06	SNV	5206793
1,2-Dichloroethane	8.5		5		1	09/15/13 9:06	SNV	5206793
Benzene	12		1		1	09/15/13 9:06	SNV	5206793
Ethylbenzene	1		1		1	09/15/13 9:06	SNV	5206793
Methyl tert-butyl ether	840		5		5	09/17/13 4:15	NN	5208326
Naphthalene	11		5		1	09/15/13 9:06	SNV	5206793
Toluene	1.5		1		1	09/15/13 9:06	SNV	5206793
m,p-Xylene	ND		2		1	09/15/13 9:06	SNV	5206793
o-Xylene	ND		2		1	09/15/13 9:06	SNV	5206793
Xylenes,Total	ND		2		1	09/15/13 9:06	SNV	5206793
Surr: 1,2-Dichloroethane-d4	120		% 84-124		1	09/15/13 9:06	SNV	5206793
Surr: 1,2-Dichloroethane-d4	103		% 84-124		5	09/17/13 4:15	NN	5208326
Surr: 4-Bromofluorobenzene	97.2		% 89-111		1	09/15/13 9:06	SNV	5206793
Surr: 4-Bromofluorobenzene	101		% 89-111		5	09/17/13 4:15	NN	5208326
Surr: Toluene-d8	101		% 83-115		1	09/15/13 9:06	SNV	5206793
Surr: Toluene-d8	96.5		% 83-115		5	09/17/13 4:15	NN	5208326

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:08 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-22 **Collected:** 09/06/2013 7:45 **Lab Sample ID:** L0034054-19

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/16/13 17:00	SJA	5207476
Surr: 1-Chloro-2-fluorobenzene	93.8		%	32-169		1	09/16/13 17:00	SJA	5207476

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.07

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 7:54	RPJ	5206375
Diisopropyl ether	**2000**	**>MCL**		**250**	**150**	**50**	**09/17/13 4:45**	**NN**	**5208327**
Ethanol	ND			100	1000	1	09/15/13 7:54	RPJ	5206375
t-Butyl alcohol	800			10	1400	1	09/15/13 7:54	RPJ	5206375
tert-Amyl alcohol	**2800**	**>MCL**		**10**	**240**	**1**	**09/15/13 7:54**	**RPJ**	**5206375**
tert-Amyl methyl ether	ND			5	128	1	09/15/13 7:54	RPJ	5206375
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 7:54	RPJ	5206375
tert-Butyl formate	ND			1	100	1	09/15/13 7:54	RPJ	5206375
1,2-Dichloroethane	ND			5		1	09/15/13 7:54	RPJ	5206375
Benzene	1700			50		50	09/17/13 4:45	NN	5208327
Ethylbenzene	1.3			1		1	09/15/13 7:54	RPJ	5206375
Methyl tert-butyl ether	16			1		1	09/15/13 7:54	RPJ	5206375
Naphthalene	120			5		1	09/15/13 7:54	RPJ	5206375
Toluene	13			1		1	09/15/13 7:54	RPJ	5206375
m,p-Xylene	11			2		1	09/15/13 7:54	RPJ	5206375
o-Xylene	2.8			2		1	09/15/13 7:54	RPJ	5206375
Xylenes,Total	13.8			2		1	09/15/13 7:54	RPJ	5206375
Surr: 1,2-Dichloroethane-d4	122		%	84-124		1	09/15/13 7:54	RPJ	5206375
Surr: 1,2-Dichloroethane-d4	101		%	84-124		50	09/17/13 4:45	NN	5208327
Surr: 4-Bromofluorobenzene	106		%	89-111		1	09/15/13 7:54	RPJ	5206375
Surr: 4-Bromofluorobenzene	102		%	89-111		50	09/17/13 4:45	NN	5208327
Surr: Toluene-d8	99.2		%	83-115		50	09/17/13 4:45	NN	5208327
Surr: Toluene-d8	101		%	83-115		1	09/15/13 7:54	RPJ	5206375

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:10 PM

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-23 **Collected:** 09/06/2013 8:10 **Lab Sample ID:** L0034054-20

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.022		1	09/16/13 17:22	SJA	5207477
Surr: 1-Chloro-2-fluorobenzene	81.8		%	32-169		1	09/16/13 17:22	SJA	5207477

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/10/2013 15:39	JNY	1.10

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 8:23	RPJ	5206376
Diisopropyl ether	**3200**	**>MCL**		**100**	**150**	**20**	**09/17/13 20:01**	**SNV**	**5210983**
Ethanol	ND			100	1000	1	09/15/13 8:23	RPJ	5206376
t-Butyl alcohol	810			10	1400	1	09/15/13 8:23	RPJ	5206376
tert-Amyl alcohol	**2500**	**>MCL**		**10**	**240**	**1**	**09/15/13 8:23**	**RPJ**	**5206376**
tert-Amyl methyl ether	ND			5	128	1	09/15/13 8:23	RPJ	5206376
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 8:23	RPJ	5206376
tert-Butyl formate	ND			1	100	1	09/15/13 8:23	RPJ	5206376
1,2-Dichloroethane	ND			5		1	09/15/13 8:23	RPJ	5206376
Benzene	1900			20		20	09/17/13 20:01	SNV	5210983
Ethylbenzene	ND			1		1	09/15/13 8:23	RPJ	5206376
Methyl tert-butyl ether	21			1		1	09/15/13 8:23	RPJ	5206376
Naphthalene	73			5		1	09/15/13 8:23	RPJ	5206376
Toluene	ND			1		1	09/15/13 8:23	RPJ	5206376
m,p-Xylene	ND			2		1	09/15/13 8:23	RPJ	5206376
o-Xylene	ND			2		1	09/15/13 8:23	RPJ	5206376
Xylenes,Total	ND			2		1	09/15/13 8:23	RPJ	5206376
Surr: 1,2-Dichloroethane-d4	121		%	84-124		1	09/15/13 8:23	RPJ	5206376
Surr: 1,2-Dichloroethane-d4	105		%	84-124		20	09/17/13 20:01	SNV	5210983
Surr: 4-Bromofluorobenzene	105		%	89-111		1	09/15/13 8:23	RPJ	5206376
Surr: 4-Bromofluorobenzene	98.5		%	89-111		20	09/17/13 20:01	SNV	5210983
Surr: Toluene-d8	98.7		%	83-115		20	09/17/13 20:01	SNV	5210983
Surr: Toluene-d8	101		%	83-115		1	09/15/13 8:23	RPJ	5206376

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:11 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-24 **Collected:** 09/06/2013 8:35 **Lab Sample ID:** L0034054-21

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/12/13 15:17	SJA	5204271
Surr: 1-Chloro-2-fluorobenzene	63.7		% 32-169		1	09/12/13 15:17	SJA	5204271

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/15/13 5:16	SNV	5206785
Diisopropyl ether	83		5	150	1	09/15/13 5:16	SNV	5206785
Ethanol	ND		200	1000	1	09/15/13 5:16	SNV	5206785
t-Butyl alcohol	22		10	1400	1	09/15/13 5:16	SNV	5206785
tert-Amyl alcohol	66		10	240	1	09/15/13 5:16	SNV	5206785
tert-Amyl methyl ether	ND		5	128	1	09/15/13 5:16	SNV	5206785
tert-Butyl ethyl ether	ND		5	47	1	09/15/13 5:16	SNV	5206785
tert-Butyl formate	ND		5	100	1	09/15/13 5:16	SNV	5206785
1,2-Dichloroethane	ND		5		1	09/15/13 5:16	SNV	5206785
Benzene	60		5		1	09/15/13 5:16	SNV	5206785
Ethylbenzene	ND		5		1	09/15/13 5:16	SNV	5206785
Methyl tert-butyl ether	ND		5		1	09/15/13 5:16	SNV	5206785
Naphthalene	ND		5		1	09/15/13 5:16	SNV	5206785
Toluene	ND		5		1	09/15/13 5:16	SNV	5206785
m,p-Xylene	ND		5		1	09/15/13 5:16	SNV	5206785
o-Xylene	ND		5		1	09/15/13 5:16	SNV	5206785
Xylenes,Total	ND		5		1	09/15/13 5:16	SNV	5206785
Surr: 1,2-Dichloroethane-d4	115		% 84-124		1	09/15/13 5:16	SNV	5206785
Surr: 4-Bromofluorobenzene	95.5		% 89-111		1	09/15/13 5:16	SNV	5206785
Surr: Toluene-d8	99.6		% 83-115		1	09/15/13 5:16	SNV	5206785

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:13 PM

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-25 **Collected:** 09/06/2013 9:00 **Lab Sample ID:** L0034054-22

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/12/13 15:38	SJA	5204272
Surr: 1-Chloro-2-fluorobenzene	77.5		% 32-169		1	09/12/13 15:38	SJA	5204272

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		50		5	09/14/13 16:40	SNV	5206751
Diisopropyl ether	**760**	**>MCL**	**25**	**150**	**5**	**09/14/13 16:40**	**SNV**	**5206751**
Ethanol	ND		500	1000	5	09/14/13 16:40	SNV	5206751
t-Butyl alcohol	92		50	1400	5	09/14/13 16:40	SNV	5206751
tert-Amyl alcohol	ND		50	240	5	09/14/13 16:40	SNV	5206751
tert-Amyl methyl ether	ND		25	128	5	09/14/13 16:40	SNV	5206751
tert-Butyl ethyl ether	ND		25	47	5	09/14/13 16:40	SNV	5206751
tert-Butyl formate	ND		5	100	5	09/14/13 16:40	SNV	5206751
1,2-Dichloroethane	ND		25		5	09/14/13 16:40	SNV	5206751
Benzene	260		5		5	09/14/13 16:40	SNV	5206751
Ethylbenzene	ND		5		5	09/14/13 16:40	SNV	5206751
Methyl tert-butyl ether	ND		5		5	09/14/13 16:40	SNV	5206751
Naphthalene	ND		25		5	09/14/13 16:40	SNV	5206751
Toluene	ND		5		5	09/14/13 16:40	SNV	5206751
m,p-Xylene	ND		10		5	09/14/13 16:40	SNV	5206751
o-Xylene	ND		10		5	09/14/13 16:40	SNV	5206751
Xylenes,Total	ND		10		5	09/14/13 16:40	SNV	5206751
Surr: 1,2-Dichloroethane-d4	106		% 84-124		5	09/14/13 16:40	SNV	5206751
Surr: 4-Bromofluorobenzene	97.9		% 89-111		5	09/14/13 16:40	SNV	5206751
Surr: Toluene-d8	98.3		% 83-115		5	09/14/13 16:40	SNV	5206751

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:15 PM

Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-26 **Collected:** 09/06/2013 9:35 **Lab Sample ID:** L0034054-23

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					MCL		SW8011	Units: ug/L	
1,2-Dibromoethane	ND			0.021		1	09/12/13 16:00	SJA	5204273
Surr: 1-Chloro-2-fluorobenzene	69.9		%	32-169		1	09/12/13 16:00	SJA	5204273

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 5:45	SNV	5206786
Diisopropyl ether	ND			5	150	1	09/15/13 5:45	SNV	5206786
Ethanol	ND			100	1000	1	09/15/13 5:45	SNV	5206786
t-Butyl alcohol	ND			10	1400	1	09/15/13 5:45	SNV	5206786
tert-Amyl alcohol	ND			10	240	1	09/15/13 5:45	SNV	5206786
tert-Amyl methyl ether	ND			5	128	1	09/15/13 5:45	SNV	5206786
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 5:45	SNV	5206786
tert-Butyl formate	ND			1	100	1	09/15/13 5:45	SNV	5206786
1,2-Dichloroethane	ND			5		1	09/15/13 5:45	SNV	5206786
Benzene	ND			1		1	09/15/13 5:45	SNV	5206786
Ethylbenzene	ND			1		1	09/15/13 5:45	SNV	5206786
Methyl tert-butyl ether	ND			1		1	09/15/13 5:45	SNV	5206786
Naphthalene	ND			5		1	09/15/13 5:45	SNV	5206786
Toluene	ND			1		1	09/15/13 5:45	SNV	5206786
m,p-Xylene	ND			2		1	09/15/13 5:45	SNV	5206786
o-Xylene	ND			2		1	09/15/13 5:45	SNV	5206786
Xylenes,Total	ND			2		1	09/15/13 5:45	SNV	5206786
Surr: 1,2-Dichloroethane-d4	116		%	84-124		1	09/15/13 5:45	SNV	5206786
Surr: 4-Bromofluorobenzene	96.0		%	89-111		1	09/15/13 5:45	SNV	5206786
Surr: Toluene-d8	97.8		%	83-115		1	09/15/13 5:45	SNV	5206786

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:16 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-27 **Collected:** 09/05/2013 11:55 **Lab Sample ID:** L0034054-24

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/12/13 16:21	SJA	5204274
Surr: 1-Chloro-2-fluorobenzene	79.1		%	32-169		1	09/12/13 16:21	SJA	5204274

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			500		50	09/17/13 5:14	NN	5208328
Diisopropyl ether	**16000**	**>MCL**		**250**	**150**	**50**	**09/17/13 5:14**	**NN**	**5208328**
Ethanol	ND			5000	1000	50	09/17/13 5:14	NN	5208328
t-Butyl alcohol	**36000**	**B>MC**		**500**	**1400**	**50**	**09/17/13 5:14**	**NN**	**5208328**
tert-Amyl alcohol	**190000**	**>MCL**		**500**	**240**	**50**	**09/17/13 5:14**	**NN**	**5208328**
tert-Amyl methyl ether	ND			250	128	50	09/17/13 5:14	NN	5208328
tert-Butyl ethyl ether	ND			250	47	50	09/17/13 5:14	NN	5208328
tert-Butyl formate	ND			50	100	50	09/17/13 5:14	NN	5208328
1,2-Dichloroethane	ND			250		50	09/17/13 5:14	NN	5208328
Benzene	14000			50		50	09/17/13 5:14	NN	5208328
Ethylbenzene	2700			50		50	09/17/13 5:14	NN	5208328
Methyl tert-butyl ether	14000			50		50	09/17/13 5:14	NN	5208328
Naphthalene	720			250		50	09/17/13 5:14	NN	5208328
Toluene	3200			50		50	09/17/13 5:14	NN	5208328
m,p-Xylene	3100			100		50	09/17/13 5:14	NN	5208328
o-Xylene	2200			100		50	09/17/13 5:14	NN	5208328
Xylenes,Total	5300			100		50	09/17/13 5:14	NN	5208328
Surr: 1,2-Dichloroethane-d4	102		%	84-124		50	09/17/13 5:14	NN	5208328
Surr: 4-Bromofluorobenzene	99.2		%	89-111		50	09/17/13 5:14	NN	5208328
Surr: Toluene-d8	95.1		%	83-115		50	09/17/13 5:14	NN	5208328

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:18 PM

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: MW-28 **Collected:** 09/05/2013 11:25 **Lab Sample ID:** L0034054-25

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	12			0.11		5	09/13/13 11:41	SJA	5204283
Surr: 1-Chloro-2-fluorobenzene	71.4		%	32-169		5	09/13/13 11:41	SJA	5204283

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			1000		100	09/17/13 5:44	NN	5208329
Diisopropyl ether	**13000**	**>MCL**		**500**	**150**	**100**	**09/17/13 5:44**	**NN**	**5208329**
Ethanol	ND			10000	1000	100	09/17/13 5:44	NN	5208329
t-Butyl alcohol	**27000**	**B>MC**		**1000**	**1400**	**100**	**09/17/13 5:44**	**NN**	**5208329**
tert-Amyl alcohol	**150000**	**>MCL**		**1000**	**240**	**100**	**09/17/13 5:44**	**NN**	**5208329**
tert-Amyl methyl ether	ND			500	128	100	09/17/13 5:44	NN	5208329
tert-Butyl ethyl ether	ND			500	47	100	09/17/13 5:44	NN	5208329
tert-Butyl formate	ND			100	100	100	09/17/13 5:44	NN	5208329
1,2-Dichloroethane	ND			500		100	09/17/13 5:44	NN	5208329
Benzene	14000			100		100	09/17/13 5:44	NN	5208329
Ethylbenzene	8700			100		100	09/17/13 5:44	NN	5208329
Methyl tert-butyl ether	18000			100		100	09/17/13 5:44	NN	5208329
Naphthalene	4000			500		100	09/17/13 5:44	NN	5208329
Toluene	45000			200		200	09/18/13 5:43	IHK	5210573
m,p-Xylene	33000			200		100	09/17/13 5:44	NN	5208329
o-Xylene	15000			200		100	09/17/13 5:44	NN	5208329
Xylenes,Total	48000			200		100	09/17/13 5:44	NN	5208329
Surr: 1,2-Dichloroethane-d4	102		%	84-124		100	09/17/13 5:44	NN	5208329
Surr: 1,2-Dichloroethane-d4	103		%	84-124		200	09/18/13 5:43	IHK	5210573
Surr: 4-Bromofluorobenzene	102		%	89-111		100	09/17/13 5:44	NN	5208329
Surr: 4-Bromofluorobenzene	97.4		%	89-111		200	09/18/13 5:43	IHK	5210573
Surr: Toluene-d8	95.6		%	83-115		100	09/17/13 5:44	NN	5208329
Surr: Toluene-d8	96.0		%	83-115		200	09/18/13 5:43	IHK	5210573

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:20 PM

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-1 **Collected:** 09/05/2013 10:10 **Lab Sample ID:** L0034054-26

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/12/13 17:04	SJA	5204275
Surr: 1-Chloro-2-fluorobenzene	72.2		%	32-169		1	09/12/13 17:04	SJA	5204275

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/18/13 15:38	SNV	5211773
Diisopropyl ether	ND			5	150	1	09/18/13 15:38	SNV	5211773
Ethanol	ND			100	1000	1	09/18/13 15:38	SNV	5211773
t-Butyl alcohol	ND			10	1400	1	09/18/13 15:38	SNV	5211773
tert-Amyl alcohol	ND			10	240	1	09/18/13 15:38	SNV	5211773
tert-Amyl methyl ether	ND			5	128	1	09/18/13 15:38	SNV	5211773
tert-Butyl ethyl ether	ND			5	47	1	09/18/13 15:38	SNV	5211773
tert-Butyl formate	ND			1	100	1	09/18/13 15:38	SNV	5211773
1,2-Dichloroethane	ND			5		1	09/18/13 15:38	SNV	5211773
Benzene	ND			1		1	09/18/13 15:38	SNV	5211773
Ethylbenzene	ND			1		1	09/18/13 15:38	SNV	5211773
Methyl tert-butyl ether	ND			1		1	09/18/13 15:38	SNV	5211773
Naphthalene	ND			5		1	09/18/13 15:38	SNV	5211773
Toluene	4.3			1		1	09/18/13 15:38	SNV	5211773
m,p-Xylene	4.6			2		1	09/18/13 15:38	SNV	5211773
o-Xylene	ND			2		1	09/18/13 15:38	SNV	5211773
Xylenes,Total	4.6			2		1	09/18/13 15:38	SNV	5211773
Surr: 1,2-Dichloroethane-d4	110		%	84-124		1	09/18/13 15:38	SNV	5211773
Surr: 4-Bromofluorobenzene	99.2		%	89-111		1	09/18/13 15:38	SNV	5211773
Surr: Toluene-d8	95.9		%	83-115		1	09/18/13 15:38	SNV	5211773

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:22 PM

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DW-2 **Collected:** 09/06/2013 10:30 **Lab Sample ID:** L0034054-27

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/12/13 17:25	SJA	5204276
Surr: 1-Chloro-2-fluorobenzene	88.4		% 32-169		1	09/12/13 17:25	SJA	5204276

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/18/13 16:06	SNV	5211774
Diisopropyl ether	**200**	**>MCL**	**5**	**150**	**1**	**09/18/13 16:06**	**SNV**	**5211774**
Ethanol	ND		100	1000	1	09/18/13 16:06	SNV	5211774
t-Butyl alcohol	ND		10	1400	1	09/18/13 16:06	SNV	5211774
tert-Amyl alcohol	**300**	**>MCL**	**10**	**240**	**1**	**09/18/13 16:06**	**SNV**	**5211774**
tert-Amyl methyl ether	ND		5	128	1	09/18/13 16:06	SNV	5211774
tert-Butyl ethyl ether	ND		5	47	1	09/18/13 16:06	SNV	5211774
tert-Butyl formate	ND		1	100	1	09/18/13 16:06	SNV	5211774
1,2-Dichloroethane	ND		5		1	09/18/13 16:06	SNV	5211774
Benzene	ND		1		1	09/18/13 16:06	SNV	5211774
Ethylbenzene	ND		1		1	09/18/13 16:06	SNV	5211774
Methyl tert-butyl ether	4.6		1		1	09/18/13 16:06	SNV	5211774
Naphthalene	ND		5		1	09/18/13 16:06	SNV	5211774
Toluene	ND		1		1	09/18/13 16:06	SNV	5211774
m,p-Xylene	ND		2		1	09/18/13 16:06	SNV	5211774
o-Xylene	ND		2		1	09/18/13 16:06	SNV	5211774
Xylenes,Total	ND		2		1	09/18/13 16:06	SNV	5211774
Surr: 1,2-Dichloroethane-d4	109		% 84-124		1	09/18/13 16:06	SNV	5211774
Surr: 4-Bromofluorobenzene	98.8		% 89-111		1	09/18/13 16:06	SNV	5211774
Surr: Toluene-d8	96.2		% 83-115		1	09/18/13 16:06	SNV	5211774

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:24 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DUP-01 **Collected:** 09/05/2013 11:30 **Lab Sample ID:** L0034054-28

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**	**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	12		0.11	5	09/13/13 12:02	SJA	5204284
Surr: 1-Chloro-2-fluorobenzene	108		% 32-169	5	09/13/13 12:02	SJA	5204284

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B				MCL	SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		1000		100	09/17/13 6:12	NN	5208330
Diisopropyl ether	**11000**	**>MCL**	**500**	**150**	**100**	**09/17/13 6:12**	**NN**	**5208330**
Ethanol	ND		10000	1000	100	09/17/13 6:12	NN	5208330
t-Butyl alcohol	**27000**	**B>MC**	**1000**	**1400**	**100**	**09/17/13 6:12**	**NN**	**5208330**
tert-Amyl alcohol	**150000**	**>MCL**	**1000**	**240**	**100**	**09/17/13 6:12**	**NN**	**5208330**
tert-Amyl methyl ether	ND		500	128	100	09/17/13 6:12	NN	5208330
tert-Butyl ethyl ether	ND		500	47	100	09/17/13 6:12	NN	5208330
tert-Butyl formate	ND		100	100	100	09/17/13 6:12	NN	5208330
1,2-Dichloroethane	ND		500		100	09/17/13 6:12	NN	5208330
Benzene	11000		100		100	09/17/13 6:12	NN	5208330
Ethylbenzene	5000		100		100	09/17/13 6:12	NN	5208330
Methyl tert-butyl ether	19000		100		100	09/17/13 6:12	NN	5208330
Naphthalene	2400		500		100	09/17/13 6:12	NN	5208330
Toluene	33000		100		100	09/17/13 6:12	NN	5208330
m,p-Xylene	19000		200		100	09/17/13 6:12	NN	5208330
o-Xylene	9200		200		100	09/17/13 6:12	NN	5208330
Xylenes,Total	28200		200		100	09/17/13 6:12	NN	5208330
Surr: 1,2-Dichloroethane-d4	102		% 84-124		100	09/17/13 6:12	NN	5208330
Surr: 4-Bromofluorobenzene	102		% 89-111		100	09/17/13 6:12	NN	5208330
Surr: Toluene-d8	94.7		% 83-115		100	09/17/13 6:12	NN	5208330

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: DUP-02 **Collected:** 09/05/2013 13:15 **Lab Sample ID:** L0034054-29

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/13/13 9:45	SJA	5204278
Surr: 1-Chloro-2-fluorobenzene	82.1		%	32-169		1	09/13/13 9:45	SJA	5204278

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			200		20	09/17/13 17:37	SNV	5210978
Diisopropyl ether	**3700**	**>MCL**		**100**	**150**	**20**	**09/17/13 17:37**	**SNV**	**5210978**
Ethanol	ND			2000	1000	20	09/17/13 17:37	SNV	5210978
t-Butyl alcohol	650			200	1400	20	09/17/13 17:37	SNV	5210978
tert-Amyl alcohol	**3900**	**>MCL**		**200**	**240**	**20**	**09/17/13 17:37**	**SNV**	**5210978**
tert-Amyl methyl ether	ND			100	128	20	09/17/13 17:37	SNV	5210978
tert-Butyl ethyl ether	ND			100	47	20	09/17/13 17:37	SNV	5210978
tert-Butyl formate	ND			20	100	20	09/17/13 17:37	SNV	5210978
1,2-Dichloroethane	ND			100		20	09/17/13 17:37	SNV	5210978
Benzene	5200			20		20	09/17/13 17:37	SNV	5210978
Ethylbenzene	810			20		20	09/17/13 17:37	SNV	5210978
Methyl tert-butyl ether	ND			20		20	09/17/13 17:37	SNV	5210978
Naphthalene	610			100		20	09/17/13 17:37	SNV	5210978
Toluene	5900			20		20	09/17/13 17:37	SNV	5210978
m,p-Xylene	3700			40		20	09/17/13 17:37	SNV	5210978
o-Xylene	1400			40		20	09/17/13 17:37	SNV	5210978
Xylenes,Total	5100			40		20	09/17/13 17:37	SNV	5210978
Surr: 1,2-Dichloroethane-d4	106		%	84-124		20	09/17/13 17:37	SNV	5210978
Surr: 4-Bromofluorobenzene	99.6		%	89-111		20	09/17/13 17:37	SNV	5210978
Surr: Toluene-d8	97.2		%	83-115		20	09/17/13 17:37	SNV	5210978

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:27 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: FIELD BLANK **Collected:** 09/05/2013 12:00 **Lab Sample ID:** L0034054-30

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/13/13 10:07	SJA	5204279
Surr: 1-Chloro-2-fluorobenzene	74.1		% 32-169		1	09/13/13 10:07	SJA	5204279

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.05

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/14/13 15:12	SNV	5206748
Diisopropyl ether	ND		5	150	1	09/14/13 15:12	SNV	5206748
Ethanol	870		100	1000	1	09/14/13 15:12	SNV	5206748
t-Butyl alcohol	ND		10	1400	1	09/14/13 15:12	SNV	5206748
tert-Amyl alcohol	ND		10	240	1	09/14/13 15:12	SNV	5206748
tert-Amyl methyl ether	ND		5	128	1	09/14/13 15:12	SNV	5206748
tert-Butyl ethyl ether	ND		5	47	1	09/14/13 15:12	SNV	5206748
tert-Butyl formate	ND		1	100	1	09/14/13 15:12	SNV	5206748
1,2-Dichloroethane	ND		5		1	09/14/13 15:12	SNV	5206748
Benzene	ND		1		1	09/14/13 15:12	SNV	5206748
Ethylbenzene	ND		1		1	09/14/13 15:12	SNV	5206748
Methyl tert-butyl ether	ND		1		1	09/14/13 15:12	SNV	5206748
Naphthalene	ND		5		1	09/14/13 15:12	SNV	5206748
Toluene	ND		1		1	09/14/13 15:12	SNV	5206748
m,p-Xylene	ND		2		1	09/14/13 15:12	SNV	5206748
o-Xylene	ND		2		1	09/14/13 15:12	SNV	5206748
Xylenes,Total	ND		2		1	09/14/13 15:12	SNV	5206748
Surr: 1,2-Dichloroethane-d4	105		% 84-124		1	09/14/13 15:12	SNV	5206748
Surr: 4-Bromofluorobenzene	98.9		% 89-111		1	09/14/13 15:12	SNV	5206748
Surr: Toluene-d8	97.9		% 83-115		1	09/14/13 15:12	SNV	5206748

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:29 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: FIELD BLANK **Collected:** 09/06/2013 9:00 **Lab Sample ID:** L0034054-31

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP				**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND		0.021		1	09/13/13 10:28	SJA	5204280
Surr: 1-Chloro-2-fluorobenzene	82.1		% 32-169		1	09/13/13 10:28	SJA	5204280

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B				MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND		10		1	09/14/13 14:43	SNV	5206747
Diisopropyl ether	ND		5	150	1	09/14/13 14:43	SNV	5206747
Ethanol	770		100	1000	1	09/14/13 14:43	SNV	5206747
t-Butyl alcohol	ND		10	1400	1	09/14/13 14:43	SNV	5206747
tert-Amyl alcohol	ND		10	240	1	09/14/13 14:43	SNV	5206747
tert-Amyl methyl ether	ND		5	128	1	09/14/13 14:43	SNV	5206747
tert-Butyl ethyl ether	ND		5	47	1	09/14/13 14:43	SNV	5206747
tert-Butyl formate	ND		1	100	1	09/14/13 14:43	SNV	5206747
1,2-Dichloroethane	ND		5		1	09/14/13 14:43	SNV	5206747
Benzene	ND		1		1	09/14/13 14:43	SNV	5206747
Ethylbenzene	ND		1		1	09/14/13 14:43	SNV	5206747
Methyl tert-butyl ether	ND		1		1	09/14/13 14:43	SNV	5206747
Naphthalene	ND		5		1	09/14/13 14:43	SNV	5206747
Toluene	ND		1		1	09/14/13 14:43	SNV	5206747
m,p-Xylene	ND		2		1	09/14/13 14:43	SNV	5206747
o-Xylene	ND		2		1	09/14/13 14:43	SNV	5206747
Xylenes,Total	ND		2		1	09/14/13 14:43	SNV	5206747
Surr: 1,2-Dichloroethane-d4	104		% 84-124		1	09/14/13 14:43	SNV	5206747
Surr: 4-Bromofluorobenzene	99.3		% 89-111		1	09/14/13 14:43	SNV	5206747
Surr: Toluene-d8	96.3		% 83-115		1	09/14/13 14:43	SNV	5206747

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:31 PM

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: TRIP BLANK **Collected:** 09/05/2013 0:00 **Lab Sample ID:** L0034054-32

Site: UNITED EXXON

Analyses/Method	Result	QUAL	Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS:METHOD 8260B				**MCL**	**SW8260B**	**Units: ug/L**		
3,3-Dimethyl-1-butanol	ND		10		1	09/14/13 14:14	SNV	5206746
Diisopropyl ether	ND		5	150	1	09/14/13 14:14	SNV	5206746
Ethanol	ND		100	1000	1	09/14/13 14:14	SNV	5206746
t-Butyl alcohol	ND		10	1400	1	09/14/13 14:14	SNV	5206746
tert-Amyl alcohol	ND		10	240	1	09/14/13 14:14	SNV	5206746
tert-Amyl methyl ether	ND		5	128	1	09/14/13 14:14	SNV	5206746
tert-Butyl ethyl ether	ND		5	47	1	09/14/13 14:14	SNV	5206746
tert-Butyl formate	ND		1	100	1	09/14/13 14:14	SNV	5206746
1,2-Dichloroethane	ND		5		1	09/14/13 14:14	SNV	5206746
Benzene	ND		1		1	09/14/13 14:14	SNV	5206746
Ethylbenzene	ND		1		1	09/14/13 14:14	SNV	5206746
Methyl tert-butyl ether	ND		1		1	09/14/13 14:14	SNV	5206746
Naphthalene	ND		5		1	09/14/13 14:14	SNV	5206746
Toluene	ND		1		1	09/14/13 14:14	SNV	5206746
m,p-Xylene	ND		2		1	09/14/13 14:14	SNV	5206746
o-Xylene	ND		2		1	09/14/13 14:14	SNV	5206746
Xylenes,Total	ND		2		1	09/14/13 14:14	SNV	5206746
Surr: 1,2-Dichloroethane-d4	105	%	84-124		1	09/14/13 14:14	SNV	5206746
Surr: 4-Bromofluorobenzene	101	%	89-111		1	09/14/13 14:14	SNV	5206746
Surr: Toluene-d8	95.8	%	83-115		1	09/14/13 14:14	SNV	5206746

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:32 PM

Version 2.2 - Modified January 16, 2012

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Client Sample ID: CK-1 **Collected:** 09/06/2013 10:55 **Lab Sample ID:** L0034054-33

Site: UNITED EXXON

Analyses/Method	Result	QUAL		Rep.Limit		Dil. Factor	Date Analyzed	Analyst	Seq. #
EDB & DBCP					**MCL**		**SW8011**	**Units: ug/L**	
1,2-Dibromoethane	ND			0.021		1	09/13/13 10:49	SJA	5204281
Surr: 1-Chloro-2-fluorobenzene	89.3		%	32-169		1	09/13/13 10:49	SJA	5204281

Prep Method	Prep Date	Prep Initials	Prep Factor
E504	09/11/2013 9:30	MFF	1.06

VOLATILE ORGANICS:METHOD 8260B					MCL		SW8260B	Units: ug/L	
3,3-Dimethyl-1-butanol	ND			10		1	09/15/13 4:47	SNV	5206784
Diisopropyl ether	32			5	150	1	09/15/13 4:47	SNV	5206784
Ethanol	ND			200	1000	1	09/15/13 4:47	SNV	5206784
t-Butyl alcohol	ND			10	1400	1	09/15/13 4:47	SNV	5206784
tert-Amyl alcohol	ND			10	240	1	09/15/13 4:47	SNV	5206784
tert-Amyl methyl ether	ND			5	128	1	09/15/13 4:47	SNV	5206784
tert-Butyl ethyl ether	ND			5	47	1	09/15/13 4:47	SNV	5206784
tert-Butyl formate	ND			5	100	1	09/15/13 4:47	SNV	5206784
1,2-Dichloroethane	ND			5		1	09/15/13 4:47	SNV	5206784
Benzene	ND			5		1	09/15/13 4:47	SNV	5206784
Ethylbenzene	ND			5		1	09/15/13 4:47	SNV	5206784
Methyl tert-butyl ether	15			5		1	09/15/13 4:47	SNV	5206784
Naphthalene	ND			5		1	09/15/13 4:47	SNV	5206784
Toluene	ND			5		1	09/15/13 4:47	SNV	5206784
m,p-Xylene	ND			5		1	09/15/13 4:47	SNV	5206784
o-Xylene	ND			5		1	09/15/13 4:47	SNV	5206784
Xylenes,Total	ND			5		1	09/15/13 4:47	SNV	5206784
Surr: 1,2-Dichloroethane-d4	114		%	84-124		1	09/15/13 4:47	SNV	5206784
Surr: 4-Bromofluorobenzene	97.7		%	89-111		1	09/15/13 4:47	SNV	5206784
Surr: Toluene-d8	98.0		%	83-115		1	09/15/13 4:47	SNV	5206784

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated value between MDL and PQL
E - Estimated Value exceeds calibration curve
TNTC - Too numerous to count
>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

9/20/2013 1:21:34 PM

Quality Control Documentation

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: EDB & DBCP
Method: SW8011

WorkOrder: L0034054
Lab Batch ID: 124647

Method Blank

RunID: PCBB_130916A-5207454 Units: ug/L
Analysis Date: 09/16/2013 8:52 Analyst: SJA
Preparation Date: 09/10/2013 15:39 Prep By: JNY Method: E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	119.3	32-169

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-01B	MW-1
L0034054-02B	MW-3
L0034054-03B	MW-4R
L0034054-04B	MW-5
L0034054-05B	MW-6R
L0034054-06B	MW-8
L0034054-07B	MW-9R
L0034054-08B	MW-10
L0034054-09B	MW-11
L0034054-10B	MW-12
L0034054-11B	MW-13
L0034054-12B	MW-14
L0034054-13B	MW-15
L0034054-14B	MW-17
L0034054-15B	MW-18
L0034054-16B	MW-19
L0034054-17B	MW-20
L0034054-18B	MW-21
L0034054-19B	MW-22
L0034054-20B	MW-23

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_130916A-5207455 Units: ug/L
Analysis Date: 09/16/2013 9:13 Analyst: SJA
Preparation Date: 09/10/2013 15:39 Prep By: JNY Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.720	126	0.570	0.664	117	8.0	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	160	112	143	156	109	3.1	30	32	169

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:56 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis:	**EDB & DBCP**	**WorkOrder:**	**L0034054**
Method:	**SW8011**	**Lab Batch ID:**	**124647**

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:56 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: EDB & DBCP
Method: SW8011

WorkOrder: L0034054
Lab Batch ID: 124670

Method Blank

RunID: PCBB_130912A-5204268 Units: ug/L
Analysis Date: 09/12/2013 14:13 Analyst: SJA
Preparation Date: 09/11/2013 9:30 Prep By: MFF Method: E504

Analyte	Result	Rep Limit
1,2-Dibromoethane	ND	0.020
Surr: 1-Chloro-2-fluorobenzene	50.4	32-169

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-21B	MW-24
L0034054-22B	MW-25
L0034054-23B	MW-26
L0034054-24B	MW-27
L0034054-25B	MW-28
L0034054-26B	DW-1
L0034054-27B	DW-2
L0034054-28B	DUP-01
L0034054-29B	DUP-02
L0034054-30B	FIELD BLANK
L0034054-31B	FIELD BLANK
L0034054-33B	CK-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: PCBB_130912A-5204269 Units: ug/L
Analysis Date: 09/12/2013 14:35 Analyst: SJA
Preparation Date: 09/11/2013 9:30 Prep By: MFF Method: E504

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dibromoethane	0.570	0.346	60.6	0.570	0.396	69.4	13.5	30	60	140
Surr: 1-Chloro-2-fluorobenzene	143	82.1	57.4	143	89.3	62.4	8.4	30	32	169

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:57 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318238

Method Blank

RunID: XA_130914B-5206374 Units: ug/L
Analysis Date: 09/15/2013 1:35 Analyst: RPJ

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-19A	MW-22
L0034054-20A	MW-23

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	112.0	84-124
Surr: 4-Bromofluorobenzene	102.8	89-111
Surr: Toluene-d8	101.8	83-115

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_130914B-5206372 Units: ug/L
Analysis Date: 09/15/2013 0:36 Analyst: RPJ

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	20.4	102	20.0	20.7	104	1.7	10	74	127
3,3-Dimethyl-1-butanol	200	181	90.3	200	147	73.3	20.8	37	70	130
Ethanol	400	770	193 *	400	531	133 *	36.8	40	70	130
Ethylbenzene	20.0	20.4	102	20.0	20.6	103	0.6	10	84	117
Methyl tert-butyl ether	20.0	22.4	112	20.0	22.4	112	0.1	40	75	126
Naphthalene	20.0	20.8	104	20.0	19.9	99.4	4.6	22	74	130
t-Butyl alcohol	200	269	134 *	200	247	124	8.3	40	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:58 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318238

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_130914B-5206372 Units: ug/L
Analysis Date: 09/15/2013 0:36 Analyst: RPJ

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
tert-Amyl alcohol	200	270	135 *	200	242	121	10.9	35	70	130
tert-Amyl methyl ether	20.0	21.5	108	20.0	21.2	106	1.3	11	80	121
tert-Butyl ethyl ether	20.0	23.2	116	20.0	23.8	119	2.7	10	77	123
tert-Butyl formate	20.0	22.4	112	20.0	23.0	115	2.4	14	70	130
Toluene	20.0	20.5	102	20.0	20.5	103	0.2	10	80	121
m,p-Xylene	40.0	42.2	106	40.0	41.6	104	1.3	10	82	121
o-Xylene	20.0	20.5	103	20.0	20.3	102	0.9	10	84	119
Xylenes,Total	60.0	62.7	105	60.0	61.9	103	1.2	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	56.5	113	50.0	57.5	115	1.8	30	84	124
Surr: 4-Bromofluorobenzene	50.0	50.3	101	50.0	50.8	102	0.9	30	89	111
Surr: Toluene-d8	50.0	50.8	102	50.0	50.4	101	0.8	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034241-01
RunID: XA_130914B-5206380 Units: ug/L
Analysis Date: 09/15/2013 9:48 Analyst: RPJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	200	188	94.0	200	191	95.3	1.41	10	74	127
3,3-Dimethyl-1-butanol	ND	2000	1160	57.9 *	2000	1140	57.2 *	1.08	37	70	130
Benzene	2540	200	2920	N/C	200	2830	N/C	N/C	10	82	119
Diisopropyl ether	1590	200	2020	N/C	200	2010	N/C	N/C	10	71	126
Ethanol	ND	4000	4390	110	4000	5140	128	15.7	40	70	130
Ethylbenzene	234	200	414	90.0	200	396	80.8 *	4.55	10	84	117

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:59 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **L0034054**
Method: **SW8260B** **Lab Batch ID:** **R318238**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034241-01
RunID: XA_130914B-5206380 Units: ug/L
Analysis Date: 09/15/2013 9:48 Analyst: RPJ

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Methyl tert-butyl ether	1950	200	2360	N/C	200	2440	N/C	N/C	40	75	126
Naphthalene	152	200	350	98.6	200	352	99.8	0.666	22	74	130
t-Butyl alcohol	1020	2000	2930	95.4	2000	3080	103	5.25	40	70	130
tert-Amyl alcohol	2240	2000	3910	83.4	2000	4380	107	11.3	35	70	130
tert-Amyl methyl ether	ND	200	199	99.5	200	190	94.8	4.84	11	80	121
tert-Butyl ethyl ether	ND	200	234	117	200	230	115	1.68	10	77	123
tert-Butyl formate	ND	200	103	51.3 *	200	99.3	49.6 *	3.21	14	70	130
Toluene	ND	200	244	106	200	220	93.6	10.4 *	10	80	121
m,p-Xylene	111	400	520	102	400	492	95.3	5.54	10	82	121
o-Xylene	ND	200	210	103	200	192	94.3	9.04	10	84	119
Xylenes,Total	110	600	730	100	600	680	95	6.5	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	500	584	117	500	595	119	1.79	30	84	124
Surr: 4-Bromofluorobenzene	ND	500	530	106	500	526	105	0.667	30	89	111
Surr: Toluene-d8	ND	500	505	101	500	502	100	0.712	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:21:59 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **L0034054**
Method: **SW8260B** **Lab Batch ID:** **R318255**

Method Blank

RunID: XB_130914A-5206745 Units: ug/L
Analysis Date: 09/14/2013 13:45 Analyst: SNV

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	104.7	84-124
Surr: 4-Bromofluorobenzene	97.1	89-111
Surr: Toluene-d8	96.2	83-115

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-10A	MW-12
L0034054-11A	MW-13
L0034054-12A	MW-14
L0034054-22A	MW-25
L0034054-30A	FIELD BLANK
L0034054-31A	FIELD BLANK
L0034054-32A	TRIP BLANK

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130914A-5206743 Units: ug/L
Analysis Date: 09/14/2013 12:48 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	16.7	83.6	20.0	19.0	94.8	12.5 *	10	74	127
3,3-Dimethyl-1-butanol	200	203	102	200	169	84.5	18.5	37	70	130
Benzene	20.0	17.1	85.7	20.0	19.6	97.8	13.3 *	10	82	119
Diisopropyl ether	20.0	18.8	94.0	20.0	20.6	103	9.2	10	71	126
Ethanol	400	376	94.0	400	368	92.1	2.0	40	70	130

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:00 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318255

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130914A-5206743 Units: ug/L
Analysis Date: 09/14/2013 12:48 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	20.0	17.7	88.5	20.0	19.9	99.4	11.7 *	10	84	117
Methyl tert-butyl ether	20.0	17.9	89.4	20.0	19.5	97.6	8.8	40	75	126
Naphthalene	20.0	19.6	98.1	20.0	20.9	105	6.4	22	74	130
t-Butyl alcohol	200	191	95.7	200	213	106	10.5	40	70	130
tert-Amyl alcohol	200	192	95.8	200	210	105	9.2	35	70	130
tert-Amyl methyl ether	20.0	18.1	90.6	20.0	20.1	101	10.5	11	80	121
tert-Butyl ethyl ether	20.0	18.8	94.2	20.0	20.8	104	9.9	10	77	123
tert-Butyl formate	20.0	19.6	98.0	20.0	21.7	109	10.4	14	70	130
Toluene	20.0	17.3	86.3	20.0	19.3	96.4	11.0 *	10	80	121
m,p-Xylene	40.0	36.2	90.5	40.0	40.7	102	11.8 *	10	82	121
o-Xylene	20.0	17.6	88.1	20.0	19.5	97.7	10.3 *	10	84	119
Xylenes,Total	60.0	53.8	89.7	60.0	60.2	100	11.3 *	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	52.3	105	50.0	52.3	105	0.1	30	84	124
Surr: 4-Bromofluorobenzene	50.0	49.5	98.9	50.0	50.0	99.9	1.0	30	89	111
Surr: Toluene-d8	50.0	48.6	97.2	50.0	49.3	98.7	1.5	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-10
RunID: XB_130914A-5206763 Units: ug/L
Analysis Date: 09/14/2013 22:26 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	400	391	97.9	400	376	94.1	3.96	10	74	127
3,3-Dimethyl-1-butanol	ND	4000	4950	124	4000	5120	128	3.35	37	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:00 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318255

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-10
RunID: XB_130914A-5206763 Units: ug/L
Analysis Date: 09/14/2013 22:26 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	1340	400	1770	107	400	1730	97.9	1.99	10	82	119
Diisopropyl ether	3370	400	3950	N/C	400	3760	N/C	N/C	10	71	126
Ethanol	ND	8000	8290	104	8000	9180	115	10.2	40	70	130
Ethylbenzene	126	400	492	91.5	400	487	90.1	1.10	10	84	117
Methyl tert-butyl ether	ND	400	520	110	400	485	101	7.08	40	75	126
Naphthalene	186	400	585	99.9	400	596	103	1.80	22	74	130
t-Butyl alcohol	2420	4000	7230	120	4000	7640	130 *	5.55	40	70	130
tert-Amyl alcohol	10900	4000	15100	106	4000	15900	126	5.06	35	70	130
tert-Amyl methyl ether	ND	400	428	107	400	423	106	1.13	11	80	121
tert-Butyl ethyl ether	ND	400	421	105	400	407	102	3.25	10	77	123
tert-Butyl formate	ND	400	364	91.1	400	358	89.6	1.68	14	70	130
Toluene	126	400	504	94.6	400	494	91.9	2.10	10	80	121
m,p-Xylene	503	800	1280	96.6	800	1270	95.2	0.831	10	82	121
o-Xylene	203	400	575	93.1	400	582	94.8	1.14	10	84	119
Xylenes,Total	706.3	1200	1855	95.41	1200	1852	95.08	0.2132	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	1000	1090	109	1000	1080	108	0.896	30	84	124
Surr: 4-Bromofluorobenzene	ND	1000	959	95.9	1000	969	96.9	0.970	30	89	111
Surr: Toluene-d8	ND	1000	995	99.5	1000	1010	101	1.51	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:01 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318257

Method Blank

RunID: XB_130914B-5206778 Units: ug/L
Analysis Date: 09/15/2013 1:50 Analyst: SNV

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	111.4	84-124
Surr: 4-Bromofluorobenzene	99.4	89-111
Surr: Toluene-d8	97.3	83-115

Samples In Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-01A	MW-1
L0034054-03A	MW-4R
L0034054-04A	MW-5
L0034054-05A	MW-6R
L0034054-06A	MW-8
L0034054-14A	MW-17
L0034054-15A	MW-18
L0034054-16A	MW-19
L0034054-17A	MW-20
L0034054-18A	MW-21
L0034054-21A	MW-24
L0034054-23A	MW-26
L0034054-33A	CK-1

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130914B-5206776 Units: ug/L
Analysis Date: 09/15/2013 0:52 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	19.8	99.1	20.0	20.7	104	4.5	10	74	127
3,3-Dimethyl-1-butanol	200	244	122	200	248	124	1.5	37	70	130
Benzene	20.0	20.2	101	20.0	21.5	107	6.2	10	82	119
Diisopropyl ether	20.0	23.7	118	20.0	25.8	129 *	8.5	10	71	126
Ethanol	400	431	108	400	483	121	11.5	40	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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9/20/2013 1:22:03 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318257

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130914B-5206776 Units: ug/L
Analysis Date: 09/15/2013 0:52 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	20.0	18.6	93.1	20.0	19.7	98.7	5.9	10	84	117
Methyl tert-butyl ether	20.0	22.5	112	20.0	22.6	113	0.8	40	75	126
Naphthalene	20.0	21.1	106	20.0	21.6	108	2.1	22	74	130
t-Butyl alcohol	200	250	125	200	247	124	1.3	40	70	130
tert-Amyl alcohol	200	242	121	200	237	119	2.1	35	70	130
tert-Amyl methyl ether	20.0	21.6	108	20.0	22.3	111	3.1	11	80	121
tert-Butyl ethyl ether	20.0	23.4	117	20.0	24.3	122	3.8	10	77	123
tert-Butyl formate	20.0	22.4	112	20.0	23.5	118	4.7	14	70	130
Toluene	20.0	18.6	92.8	20.0	20.0	100	7.6	10	80	121
m,p-Xylene	40.0	38.5	96.3	40.0	40.1	100	4.1	10	82	121
o-Xylene	20.0	18.7	93.5	20.0	19.8	98.9	5.7	10	84	119
Xylenes,Total	60.0	57.2	95.4	60.0	59.9	99.9	4.6	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	56.6	113	50.0	55.6	111	1.8	30	84	124
Surr: 4-Bromofluorobenzene	50.0	48.3	96.6	50.0	49.5	98.9	2.4	30	89	111
Surr: Toluene-d8	50.0	49.4	98.9	50.0	50.7	101	2.6	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-02
RunID: XB_130914B-5206795 Units: ug/L
Analysis Date: 09/15/2013 10:02 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	100	105	105	100	101	101	3.88	10	74	127
3,3-Dimethyl-1-butanol	ND	1000	2720	272 *	1000	2880	288 *	5.80	37	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:03 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **L0034054**
Method: **SW8260B** **Lab Batch ID:** **R318257**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-02
RunID: XB_130914B-5206795 Units: ug/L
Analysis Date: 09/15/2013 10:02 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	98.3	100	200	102	100	195	96.4	2.60	10	82	119
Diisopropyl ether	229	100	347	117	100	346	117	0.128	10	71	126
Ethanol	ND	2000	1980	99.2	2000	2090	104	5.05	40	70	130
Ethylbenzene	ND	100	95.2	93.7	100	94.5	93.0	0.740	10	84	117
Methyl tert-butyl ether	ND	100	118	116	100	115	113	2.06	40	75	126
Naphthalene	ND	100	94.6	94.6	100	94.8	94.8	0.235	22	74	130
t-Butyl alcohol	1190	1000	2240	105	1000	2370	118	5.59	40	70	130
tert-Amyl alcohol	399	1000	1360	96.1	1000	1400	101	3.21	35	70	130
tert-Amyl methyl ether	ND	100	110	110	100	106	106	3.26	11	80	121
tert-Butyl ethyl ether	ND	100	125	125 *	100	121	121	2.89	10	77	123
tert-Butyl formate	ND	100	8.61	8.61 *	100	7.17	7.17 *	18.3 *	14	70	130
Toluene	ND	100	94.7	94.3	100	92.5	92.1	2.44	10	80	121
m,p-Xylene	ND	200	192	94.5	200	192	94.3	0.146	10	82	121
o-Xylene	ND	100	95.1	95.1	100	92.3	92.3	2.96	10	84	119
Xylenes,Total	ND	300	287.1	94.66	300	284.3	93.64	1.069	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	250	295	118	250	293	117	0.929	30	84	124
Surr: 4-Bromofluorobenzene	ND	250	241	96.6	250	243	97.3	0.773	30	89	111
Surr: Toluene-d8	ND	250	244	97.8	250	248	99.3	1.56	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:04 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318340

Method Blank

RunID: XA_130916C-5208322 Units: ug/L
Analysis Date: 09/17/2013 2:18 Analyst: NN

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	12	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	103.3	84-124
Surr: 4-Bromofluorobenzene	100.4	89-111
Surr: Toluene-d8	97.4	83-115

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-02A	MW-3
L0034054-09A	MW-11
L0034054-13A	MW-15
L0034054-15A	MW-18
L0034054-18A	MW-21
L0034054-19A	MW-22
L0034054-24A	MW-27
L0034054-25A	MW-28
L0034054-28A	DUP-01

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_130916C-5208320 Units: ug/L
Analysis Date: 09/17/2013 1:19 Analyst: NN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	20.2	101	20.0	20.5	102	1.4	10	74	127
3,3-Dimethyl-1-butanol	200	241	121	200	234	117	2.8	37	70	130
Benzene	20.0	19.2	96.0	20.0	20.2	101	5.1	10	82	119
Diisopropyl ether	20.0	20.6	103	20.0	20.0	100	3.1	10	71	126
Ethanol	400	877	219 *	400	555	139 *	45.0 *	40	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:06 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318340

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XA_130916C-5208320 Units: ug/L
Analysis Date: 09/17/2013 1:19 Analyst: NN

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	20.0	21.9	110	20.0	21.6	108	1.5	10	84	117
Methyl tert-butyl ether	20.0	20.7	104	20.0	20.0	100	3.6	40	75	126
Naphthalene	20.0	22.5	112	20.0	22.0	110	2.2	22	74	130
t-Butyl alcohol	200	279	139 *	200	235	117	17.2	40	70	130
tert-Amyl alcohol	200	258	129	200	252	126	2.2	35	70	130
tert-Amyl methyl ether	20.0	20.5	102	20.0	20.4	102	0.2	11	80	121
tert-Butyl ethyl ether	20.0	21.1	106	20.0	20.5	102	3.2	10	77	123
tert-Butyl formate	20.0	20.1	101	20.0	20.2	101	0.4	14	70	130
Toluene	20.0	21.1	106	20.0	21.0	105	0.6	10	80	121
m,p-Xylene	40.0	43.9	110	40.0	42.8	107	2.4	10	82	121
o-Xylene	20.0	22.7	114	20.0	21.8	109	3.9	10	84	119
Xylenes,Total	60.0	66.6	111	60.0	64.6	108	2.9	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	51.2	102	50.0	50.0	99.9	2.4	30	84	124
Surr: 4-Bromofluorobenzene	50.0	48.7	97.4	50.0	50.3	101	3.2	30	89	111
Surr: Toluene-d8	50.0	48.3	96.6	50.0	49.6	99.2	2.6	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-09
RunID: XA_130916C-5208332 Units: ug/L
Analysis Date: 09/17/2013 10:36 Analyst: NN

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	1000	1000	100	1000	986	98.6	1.49	10	74	127
3,3-Dimethyl-1-butanol	ND	10000	9870	98.7	10000	9780	97.8	0.831	37	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

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ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318340

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-09
RunID: XA_130916C-5208332 Units: ug/L
Analysis Date: 09/17/2013 10:36 Analyst: NN

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	8540	1000	10100	N/C	1000	9990	N/C	N/C	10	82	119
Diisopropyl ether	6450	1000	8080	N/C	1000	8180	N/C	N/C	10	71	126
Ethanol	ND	20000	19800	98.8	20000	20600	103	4.17	40	70	130
Ethylbenzene	3800	1000	5160	135 *	1000	5240	143 *	1.49	10	84	117
Methyl tert-butyl ether	ND	1000	1040	100	1000	1040	100	0.0529	40	75	126
Naphthalene	961	1000	1920	95.9	1000	1900	93.9	1.04	22	74	130
t-Butyl alcohol	2220	10000	11500	93.1	10000	10900	86.8	5.58	40	70	130
tert-Amyl alcohol	11100	10000	19700	85.8	10000	18900	77.5	4.31	35	70	130
tert-Amyl methyl ether	ND	1000	974	97.4	1000	948	94.8	2.70	11	80	121
tert-Butyl ethyl ether	ND	1000	1060	106	1000	1060	106	0.242	10	77	123
tert-Butyl formate	ND	1000	949	94.9	1000	989	98.9	4.15	14	70	130
Toluene	7120	1000	8910	N/C	1000	8830	N/C	N/C	10	80	121
m,p-Xylene	11300	2000	13900	N/C	2000	14200	N/C	N/C	10	82	121
o-Xylene	4780	1000	6250	N/C	1000	6280	N/C	N/C	10	84	119
Xylenes,Total	16050	3000	20150	N/C	3000	20480	N/C	N/C	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	2500	2720	109	2500	2720	109	0.126	30	84	124
Surr: 4-Bromofluorobenzene	ND	2500	2580	103	2500	2600	104	0.621	30	89	111
Surr: Toluene-d8	ND	2500	2460	98.4	2500	2410	96.3	2.23	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B

WorkOrder: L0034054
Lab Batch ID: R318433

Method Blank

RunID: XB_130917A-5210569 Units: ug/L
Analysis Date: 09/18/2013 3:45 Analyst: IHK

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-15A	MW-18
L0034054-25A	MW-28

Analyte	Result	Rep Limit
Methyl tert-butyl ether	ND	1.0
Toluene	ND	1.0
Surr: 1,2-Dichloroethane-d4	107.0	84-124
Surr: 4-Bromofluorobenzene	99.4	89-111
Surr: Toluene-d8	97.3	83-115

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130917A-5210584 Units: ug/L
Analysis Date: 09/18/2013 2:46 Analyst: IHK

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	20.5	103	20.0	19.2	96.1	6.7	11	70	130
3,3-Dimethyl-1-butanol	200	211	106	200	189	94.3	11.3	45	70	130
Benzene	20.0	20.3	102	20.0	19.6	98.2	3.5	12	70	130
Diisopropyl ether	20.0	21.7	109	20.0	20.6	103	5.2	15	70	130
Ethanol	400	441	110	400	374	93.6	16.3	47	70	130
Ethylbenzene	20.0	20.1	100	20.0	18.8	93.9	6.7	11	70	130
Methyl tert-butyl ether	20.0	21.3	107	20.0	20.1	101	5.7	46	70	130
Naphthalene	20.0	21.4	107	20.0	18.9	94.5	12.5	19	70	130
t-Butyl alcohol	200	220	110	200	202	101	8.2	47	70	130
tert-Amyl alcohol	200	215	108	200	197	98.3	8.9	71	70	130
tert-Amyl methyl ether	20.0	20.8	104	20.0	19.3	96.7	7.4	10	70	130
tert-Butyl ethyl ether	20.0	21.9	109	20.0	20.5	103	6.5	10	70	130
tert-Butyl formate	20.0	18.7	93.6	20.0	17.6	88.2	6.0	14	70	130
Toluene	20.0	20.4	102	20.0	18.7	93.7	8.4	12	70	130
m,p-Xylene	40.0	40.9	102	40.0	38.4	95.9	6.4	12	70	130
o-Xylene	20.0	20.2	101	20.0	19.3	96.4	4.9	11	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318433

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130917A-5210584 Units: ug/L
Analysis Date: 09/18/2013 2:46 Analyst: IHK

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Xylenes,Total	60.0	61.1	102	60.0	57.7	96.1	5.9	12	70	130
Surr: 1,2-Dichloroethane-d4	50.0	55.3	111	50.0	54.3	109	1.9	30	75	126
Surr: 4-Bromofluorobenzene	50.0	50.4	101	50.0	50.2	100	0.6	30	89	112
Surr: Toluene-d8	50.0	49.8	99.5	50.0	48.7	97.5	2.1	30	84	112

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034240-06
RunID: XB_130917A-5210582 Units: ug/L
Analysis Date: 09/18/2013 11:59 Analyst: IHK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	100	84.0	84.0	100	79.0	79.0	6.16	10	74	127
3,3-Dimethyl-1-butanol	ND	1000	834	83.4	1000	802	80.2	3.83	37	70	130
Benzene	ND	100	80.4	80.2 *	100	73.6	73.4 *	8.81	10	82	119
Diisopropyl ether	ND	100	83.7	83.7	100	80.7	80.7	3.73	10	71	126
Ethanol	ND	2000	1770	88.7	2000	1740	87.2	1.72	40	70	130
Ethylbenzene	ND	100	88.6	88.6	100	84.4	84.4	4.77	10	84	117
Methyl tert-butyl ether	ND	100	75.0	75.0 *	100	73.6	73.6 *	1.90	40	75	126
Naphthalene	ND	100	87.9	87.9	100	88.5	88.5	0.714	22	74	130
t-Butyl alcohol	ND	1000	949	94.9	1000	962	96.2	1.31	40	70	130
tert-Amyl alcohol	ND	1000	899	89.9	1000	842	84.2	6.52	35	70	130
tert-Amyl methyl ether	ND	100	83.7	83.7	100	78.2	78.2 *	6.74	11	80	121
tert-Butyl ethyl ether	ND	100	82.3	82.3	100	80.9	80.9	1.73	10	77	123
tert-Butyl formate	ND	100	12.1	12.1 *	100	11.5	11.5 *	5.02	14	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **L0034054**
Method: **SW8260B** **Lab Batch ID:** **R318433**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034240-06
RunID: XB_130917A-5210582 Units: ug/L
Analysis Date: 09/18/2013 11:59 Analyst: IHK

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Toluene	ND	100	83.3	83.3	100	80.1	80.1	3.87	10	80	121
m,p-Xylene	ND	200	186	93.0	200	174	86.7	6.96	10	82	121
o-Xylene	ND	100	90.9	90.9	100	86.4	86.4	5.09	10	84	119
Xylenes,Total	ND	300	276.9	92.30	300	260.4	86.62	6.342	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	250	275	110	250	281	112	2.31	30	84	124
Surr: 4-Bromofluorobenzene	ND	250	252	101	250	251	100	0.415	30	89	111
Surr: Toluene-d8	ND	250	250	100	250	241	96.3	3.73	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318457

Method Blank

RunID: XB_130917C-5210976 Units: ug/L
Analysis Date: 09/17/2013 15:15 Analyst: SNV

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	107.5	84-124
Surr: 4-Bromofluorobenzene	98.9	89-111
Surr: Toluene-d8	95.7	83-115

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-07A	MW-9R
L0034054-08A	MW-10
L0034054-11A	MW-13
L0034054-12A	MW-14
L0034054-20A	MW-23
L0034054-29A	DUP-02

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130917C-5210974 Units: ug/L
Analysis Date: 09/17/2013 14:19 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	20.4	102	20.0	19.8	98.9	3.0	10	74	127
3,3-Dimethyl-1-butanol	200	168	84.0	200	159	79.7	5.3	37	70	130
Benzene	20.0	19.6	98.2	20.0	19.8	98.8	0.6	10	82	119
Diisopropyl ether	20.0	20.5	103	20.0	20.4	102	0.7	10	71	126
Ethanol	400	336	83.9	400	353	88.3	5.2	40	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

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Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318457

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130917C-5210974 Units: ug/L
Analysis Date: 09/17/2013 14:19 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	20.0	21.3	107	20.0	20.6	103	3.3	10	84	117
Methyl tert-butyl ether	20.0	19.1	95.7	20.0	18.5	92.3	3.6	40	75	126
Naphthalene	20.0	20.6	103	20.0	19.3	96.5	6.5	22	74	130
t-Butyl alcohol	200	180	90.2	200	172	85.8	5.1	40	70	130
tert-Amyl alcohol	200	181	90.6	200	169	84.6	6.8	35	70	130
tert-Amyl methyl ether	20.0	19.8	99.0	20.0	19.1	95.5	3.6	11	80	121
tert-Butyl ethyl ether	20.0	20.3	102	20.0	20.0	99.8	1.8	10	77	123
tert-Butyl formate	20.0	20.1	100	20.0	19.1	95.7	4.7	14	70	130
Toluene	20.0	20.8	104	20.0	20.7	104	0.2	10	80	121
m,p-Xylene	40.0	43.9	110	40.0	42.7	107	2.8	10	82	121
o-Xylene	20.0	21.3	106	20.0	20.7	104	2.5	10	84	119
Xylenes,Total	60.0	65.2	109	60.0	63.4	106	2.7	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	53.3	107	50.0	53.4	107	0.1	30	84	124
Surr: 4-Bromofluorobenzene	50.0	51.0	102	50.0	49.4	98.8	3.2	30	89	111
Surr: Toluene-d8	50.0	48.8	97.6	50.0	48.9	97.8	0.2	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-29
RunID: XB_130917C-5210984 Units: ug/L
Analysis Date: 09/18/2013 0:20 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	400	376	94.1	400	367	91.8	2.43	10	74	127
3,3-Dimethyl-1-butanol	ND	4000	3990	99.7	4000	3640	91.0	9.11	37	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: **Volatile Organics:Method 8260B** **WorkOrder:** **L0034054**
Method: **SW8260B** **Lab Batch ID:** **R318457**

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0034054-29
RunID: XB_130917C-5210984 Units: ug/L
Analysis Date: 09/18/2013 0:20 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	5210	400	5740	N/C	400	5650	N/C	N/C	10	82	119
Diisopropyl ether	3720	400	4300	N/C	400	4220	N/C	N/C	10	71	126
Ethanol	ND	8000	7350	91.9	8000	6650	83.1	10.0	40	70	130
Ethylbenzene	807	400	1210	101	400	1180	93.9	2.42	10	84	117
Methyl tert-butyl ether	ND	400	415	100	400	395	95.4	5.01	40	75	126
Naphthalene	610	400	1090	119	400	1010	99.7	7.36	22	74	130
t-Butyl alcohol	649	4000	4810	104	4000	4290	91.0	11.5	40	70	130
tert-Amyl alcohol	3940	4000	8910	124	4000	7880	98.5	12.3	35	70	130
tert-Amyl methyl ether	ND	400	377	94.3	400	368	92.0	2.44	11	80	121
tert-Butyl ethyl ether	ND	400	395	98.7	400	388	97.0	1.80	10	77	123
tert-Butyl formate	ND	400	339	84.7	400	320	80.1	5.65	14	70	130
Toluene	5870	400	6410	N/C	400	6200	N/C	N/C	10	80	121
m,p-Xylene	3730	800	4580	N/C	800	4390	N/C	N/C	10	82	121
o-Xylene	1440	400	1880	111	400	1810	93.6	3.77	10	84	119
Xylenes,Total	5160	1200	6460	N/C	1200	6200	N/C	N/C	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	1000	1070	107	1000	1070	107	0.295	30	84	124
Surr: 4-Bromofluorobenzene	ND	1000	1010	101	1000	997	99.7	0.908	30	89	111
Surr: Toluene-d8	ND	1000	982	98.2	1000	966	96.6	1.58	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:11 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318499

Method Blank

RunID: XB_130918C-5211772 Units: ug/L
Analysis Date: 09/18/2013 15:10 Analyst: SNV

Samples in Analytical Batch:

Lab Sample ID	Client Sample ID
L0034054-26A	DW-1
L0034054-27A	DW-2

Analyte	Result	Rep Limit
1,2-Dichloroethane	ND	5.0
3,3-Dimethyl-1-butanol	ND	10
Benzene	ND	1.0
Diisopropyl ether	ND	5.0
Ethanol	ND	100
Ethylbenzene	ND	1.0
Methyl tert-butyl ether	ND	1.0
Naphthalene	ND	5.0
t-Butyl alcohol	ND	10
tert-Amyl alcohol	ND	10
tert-Amyl methyl ether	ND	5.0
tert-Butyl ethyl ether	ND	5.0
tert-Butyl formate	ND	1.0
Toluene	ND	1.0
m,p-Xylene	ND	2.0
o-Xylene	ND	2.0
Xylenes,Total	ND	2.0
Surr: 1,2-Dichloroethane-d4	110.5	84-124
Surr: 4-Bromofluorobenzene	97.4	89-111
Surr: Toluene-d8	96.4	83-115

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130918C-5211770 Units: ug/L
Analysis Date: 09/18/2013 14:14 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
1,2-Dichloroethane	20.0	18.9	94.7	20.0	18.9	94.5	0.2	10	74	127
3,3-Dimethyl-1-butanol	200	152	76.1	200	148	74.2	2.5	37	70	130
Benzene	20.0	18.7	93.3	20.0	18.2	90.8	2.8	10	82	119
Diisopropyl ether	20.0	19.4	97.1	20.0	18.8	93.9	3.3	10	71	126
Ethanol	400	324	80.9	400	350	87.5	7.8	40	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:13 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B **WorkOrder:** L0034054
Method: SW8260B **Lab Batch ID:** R318499

Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

RunID: XB_130918C-5211770 Units: ug/L
Analysis Date: 09/18/2013 14:14 Analyst: SNV

Analyte	LCS Spike Added	LCS Result	LCS Percent Recovery	LCSD Spike Added	LCSD Result	LCSD Percent Recovery	RPD	RPD Limit	Lower Limit	Upper Limit
Ethylbenzene	20.0	19.6	97.9	20.0	19.0	95.2	2.8	10	84	117
Methyl tert-butyl ether	20.0	18.6	92.8	20.0	18.0	90.2	2.9	40	75	126
Naphthalene	20.0	18.2	91.1	20.0	18.4	92.1	1.1	22	74	130
t-Butyl alcohol	200	175	87.7	200	167	83.6	4.8	40	70	130
tert-Amyl alcohol	200	169	84.4	200	164	82.2	2.7	35	70	130
tert-Amyl methyl ether	20.0	18.4	92.0	20.0	18.6	93.1	1.2	11	80	121
tert-Butyl ethyl ether	20.0	19.3	96.3	20.0	18.8	94.2	2.1	10	77	123
tert-Butyl formate	20.0	18.2	91.0	20.0	17.1	85.5	6.2	14	70	130
Toluene	20.0	18.9	94.3	20.0	18.3	91.5	3.0	10	80	121
m,p-Xylene	40.0	40.1	100	40.0	39.0	97.6	2.7	10	82	121
o-Xylene	20.0	19.7	98.4	20.0	18.9	94.4	4.1	10	84	119
Xylenes,Total	60.0	59.8	99.6	60.0	57.9	96.5	3.2	9	81	122
Surr: 1,2-Dichloroethane-d4	50.0	55.3	111	50.0	55.0	110	0.6	30	84	124
Surr: 4-Bromofluorobenzene	50.0	50.1	100	50.0	49.4	98.8	1.4	30	89	111
Surr: Toluene-d8	50.0	48.9	97.7	50.0	48.9	97.8	0.0	30	83	115

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0033939-09
RunID: XB_130918C-5212364 Units: ug/L
Analysis Date: 09/18/2013 23:44 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichloroethane	ND	100	86.0	86.0	100	86.6	86.6	0.740	10	74	127
3,3-Dimethyl-1-butanol	ND	1000	810	81.0	1000	771	77.1	4.89	37	70	130

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

QC results presented on the QC Summary Report have been rounded. RPD and percent recovery values calculated by the SPL LIMS system are derived from QC data prior to the application of rounding rules.

9/20/2013 1:22:13 PM

Version 2.1 - Modified February 11, 2011

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Quality Control Report

CARDNO ATC

14.25384.0012

Analysis: Volatile Organics:Method 8260B
Method: SW8260B
WorkOrder: L0034054
Lab Batch ID: R318499

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: L0033939-09
RunID: XB_130918C-5212364 Units: ug/L
Analysis Date: 09/18/2013 23:44 Analyst: SNV

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	100	83.6	83.6	100	83.7	83.7	0.0314	10	82	119
Diisopropyl ether	ND	100	91.5	91.5	100	91.5	91.5	0.0552	10	71	126
Ethanol	ND	2000	1570	78.4	2000	1600	80.2	2.36	40	70	130
Ethylbenzene	ND	100	88.0	87.7	100	87.0	86.7	1.19	10	84	117
Methyl tert-butyl ether	ND	100	86.7	86.7	100	85.4	85.4	1.42	40	75	126
Naphthalene	ND	100	83.9	83.9	100	84.3	84.3	0.443	22	74	130
t-Butyl alcohol	ND	1000	935	93.5	1000	883	88.3	5.72	40	70	130
tert-Amyl alcohol	ND	1000	876	87.6	1000	833	83.3	5.04	35	70	130
tert-Amyl methyl ether	ND	100	85.0	85.0	100	83.3	83.3	1.98	11	80	121
tert-Butyl ethyl ether	ND	100	88.9	88.9	100	90.4	90.4	1.66	10	77	123
tert-Butyl formate	ND	100	72.1	72.1	100	70.7	70.7	1.99	14	70	130
Toluene	ND	100	87.1	86.8	100	87.6	87.3	0.496	10	80	121
m,p-Xylene	ND	200	180	89.9	200	178	88.8	1.14	10	82	121
o-Xylene	ND	100	90.1	89.0	100	89.6	88.5	0.520	10	84	119
Xylenes,Total	ND	300	270.1	89.57	300	267.6	88.73	0.9317	9	81	122
Surr: 1,2-Dichloroethane-d4	ND	250	280	112	250	281	112	0.374	30	84	124
Surr: 4-Bromofluorobenzene	ND	250	252	101	250	248	99.4	1.47	30	89	111
Surr: Toluene-d8	ND	250	235	94.0	250	237	94.7	0.667	30	83	115

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte Detected In The Associated Method Blank
J - Estimated Value Between MDL And PQL
E - Estimated Value exceeds calibration curve
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count
MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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9/20/2013 1:22:14 PM

Version 2.1 - Modified February 11, 2011

Sample Receipt Checklist
And
Chain of Custody

ACCUTEST LABORATORIES

ACCUTEST GULF COAST
500 AMBASSADOR CAFFERY PARKWAY
SCOTT, LA 70583
(337) 237-4775

Sample Receipt Checklist

Workorder:	**L0034054**	Received By:	**HJC**
Date and Time Received:	**9/9/2013 10:30:00 AM**	Carrier name:	**FedEx-Pri 1 Day AM**
Temperature:	**4°C**	Chilled by:	**Water Ice**

1.	**Shipping container/cooler in good condition?**	Yes ☑	No ☐	Not Present ☐
2.	**Custody seals intact on shippping container/cooler?**	Yes ☑	No ☐	Not Present ☐
3.	**Custody seals intact on sample bottles?**	Yes ☐	No ☐	Not Present ☑
4.	**Chain of custody present?**	Yes ☑	No ☐	
5.	**Chain of custody signed when relinquished and received?**	Yes ☑	No ☐	
6.	**Chain of custody agrees with sample labels?**	Yes ☑	No ☐	
7.	**Samples in proper container/bottle?**	Yes ☑	No ☐	
8.	**Sample containers intact?**	Yes ☑	No ☐	
9.	**Sufficient sample volume for indicated test?**	Yes ☑	No ☐	
10.	**All samples received within holding time?**	Yes ☑	No ☐	
11.	**Container/Temp Blank temperature in compliance?**	Yes ☑	No ☐	
12.	**Water - VOA vials have zero headspace?**	Yes ☑	No ☐	VOA Vials Not Present ☐
13.	**Water - Preservation checked upon receipt (except VOA*)?**	Yes ☐	No ☐	Not Applicable ☑

***VOA Preservation Checked After Sample Analysis**

Accutest Representative: _____ **Contact Date & Time:** _____

Client Name Contacted: _____

Non Conformance Issues: _____

Client Instructions: _____

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

LSR-F005.00

FED-EX Tracking #: | Bottle Order Control #: | Accutest Quote #: | Accutest Job #: L0034054

Client / Reporting Information

Company Name: Cardno ATC
Street Address: 400 Northeast Dr. Suite Q
City / State / Zip: Columbia SC 29023
Project Contact / E-mail: Jesse Keeffe
Phone # / Fax #: 803-735-0003
Sampler(s) Name(s) / Phone #: John Moneghan, William Fogle, Linda Harrelson

Project Information

Project Name: ~~14.25384~~ United Exxon
Street:
City / State: Winnsboro SC
Project # / E-mail: 14.25384.0012
Client Purchase Order #:
Project Manager: Jesse Keeffe

Billing Information (If different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analyses: (8260B) BTEX, Naph, MTBE; 1,2-DCA, 8-Oxys; (8011) EDB

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAc/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2S2O3	ENCORE	OTHER	(8260B) BTEX, Naph, MTBE	1,2-DCA, 8-Oxys	(8011) EDB		LAB USE ONLY
	MW 1	9/5/13	0951		GW	6																6	
	~~MW 2~~																					—	
	MW 3	9/5/13	1032																			6	
	~~MW 4~~																					~~6~~	09/09/13
	MW 4R	9/5/13	1022																			6	
	MW 5	9/5/13	1001																			6	
	MW 6R	9/5/13	1100																			6	
	~~MW 7~~																					—	
	MW 8	9/5/13	0931																			6	
	MW 9R	9/5/13	1035																			6	
	MW 10	9/5/13	1335																			6	
	MW 11	9/5/13	1355																			6	

Turnaround Time (Business days)

- ☐ Standard
- ☐ 5 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULT1 (Level 3+4)
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C"
- ☐ TRRP
- ☐ EDD Format
- ☐ Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

BW-1 (13), MX-7 (F35)

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 John Fogle	9/6/13	1 Fedex	2 Fedex	09/09/13 0930	2 Accutest (OB)
3 William Fogle	9-6-13	3 Accutest (OB)	4 Accutest (OB)	09/09/13 1000	4 Hutchinson
5 Linda Harrelson	9/6/13	5	Custody Seal # CS on cooler ☐ Intact ☐ Not Intact	Preserved where applicable ☐	On Ice ☐ Cooler Temp. (4.0 A.D)

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

LSR-F005.00

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

Client / Reporting Information

Company Name: Cardno ATC
Street Address: 400 Northeast Dr Suite Q
City / State / Zip: Columbia SC 29223
Project Contact / E-mail: Jesse Keeffe
Phone # / Fax #: 803-735-0003
Sampler(s) Name(s) / Phone #: John Monaghan, William Fogle, Linda Harrelson

Project Information

Project Name: United Exxon
Street:
City / State: Winnsboro SC
Project #: 14.25384.0012
Client Purchase Order #:
Project Manager: Jesse Keeffe

Billing Information (If different from Report to)
Company Name:
Street Address:
City / State / Zip:
Attention:

Requested Analyses: (8260B) BTEX, Naph, MTBE; 1,2 DCA; 8-Oxys; (8011) EDB

Matrix Codes: DW - Drinking Water; GW - Ground Water; WW - Water; SW - Surface Water; SO - Soil; SL- Sludge; SED-Sediment; OI - Oil; LIQ - Other Liquid; AIR - Air; SOL - Other Solid; WP - Wipe; FB-Field Blank; EB-Equipment Blank; RB- Rinse Blank; TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAc/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	Na2SO4	ENCORE	OTHER	(8260B) BTEX, Naph, MTBE	1,2 DCA	8-Oxys	(8011) EDB										LAB USE ONLY
1	MW 12	9/5/13	1400		GW	6																									6	
2	MW 13	9/5/13	1450																												6	
3	MW 14	9/5/13	1240																												6	
4	MW 15	9/5/13	1310																												6	
	~~MW 16~~																														—	
5	MW 17	9/5/13	1310																												6	
6	MW 18	9/5/13	1425																												6	
7	MW 19	9/5/13	1245																												6	
8	MW 20	9/5/13	1220																												6	
9	MW 21	9/6/13	0720																												6	
10	MW 22	9/6/13	0745																												6	
11	MW 23	9/6/13	0810																												6	

Turnaround Time (Business days)

- ☐ Standard
- ☐ 5 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULT1 (Level 3+4)
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C"
- ☐ TRRP
- ☐ EDD Format
- ☐ Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	9/6/13	1 Fedex	2 Fedex	09/09/13	2 Accutest
3 [signature]	9-6-13	3 Accutest	4 Accutest	09/09/13	4 [signature]
5 Linda Harrelson	9/6/13	5			

Custody Seal # CS 1 Cash ☐ Intact ☐ Not Intact
Preserved where applicable ☐
On Ice ☐ Cooler Temp. 4.0-4.5

CHAIN OF CUSTODY

ACCUTEST LABORATORIES

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

LSR-F005.00

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

Client / Reporting Information

Company Name: CARDNO ATC
Street Address: 400 NORTHEAST DR UNIT Q
City / State / Zip: COLUMBIA SC 29223
Project Contact / E-mail: JESSE KEEFE
Phone # / Fax #: (803) 735-0003
Sampler(s) Name(s) / Phone #: LINDA HANNELSON, WILLIAM FOGLE, JOHN MOREHAN

Project Information

Project Name: FMR UNITED EXXON
Street:
City / State: WINNSBORO, SC
Project #: 14.25384.0012
Client Purchase Order #:
Project Manager:
Attention:

Billing Information (If different from Report to)

Company Name:
Street Address:
City / State / Zip:

Requested Analyses

(8260B) BTEX, Naph, MTBE; 1,2 DCA; 8-Oxy; (8011) EDB

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Date	Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZA/NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER	(8260B) BTEX, Naph, MTBE	1,2 DCA	8-Oxy	(8011) EDB								LAB USE ONLY
	MW 24	9/6/13	0835		GW	6																							6	
	MW 25	9/6/13	0900																										6	
	MW 26	9/6/13	0935																										6	
	MW 27	9/5/13	1155																										6	
	MW 28	9/5/13	1125																										6	
	~~MW 29~~																													
	DW1	9/5/13	1010																										6	
	DW2	9/6/13	1030																										6	
	Dup-01	9/5/13	1130																										6	
	Dup-02	9/5/13	1315																										6	
	Field Blank	9/5/13	1200																										6	
	Field Blank	9/6/13	0900																										6	

Turnaround Time (Business days)

- ☐ Standard
- ☐ 5 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *EMERGENCY*

Emergency & Rush T/A data available VIA Lablink

Approved By (Accutest PM): / Date:

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULT1 (Level 3+4)
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C"
- ☐ TRRP
- ☐ EDD Format
- ☐ Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1 [signature]	9/6/13	1 Fedex	2 Fedex	09/09/13 09:50	2 Accutest GB
3 William Fogle	9-6-13	3 Accutest GB	4 Accutest GB	09/09/13 10:30	4 [signature]
5 Linda Hannelson	9/6/13	5			

Custody Seal # Bunscoom ☐ Intact ☐ Not intact
Preserved where applicable ☑
On Ice ☐
Cooler Temp. (-20 A 20)

ACCUTEST LABORATORIES

CHAIN OF CUSTODY

Accutest Gulf Coast
500 Ambassador Caffery Pkwy, Scott, LA 70583
TEL.337-237-4775 FAX: 337-237-7838
www.accutest.com

LSR-F005.00

FED-EX Tracking #	Bottle Order Control #
Accutest Quote #	Accutest Job #

Client / Reporting Information

Company Name: CANONO ATC
Street Address: 400 NORTHEAST DR UNIT Q
City: COLUMBIA State: SC Zip: 29023
Project Contact: JESSE KEEFFE E-mail:
Phone #: (803)755-0003 Fax #:
Sampler(s) Name(s): WILLIAM FOGLE, JOHN MONTGOMERY Phone #:

Project Information

Project Name: FORM UNITED EXXON
Street:
City: WINNSBORO, State: SC
Project #: 14.25384.0012
Client Purchase Order #:
Project Manager:

Billing Information (If different from Report to)
Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analyses

(8260B) BTEX, MTBE; 1,2 DCA; 8-OXYG; (8011) EDB

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

Accutest Sample #	Field ID / Point of Collection	Collection Date	Collection Time	Sampled By	Matrix	# of bottles	HCl	NaOH	ZnAcNaOH	HNO3	H2SO4	NONE	DI Water	MEOH	TSP	NaHSO4	ENCORE	OTHER										LAB USE ONLY
*	Trip Blank				GW		✓												✓	✓	✓	✓					3	
	~~Trip Blank~~																										~~1~~	
**	CK-1	1055	1055																								6	

Turnaround Time (Business days)

- ☐ Standard
- ☐ 5 Day *RUSH*
- ☐ 4 Day *RUSH*
- ☐ 3 Day *RUSH*
- ☐ 2 Day *RUSH*
- ☐ 1 Day *EMERGENCY*

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- ☐ Commercial "A" (Level 1)
- ☐ Commercial "B" (Level 2)
- ☐ FULT1 (Level 3+4)
- ☐ REDT1 (Level 3+4)
- ☐ Commercial "C"
- ☐ TRRP
- ☐ EDD Format
- ☐ Other _____

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial "C" = Results + QC & Surrogate Summary

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	[signature]	9/6/13	1 Fedex	2 Fedex	09/09/13 09	2 Accutest
3	William Fogle	9-6-13	3	4	09/09/13 08:30	4
5	Linda Hamilton	9/6/13	5			

Custody Seal # CSN case ☐ Intact ☐ Not intact Preserved where applicable ☐ On Ice ☒ Cooler Temp. 4.0A-D

HAL

DATE: 13Aug13
WGT: 1.00 LBS
DV:
0.00

SHIPPING: 0.00
SPECIAL: 0.00
HANDLING: 0.00
TOTAL: 0.00

PRIORITY OVERNIGHT Master 9173 7251 4718
TRCK: 9173 7251 4718

ORIGIN ID: LFTA (803) 736-0003
JESSE KEEFFE
CARDNO ATC
400 NORTHEAST DR.
UNIT G
COLUMBIA, SC 29203
UNITED STATES US

SHIP DATE: 13AUG13
ACTWGT: 1.0 LB MAN
CAD: 031768/CAFE2600

BILL SENDER

TO SAMPLE MANAGEMENT
ACCUTEST LABS
109 COMMISSION BLVD

LAFAYETTE LA 70508
(337) 237-4775
DEPT: ENVIRONMENTAL
REF: 44909/KITS/EB

512C1/0908/CF68

FedEx Express

FedEx
TRK# 0221 9173 7251 4718

XH LFTA

MON - 09 SEP 10:30A
PRIORITY OVERNIGHT

70508
LA-US LFT

Ref: 44909/KITS/EB Date: 13Aug13 SHIPPING: 0.00
Dep: ENVIRONMENTAL Wgt: 1.00 LBS SPECIAL: 0.00
HANDLING: 0.00
DV: 0.00 TOTAL: 0.00

Svcs: PRIORITY OVERNIGHT Master 9173 7251 4718
TRCK: 9173 7251 4729

ORIGIN ID: LFTA (803) 735-0003
JESSE KEEFE
CARDNO ATG
400 NORTHEAST DR.
UNIT 9
COLUMBIA, SC 29203
UNITED STATES US

SHIP DATE: 13AUG13
ACTWGT: 1.0 LB MAN
CAD: 031768/CAFE2608

BILL SENDER

TO SAMPLE MANAGEMENT
ACCUTEST LABS
109 COMMISSION BLVD

LAFAYETTE LA 70508
(337) 237-4775 REF: 44909/KITS/EB
DEPT: ENVIRONMENTAL

FedEx Express

FedEx
TRK# 0221 9173 7251 4729

MON - 09 SEP 10:30A
PRIORITY OVERNIGHT

XH LFTA

70508
LA-US LFT

APPENDIX C

DISPOSAL CERTIFICATE

Cardno ATC
Shaping the Future

Cardno ATC

400 Northeast Drive
Unit Q
Columbia, SC 29203

Phone +1 803 735 0003
Fax +1 803 735 0443
www.cardno.com

www.cardnoatc.com

October 25, 2013

Re: Treatment of Purge Water
Former United Oil
Winnsboro, South Carolina
UST Permit #11760

To Whom It May Concern:

Cardno ATC submits this letter as certification of treatment of purge water at the **Former United Exxon** facility complied with the adsorption use of portable activated carbon units for the treatment of small volumes of suspected petroleum hydrocarbon contaminated groundwater. Water is treated on site with pour through\up flow treatment container filled with activated carbon. The carbon will be replaced or reactivated at 8,000 gallons of treated water or once total organic compound exceed manufacture conditions of 3.5 pounds. Data concerning gallons treated or adsorption capacity is available upon request. Should you have any questions or require additional information, please contact me at 735-0003.

The water obtained from development\sampling the groundwater monitoring wells at the site was treated with activated carbon. A total of **114.75** gallons of water was treated at the site on September 5, 2013.

No free product was detected in any of the well water to be treated.

Cardno ATC maintains records of treated water.

The carbon will be replaced or reactivated every 8,000 gallons.

Petroleum hydrocarbons analytical results from the site wells report Benzene concentrations at 14,000 parts per billion (ppb) or less and total BTEX concentrations at 115,700 ppb or less.

Recommendations issued by SCDHEC and the manufacturer have and will be followed.

Development\sampling purge water from all wells is mixed before treatment with the activated carbon.

Cardno ATC

Jose Rafe for:

Braden Belding
Staff Geologist

APPENDIX D

SCDHEC QAPP APPENDIX K

Contractor Verification Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Are Facility Name, Permit #, and address provided?	X		
2	Is UST Owner/Operator name, address, & phone number provided?	X		
3	Are name, address, & phone number of current property owner provided?	X		
4	Are the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	X		
5	Are the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?		X	
6	Are the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	X		
7	Has the facility history been summarized?	X		
8	Has the regional geology and hydrogeology been described?			X
9	Are the receptor survey results provided as required?			X
10	Has current use of the site and adjacent land been described?	X		
11	Has the site-specific geology and hydrogeology been described?			X
12	Has the primary soil type been described?			X
13	Have field screening results been described?			X
14	Has a description of the soil sample collection and preservation been detailed?			X
15	Has the field screening methodology and procedure been detailed?			X
16	Has the monitoring well installation and development dates been provided?			X
17	Has the method of well development been detailed?			X
18	Has justification been provided for the locations of the monitoring wells?			X
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	X		
20	Has the groundwater sampling methodology been detailed?	X		
21	Have the groundwater sampling dates and groundwater measurements been provided?	X		
22	Has the purging methodology been detailed?	X		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	X		
24	If free-product is present, has the thickness been provided?	X		
25	Does the report include a brief discussion of the assessment done and the results?	X		
26	Does the report include a brief discussion of the aquifer evaluation and results?			X
27	Does the report include a brief discussion of the fate & transport models used?			X

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			X
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			X
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			X
31	Have recommendations for further action been provided and explained?		X	
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			X
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	X		
34	Has the current and historical laboratory data been provided in tabular format?	X		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?			X
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			X
37	Has the topographic map been provided with all required elements? (Figure 1)	X		
38	Has the site base map been provided with all required elements? (Figure 2)	X		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	X		
40	Has the site potentiometric map been provided? (Figure 5)	X		
41	Have the geologic cross-sections been provided? (Figure 6)			X
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			X
43	Has the site survey been provided and include all necessary elements? (Appendix A)		X	
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	X		
45	Is the laboratory performing the analyses properly certified?	X		
46	Has the tax map been included with all necessary elements? (Appendix C)			X
47	Have the soil boring/field screening logs been provided? (Appendix D)			X
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)			X
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)			X
50	Have the disposal manifests been provided? (Appendix G)	X		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			X
52	Has all fate and transport modeling been provided? (Appendix I)			X
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			X
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	X		

Explanation for missing and incomplete information

The directive and QAPP for this site involves the work done for a Groundwater Monitoring Report. Any information that was not required or approved in the QAPP for the scope of work was not included.

APPENDIX E

SCDHEC QAPP APPENDIX M

Appendix M: Project Status Update Form

UST Permit # 11760

Former United Exxon (Facility Name)

Date	Current Status	Deficiency	Corrective Action Taken	Date Deficiency resolved
10-23-13	Laboratory Analyticals	Relative Percentage Limit exceeded 20% between groundwater Sample & Duplicate Sample	Laboratory Review: No deficiencies were noted	10-25-13

Comments: The significant amounts of analyte in the samples & with the dilutions may be causing the wider RPD %.

Groundwater Monitoring Report
Former United Oil
401 North Congress Street, Winnsboro, South Carolina
UST Permit ID #11760; CA #46151
Cardno ATC Project No. 14.25384.0012

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

OCT 0 2 2014

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

Re: **Site Specific Work Plan Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
Permit # 11760
Releases reported August 1, 1997
Monitoring Report received October 31, 2013
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report.

To evaluate the current site conditions, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, please have your contractor develop a Site Specific Work Plan for a groundwater sampling event. Sampling should include all of the monitoring wells, trip blank, field blank, and field duplicate for BTEX, naphthalene, 1,2-DCA, MTBE, oxygenates, and EDB. The groundwater sampling event should be conducted in accordance with the UST Quality Assurance Program Plan Revision 2.0 and must be conducted in compliance with all applicable regulations. A copy of QAPP Revision 2.0 for the Underground Storage Tank Division is available at http://www.scdhec.gov/environment/docs/QAPP_Rev-2_April2013.pdf.

Please have your contractor submit the Site Specific Work Plan and Cost Agreement within thirty days of the date of this letter. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial pre-approval from the Agency must be issued before work begins**.

On all correspondence concerning this site, please reference UST Permit #11760. If you have any questions, please contact me at (803) 898-0608 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Technical File
Cardno, 400 Northeast Dr., Unit Q, Columbia, SC 29203-5182

D H E C
PROMOTE PROTECT PROSPER

Site-Specific Work Plan for Approved ACQAP
Underground Storage Tank Management Division

UST OCT 13 2014 PROGRAM

To: Reed Miner (SCDHEC Project Manager)
From: Fred Lyke (Contractor Project Manager)
Contractor: Cardno ATC UST Contractor Certification Number: 313

Facility Name: Former United Oil UST Permit #: 11760
Facility Address: 401 North Congress St., Winnsboro, SC
Responsible Party: Keenan Oil Co Inc. Phone: 803-256-0667
RP Address: 3923 West Beltline Blvd., Columbia, SC 29204
Property Owner (if different):
Property Owner Address:
Current Use of Property: Commercial Retail Store

UST 98 tech DOCKETING

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☐ Tier II
- ☑ Groundwater Sampling
- ☐ GAC
- ☐ Tier I
- ☐ Monitoring Well Installation
- ☐ Other

Analyses (Please check all that apply)

Groundwater/Surface Water:

- ☑ BTEXNMDCA (8260B)
- ☑ Oxygenates (8260B)
- ☑ EDB (8011)
- ☐ PAH (8270D)
- ☐ Lead
- ☐ 8 RCRA Metals
- ☐ TPH
- ☐ pH
- ☐ BOD
- ☐ Nitrate
- ☐ Sulfate
- ☐ Other
- ☐ Methane
- ☐ Ethanol
- ☐ Dissolved Iron

Soil:

- ☐ BTEXN
- ☐ PAH
- ☐ 8 RCRA Metals
- ☐ Oil & Grease (9071)
- ☐ TPH-DRO (3550B/8015B)
- ☐ TPH-GRO (5030B/8015B)
- ☐ Grain Size
- ☐ TOC

Air:

- ☐ BTEXN

Sample Collection (Estimate the number of samples of each matrix that are expected to be collected.)

0	Soil	1	Water Supply Wells	0	Air	2	Field Blank
28	Monitoring Wells	0	Surface Water	2	Duplicate	2	Trip Blank

Field Screening Methodology

Estimate number and total completed depth for each point, and include their proposed locations on the attached map.

# of shallow points proposed: 0 Estimated Footage: 0 feet per point
# of deep points proposed: 0 Estimated Footage: 0 feet per point
Field Screening Methodology: OVA-PID

Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: 0 Estimated Footage: 0 feet per point
# of deep wells: 0 Estimated Footage: 0 feet per point
# of recovery wells: 0 Estimated Footage: feet per point
Monitoring Well development method (consistent with SOP): centrifugal pump or submersible pump
Comments, if warranted:

UST Permit #: 11760 Facility Name: Former United Oil

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 30 Field Work Completion: 60
Report Submittal: 60 # of Copies Provided to Property Owners: 1

Aquifer Characterization
Pump Test: ☐ Slug Test: ☐ (Check one and provide explanation below for choice)
NA

Investigation Derived Waste Disposal
Soil: 0 Tons Purge Water: 300 Gallons
Drilling Fluids: 0 Gallons Free-Phase Product: 0 Gallons

Additional Details For This Scope of Work
For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.
Cardno ATC will sample monitoring wells MW-1,MW-3, MW-4R, MW-5, MW-6R, MW-8, MW-9R, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20, MW-21, MW-22, MW-23, MW-24, MW-25, MW-26, MW-27, MW-28, DMW-1, DMW-2, AND CK-1.

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
Y Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.
Name of Laboratory:
SCDHEC Certification Number:
Name of Laboratory Director:

____ Well Driller as indicated in ACQAO? (Yes/No) If no, indicate driller information below.
Name of Well Driller:
SCLLR Certification Number:

____ Other variations from ACQAP. Please describe below.

Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE

SOUTH CAROLINA

Department of Health and Environmental Control

Underground Storage Tank Management Division

State Underground Petroleum Environmental Response Bank Account

November 1, 2013

Facility Name: Former United Oil

UST Permit #: 11760 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE		TOTAL
1. **Plan Preparation**					
A1. Site-specific Work Plan	1	each	$150.00		$150.00
B1. Tax Map		each	$70.00		$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00		$0.00
2. A1. **Receptor Survey** *		each	$551.00		$0.00
3. **Survey (500 ft x 500 ft)**					
A1. Comprehensive Survey		each	$1,040.00		$0.00
B. Subsurface Geophysical Survey					
1B. < 10 meters below grade		each	$1,300.00		$0.00
2B. > 10 meters below grade		each	$2,310.00		$0.00
C1. Geophysical UST or Drum Survey		each	$910.00		$0.00
4. **Mob/Demob**					
A1. Equipment		each	$1,020.00		$0.00
B1. Personnel 9	1	each	$423.00		$423.00
C1. Adverse Terrain Vehicle		each	$500.00		$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00		$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water sample, soil sample, soil gas sample, etc.)***					
A1. Standard		per foot	$15.00		$0.00
C1. Fractured Rock		per foot	$20.20		$0.00
7. A1. **Soil Leachability Model**		each	$60.00		$0.00
8. **Abandonment (per foot)***					
A1. 2" diameter or less		per foot	$3.10		$0.00
B1. Greater than 2" to 6" diameter		per foot	$4.50		$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00		$0.00
9. **Well Installation (per foot)***					
A1. Water Table (hand augered)		per foot	$10.60		$0.00
B1. Water Table (drill rig)		per foot	$38.00		$0.00
CC. Telescoping		per foot	$50.00		$0.00
DD. Rock Drilling		per foot	$58.00		$0.00
E1. 2" Rock Coring		per foot	$30.90		$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40		$0.00
HH. Recovery Well (4" diameter)		per foot	$45.00		$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00		$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00		$0.00
K. Re-develop Existing Well		per foot	$11.00		$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product** *					
A1. Groundwater Purge	28	per well/receptor	$60.00		$1,680.00
B1. Air or Vapors		per receptor	$12.00		$0.00
C1. Water Supply	1	per well/receptor	$22.00		$22.00
D1. Groundwater (No Purge or Duplicate	2	per well/receptor	$28.00		$56.00
E1. Gauge Well only		per well	$7.00		$0.00
F1. Sample Below Product		per well	$12.00		$0.00

G1. Passive Diffusion Bag		each	$26.00		$0.00
H1. Field Blank	2	each	$24.60		$49.20

11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	35	per sample	$122.00		$4,270.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's		per sample	$60.60		$0.00
E1. Lead		per sample	$16.00		$0.00
F1. EDB by EPA 8011	33	per sample	$45.20		$1,491.60
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer		per sample	$104.00		$0.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*		per test	$191.00		$0.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	300	gallon	$0.56		$168.00
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal		ton	$60.00		$0.00
D1. Drilling fluids		gallon	$0.42		$0.00
18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00

23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
AA. 24-hour Event*		each	$3,825.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F1. Effluent Disposal		gallon	$0.44		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Delivered		each	$50.00		$0.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
II. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Coordination	12%	percent	$8,309.80		$997.18
TOTAL					$9,306.98

*The appropriate mobilization cost can be added to complete these tasks, as necessary. DHEC 0728 (11/2013)

Figure 1: Site Location Map
Former United Oil
401 North Congress Street
Winnsboro, South Carolina
UST Permit #11760

Cardno ATC
Shaping the Future

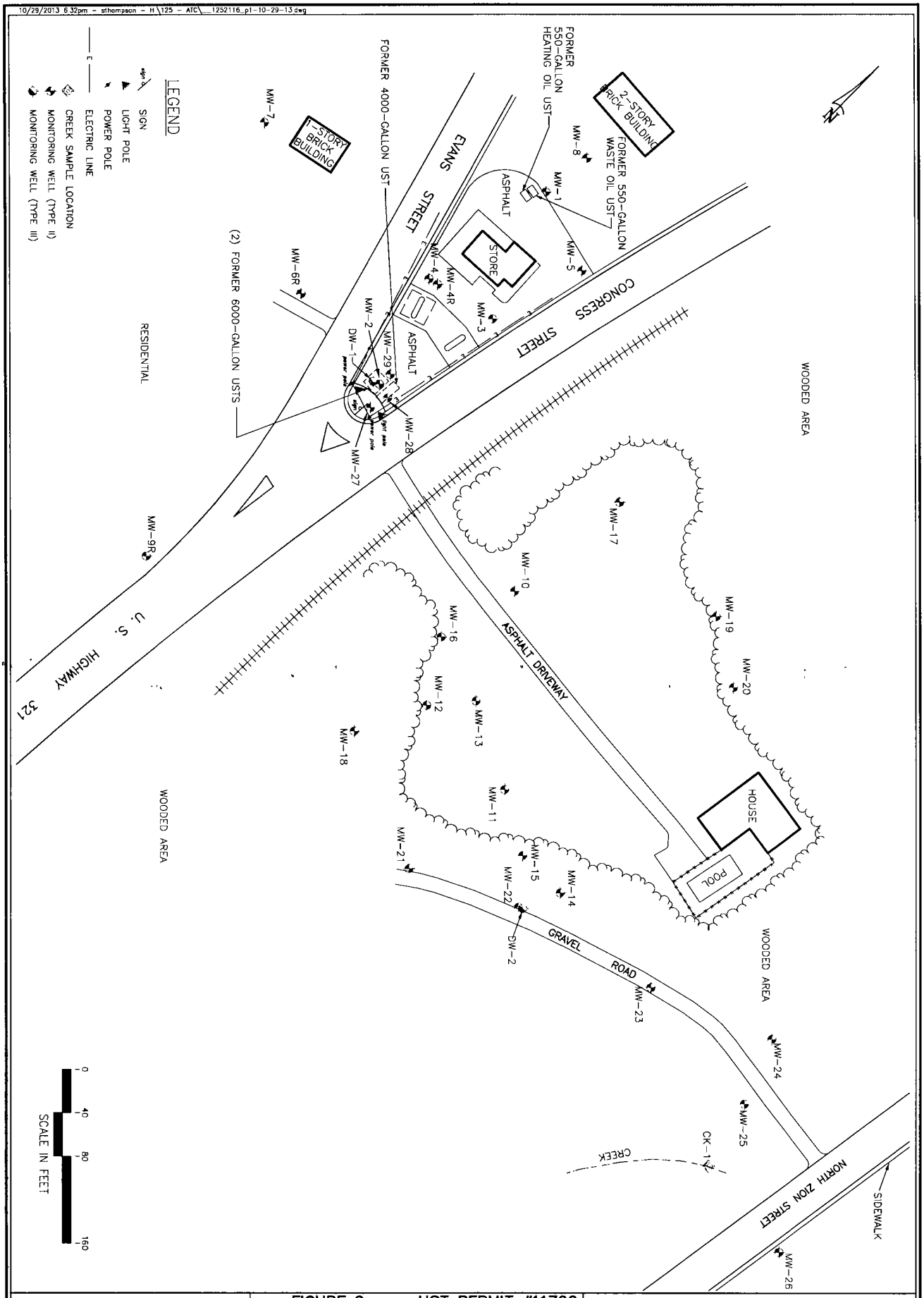
400 Northeast Drive, Unit Q
Columbia, South Carolina
P (803) 735-0003
F (803) 735-0443

ATC PROJECT No: 14.25384.0012

SOURCE: USGS Topographic Map Winnsboro, SC Quadrangle

1"= 885'

10/29/2013 6:32pm - sthompson - H:\125 - ATC__1252116_p1-10-29-13.dwg



NOTES:

TITLE **FIGURE 2** **UST PERMIT #11760**
SITE MAP
FORMER UNITED OIL
401 NORTH CONGRESS STREET
WINNSBORO, SOUTH CAROLINA

Cardno ATC
Shaping the Future
Columbia, South Carolina 29203 (803) 735-0003 FAX (803) 735-0443

CAD FILE	TYPE CODE	PREP BY	REV BY	SCALE	DATE	PROJECT NO
1252116 dwg		JK		1"=80'	10-29-2013	14.25384.0012

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

UST DOCKETING 99tech

BILLY KEENAN
KEENAN OIL CO INC
3923 W BELTLINE BLVD
COLUMBIA SC 29204

OCT 2 1 2014

Re: **Sample Directive**
Former United Oil, 401 N Congress St., Winnsboro, SC
UST Permit #11760; CA #48948
Release reported August 1, 1997
Site-Specific Work Plan received October 13, 2014
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced plan submitted on your behalf by Cardno. Sampling of the monitoring wells is necessary. All work should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) and must be conducted in compliance with all applicable regulations. A copy of Agency QAPP Revision 2.0 for the UST Management Division is available at http://www.scdhec.gov/environment/docs/QAPP_ Rev-2_April2013.pdf.

Activities at the site should begin immediately upon receipt of this letter. Cost agreement # 48948 has been approved for the amount shown on the enclosed cost agreement form for the sampling of the monitoring wells and analysis for BTEX, naphthalene, MTBE, 1,2-DCA, oxygenates, and EDB. Analyses should be in accordance with Appendix E of the QAPP to include duplicate samples, field and trip blanks.

The Monitoring Report and invoice are due within 60 days from the date of this letter. The report submitted at the completion of these activities should include the required information outlined in the QAPP. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

Cardno can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for pre-approved costs. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding the services and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval is obtained from the Agency. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by the Agency for the cost to be paid. The Agency reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, the Agency reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

Please note, if unnecessary dilutions are completed resulting in reporting limits of individual CoC in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Agency may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release.

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit #11760. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0608 or by e-mail at minerrs@dhec.sc.gov.

Sincerely,

Read S. Miner

Read S. Miner, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Cardno, 400 Northeast Dr., Unit Q, Columbia, SC 29203-5182 (with enclosure)
Technical File (with enclosure)

Approved Cost Agreement 48948

Facility 11760 UNITED EXXON

MINERRS

PO Number

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A1	SITE SPECIFIC WORK PLAN	1 0000	150 00	150 00
04 MOB/DEMOB						
		B1	PERSONNEL	1 0000	423 00	423 00
10 SAMPLE COLLECTION						
		A1	GROUNDWATER (PURGE)	28 0000	60.00	1,680.00
		C1	WATER SUPPLY	1 0000	22 00	22 00
		D1	GROUNDWATER NO PURGE/DUPLICATE	2 0000	28 00	56 00
		H1	FIELD BLANK	2 0000	24.60	49 20
11 ANALYSES						
	GW GROUNDWATER	A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	35 0000	122 00	4,270 00
		F1	EDB BY 8011	33.0000	45 20	1,491.60
17 DISPOSAL						
		AA	WASTEWATER	300 0000	0 56	168.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0 1200	8,309 80	997 18
				Total Amount		9,306 98

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment.

MR BILLY KEENAN
KEENAN ENERGY COMPANY
P O BOX 3218
COLUMBIA SC 29230-3218

DEC 14 2007

Re: Monitoring Report Directive
United Exxon, 401 North Congress Street, Winnsboro, SC
UST Permit #11760; CA #31315 and 31316
Release 2 Reported August 1, 1997
Release 3 Reported August 1, 1997
Free Product Removal Report received December 4, 2007
Fairfield County

Dear Mr. Keenan:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The Program has reviewed the referenced report submitted by ATC Associates, Incorporated on your behalf. To determine if levels of petroleum Chemicals of Concern (CoC) are increasing, decreasing, or remain, the same the UST Program requests that all monitoring wells and the stream be sampled at this time.

Assessment activities at the site should begin immediately upon receipt of this letter. Existing groundwater monitoring wells with screens that bracket the water table do no need to be purged before sampling. A sample should be collected from the stream and analyzed for BTEX, naphthalene, MtBE. Groundwater samples should be collected from all monitoring wells associated with the release and analyzed for BTEX, naphthalene, MtBE, lead, EDB, 8 oxygenates, and 1,2 DCA in accordance with *Analytical Methodology for Petroleum Releases* dated August 24, 2005. A copy of this publication is available on line at http://www.scdhec.gov/lwm/forms/analmet.pdf. Please note that all applicable South Carolina certification requirements apply to the laboratory services, well installation, and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor. The monitoring report (a signed .pdf copy on a CD is preferred) and associated invoice should be submitted on or before 60 days from the date of this letter should include the following:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable), levels of dissolved oxygen, and turbidity comments.
- Groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for the specified monitoring wells associated with the site. Unless otherwise directed by the Program, all data shall be presented in tabular form. Groundwater laboratory analytical data for all monitoring wells shall also be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.

UST PROGRAM
DOCKETING # 3

- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- Manifests for any contaminated groundwater removed from the site for treatment and/or disposal.

Cost agreement numbers 31315 and 31316 have been approved for the amount shown on the enclosed cost agreement form. ATC Associates, Incorporated can submit an invoice for direct billing from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. If the invoice and the completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please be advised if the time frame exceeds 45 days between the date when the groundwater samples are collected and the date the report of findings is received, the analytical data will not be considered current and ATC Associates, Incorporated will not be reimbursed for a personnel mobilization to collect the groundwater samples, sample collection costs, laboratory analyses, or associated disposal costs.

Please note that Sections 44-2-110(4) and 44-2-130 of the SUPERB Statute state that no costs will be allowed unless prior approval from the Program is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be preapproved by the Program for the cost to be paid. The SCDHEC reserves the authority to pay only for work properly performed and/or technically justified and will only pay rates in accordance with established criteria. Further, SCDHEC reserves the right to question and/or reject costs if deemed unreasonable and the right to audit project records at any time during the project or after completion of work.

The Program grants preapproval for transportation of virgin petroleum-contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on-site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence regarding this site, please reference UST Permit number 11760. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6669, fax me at (803) 896-6245, or e-mail me at shradeaa@dhec.sc.gov.

Sincerely,

Arthur Shrader, Hydrogeologist
Assessment Section
Assessment and Corrective Action Division
Bureau of land and Waste Management

enc: Approved Cost Agreement (ACA)

cc: ATC Associates Incorporated, 400 Northeast Drive, Unit Q, Columbia, SC 29203 (with enc.)
Technical File (with enc.)

Approved Cost Agreement 31315

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		B PERSONNEL	1.0000	275.00	275.00
10 SAMPLE COLLECTION					
		A GROUND WATER	1.0000	55.00	55.00
		D GROUNDWATER NO-PURGE	16.5000	35.00	577.50
		F SAMPLE BELOW PRODUCT	1.0000	50.00	50.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	18.5000	100.00	1,850.00
		BB 1,2-DCA	18.0000	10.75	193.50
		E LEAD	18.0000	20.00	360.00
		F EDB	18.0000	55.00	990.00
		K NITRATE	18.0000	20.00	360.00
		L SULFATE	18.0000	20.00	360.00
		M FERROUS IRON	18.0000	20.00	360.00
		N METHANE	18.0000	110.00	1,980.00
		P 8 OXYGENATES	18.0000	85.00	1,530.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	9,121.00	1,368.15
			Total Amount		10,489.15

Approved Cost Agreement 31316

Facility: 11760 UNITED EXXON
SHRADEAA
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB					
		B PERSONNEL	1.0000	275.00	275.00
10 SAMPLE COLLECTION					
		A GROUND WATER	1.0000	55.00	55.00
		D GROUNDWATER NO-PURGE	16.5000	35.00	577.50
		F SAMPLE BELOW PRODUCT	1.0000	50.00	50.00
11 ANALYSES					
	GW GROUNDWATER	A BTEX+NAPTH+MTBE	18.5000	100.00	1,850.00
		BB 1,2-DCA	18.0000	10.75	193.50
		E LEAD	18.0000	20.00	360.00
		F EDB	18.0000	55.00	990.00
		K NITRATE	18.0000	20.00	360.00
		L SULFATE	18.0000	20.00	360.00
		M FERROUS IRON	18.0000	20.00	360.00
		N METHANE	18.0000	110.00	1,980.00
		P 8 OXYGENATES	18.0000	85.00	1,530.00
17 DISPOSAL					
		A1 WASTEWATER - PURGING/SAMPLING	2.0000	90.00	180.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	9,121.00	1,368.15
			Total Amount		10,489.15