CTSI

LOG OF Boring

Page 1 OF 2 ~~1 of 1~~

Site Name:	Broad River Amoco	Method:		Total Depth (ft):	
Project Number:	18-6580	Sampling Method:		Measuring Point Elev. (ft-msl):	Grade
Location:	Columbia SC	Subcontractor/Drillers:	Elite Tech/ Dearal rogers	Latitude	
Date/Time Started:	MARCH 22 2019	SC Registration:	NA	Longitude	
~~Date/Time Completed~~:	KEVIN WESSINGER	Monitoring Equipment:	NA	Geologist/Engineer:	William D Wood

ft-bgs = bgs

SOIL DESCRIPTION

ft-bgs

FRESH AIR CALIBRATION

ISOBUTYLENE GAS 100ppm

LOCATION	TIME	READING	NOTE:
SMH #1	17:30	7.6	
SMH #2	17:33	5.0	
SMH #3	17:39	2.5	
CLEANOUT	17:38	2.0	1208
	17:36	3.8	1218
↓	17:35	2.1	1230

COMMENTS:

NOTES:
in - indicates inches
ft - indicates depth in feet
ft-bgs - indicates feet below ground surface
ft-msl - indicates feet above mean sea level
N/A - indicates not applicable to this boring
MC - 4-foot Macrocore sampler
SS - Split Spoon sampler

CTSI

LOG OF Boring

Site Name:	Broad River Amoco	Method:		Total Depth (ft):	
Project Number:	18-6580	Sampling Method:		Measuring Point Elev. (ft-msl):	Grade
Location:	Columbia SC	Subcontractor/Drillers:	Elite Tech/ Dearal rogers	Latitude:	
Date/Time Started:	MARCH 25 2019	SC Registration	NA	Longitude	
~~Date/Time Completed:~~	KEVIN WESSINGER	Monitoring Equipment:	NA	Geologist/Engineer:	William D Wood

ft-bgs | SOIL DESCRIPTION | ft-bgs

FRESH AIR CALIBRATION
9:10AM 0.0 ppm

ISOBUTYLENE GAS 100ppm
9:12AM 104 ppm

LOCATION	TIME	READING	NOTE:
SMH #1	9:50	62.5	
SMH #2	9:54	7.3	
SMH #3	10:03	2.8	
CLEANOUT	10:01	2.4	1208
↓	9:59	3.1	1218
↓	9:56	7.5	1230
SMH #1	11:50	66.7	
SMH #2	11:54	34.7	
SMH #3	12:05	6.2	
CLEANOUT	12:02	6.5	1208
↓	12:00	4.2	1218
↓	11:58	17.5	1230

COMMENTS:

NOTES:
in - indicates inches
ft - indicates depth in feet
ft-bgs - indicates feet below ground surface
ft-msl - indicates feet above mean sea level
N/A - indicates not applicable to this boring
MC - 4-foot Macrocore sampler
SS - Split Spoon sampler

CTSI

LOG OF Boring

Site Name:	Broad River Amoco	Method:		Total Depth (ft):	
Project Number:	18-8580	Sampling Method:		Measuring Point Elev. (ft-msl):	Grade
Location:	Columbia SC	Subcontractor/Drillers:	Elite Tech/ Dearal rogers	Latitude	
Date/Time Started:	MARCH 25 2019	SC Registration	NA	Longitude	
~~Date/Time Completed~~	KEVIN WESSINGER	Monitoring Equipment:	NA	Geologist/Engineer:	William D Wood

SOIL DESCRIPTION

FRESH AIR CALIBRATION — ISOBUTYLENE GAS 100ppm

LOCATION	TIME	READING	NOTE:
SMH# 1	16:25	28.3	
SMH#2	16:29	12.5	
SMH#3	16:38	2.3	
CLEANOUT	16:35	3.7	1208
7	16:33	2.7	1218
7	16:31	11.1	1230

COMMENTS:

NOTES:
in - indicates inches
ft - indicates depth in feet
ft-bgs - indicates feet below ground surface
ft-msl - indicates feet above mean sea level
N/A - indicates not applicable to this boring
MC - 4-foot Macrocore sampler
SS - Split Spoon sampler

MW-R2

WASTE
FLAMMABLE LIQUID
FLAMMABLE LIQUID

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

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

FEB 2 3 2012

FREDRICK N CECCHINI
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
COLUMBIA SC 29210-4009

UST 16 tul DOCKETING

Re: Required Revision of Site Specific QAPP Contractor Addendum
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946
Release reported January 4, 2011
Tier I Report received April 11, 2011
Monitoring Well Installation Report received June 21, 2011
QAPP Contractor Addendum for Tier II Directive dated January 20, 2012
QAPP Contractor Addendum received February 21, 2012
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the Quality Assurance Program Plan (QAPP) submitted by Enviro Services on your behalf. The following deficiencies must be corrected before approval of the QAPP Contractor Addendum:

- Signature by both laboratories.
- Need to include GCAL in Table 2A. This should be the same entry as in Table A1 on page 4.
- Section A8 Table 3A needs to list the OSHA training dates for all on site personnel (Terry Tate and Rick Dowell as a minimum).
- Section B2. Well purging must be in accordance with Page 92 of the Master QAPP. Please include turbidity meter in Table 13A.
- Appendix C. Please include a blank Access Analytical, Incorporated Chain of Custody form.

A revised Site Specific QAPP Contractor Addendum for Broad River Amoco is due on or before March 16, 2012. Please reference UST Permit number 11946 on all correspondence. If you have any questions, please contact me by phone at (803) 896-6669, by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

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

cc: Enviro-Test Services, PO Box 2237, Irmo, SC 29063
Technical File

RE: Vapor sampling

Michael Faris <mfaris@armenv.com>

Tue 5/7/2019 12:09 PM

To: Moores, Carolyn T. <mooresct@dhec.sc.gov>;

Cc: Thoma, Debra L. <thomadl@dhec.sc.gov>;

1 attachments (42 KB)

BroadRiverAmoco_May2019 SoilGas&Air proposal.pdf;

*** Caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. ***
Carolyn,
Please find attached the cost proposal for soil vapor and indoor/outdoor, as well as crawl space, air sampling at the Broad River BP / Play Pals site.
The setup, locations, and quantity (12) of samples are proposed to be identical to what was collected the last time at this site as summarized in the March 2019 Emergency Response Report.

We can schedule the sampling immediately upon your approval.

Michael

Michael L. Faris, P.G.
ARM Environmental Services, Inc.
1210 First Street South

Columbia, SC 29209
www.armenv.com
ph: 803 783-3314
cell: 803 269-3913

From: Moores, Carolyn T. [mailto:mooresct@dhec.sc.gov]
Sent: Wednesday, April 10, 2019 3:30 PM
To: terryteate@aol.com
Cc: Michael Faris <mfaris@armenv.com>; Thoma, Debra L. <thomadl@dhec.sc.gov>
Subject: Vapor sampling

Terry,

We need to get another round of the air quality sampling that ARM performed last year at the Broad River Road Play Pals site before we put the bid out. It would be the same as before, using the sub slab sample ports, the ambient air, indoor air, and crawlspace sampling for BTEX vapors.

Can you please send a cost proposal for this? Then I can get you a cost agreement and a notice to proceed, since we don't have preset rates for this.

Thank you,

Carolyn Moores
Hydrogeologist
Corrective Action & Quality Assurance
UST Management Division
Bureau of Land & Waste Management

2600 Bull Street
Columbia SC 29201-1708
Office: (803) 898-2622
Fax: (803) 898-0673

ARM
ENVIRONMENTAL SERVICES

Broad River BP; UST Permit #11946; 4335 Broad River Rd., Columbia, SC
Indoor / Outdoor Air & Sub-Slab Soil Vapor Sampling - Proposal

Description	Amount
Personnel mobilization (@ $423 - ACI #4.B1)	$ 846.00
Personnel: Project Scientist & Tech 2 to conduct leak tests, deploy, collect samples, collect equipment	$ 3,497.00
FedEx Standard Overnight delivery of SUMA Cannisters for air sampling (12 cannisters)	$ 1,150.00
Laboratory Air Analysis: TO-15 for indoor/outdoor air & subslab soil vapor (12 samples)	$ 3,300.00
Subtotal	$ 8,793.00
Project Management & Reporting	$ 1,055.16
Total	**$ 9,848.16**

CTSI

Geotechnical

Materials

Environmental

TRANSMITTAL FORM

TO: Mr. Ed Mendenhall	FROM: William Wood
Underground Storage Tank Management	CTSI
Bureau of Land and Waste Management	P O Box 115
2600 Bull Street, Columbia, SC 29201	Irmo SC 29063
SUBJECT:	
Broad River Amoco, site 11946	DATE: 5/21/2019

The Following Items Are:

X ENCLOSED o REQUESTED o SENT SEPARATELY VIA_____

Item	No. Copies	
1	1	Broad River Amoco 11946, Tier II IDW - Soil Disposal
2		Manifest and Weight Ticket
3		
4		
5		

These Items Are Submitted:

X As Requested o For Your Review and Comment o For Your Information

o For Your Files o For Your Signature X For Approval

Comments:

As indicated in the Tier II report, attached please find documentation of IDW soil diposal at the Waste Management Richland County landfill in Elgin SC

By: William Wood

Carolina Technical Services, Inc.
1111 Interstate Blvd., Florence, SC 29501
Phone 843-610-1953

WASTE MANAGEMENT

Richland County LF
1047 Highway Church Road
Elgin, SC, 29045
Ph: (803) 788-3054

Original
Ticket# 1667573

Customer Name WMCOLUMBIAHAULI0000016 WM-COL
Ticket Date 04/23/2019
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO 18-6580
Profile 610168SC (PETROLEUM PRODUCT IMPACTED SOIL)
Generator 126-BROADRIVERCSTORE BROAD RIVER C STORE

Carrier WM COLA HA Columbia Hauling
Vehicle# 417025
Container
Driver
Check#
Billing # 0000016
Gen EPA ID N/A
Volume

	Time	Scale	ScaleMaster
In	04/23/2019 11:47:34	Inbound #2	kenny1
Out	04/23/2019 12:11:03	Outbound	kenny1

Comments

Gross	54700 lb
Tare	33060 lb
Net	21640 lb
Tons	10.82

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	Special Misc-Tons-	100	10.82	Tons				40-RICHLAN

T-584224

Total Fees
Total Ticket

SIGNATURE

403\WM

NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST	1. Generator's US EPA ID No.	Manifest Doc No.	2. Page 1 of

GENERATOR

3. Generator's Mailing Address:	Generator's Site Address (if different than mailing):	A. Manifest Number
BROAD RIVER C STORE LLC 4335 BROAD RIVER ROAD COLUMBIA, SC 29210 4. Generator's Phone 843-610-1953		B. State Generator's ID

5. Transporter 1 Company Name	6. US EPA ID Number	C. State Transporter's ID D. Transporter's Phone
7. Transporter 2 Company Name	8. US EPA ID Number	E. State Transporter's ID F. Transporter's Phone
9. Designated Facility Name and Site Address **RICHLAND COUNTY LANDFILL, INC.** **1047 HIGHWAY CHURCH ROAD** **ELGIN, SC 29045**	10. US EPA ID Number	G. State Facility ID 402401-1101 H. State Facility Phone **803-744-3373**

11. Description of Waste Materials	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.	I. Misc. Comments
a PERTROLEUM PRODUCT IMPACTED SOIL WM Profile # 610168SC					
b. WM Profile #					
c. WM Profile #					
d. WM Profile #					

J. Additional Descriptions for Materials Listed Above	K. Disposal Location			
	Cell		Level	
	Grid			

15. Special Handling Instructions and Additional Information
RICHLAND COUNTY

Purchase Order # 18-6580 EMERGENCY CONTACT / PHONE NO.:

16. GENERATOR'S CERTIFICATE:
I hereby certify that the above-described materials are not hazardous wastes as defined by 40 CFR Part 261 or any applicable state law, have been fully and accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.

Printed Name	Signature "On behalf of"	Month	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year
WILLIAM WOODS	Millard Wood for Broad River C Store	4	23	2019

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year
Floyd Anderson	Floyd Anderson	4	23	2019

FACILITY

19. Certificate of Final Treatment/Disposal
I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.

Printed Name	Signature	Month	Day	Year
Kenneth Robbins		4	23	19

Healthy People. Healthy Communities.

CERTIFIED MAIL
9214 8969 0099 9790 1414 8842 69

MAY 2 3 2019

MR FREDERICK CECCHINI
429 PRESS LINDLER ROAD
COLUMBIA SC 29212

Re: **Notice of Alleged Violation**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit #11946
Release Reported January 4, 2011
Directive for Report of February Abatement Activities dated March 20, 2019
Richland County

Dear Mr. Cecchini:

Late Report:
The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) directed you on March 20,2019 to complete a February Abatement Activity Report with the report due within <30> days. To date the required report has not been received.

Additionally, a summary is needed of Enviro-Test response activities for the dates prior to ARM's involvement (November 16, 2018 through November 26, 2018). Also, please clarify if the ARM report includes all of the response activities by Enviro-Test from November 26, 2018 through January 31, 2019 or if the report is detailing solely ARM's activities. If any additional work was performed by Enviro-Test from November 26, 2018 through January 31st that is not included in the ARM report, a summary is needed detailing these activities, as was requested in the letter dated February 4, 2019.

In accordance with Section 280.65 of the South Carolina Underground Storage Tank Regulations, the assessment must be conducted as chemicals of concern are above Risk-Based Screening Levels (RBSLs). Implementation of this scope of work should proceed upon receipt of this correspondence.

Please submit the reports on or before June 24,2019. Should you not submit the report on or before this date, this office will initiate further enforcement action.

On all correspondence regarding this site, please reference UST Permit #11946. If you have any questions concerning this correspondence, please call me at (803) 898-2622, e-mail me at mooresct@dhec.sc.gov, or fax me at (803) 898-0673.

Sincerely,
Carolyn T Moores
Carolyn Moores, Hydrogeologist
Corrective Action and Quality Assurance Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Enviro-Test Services, Inc., P.O Box 2237, Irmo, Sc 29063
Technical File

dhec
Healthy People. Healthy Communities.

CERTIFIED MAIL
9214 8969 0099 9790 1414 8842 52

MAY 2 3 2019

UST 16 DOCKETING

MR FREDERICK N CECCHINI
429 PRESS LINDLER ROAD
COLUMBIA SC 29212-8322

Re: **Request for April 2019 Activities Report**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946
Release reported January 4, 2011
Summary report received March 26, 2019
Richland County

Dear Mr. Cecchini:

The UST Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed the referenced report submitted by ARM Environmental Services Inc. (ARM) on behalf of Enviro-Test Services, Inc. (Enviro-Test). The next appropriate step for this site is a report documenting the abatement activities on the site for the month of April, 2019. This report should include the dates and descriptions of the work performed and the quantities of free product and contaminated storm water recovered and any other notable observations. It should also include recommendations of solutions for remediation and restoration of the impacted facility and adjacent properties.

Please have your contractor complete and submit the report detailing the April 2019 abatement activities within thirty (30) days of the date of this letter.

The letter that was sent with the waste disposal manifests had no dates of the seven vacuum recovery events listed. This is not sufficient to pay the invoice, as no other documentation was received.

On all correspondence regarding this site, please reference UST Permit # 11946. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-2622, by fax at (803) 898-0673, or by e-mail at mooresct@dhec.sc.gov.

Sincerely,

Carolyn T Moores

Carolyn Moores, Hydrogeologist
Corrective Action & Quality Assurance Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Enviro-Test Services, Inc., PO Box 2237, Irmo, SC 29063
Technical File

dhec
Healthy People. Healthy Communities.

MAY 2 9 2019

UST 164 DOCKETING

MR FREDERICK N CECCHINI
429 PRESS LINDLER ROAD
COLUMBIA SC 29212-8322

Re: **Air Quality Vapor Sampling Directive**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST# 11946; CA# 59677
Release reported January 4, 2011
Cost Proposal received May 7, 2019
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed the referenced Cost Proposal submitted on your behalf by Enviro-Test Services, Inc. The next appropriate scope of work at the site is an air quality vapor sampling event. All work should be conducted in accordance with Enviro-Test Services, Inc.'s approved Annual Contractor Quality Assurance Plan (ACQAP), industry standards, and must be conducted in compliance with all applicable regulations. Enviro-Test Services, Inc. can use the UST Quality Assurance Program Plan (QAPP) Revision 3.1 as a guideline. A copy of the UST QAPP is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Air quality vapor sampling activities at the site should begin immediately upon receipt of this letter. Cost agreement #59677 has been approved for the amount shown on the enclosed cost agreement form for conducting the sampling associated with the referenced release. Air quality samples should be collected and analyzed for BTEX, naphthalene, MTBE, 1, 2-DCA.

In accordance with Enviro-Test Services, Inc.'s ACQAP, a weekly status report of the project should be provided via e-mail. If any quality assurance problems arise, you must contact me within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered, including quality assurance problems, the actions taken, and the results must be included in the final report submitted to the UST Management Division.

The Monitoring Report, contractor checklist (QAPP Appendix K), 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 Enviro-Test Services, Inc.'s ACQAP. 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.

Enviro-Test Services, Inc. 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 laboratory 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 from DHEC is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by DHEC for the cost to be paid. DHEC 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, DHEC 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 chemicals of concern (CoC) in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Division 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.

DHEC 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 Enviro-Test Services, Inc.'s ACQAP. 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 #11946. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-2622, by fax at (803) 898-0673, or by email at mooresct@dhec.sc.gov.

Sincerely,

Carolyn T Moores

Carolyn Moores, Hydrogeologist
Corrective Action & Quality Assurance Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Enc: Approved Cost Agreement

Cc: Enviro-Test Services, Inc., PO Box 2237, Irmo, SC 29063 (w/enc)
ARM Environmental Services, Inc., 1210 First Street South, Columbia, SC 29209 (w/ enc)
Technical File (w/ enc)

Approved Cost Agreement 59677

Facility: 11946 BROAD RIVER AMOCO
MOORESCT
PO Number:

Task / Description Categories	Item Description	Qty / Pct	Unit Price	Amount
04 MOB/DEMOB				
	B1 PERSONNEL	2.0000	$423.000	846.00
18 MISCELLANEOUS				
	12 CANNISTERS AND DELIVERY	1.0000	$1,150.000	1,150.00
	CANNISTERS AND DELIVERY	1.0000	$3,497.000	3,497.00
	LAB ANALYSIS FOR INDOOR, OUTDOOR, AND SUBL	12.0000	$275.000	3,300.00
19 RPT/PROJECT MNGT & COORDINATIO				
	PRT REPORT PREPARATION	0.1200	$8,793.000	1,055.16
		Total Amount		9,848.16

UST 165 Tech Meeting
UST MAY 30 2019 PROGRAM

dhec

Site-Specific Work Plan for Approved ACQAP
Underground Storage Tank Management Division

To: Jeffery Mendenhall (SCDHEC Project Manager)
From: William Wood (Contractor Project Manager)
Contractor: Carolina Technical Services, Inc UST Contractor Certification Number: 263

Facility Name: Broad River Amoco UST Permit #: 11946
Facility Address: 4335 Broad River Rd. Columbia SC
Responsible Party: Broad River C Store LLC Phone: 803-477-7575
RP Address: 41 Cromwell Court, Irmo SC 29063
Property Owner (if different):
Property Owner Address:
Current Use of Property: Convenience store

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☐ Tier I
- ☐ Tier II
- ☐ Monitoring Well Installation
- ☐ Groundwater Sampling
- ☑ Other Free Product Recovery, AFVR
- ☐ GAC

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

Drinking Water Supply Wells:

- ☐ BTEXNMDCA (524.2)
- ☐ Oxygenates & Ethanol (8260B)
- ☐ Mecury (200.8 245.1 or 245.2)
- ☐ RCRA Metals (200.8)
- ☐ EDB (504.1)

Soil:

- ☐ BTEXNM
- ☐ Lead
- ☐ RCRA Metals
- ☐ PAH
- ☐ 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.)

_____ Soil _____ Water Supply Wells _____ Air _____ Field Blank
_____ Monitoring Wells _____ Surface Water _____ Duplicate _____ 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: _____ Estimated Footage: _____ feet per point
# of deep points proposed: _____ Estimated Footage: _____ feet per point
Field Screening Methodology: _____

Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: _____ Estimated Footage: _____ feet per point
# of deep wells: _____ Estimated Footage: _____ feet per point
# of recovery wells: _____ Estimated Footage: _____ feet per point
Comments, if warranted:

_____

_____

UST Permit #: 11946 Facility Name: Broad River Amoco

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 3 days following approval Field Work Completion: 90 days following approval
Report Submittal: 30 days following completion # of Copies Provided to Property Owners: _____

Aquifer Characterization
Pump Test: ☐ Slug Test: ☐ (Check one and provide explanation below for choice)

Investigation Derived Waste Disposal
Soil: _____ Tons Purge Water: 4000 Gallons
Drilling Fluids: _____ Gallons Free-Phase Product: 450 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.

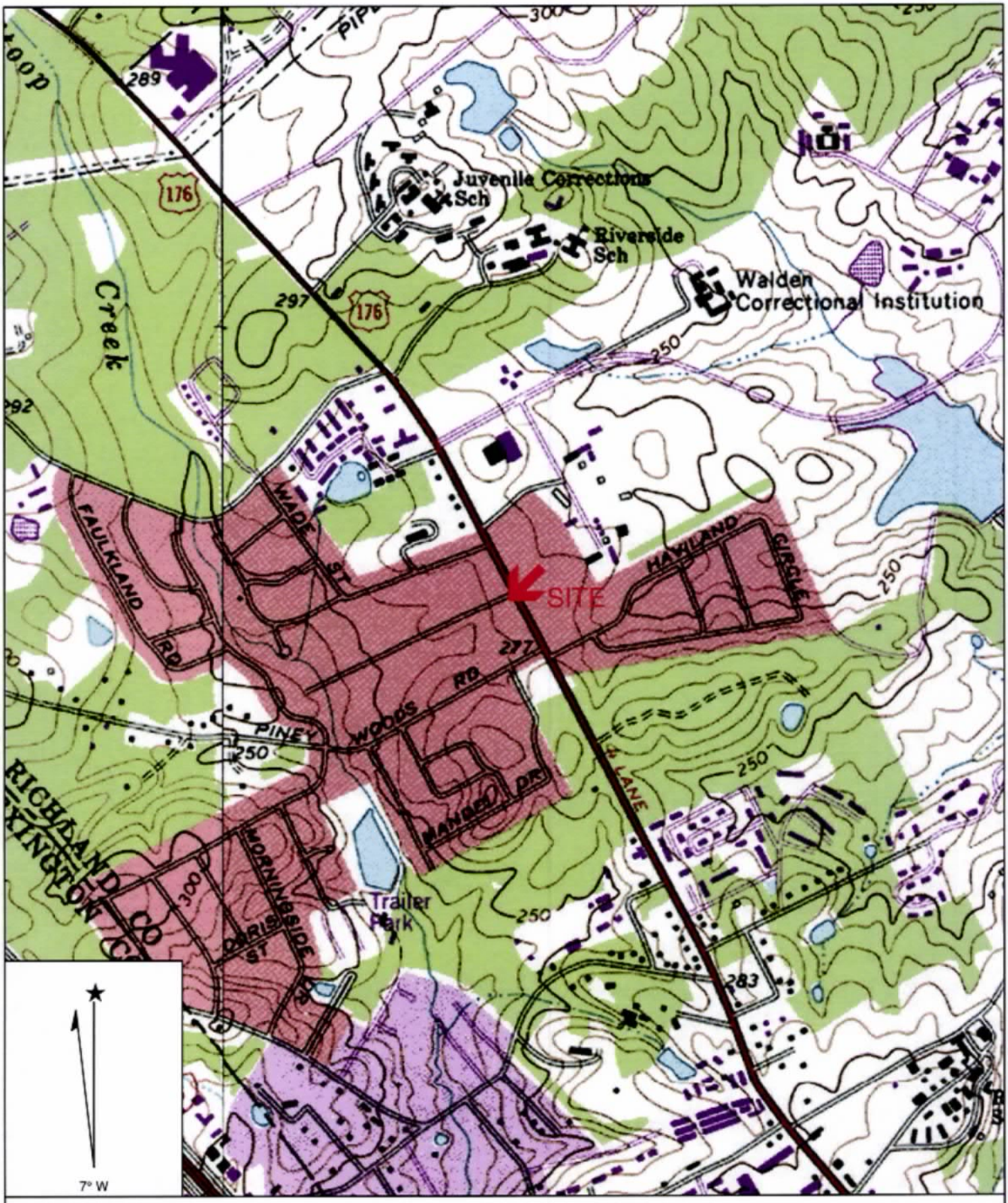
Free product will be pumped from recovery and monitoring wells three days per week for 13 weeks, dependent upon free prodcut accumulation rates
Selected wells will be gauged on a regular basis for free product presence
An 8 hour AFVR will be conducted in in UST pit area using Recovery wells RW-A and RW-B. Minimal stenger depth so that excessive drawdown is avoided

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
____ 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 ACQAP? (Yes/No) If no, indicate driller information below.
Name of Well Driller: _____
SCLLR Certification Number: _____

____ Other variations from ACQAP. Please describe below.

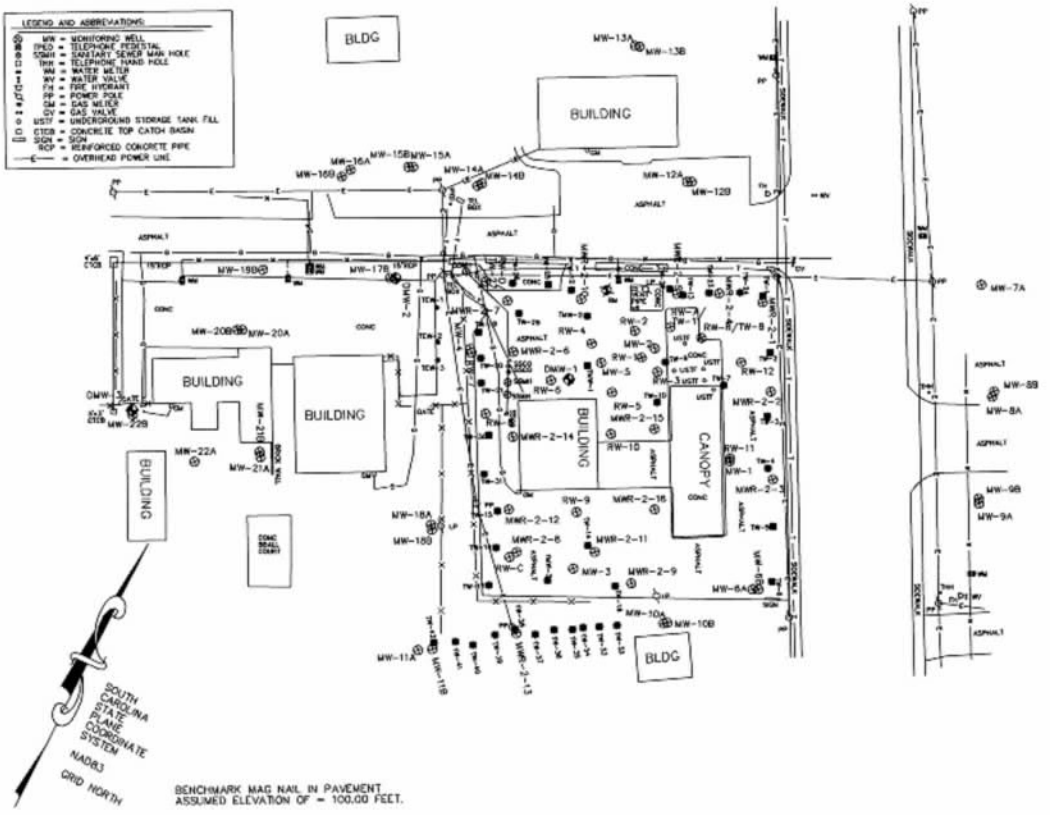
Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location 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



Name: COLUMBIA NORTH
Date: 5/8/2019
Scale: 1 inch equals 1000 feet

Location: 034° 03' 54.9" N 081° 07' 01.6" W
Caption: Figure 1
Broad River Amoco, Site 11946
CTSI Proj. No. 18-6580

Copyright (C) 1997, Maptech, Inc.



CTSI
Geotechnical Engineering and Environmental Services
IRMO, SOUTH CAROLINA

Date: 4/19/19 | SCALE:SEE GRAPHIC | Dwg: BASEMAP

FIGURE 2A
BROAD RIVER AMOCO
UST ID#11946
CTSI PROJ. 18-6580
COLUMBIA
SOUTH CAROLINA

☒ http://dhecnet/co/cr/docs/Temp/JP...

ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account
June 15, 2017

Facility Name: **Broad River Amoco**

UST Permit #: 11946 **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	1	each	$1,020.00	$1,020.00
B1. Personnel	40	each	$423.00	$16,920.00
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 ssample, soil sample, soil gas sample, etc.)***				
AA. 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		per well/receptor	$60.00	$0.00
B1. Air or Vapors		per receptor	$12.00	$0.00
C1. Water Supply		per well/receptor	$22.00	$0.00
D1. Groundwater No Purge or Duplicate		per well/receptor	$28.00	$0.00
E1. Gauge Well only	325	per well	$7.00	$2,275.00
F1. Sample Below Product		per well	$12.00	$0.00
G1. Passive Diffusion Bag		each	$26.00	$0.00
H1. Field Blank		each	$24.60	$0.00
I. Groundwater (low flow purge)		per well/receptor	$91.00	$0.00
11. Laboratory Analyses-Groundwater				
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(8260B)		per sample	$122.00	$0.00
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		per sample	$45.20	$0.00
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-Drinking Water				
L. BTEXNM+1,2 DCA (524.2)		per sample	$124.05	$0.00
M. 7-OXYGENATES & ETHANOL (8260B)		per sample	$91.75	$0.00
N. EDB (504.1)		per sample	$79.50	$0.00
O. RCRA METALS (200.8)		per sample	$100.00	$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		gallon	$0.56		$0.00
BB. Free Product	400	gallon	$0.50		$200.00
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*	1	each	$1,375.00		$1,375.00
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	1	per event	$122.50		$122.50
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	1	per event	$780.00		$780.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F1. Effluent Disposal	4000	gallon	$0.44		$1,760.00
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 Management	12%	percent	$24,602.50		$2,952.30
TOTAL					$27,554.80

DHEC 2495 6-2017 *The appropriate mobilization cost can be added to complete these tasks, as necessary

dhec
Healthy People. Healthy Communities.

MR FREDERICK N CECCHINI
429 PRESS LINDLER ROAD
COLUMBIA SC 29212-8322

MAY 2 9 2019

Re: **Cost Agreement for ongoing FP containment measures**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946; CA# 59552
Release reported January 4, 2011
MW Replacement report received April 9, 2019
Richland County

Dear Mr. Cecchini:

The UST Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed the referenced report submitted by Enviro-Test Services, Inc. (Enviro-Test). To address the current site conditions that began in November of 2018, and the containment of migrating free product, DHEC has written a cost proposal for removing and disposing of the accumulating free product on the adjacent Play Pals property downgradient from the site.

The cost proposal includes costs for weekly vacuuming and removal of the free product from the trenches and areas where it collects as well as removing free product and storm water from trenches after rain events and disposal. Additionally, the cost proposal includes expenses relating to the prevention of plume migration such as boom replacement in areas that are at risk of contributing to surface water contamination and to prevent migration.

On all correspondence regarding this site, please reference UST Permit # 11946. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-2622, by fax at (803) 898-0673, or by e-mail at mooresct@dhec.sc.gov.

Sincerely,

Carolyn T Moores

Carolyn Moores, Hydrogeologist
Corrective Action & Quality Assurance Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Enviro-Test Services, Inc., PO Box 2237, Irmo, SC 29063
Technical File

Approved Cost Agreement 59552

Facility: 11946 BROAD RIVER AMOCO
MOORESCT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
17 DISPOSAL						
		AA	WASTEWATER	6,500.0000	$0.560	3,640.00
		BB	FREE PRODUCT	100.0000	$0.500	50.00
18 MISCELLANEOUS						
			ARM INVOICE 0319 B	1.0000	$6,203.040	6,203.04
			ENVIRO-TEST INVOICE A	1.0000	$16,000.000	16,000.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0.1200	$25,893.040	3,107.16
					Total Amount	29,000.20

dhec
Healthy People. Healthy Communities.

MAY 3 1 2019

UST 167 DOCKETING

MR PAUL DESAI
BROAD RIVER C STORE LLC
41 CROMWELL COURT
IRMO, SC 29063

Re: Free Product Removal Notice to Proceed
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit #11946; CA #59685
Release #2 reported November 16, 2018
Site-Specific Work Plan and cost proposal received May 17, 2019
Richland County

Dear Mr. Desai:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed and approved the referenced Site-Specific Work Plan (SSWP) submitted by your contractor. All work should be conducted in accordance with the most recent revision of the UST Quality Assurance Program Plan (QAPP), your contractor's Annual Contractor Quality Assurance Plan (ACQAP) and in compliance with all applicable regulations. A copy of the current revision of the UST QAPP is available for reference at https://scdhec.gov/environment/land-waste/underground-storage-tanks/release-assessment-clean/quality-assurance.

The Cost Agreement (CA) 59685 above has been approved for the amount shown on the enclosed cost agreement form. Please note the following changes to the cost agreement and SSWP:

- Item 4A Equipment Mob has been removed.
- Item 4B Personnel Mob has been reduced from 40 to 15.
- Item 23G AFVR Mobilization/Demobilization has been increased from 0 to 1.

The Contractor must provide the UST Project Manager with a weekly status report via e-mail to include depth to free product, depth to ground water and groundwater elevation in tabular format. The Free Product (FP) removal is to be performed for 4 weeks beginning June 3, 2019 and ending June 30, 2019. All onsite monitoring wells and recovery wells are to be gauged prior to the beginning of FP removal, with a final gauging event for the same wells to be completed on July 5, 2019. The UST Project Manager must be notified via email 4 days prior to initiation of any site rehabilitation activities. If there are any changes or conflicts with the date(s) of site activities, the UST Project Manager must be contacted within 24 hours of those changes. All reports submitted for these activities should include the required information outlined in the UST QAPP. **The Final FP Removal and Gauging Report needs to be submitted via e-mail on July 8, 2019 with the hard copy due July 12, 2019.**

Your contractor 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. 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 Section 44-2-130 of the SUPERB Statute states that no costs will be allowed unless prior approval is obtained from the Department. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved 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.

Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. Any site rehabilitation activity associated with the UST release must be performed by a DHEC-certified site rehabilitation contractor as required by R.61-98.

The Division grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility following each sampling event. 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 each report. If the Chemical of Concern (CoC) concentrations based on laboratory analysis is 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 regarding this site, please reference UST Permit #11946. Should you have any questions regarding this correspondence, please feel free to contact me by phone at (803) 898-7542, by fax at (803) 898-0673, or by e-mail at mendenje@dhec.sc.gov.

Sincerely,

Jeffrey E Mendenhall

Ed Mendenhall, Hydrogeologist
Assessment & Unregulated Petroleum Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)

cc: Carolina Technical Services, Inc., 7130-A Broad River Road, Irmo, SC 29063 (w/enc)
Technical file (w/enc)

Approved Cost Agreement 59685

Facility: 11946 BROAD RIVER AMOCO
MENDENJE
PO Number:

Task / Description Categories	Item Description	Qty / Pct	Unit Price	Amount
01 PLAN				
	A1 SITE SPECIFIC WORK PLAN	1.0000	$150.000	150.00
04 MOB/DEMOB				
	B1 PERSONNEL	15.0000	$423.000	6,345.00
10 SAMPLE COLLECTION				
	E1 GAUGE WELL ONLY	325.0000	$7.000	2,275.00
17 DISPOSAL				
	BB FREE PRODUCT	400.0000	$0.500	200.00
19 RPT/PROJECT MNGT & COORDINATIO				
	PRT REPORT PREPARATION	0.1200	$12,619.000	1,514.28
23 EFR				
	A1 8 HOUR EVENT	1.0000	$1,375.000	1,375.00
	C1 OFF GAS TREATMENT 8 HOUR	1.0000	$122.500	122.50
	F1 EFFLUENT DISPOSAL	4,000.0000	$0.440	1,760.00
	G AFVR EQUIPMENT MOB	1.0000	$391.500	391.50
		Total Amount		14,133.28

follow up email from 5/30/19 meeting

Moores, Carolyn T.

Thu 5/30/2019 3:14 PM

To: terryteate@aol.com <terryteate@aol.com>;

1 attachments (392 KB)

11946 AQVS Directive and CA59677.pdf;

Terry,

I have included the air sampling directive as a .pdf attachment. The document was mailed yesterday, so you should receive it any day now. The CA# for the air sampling is 59677.

The May activities CA# is 59552.

As discussed in the meeting, DHEC needs a report (individual reports by month or a report covering multiple months) detailing monthly abatement activities from the months of February, March, April, May (and eventually June) 2019. It was our understanding that you would be submitting a report detailing the activities for the months of February through May by June 7. Please note, upon receipt of that report, the invoice received for the April abatement activities will be processed for payment.

Thank you for your work in controlling runoff at the site while assessment was ongoing. I have included some report guidance for your reference below:

****

Section A9 of the QAPP contains required elements for submitted reports. I have pulled out what I think is most important:

A. Introduction
1. UST Facility Name, Permit Number, Address, and Telephone Number.
2. UST Owner's and Operator's name, Address, and Telephone Number.
3. Property Owner's Name, Address, and Telephone Number.
4. DHEC Certified UST Site Rehabilitation Contractor's Name, Address, Telephone Number, and Certification Number

F. AFVR Information
1. A brief description of each completed work scope and any relevant descriptions pertaining to data tables generated.
4. The total volume of water recovered (gallons) for each event.
5. The total volume of free phase product (FPP) recovered in gallons for each event.
8. A scaled base map depicting the location of the extraction wells (trenches) (Figure 2)
9. An original copy of the weight ticket and disposal manifest from the permitted treatment facility that clearly designates the quantity of effluent received, applicable permit numbers, and dates must be included as Appendix H in the final report.

J. Figures
1. Topographic Map - the report shall include a copy of the relevant portion of a USGS 7.5 min topographic map showing the site location and the locations of all public and private water supply wells and other potential receptors within 1,000 feet of the site or within 500 feet of the down gradient edge of the plume, whichever is

greater. The figure will be captioned with the facility name and address, UST Permit number, date, and bar scale. The map must include a north arrow. Label as Figure 1.
2. Site base map as Figure 2

K. Appendices
7.Appendix G: Disposal manifests

Additional requested information - site photographs that depict observed site conditions.

Carolyn Moores
Hydrogeologist
Corrective Action & Quality Assurance
UST Management Division
Bureau of Land & Waste Management

2600 Bull Street
Columbia SC 29201-1708
Office: (803) 898-2622
Fax: (803) 898-0673

FLAMMABLE
LIQUID

Closures
Assessments

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PLAY
PALS

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shop
MWR2-8
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UST
MAR 15 2012
PROGRAM

UST
17Hell
DOCKETING

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Broad River Amoco, UST Permit # 11946

4335 Broad River Road, Columbia, SC – Richland County

Prepared by: Terry L. Teate
Enviro-Test Services Inc. - SCDHEC Certified Contractor No. 14
Date: February 20, 2012

Approvals

Arthur Shrader, Hydrogeologist
SCDHEC Project Manager
_____ Date_____
Signature

Terry L. Teate
Site Rehabilitation Contractor
Enviro-Test Services, Inc.
Terry L. Teate Date 2-17-12
Signature

Jim Kotti, P.G
Contractor QA Manager
_____ Date 2-17-12
Signature

Ashley B. Amick
Laboratory Director
Access Analytical, Inc.
_____ Date 2-17-12
Signature

Scott Bailey
Laboratory Director
GCAL
Brenda Martinez for
Brenda Martinez
Wed Mar 14 2012 10:41:36
_____ Date 03/14/12
Signature

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Arthur Shrader, Hydrogeologist	SCDHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Enviro-Test Services Inc.	Site Rehabilitation Contractor	Enviro-Test Services, Inc. P.O. Box 2237 Irmo, SC 29063	803-413-4936	-	terryteate@gmail.com
Terry Teate	Field Manager, SC Certified Well Driller	Enviro-Test Services, Inc. P.O. Box 2237 Irmo, SC 29063	803-413-4936	-	terryteate@gmail.com
Jim Kotti, P.G.	Project Verifier	Enviro-Test Services, Inc. P.O. Box 2237 Irmo, SC 29063	803-413-4936	-	jdkottboy@aol.com
Ashley B. Amick	Laboratory Director, Access	Access Analytical, Inc. 7478 Carlisle St. Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Scott Bailey	Laboratory Director, GCAL	GCAL 7979 GSRI Rd. Baton Rouge, LA 70820	225-769-4900	225-767-5717	scott.bailey@gcal.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
Technical Project Manager	Arthur Shrader, Hydrogeologist	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Site Rehabilitation Contractor	Terry Teate	Enviro-Test Services, Inc. P.O. Box 2237 Irmo, SC 29063	803-413-4936	-	terryteate@gmail.com
Field Manager	Terry Teate	Enviro-Test Services P.O. Box 2237 Irmo, SC 20963	803-413-4936	-	terryteate@gmail.com
Project Verifier	Jim Kotti P.G.	Enviro-Test Services P.O. Box 2237 Irmo, SC 20963	803-413-4936	-	jdkottboy@aol.com
Analytical Laboratory Director	Ashley Amick	Access Analytical, Inc. 7478 Carlisle St. Irmo, SC 29063	803-781-4243	803-781-4303	aamick@axs-inc.com
Laboratory Director, GCAL	Scott Bailey	GCAL 7979 GSRI Rd. Baton Rouge, LA 70820	225-769-4900	225-767-5717	scott.bailey@gcal.com

Table 2A Addendum Role Identification and Contact Information

Technical Project Manager: The Technical Project Manager (Art Shrader) is responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites. The Technical Project Manager performs day-to-day review of plans and reports related to site rehabilitation activities on his or her assigned sites. These reviews include verification and analysis of data laboratories and recommendations for future work. The Technical Project Manager is responsible for the review of and approval of the site-specific QAPPs to ensure compliance with the UST Master QAPP. The Technical Project Manager is also responsible for validating the Project Data.

Site Rehabilitation Contractor: The role of the Contractor (Enviro-Test Services, Inc. - ETS) is to manage and coordinate field and office activities in order to complete all phases of the project. This includes, but not limited to, preparation of Quality Assurance Project Plan Contractor Addendum, property access, oversight of field activities, data analysis and interpretation, validating and verifying project data and preparation of a report. Enviro-Test is a Class I and Class II site Rehabilitation Contractor.

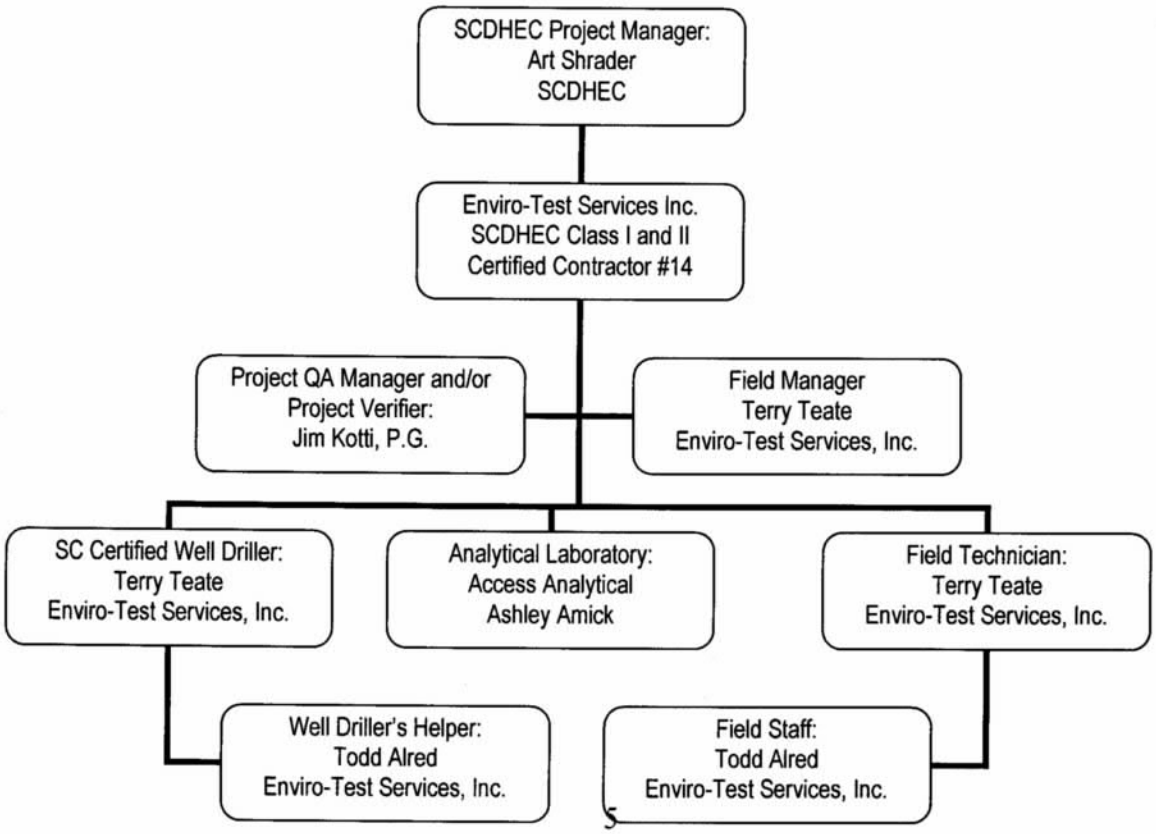
Project QA Manager: The Contractor Quality Assurance Manager (Jim Kotti - ETS) is responsible for the oversight of all quality assurance activities associated with this project, including independent review of field data and laboratory analytical data. The QA Manager will resolve any issues when correctitude actions are needed to address data quality issues.

Field Manager: Responsibilities of the Field Manager (Terry Teate - ETS) include, but are not limited to, preparation of field files detailing the project description and necessary task for the field crewman, oversight of field activities conducted by the technician, onsite data collection and decision making, verification of the collected field and laboratory analytical data and report preparation.

Field Technician: The Field Technician (Terry Teate - ETS) will collect groundwater samples for analytical qualitative and quantitative analyses.

Field Staff: The Field Staff (Rick Dowell - ETS) will assist the Field Manager with field activities as necessary to complete the project.

Figure 1A: Organizational Chart



The subject property is bounded by Broad River Road to the northeast and beyond Broad River Road, a property currently occupied by the South Carolina Law Enforcement Division (SCLED). The adjacent property to the southeast is apparently commercially utilized (Nail and Beauty Salon). The adjacent property to the southwest is commercially utilized as a nursery school and day care (Play Pal Day Care). The Play Pal Day Care facility encompasses two properties fronting Dothan Road. The subject property is bounded to the northwest by Dothan Road and a commercially utilized property beyond (MDC Associates, an apparent mechanical engineering firm). The commercial usage of the subject property and adjacent properties is expected to remain the same in the future.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Site Rehabilitation Contractor – Field Manager	Terry L. Teate Enviro-Test Services, Inc.	SCDHEC Certification, OSHA Training	1995, 2-27-2012	Class I and II	14
SC Certified Well Driller	Terry L. Teate Enviro-Test Services, Inc.	SC LLR Certification Criteria	1995	Class A	1242
Driller's Helper, Field Technician	Todd Alred	OSHA Training	8-10-2011	-	-
QA Project Manager	James D. Kotti	SC LLR Certification Criteria	1990	Registered Professional Geologist	888
Lab Director, Access	Ashley B. Amick	BS – Biology	05-1991	SCDHEC Certified Lab	32575001
Lab Director, GCAL	Scott Bailey	BS – Environmental Health	12-1991	SCDHEC Certified Lab	73006001

Table 3A Required Training and Licenses

Terry L. Teate of Enviro-Test Services, Inc. is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: Enviro-Test Services 1621 Lake Murray Blvd. Columbia, SC 29212.

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: **Access Analytical, Inc.**
Name of Lab Director: **Ashley B. Amick**
SC DHEC Certification Number: **32575001**
Parameters this Lab will analyze for this project: **N/A (field parameters if required)**

Full Name of the Laboratory: **GCAL (NOTE: partner / sub lab for Access)**
Name of Lab Director: **Scott Bailey**
SC DHEC Certification Number: **73006001**

Item	Start Date	End Date	Comments
Week 13 or 14			survey will provide a scale base map and elevations for the monitoring well network.
Tier II Report Preparation Weeks 15, 16 and 17.	July 9, 2012	July 30, 2012	A Tier II Assessment report will be prepared and submitted to the Technical Project Manager no later than July 30, 2012.

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

***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	0
Trip Blank	1
Field Blank	2
Duplicates	2
Total number of Water samples	36

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.

N/A

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

All sampling equipment is disposable with the exception of the ORS Oil/Water Interface Probe, the YSI Dissolved Oxygen (DO) Meter, the Hanna pH/Conductivity Meter and the Martini Mi415 Turbidity Meter.

Drilling tools, including solid stem auger, hollow stem auger, drill rod for mud rotary, direct push (Geoprobe™) drill rod and stainless-steel retractable well screen, are instrumental for soil and groundwater sample collection and for monitoring well installation. Obviously, these items are non-disposable.

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.

		LIMS system.	waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	their facility.
All	Water	60 days after analysis the sample custodian will stage completed samples for disposal. The sample custodian will scan all the samples segregated for disposal as "STD" (sent to disposal) using the Horizon LIMS system.	55-gallon tight head poly drum located in the Satellite Accumulation Area. Labeled according to the characteristics and waste stream. Waste streams are determined by analysis of the waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	Waste disposal is provided by various DOT certified vendors who come to the facility and label, placard, and manifest the drums according to 49 CFR Part 173 before transporting to their facility.

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).***

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. Not the availability and location of spare parts.***

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Thermo Environmental PID Detector	580B	Lamp Cleaning and Battery Charging	Prior to starting project	Calibration Gas 250 ppm of Isobutene ETS Columbia, SC	Field Manager Terry Teate
Hanna pH/Conductivity Meter	87936	Clean with de-ionized water and isopropyl alcohol	Before and after each use	Replace / battery	Field Manager Terry Teate
YSI DO Meter	06A2805	Clean with de-ionized water, replace membrane and electrolyte solution as necessary	Prior to each use	Replace / battery	Field Manager Terry Teate
ORS Oil/Water Interface Probe	06-1466	Indicator Probe Cleaning	Prior to each use	Replace probe/battery	Field Manager Terry Teate
Martini Mi415 Turbidity Meter	(Back Ordered)	IR LED and Photocell Cleaning	Prior to each use	Replace battery	Field Manager Terry Teate

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.***

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
FIELD EQUIPMENT	-	-	-	-
Thermo Environmental Photo-Ionization Detector – 590B	Lamp Cleaning	Inspect for obstructions in probe and polish PID lamp.	Field Manager Terry Teate	Clean/replace PiID Lamp.
Hanna pH/Conductivity Meter - 87936	Visual	Clean with de-ionized water and isopropyl alcohol; calibration	Field Manager Terry Teate	Clean and repair as necessary to achieve QAQC objectives
YSI DO Meter 06A2805	Visual	Replace membrane and electrolyte solution as necessary; calibration	Field Manager Terry Teate	Clean and repair as necessary to achieve QAQC objectives
ORS Oil/Water Interface Probe 06-1466	Press test button and observe for audible tone and visual light indicator.	Inspect probe sensor for dirt or contact between sensors	Field Manager Terry Teate	Check Batteries
Martini Mi415 Turbidity Meter	Visual	IR LED and Photocell Cleaning	Field Manager Terry Teate	Replace battery
LABORATORY EQUIPMENT	-	-	-	-
HP or Agilent GC/MS for VOC's S/N: Various	Daily calibration checks	Calibrates within acceptable range for initial calibration and passes ongoing daily calibration standard & batch QC analysis checks	Analyst / Laboratory department supervisor	Repair and /or recalibrate as needed. Samples may be re-analyzed if instrument fails QC checks.
Agilent GC for EDB via 8011 S/N: Various	Daily calibration checks	Calibrates within acceptable range for initial calibration and passes ongoing daily calibration standard & batch QC analysis checks	Analyst / Laboratory department supervisor	Repair and /or recalibrate as needed. Samples may be re-analyzed if instrument fails QC checks.
ICP for Lead S/N: Various	Daily calibration checks	Calibrates within acceptable range for initial calibration and passes ongoing daily calibration standard & batch QC analysis checks	Analyst / Laboratory department supervisor	Repair and /or recalibrate as needed. Samples may be re-analyzed if instrument fails QC checks.

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*
Thermo Environmental Photo-Ionization Detector (PID)	Zero calibration and Span gas calibration	Prior to use	Verify span gas against 250 ppm of isobutylene	Raise or lower span gas output to match span gas concentration	Field Manager - Terry Teate	Thermo Environmental Volatile Organic Compound Detector Calibration Procedures
Hanna pH/Conductivity Meter	pH and EC/TDS calibration solutions	Prior to use	Dependent upon specific calibration solution used	Re-calibrate (use back-up meter if calibration efforts are unsuccessful)	Field Manager - Terry Teate	Hanna, Inc. Users Guide
YSI DO Meter 06A2805	Moisten sponge in calibration sleeve with de-ionized water; commence calibration mode.	Prior to use	Dependent on accurate barometric pressure readings; calibrate barometric reading.	Replace membrane and electrolyte solution as necessary; re-calibrate	Field Manager - Terry Teate	YSI DO Meter Owners Manual
OSR Interface Probe	Calibrate against an invar surveyor's chain or steel tape	Prior to use	Within 0.01 foot per 10 feet length.	Replace interface probe.	Field Manager - Terry Teate	See Master QAPP
Martini Mi415 Turbidity Meter	MI 515-100 Calibration Unit, AMCO-AEPA-1 @ FNU Calibration solution, 30 mL	Prior to use	Operating ranges: 1) 0.00 to 50.00 FNU and 50 to 1,000 FNU	IR LED and Photocell Cleaning, Battery Replacement (9 v)	Field Manager - Terry Teate	Mi415 Owner's Manual
HP or Agilent GC/MS for VOC's	Once a BFB Tune and initial calibration meet criteria then a BFB Tune and continuing calibration verification (CCV) is performed every 12hrs.	CCV performed every 12 hours	Calibrates within Acceptable Range (See SOP for specific info)	If the CCV fails criteria a new initial calibration is performed. Also, see section 4.7 of lab QAP for detailed corrective action procedures.	Laboratory Department Supervisor / Analyst	Method 8260B GCMSV-003 r22
Agilent GC for EDB via 8011	Once an initial calibration meets criteria then a CCV is performed at the beginning of analysis and every 10 samples.	Daily, at beginning of analysis and then every 10 samples.	Calibrates within Acceptable Range (See SOP for specific info)	If the CCV fails criteria a new initial calibration is performed. Also, see section 4.7 of lab QAP for detailed corrective action procedures.	Laboratory Department Supervisor/ Analyst	Method 8011 – GC 034 r6
ICP for Lead	One point plus a zero performed daily and meet criteria CCV	CCV performed at beginning, after every 10 samples and at closing	Calibrates within acceptable range	If the CCV fails criteria, it can be reanalyzed once prior to a new calibration being performed	Laboratory Department Supervisor/ Analyst	MET-010 r18

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.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Disposable Bailer	Eon Products	New Material	Stored in clean supply room located at ETS office	Field Manager Terry Teate
Nitrile Gloves	Eon Products	New material	Stored in clean supply room located at ETS office	Field Manager Terry Teate
String	Various	Sufficient strength for lifting a water-filled disposable bailer repeatedly	Stored in clean supply room located at ETS office; in the field string is stored in a plastic bag	Field Manager Terry Teate
Sample Containers - ETS	Access Analytical, Inc.	Laboratory prepared and provided to ETS via Access Analytical, Inc.	Kept in supplied storage containers; individually sealed	Field Manager Terry Teate
Sample Containers – Access Analytical	Daniels Scientific	All bottles purchased are lot certified contaminant free environmental sample containers	Stored in controlled lab / warehouse space	Lab Manager / Bottle prep technician at Access Analytical Facility
PID Calibration Gas	Air Products	Canister of 250 ppm factory verified Isobutylene calibration gas	Store away from heat in padded protective case	Field Manager Terry Teate
55-gallon steel open-head drums	Dependable Drum Company	New or reconditioned. Drums with holes or cracks will not be accepted	Storage at ETS office until transportation to site. At site, drums will be staged in a safe location. Drums will be moved w/ the drill rig.	Field Manager Terry Teate
Non-hazardous waste labels (vinyl)	Granger	New material	Store in clean supply room located at ETS office	Field Manager Terry Teate
Laboratory Calibration Standards (Access/GCAL)	Fisher Scientific	All standards purchased are certified standards of guaranteed purity / known concentrations.	Stored at laboratory facility. Standards are stored based on the storage requirements of the individual solution.	Analyst, Laboratory Manager, Department Supervisors, Laboratory QC Manager
Laboratory Chemicals / Solutions (Access/GCAL)	Fisher Scientific, VWR, Restek,	Certificates of analysis, in-house laboratory verifications	Chemicals stored at lab under conditions appropriate for each solution.	Analyst, Laboratory Manager, Department Supervisors

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
Richland County GIS	Identifying adjacent property owners, property boundaries, subsurface municipal utilities, etc.	Facilitate access to adjacent properties, history of usage and/or ownership of the subject property and adjacent properties.	This website also provides detailed topographic maps and information regarding storm-water runoff.
Phase II Subsurface Investigation Report, Broad River BP, Partner Engineering and Science, Inc., El Segundo, California, December, 2010	Preliminary information concerning soil quality and groundwater occurrence	The laboratory analytical results from the Phase II subsurface investigation were reported to the SCDHEC as an apparent release (January 4, 2011).	A copy of the report was provided to ETS by Mr. Fredrick N. Cecchini.

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.
   Not applicable to this scope of work.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

As generated by the Environmental Rehabilitation Contractor (Enviro-Test Services, Inc. - ETS) in completing Tier II Assessment component tasks, field notes and logs will be stored in hardback bound field books and/or on 8 ½ x 11" field data sheets. Field data sheets are signed by staff upon completion of daily work. Copies of field notes and driller 1903 forms are provided on a daily basis and placed in the project file. Field boring logs are kept on a backed-up digital library.

Access Analytical - Chain of Custody Record

LAB USE ONLY

Sales Order # _____ **PO #** _____ **Access Quote #** _____

Project Work Order # _____

Laboratory ID: _____

Company Name:

Report To:

Address:

City: State: Zip:

Phone: Fax:

Email:

Project ID:

Sampled By:

Preservative: (*see codes)

Container Type: (*see codes)

↓ REQUESTED LAB ANALYSIS: ↓

Sample ID/Description	Date Collected:	Time Collected:	Type: (grab or composite)	Matrix: (see codes)	Program Area (see codes)	TOTAL # of containers	# of containers collected per analysis

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

***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** = Method 5035 set w/ $NaHSO_4$ & CH_3OH, **7** = NaOH/ZnOAC, **8** = H_3PO_4

***Matrix Codes** *(place corresponding code in matrix column)*: **GW** = ground water, **WW** = waste water, **DW** = drinking water, **S** = soil, **SL** = sludge, **A** = air, **IW** = industrial waste, **WO** = waste oil, **OT** = other *(specify in comments section)*

***Program Area Codes:** **CWA** = Clean Water Act (for wastewaters), **SDWA** = Safe Drinking Water Act (for drinking waters), **SHW** = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

***Container Type:** **G** = Glass, **P** = Plastic

NOTES / COMMENTS

(if sample is a composite please use space below to note start/finish times & dates)

Turnaround Time:

___ Standard
___ RUSH*
*Date Required:_____
(For rush work, results emailed/faxed by end of business day on date required)

Project Location:
___SC
___NC
___Other
(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C):	
				_____(°C)	_____(N/A)
				_____(°C)	_____(N/A)
				_____(°C)	_____(N/A)
				_____(°C)	_____(N/A)

See Reverse for Terms and Conditions

Pg_____of_____

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Site-Specific Work Plan for Approved ACQAP
Underground Storage Tank Management Division

UST 179 DOCKETING

To: Corie White (SCDHEC Project Manager)
From: C. Moores (Contractor Project Manager)
Contractor: SC DHEC UST Contractor Certification Number: _____

Facility Name: Broad River Amoco UST Permit #: 11946
Facility Address: 4335 Broad River Road, Columbia, SC
Responsible Party: F N Cecchini Phone: _____
RP Address: 429 Press Lindler Road, Columbia, SC 29212
Property Owner (if different): Broad River C-Store LLC
Property Owner Address: 41 Cromwell Ct, Irmo, SC 29063
Current Use of Property: Gas Station / Convenience Store

Scope of Work (Please check all that apply)

☐ IGWA ☐ Tier II ☐ Groundwater Sampling ☐ GAC
☐ Tier I ☐ Monitoring Well Installation ☑ Other Soil and SW sampling

Analyses (Please check all that apply)

Groundwater/Surface Water:

☑ BTEXNMDCA (8260B) ☐ Lead ☐ BOD ☐ Methane
☐ Oxygenates (8260B) ☐ 8 RCRA Metals ☐ Nitrate ☐ Ethanol
☐ EDB (8011) ☐ TPH ☐ Sulfate ☐ Dissolved Iron
☐ PAH (8270D) ☐ pH ☐ Other _____

Drinking Water Supply Wells:

☐ BTEXNMDCA (524.2) ☐ Mecury (200.8 245.1 or 245.2) ☐ EDB (504.1)
☐ Oxygenates & Ethanol (8260B) ☐ RCRA Metals (200.8)

Soil:

☑ BTEXNM ☐ Lead ☐ RCRA Metals ☐ TPH-DRO (3550B/8015B) ☐ Grain Size
☐ PAH ☐ Oil & Grease (9071) ☐ TPH-GRO (5030B/8015B) ☐ TOC

Air:

☐ BTEXN

Sample Collection (Estimate the number of samples of each matrix that are expected to be collected.)

3-5 Soil _____ Water Supply Wells _____ Air 1 Field Blank
_____ Monitoring Wells 1 Surface Water 2 Duplicate 1 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: _____ Estimated Footage: _____ feet per point
# of deep points proposed: _____ Estimated Footage: _____ feet per point
Field Screening Methodology: _____

Permanent Monitoring Wells

Estimate number and total completed depth for each well, and include their proposed locations on the attached map.

# of shallow wells: _____ Estimated Footage: _____ feet per point
# of deep wells: _____ Estimated Footage: _____ feet per point
# of recovery wells: _____ Estimated Footage: _____ feet per point
Comments, if warranted:

_____

_____

UST Permit #: 11946 Facility Name: Broad River Amoco

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: _____ Field Work Completion: _____
Report Submittal: _____ # of Copies Provided to Property Owners: _____

Aquifer Characterization
Pump Test: ☐ Slug Test: ☐ (Check one and provide explanation below for choice)

Investigation Derived Waste Disposal
Soil: _____ Tons Purge Water: _____ Gallons
Drilling Fluids: _____ Gallons Free-Phase Product: _____ 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.

3-5 Shallow soil samples in Play Pals playground area plus 1 duplicate, surface to upper 12"
1 SW sample after rain in drainage ditch behind property when conditions allow. + Dup, FB, TB

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
____ 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 ACQAP? (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

dhec

UST PROGRAM APR 12 2019

UST DOCKET 150

State Lead Option
Property Access Agreement for Site Rehabilitation

Only complete this form if: You are the legal owner of the property **OR** are the designated authorized representative for the legal owner of the property.

I certify that I am the legal owner of the property identified below or serve as the authorized representative for the legal owner of the property. I authorize the South Carolina Department of Health and Environmental Control (DHEC), or a contractor selected by DHEC, to enter this property at reasonable times only to conduct assessment and corrective action activities, as required. The contractor will be designated as the contractor for the UST owner or operator for only the required environmental site rehabilitation activities. I understand that the Agency will notify me of all activities that are necessary prior to their initiation and will promptly provide to me a summary of the data upon request.

UST Permit # 11946		
Facility Name: Broad River Road		
Facility Address: 4335 Broad River Road, Columbia, SC 29210		
Facility Phone Number:		
Is facility within city limits? (check yes/no)	■ **Yes**	☐ **No**
Name of nearest intersecting street/road/highway:	Broad River Road and Dothan Road	
Does public water/sewer utility service this facility?	■ **Yes**	☐ **No**
*If no, please provide a contact name/number that can assist in the location of private water and septic tank lines:		
Name:	**Phone Number:**	
Were USTs previously removed from the ground at this facility?	☐ **Yes**	☒ **No**
*If yes, please provide the name/contact number of a person that can assist in the location of the former UST(s):		
Name:	**Phone Number:**	
Is the facility currently leased to someone?	☒ **Yes**	☐ **No**
*If yes, notify them of the pending work scope, and please provide their name/contact number:		
Name: Bhavik Patel	**Phone Number:** 803 / 741 / 4832	

***Please note that if vehicles or other mobile structures are parked over the location of the existing or former USTs, they should be moved prior to DHEC's contractor mobilizes to the facility.**

Name of Property Owner (Print):	Broad River C-Store LLC	
Signature of Property Owner or authorized representative:		**Date** 4 / 11 / 2019
Affiliation (if applicable)		
Signature of Witness		**Date**

Contact Info

Phone Numbers:	**Home:**	**Cell:** 803 / 477 / 7575
Email Address:	Pallavk@aol.com	

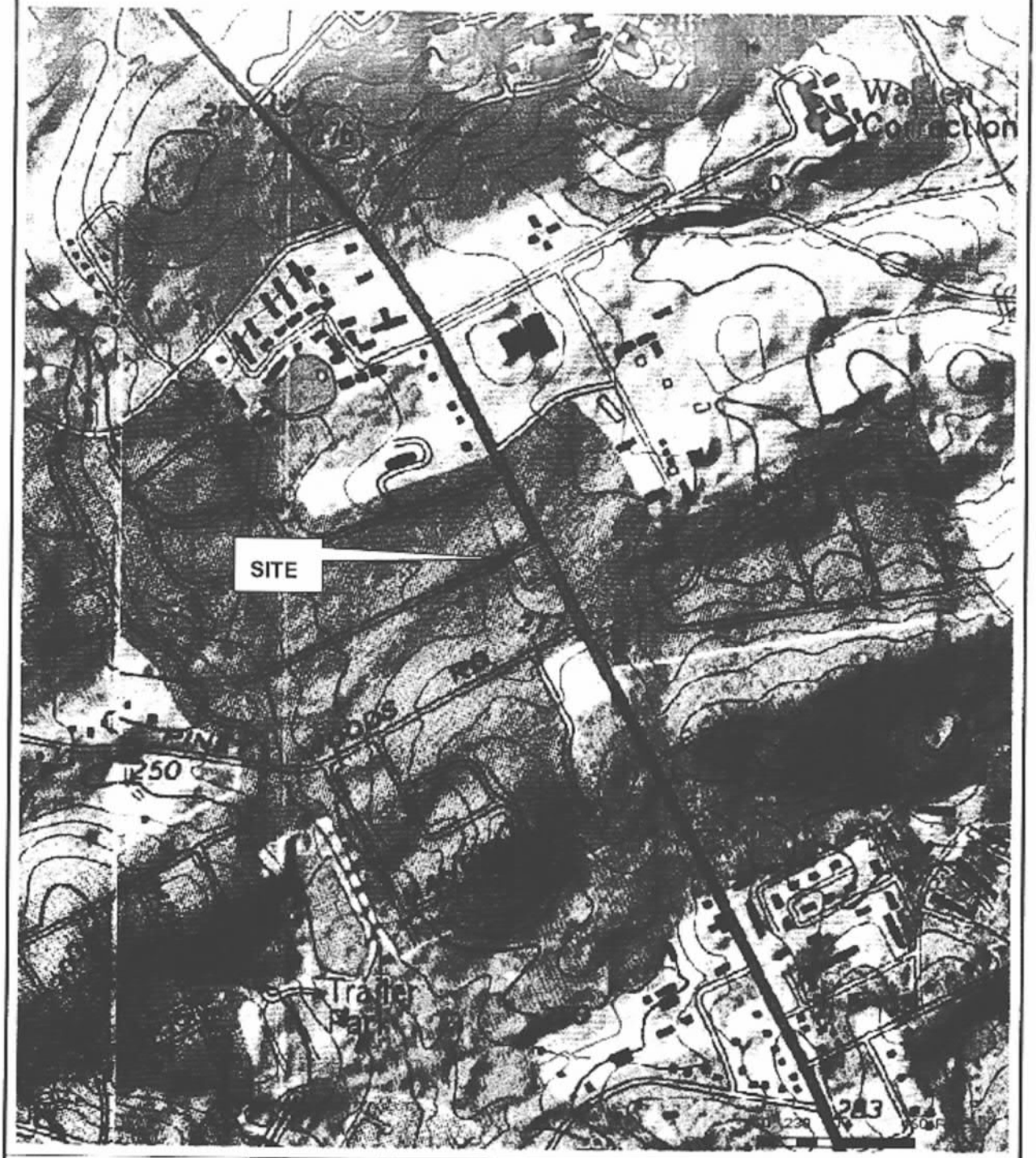


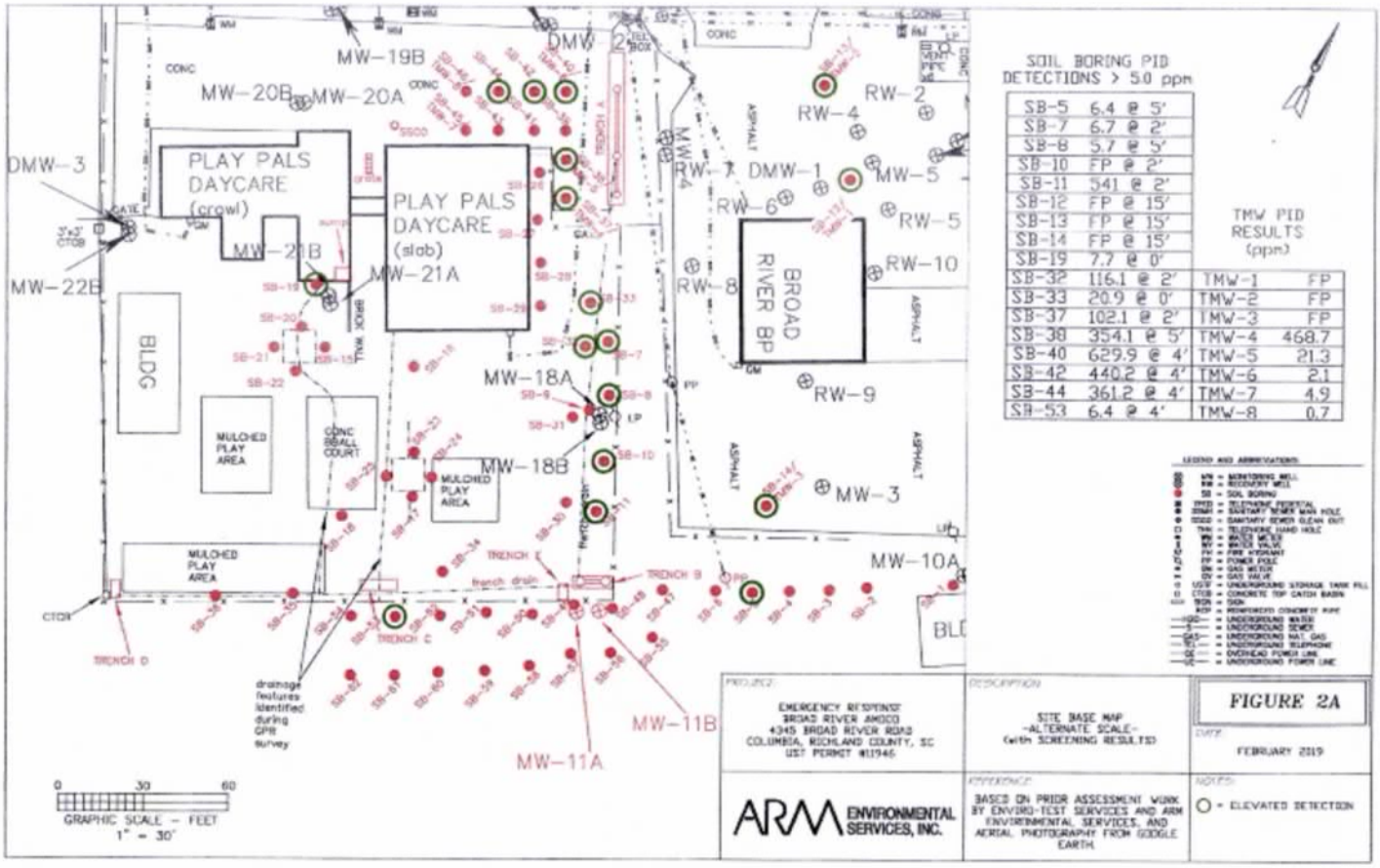
FIGURE 1: USGS Topographic Map

Source: Richland County GIS System

N↑

Enviro-Test Services, Inc.

Site Name:	**Broad River Amoco (BP)** **4335 Broad River Road** **Columbia, SC 29210**
Project Number:	**SCDHEC # 11946**



SOIL BORING PID DETECTIONS > 5.0 ppm

SB-5	6.4 @ 5'
SB-7	6.7 @ 2'
SB-8	5.7 @ 5'
SB-10	FP @ 2'
SB-11	541 @ 2'
SB-12	FP @ 15'
SB-13	FP @ 15'
SB-14	FP @ 15'
SB-19	7.7 @ 0'
SB-32	116.1 @ 2'
SB-33	20.9 @ 0'
SB-37	102.1 @ 2'
SB-38	354.1 @ 5'
SB-40	629.9 @ 4'
SB-42	440.2 @ 4'
SB-44	361.2 @ 4'
SB-53	6.4 @ 4'

TMW PID RESULTS (ppm)

TMW-1	FP
TMW-2	FP
TMW-3	FP
TMW-4	468.7
TMW-5	21.3
TMW-6	2.1
TMW-7	4.9
TMW-8	0.7

LEGEND AND ABBREVIATIONS

PROJECT: EMERGENCY RESPONSE BROAD RIVER AMOCO 4345 BROAD RIVER ROAD COLUMBIA, RICHLAND COUNTY, SC UST PERMIT #11946

DESCRIPTION: SITE BASE MAP -ALTERNATE SCALE- (with SCREENING RESULTS)

FIGURE 2A

DATE: FEBRUARY 2019

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE: BASED ON PRIOR ASSESSMENT WORK BY ENVIRO-TEST SERVICES AND ARM ENVIRONMENTAL SERVICES, AND AERIAL PHOTOGRAPHY FROM GOOGLE EARTH

NOTES: O = ELEVATED DETECTION

SCDHEC UST Management Tracking

BOTH billable and unbillable tanks

Site Information for R-11946 Facility: BROAD RIVER AMOCO

Bus.	4335 BROAD RIVER RD	**Phone**	803-798-3051
Address	COLUMBIA SC 29210-4009	**County**	Richland
District	Columbia EQC Office		
Category	Retail Sales	**Last Inspection**	03/12/19
Trans. of Ownership	07/10/18		
Tank Owner	BROAD RIVER C STORE LLC		
Bus.	41 CROMWELL CT		
Address	IRMO SC 29063	**Phone**	803-477-7575
Operator	PATEL, BHAVIK		
Bus.	4335 BROAD RIVER RD		
Address	COLUMBIA SC 29210	**Phone**	803-741-4832
Land Owner	BROAD RIVER C STORE LLC		
Bus.	41 CROMWELL CT		
Address	IRMO SC 29063	**Phone**	803-477-7575

Financial Responsibility

Financial Mechanism	Expiration Date
Guarantee	01 May 2020

Tanks 8 **Billable** 3 **Aband.** 5 **Other** 0

Compliance Operator(s)	ID	Training Date
PATEL, BHAVIK	06983	01/31/2019

Significant? Y **Memo Date:** 04/25/11

Site Memo: Also UST Permit # 12156 Associated Oil (Read only site).
Across Broad River is SLEAD (UST Permit # 13776). Block to the east across Broad River is Pitt Stop #11 (UST Permit # 11946)

Significant? N **Memo Date:** 02/24/01

Site Memo: 8-13-98-- tanks 2 and 3 manifolded -- one pump and leak i detector--could not verify lld at diesel tank due to dirt--gave in i compliance letter based on testing data which showed lld was i present...jek 08/31/00--Associated Oils is supplier and helps with guidance on i compliance issues. Mr Cecchini's name is pronounced chuh-keen-ee. i He is using his ATG to give him readings for SIR reports. Impressed i current system was covering all steel components including ALL steel i connections, according to the commissioning report. Impact valves i under the 8-hose dispenser were not anchored. Leak at first i dispenser on Silver product. A very slow drip. Mr C made a service i call for Palmetto to come and take care of that and the impact valve i anchoring. WKG 09/26/00--revisited site to deliver NOV from inspection on 08/30/00. i NOV was sent certified but was returned with a "No Such Number" i stamp. Drip has been stopped. Dirt has not been cleaned. Impact i valves have not been anchored. CP test has been done, but paperwork i not ready. I have adjusted due date. WKG 12/1/00 Received cpst results indicating piping is fiberglass but, i steel or flex piping in tank area is protected & flex or buried i steel at dispenser is not protected. Matt Lowe w/ PTS indicated on i test results that lines are fiberglass. Issued NOV - requested i clarification. RSM

Significant? N **Memo Date:** 01/22/04

Site Memo: owner called to inform us that his piping is steel

Significant? N **Memo Date:** 10/24/07

Site Memo: Per 8/3/06 cp test, no flexes at STPs, only at Dispensers

SCDHEC UST Management Tracking

BOTH billable and unbillable tanks

Site Information for R-11946 Facility: BROAD RIVER AMOCO

Rel. No.	1	**Reported**	01/04/11	**Status**	Confirmed - Active	**Product**	Petroleum	**Compl Required**	Y
Active Tnks	Y	**NFA**		**Fin. Type**	With SUPERB	**RBCA / Score**	1C 300300	**Compliance Met**	Y
		Confirmed	01/05/11	**Emer. Resp.**		**Superb Qualified**	Y	**Compliance Met Dt**	01/06/11
		CU Init.	02/04/11	**Abate. Met**		**Superb Determ. Dt**	02/08/11	**Fin Res Mechanism**	SELF101
		CU Compl.		**Transferred**		**Project Manager**	MOORES CAROLYN T		
		CU > MCL		**Source**	UST	**Responsible Party**	CECCHINI FREDERICK N		

Ranking **SCRBCA:** 1C - Vapors or FP in stru/util **FP Thick:** > 1 Foot

Rel. No. 1

Analyticals	Contaminant	ug/L	RBSL	Score	SSTL's	Other Contaminants	ug/L	SSTL's
	Benzene	16000	5	3200				
	Toluene	31000	1000	31		DCA (MW-1)	58	
	Ethylbenzene	3000	700	4		EDB RW-3	2.3	
	Xylene	16000	10000	2		ETHANOL MW-1,	20000	
	Naphthalene	900	25	36		MW-2, MW-5, RW-1 &		
	MTBE	31000	40	775		RW-5		
		Total Score:		4048		NO FP DURING GWS 6/7-9/2016		

Receptor Ttype:	POND	**Ground Water Flow:**	N
Distancd to Receptor:	1500	**Seepage Velocity:**	1
GW Depth:	16		

TAA MW-2	57000	
TAME MW-2	450	
TBA MW-2	25000	

Rel. No.	2	**Reported**	11/16/18	**Status**	Confirmed - Active	**Product**	Petroleum	**Compl Required**	Y
Active Tnks	Y	**NFA**		**Fin. Type**	With SUPERB 25K	**RBCA / Score**	1C 300300	**Compliance Met**	Y
		Confirmed	11/19/18	**Emer. Resp.**		**Superb Qualified**	Y	**Compliance Met Dt**	
		CU Init.		**Abate. Met**		**Superb Determ. Dt**	11/20/18	**Fin Res Mechanism**	GUAR
		CU Compl.		**Transferred**		**Project Manager**	MENDENHALL JEFFERY E		
		CU > MCL		**Source**	UST	**Responsible Party**	BROAD RIVER C STORE LLC		

Ranking **SCRBCA:** 1C - Vapors or FP in stru/util **FP Thick:** > 1 Foot

Rel. No. 2

Analyticals	Contaminant	ug/L	RBSL	Score	SSTL's	Other Contaminants	ug/L	SSTL's
	Benzene	0	5	0		EDB	0	
	Toluene	0	1000	0		FP IN STORM WATER		
	Ethylbenzene	0	700	0		& CREEK		
	Xylene	0	10000	0		LEAD	0	
	Naphthalene	0	25	0		VAPORS IN		
	MTBE	0	40	0		ADJACENT		
		Total Score:		0		DAYCARE		

Receptor Ttype:	CREEK	**Ground Water Flow:**	
Distancd to Receptor:	400	**Seepage Velocity:**	
GW Depth:			

Tank No.	1	**Const.**		**Class**	R	**Tank Const. Mat.**	SL			**Pipe Const. Mat.**	FP	
		Operate	06/06/97	**T Status**	EOU	**Tank Protect.**	IC	**CP**	06/04/18	**Pipe Protect.**	FC	**CP** 06/04/18
		Notify	12/28/88	**Capacity**	3,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW	
		Variance		**Product**	DL	**Overfill Type**		**Ver**		**Piping Type**	PR	
		Compl.	03/12/19	**C Status**	FROT	**Age @ Notif.**	10			**Dist. to Well**	101	
		Spill Det.	02/10/97	**Left Gal.**		**Owner @ ABD**						**Last Use**
		Aband.		**Method**		**CAS No.**		**Chem.**				
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**	ATG 11/21/18			**Pipe Leak Det.**	LLD 11/29/16 LTT 11/29/16	

SCDHEC UST Management Tracking

BOTH billable and unbillable tanks

Site Information for R-11946 Facility: BROAD RIVER AMOCO

Tank No.	2	**Const.**		**Class**	R	**Tank Const. Mat.**	SL			**Pipe Const. Mat.**	FP		
		Operate	06/06/97	**T Status**	ABD	**Tank Protect.**	IC	**CP**	06/04/18	**Pipe Protect.**	FC	**CP**	06/04/18
		Notify	12/28/88	**Capacity**	3,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	RUL	**Overfill Type**	DTSO	**Ver**	09/02/97	**Piping Type**	PR		
		Compl.	11/26/18	**C Status**	FRLDOT	**Age @ Notif.**	10			**Dist. to Well**	101		
		Spill Det.	02/10/97	**Left Gal.**		**Owner @ ABD**	BROAD RIVER C STORE LLC				**Last Use**		
		Aband.	02/26/19	**Method**	FI	**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**	MAN 11/20/14			**Pipe Leak Det.**	MAN		
Tank No.	3	**Const.**		**Class**	R	**Tank Const. Mat.**	SL			**Pipe Const. Mat.**	FP		
		Operate	06/06/97	**T Status**	ABD	**Tank Protect.**	IC	**CP**	06/04/18	**Pipe Protect.**	FC	**CP**	06/04/18
		Notify	12/28/88	**Capacity**	3,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	RUL	**Overfill Type**	DTSO	**Ver**	09/02/97	**Piping Type**	PR		
		Compl.	11/26/18	**C Status**	IN	**Age @ Notif.**	10			**Dist. to Well**	101		
		Spill Det.	02/10/97	**Left Gal.**		**Owner @ ABD**	BROAD RIVER C STORE LLC				**Last Use**		
		Aband.	02/26/19	**Method**	FI	**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**	MAN 11/20/14			**Pipe Leak Det.**	LLD 12/05/17 MAN LTT 12/05/17		
Tank No.	4	**Const.**		**Class**	N	**Tank Const. Mat.**				**Pipe Const. Mat.**	SL		
		Operate		**T Status**	ABD	**Tank Protect.**		**CP**		**Pipe Protect.**		**CP**	
		Notify	11/01/89	**Capacity**	3,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	GN	**Overfill Type**		**Ver**		**Piping Type**			
		Compl.		**C Status**	ABD	**Age @ Notif.**	0			**Dist. to Well**			
		Spill Det.		**Left Gal.**		**Owner @ ABD**	ASSOCIATED OILS OF SC INC				**Last Use**		
		Aband.	11/01/89	**Method**	RG	**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**				**Pipe Leak Det.**			
Tank No.	5	**Const.**		**Class**	N	**Tank Const. Mat.**				**Pipe Const. Mat.**	SL		
		Operate		**T Status**	ABD	**Tank Protect.**		**CP**		**Pipe Protect.**		**CP**	
		Notify	11/01/89	**Capacity**	2,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	GN	**Overfill Type**		**Ver**		**Piping Type**			
		Compl.		**C Status**	ABD	**Age @ Notif.**	0			**Dist. to Well**			
		Spill Det.		**Left Gal.**		**Owner @ ABD**	ASSOCIATED OILS OF SC INC				**Last Use**		
		Aband.	11/01/89	**Method**	RG	**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**				**Pipe Leak Det.**			
Tank No.	6	**Const.**		**Class**	R	**Tank Const. Mat.**	SL			**Pipe Const. Mat.**	FP		
		Operate	06/06/97	**T Status**	CIU	**Tank Protect.**	IC	**CP**	06/04/18	**Pipe Protect.**	FC	**CP**	06/04/18
		Notify	12/28/88	**Capacity**	8,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	RUL	**Overfill Type**	DTSO	**Ver**	09/02/97	**Piping Type**	PR		
		Compl.	03/12/19	**C Status**	EQFROT	**Age @ Notif.**	20			**Dist. to Well**	101		
		Spill Det.	02/10/97	**Left Gal.**		**Owner @ ABD**					**Last Use**		
		Aband.		**Method**		**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**	ATG 11/21/18			**Pipe Leak Det.**	LTT 11/21/18 LLD 03/13/19		
Tank No.	7	**Const.**		**Class**	R	**Tank Const. Mat.**	SL			**Pipe Const. Mat.**	FP		
		Operate	06/06/97	**T Status**	CIU	**Tank Protect.**	IC	**CP**	06/04/18	**Pipe Protect.**	FC	**CP**	06/04/18
		Notify	12/28/88	**Capacity**	8,000	**Tank Cont. Meth.**	SW			**Pipe Cont. Meth.**	SW		
		Variance		**Product**	PREM	**Overfill Type**	DTSO	**Ver**	09/02/97	**Piping Type**	PR		
		Compl.	03/12/19	**C Status**	EQFROT	**Age @ Notif.**	20			**Dist. to Well**	101		
		Spill Det.	02/10/97	**Left Gal.**		**Owner @ ABD**					**Last Use**		
		Aband.		**Method**		**CAS No.**		**Chem.**					
		Under Dispenser Cont.	N	**Drop Tube**	N	**Tank Leak Det.**	ATG 11/21/18			**Pipe Leak Det.**	LLD 03/13/19 LTT 11/21/18		

SCDHEC UST Management Tracking

BOTH billable and unbillable tanks

Site Information for R-11946 Facility: BROAD RIVER AMOCO

Tank No.	8	Const.	09/27/89	Class	P	Tank Const. Mat.	SL			Pipe Const. Mat.	FP		
		Operate	04/06/90	T Status	ABD	Tank Protect.	IC	CP	06/04/18	Pipe Protect.	FC	CP	06/04/18
		Notify	09/20/89	Capacity	1,000	Tank Cont. Meth.	SW			Pipe Cont. Meth.	SW		
		Variance		Product	KN	Overfill Type	DTSO	Ver	09/20/89	Piping Type	PR		
		Compl.	11/26/18	C Status	IN	Age @ Notif.	0			Dist. to Well	101		
		Spill Det.	09/20/89	Left Gal.		Owner @ ABD	BROAD RIVER C STORE LLC			Last Use			
		Aband.	02/26/19	Method	FI	CAS No.		Chem.					
		Under Dispenser Cont.	N	Drop Tube	N	Tank Leak Det.	ATG 11/20/14			Pipe Leak Det.	LLD 12/05/17 LTT 12/05/17		

dhec
Healthy People. Healthy Communities.

JUN 06 2019

UST DOCKETING

ANGELA BAIONI
PACE ANALYTICAL SERVICES
9800 KINCEY AVE STE 100
HUNTERSVILLE NC 28078

Re: Laboratory Analyses Approval
(Analytical) Bid #IFB-5400012961-04/06/17-EMW; PO #4600704184

Dear Ms. Baioni:

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 listed below. Please reference the CA number and Purchase Order number on the appropriate invoice submitted for payment against the facility.

UST #	FACILITY NAME	CA #	# of SOIL Samples (Include Duplicate)	# of SW FB & TB	# of WSW Samples (Include Duplicate)	# of WSW FB & TB	Vials/ Cooler to be provided by Lab	RUSH (24hr Notice Required)
11946	Broad River Amoco	*59780*	7	4	0	0	N	N
			BTEX+Nap	*(4) 8260B*				
				(3) 8011				

If you have any questions or need further assistance, please contact Robert A. Dunn by phone (803) 898-0671 or email dunnra@dhec.sc.gov.

Sincerely,

Carolyn Moores

Carolyn Moores, Hydrogeologist
Corrective Action& Quality Assurance Section
UST Management Division
Bureau of Land & Waste Management

Enc: Approved Cost Agreement

Cc: Robert A. Dunn, UST Management Division, Corrective Action & Field Support Section
Technical File

Approved Cost Agreement 59780

Facility: 11946 BROAD RIVER AMOCO
MOORESCT
PO Number:

Task / Description	Categories	Item Description	Qty / Pct	Unit Price	Amount
11 ANALYSES					
	GW GROUNDWATER	A2 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	4.0000	$21.000	84.00
		F1 EDB BY 8011	3.0000	$18.000	54.00
	SOIL SOIL	Q1 BTEX+NAPTH	7.0000	$16.000	112.00
			Total Amount		250.00

D H E C
PROMOTE PROTECT PROSPER

Underground Storage Tank Management Division
Field Data Information Sheet – Notes

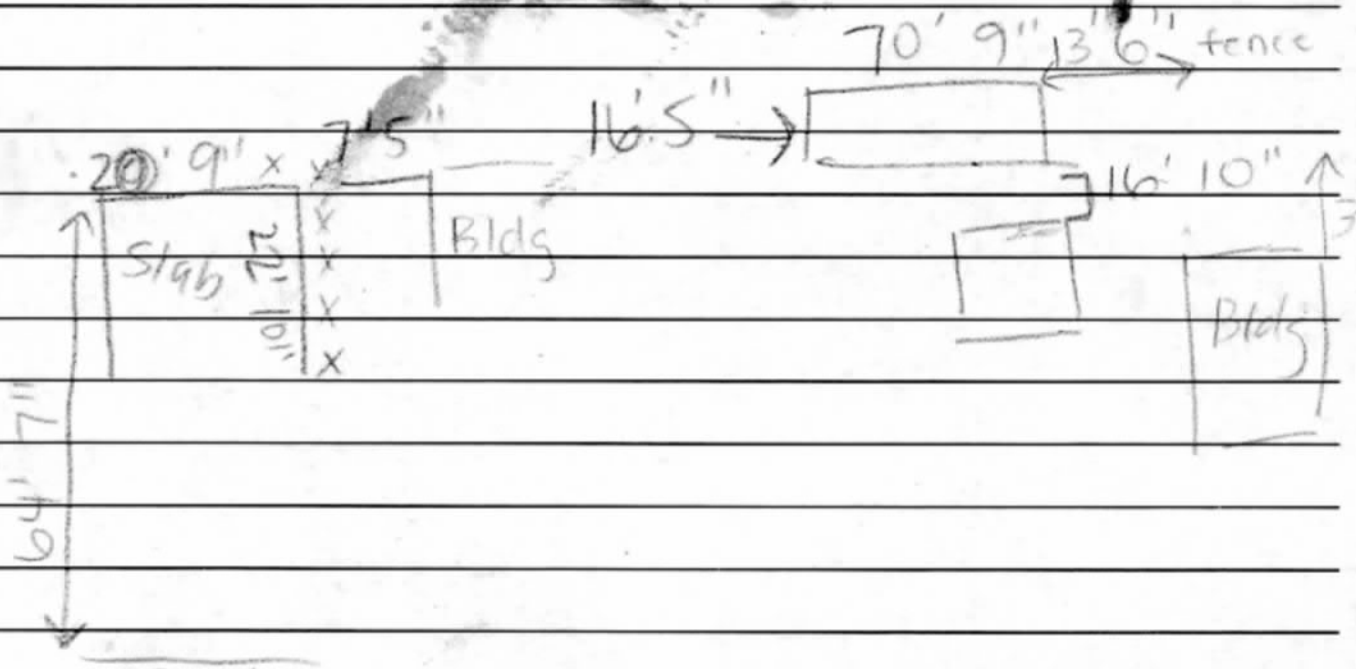
Site Information		
Date: 6/6/2019	Site ID #: 11946	Site Name: Broad River
County: Richland	Project Manager: C. Moores	Field Personnel: C. White

Notes: Soil samples:

UST
DOCKETING
6/17/19

SS1: By double ditch 825
SS2: By ditch C 835
SS3: Bfrn Playground 845
SS-4: Mdl @ 1409
SS-5: Walkway @ 1420
SS-6: DUP @ 1435
SS-7: Sump. @ 1430

Creek Dry



Signature: _____ Date: 6/6/19

-UST Field Data Information Sheet – Notes

-Purpose of the form is to record information gathered during a field activity

-DHEC UST Project Managers and Field Staff

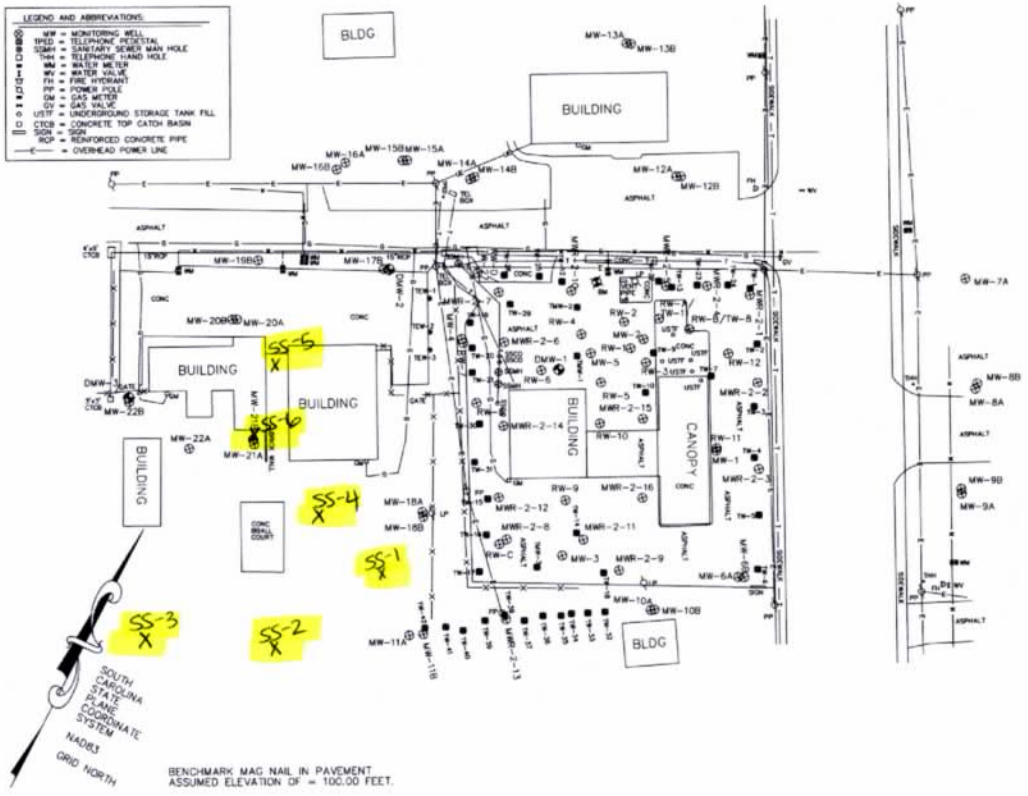
-Item-by-item instructions for completing the form:
- Fill in all Site Information boxes
- Record any applicable notes
- Sign and date the form

-Form is scanned and saved electronically; Record Group Number 169, Retention Schedule 10304

CAUTION

Soil Samples 6/7/19

11946

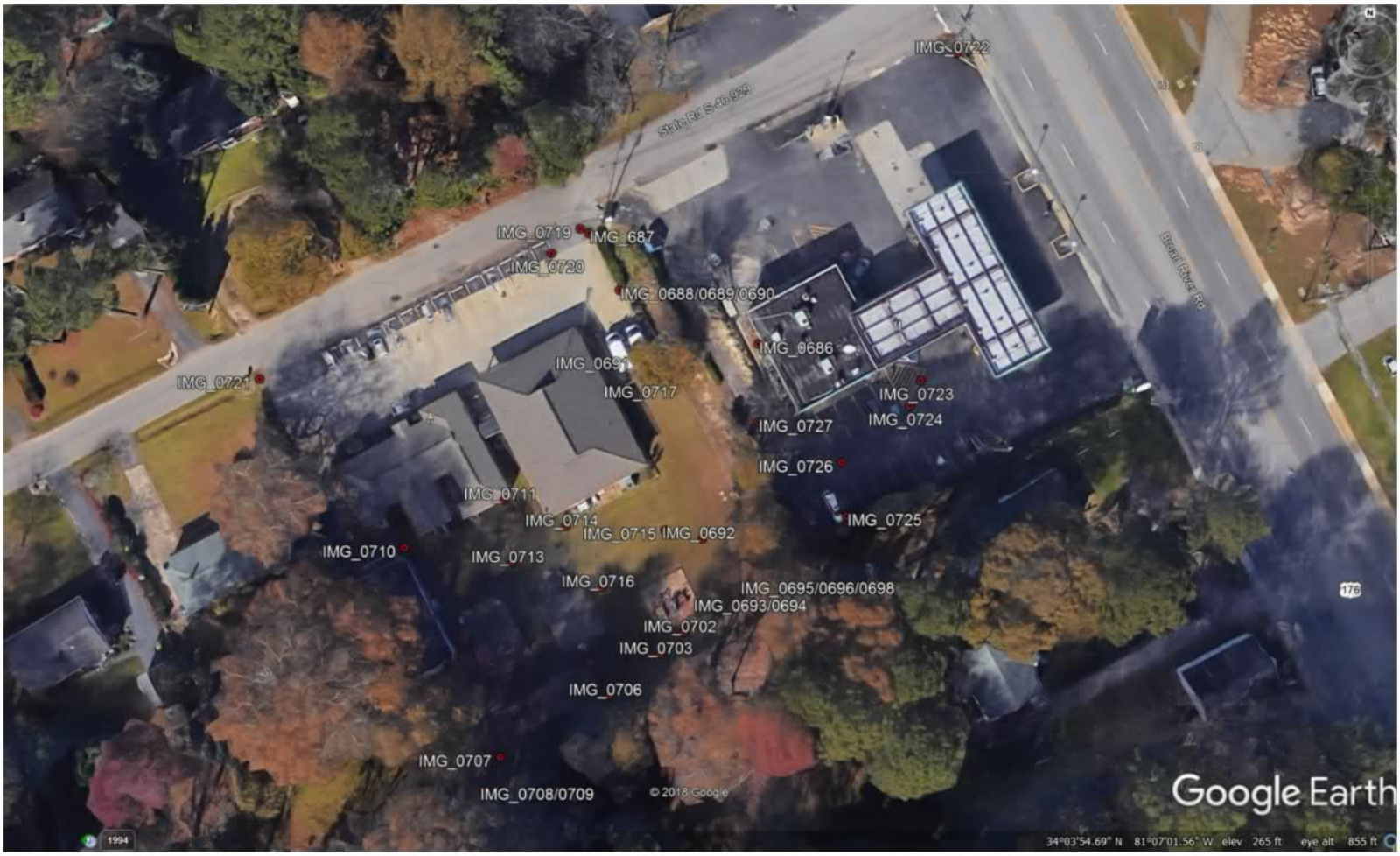


UST 173 feet DOCKETING

CTSI
Geotechnical Engineering and Environmental Services
RMO, SOUTH CAROLINA

Date: 4/19/19 | SCALE:SEE GRAPHIC | Dwg: BASEMAP

FIGURE 2A
BROAD RIVER AMOCO
UST ID#11946
CTSI PROJ. 18-6580
COLUMBIA
SOUTH CAROLINA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IMG_0713
IMG_0716
IMG_0695/0696/0698
IMG_0693/0694
IMG_0702
IMG_0703
IMG_0706
IMG_0707
IMG_0708/0709
© 2018 Google
Google Earth
1994
34°03'54.69" N 81°07'01.56" W elev 265 ft eye alt 855 ft

June 11, 2019

UST
JUN 19 2019
PROGRAM

ENVIRO-TEST SERVICES

UST
175
DOCKETING

Ms. Carolyn Moores, Hydrogeologist
Corrective Action Section
UST Program
Bureau of Land and Waste management

RE: January, February March, & April , 2019 Summary Report
for Emergency Free Product Abatement at Play Pals Day Care
Broad River Amoco
Permit # 11946; CA # 59405
4335 Broad River Rd Columbia, SC
Richland County

Dear Ms. Moores,

Enviro-Test Services January abatement activities are included in the ARM report dated November 2018 through January 31, 2019 however there are additional work that was not included. There were 5 Vacuum Events performed. They Began on January 5th, January 17th , January 26th , and January 29th , 2019 these Free Product abatement Vacuum events were performed on Recovery Trench A, Recovery Trench B, open Trench C, D and E, the recovery sumps under the play Pals day Care and on top of the ground due to the unusually heavy Rains that would cause the free product to flow out of the side of the embankment between the product source (Broad River BP Station) and the Day Care Property.
See Site Map: Figure 1
There was 200 gallons of dark Brown free Product recovered and 6,872 gallons of petroleum contact water removed this month.

On January 3rd the sewer lines were scoped with a camera checking for any breaks or leaks for product intrusion. Sewer line Vapor PID readings were also taken in the sewer line at three different locations along Dothan Rd. Located at (1) the BP station next to the dumpster this is the beginning of the sewer line. (2) at the residence at 1230 Dothan Rd. reading and 3rd at the residence at 1158 Dothan Rd. These test were done on January 25th and January 29, 2019. Attachment (A). Other activities also included absorbent boom replacement at the ditches, the storm water drain in the rear of the day care and against the fence along property boundary. On going activities also include the maintenance of the open pits, removal of leaves, trash, walls caving in and protective fencing replacement.

Environmental Laboratory & Drilling
P. O. Box 2237 Irmo, South Carolina 29063 (803) 413-4936

February, 2019:

February 2019 Abatement Activities continued due to more unusually heavy rain fall. With each rain event free product would be pushed from the gas station into the french drains and on the surface of the Play Pal Day Care property and towards the Storm Drains. Enviro-Test would keep the water levels down before the heavy rains and then remove the free product after it rained in order to keep it from going into the storm drains and into Stoop Creek.

There were a total of six Free Product Vacuum abatement Events performed. February 5th, 9th,14th, 21st 25th, 27th, 2019 which produced 105 gallons of free product and 21,338 gallons of petroleum contact water from all the source points which were the French Drains and 3 recovery pits, under the building of the Day Care and on top of the ground surrounding the Day Care.

On February 8, 2019 Palmetto Utilities lined the sewer man hole at the BP Gas station in order to stop any free product intrusion in to the sewer system due to the petroleum vapors that residence were complaining about in there houses in the neighborhood on Dothan Rd. PID Vapor readings were taken on February 8th, 14th, 22nd, 28th 2019 in three different manholes on Dothan Rd. at the same addresses listed above Recovery pits and boom replacement continued.

March, 2019:

The unusually heavy rains continued through out the month of March which have a direct effect on the Play Pals day Care. Every time it rains the Free Product from the BP gas station is pushed on to Play Pals property and collected in the french drain located between the property along the chain link fence.

During these rain storms dark brown gas will pour out of the 15 ft. embankment between the gas station and the day care in two locations (1) above collection pit (A) and (2) between monitor wells 18 and collection pit (B). There appears to be two distinct path ways the product travels. (1) at Dothan Rd above recovery pit (A) and (2) in the corner at the rear of the BP Station above recovery pit (B).
The Absorbent boom here was replaced twice.

There were a total of six free product recovery events performed in the month of March beginning on March 6th . The other 5 were on March 9th , March 14th, March 16 March 24 and March 28 for a total of 12,639 gallons of petroleum contact water recovered and 16 gallons of Free Product .
There was also two hours of maintenance on the pits performed.

On March 7th three additional Monitor wells were drilled as requested by the DHEC Project manager Carolyn Moores. MW- 16 A and MW 16B were installed across the street at the residence on Dothan Rd. which were actually replacement wells because the residence had requested the original wells be abandoned several yeas ago. The third well MW-22A was located behind Play Pals between MW-21A and MW-22B. See: Attachment A 1903 Completion Forms.

April, 2019:

Enviro-Test continued to remove Free product and contaminated petroleum contact water at the Play Pals facility through the month of April. The unusually heavy rain also continued in April. Enviro-Test performed a total of (7) Vacuum Events beginning on April 8th then on April 13th, 17th, 20th, 26th , 28th, 30th, of April. These events produced 8,050 gallons of contact water and . 5 gallon of free product.

These task include vacuuming petroleum contact water from these 5 recovery wells located in the two Recovery Trenches A & B and the three open trenches and under the Play Pals Day Care.

Four hours of trench maintenance was performed which includes the safety net barricades and the debris that falls into the open pits.
The Absorbent booms that no longer absorbed the free product were replaces next to the fence at the embankment and in the storm drain going to Stoop Creek.

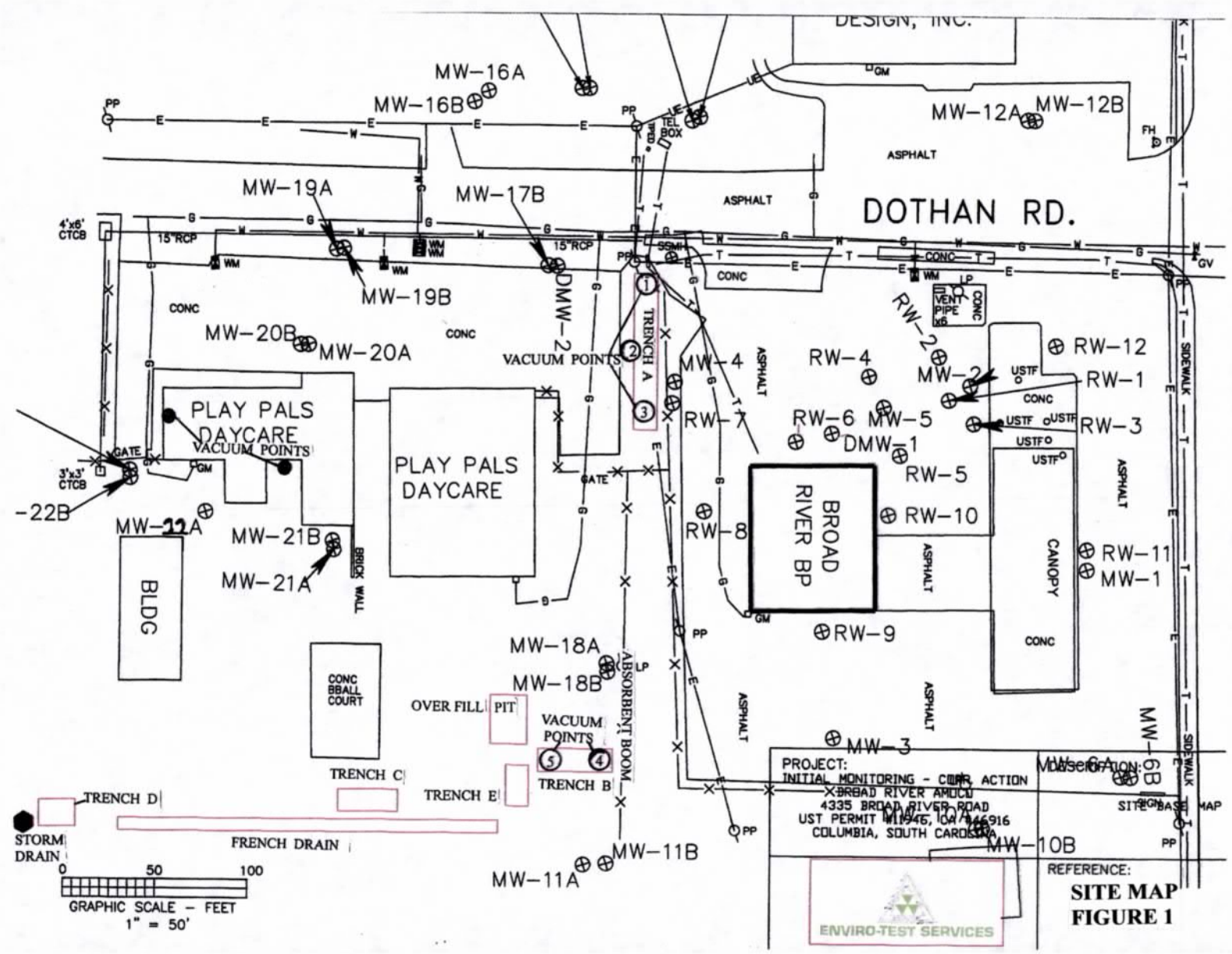
Enviro-Test will continue the Emergency Free Product Abatement until the Corrective Action begins at the Play Pals Day Care facilities ad directed by DHEC.

Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teate

Terry L. Teate
Project Manager
Enviro-Test Services Inc.

SITE MAP
FIGURE 1


DESIGN, INC.
MW-16A
MW-16B
MW-12A
MW-12B
ASPHALT
DOTHAN RD.
MW-19A
MW-17B
MW-19B
DMW-2
MW-20B
MW-20A
VACUUM POINTS
TRENCH A
MW-4
RW-4
MW-2
RW-12
RW-1
RW-2
RW-7
RW-6
MW-5
RW-3
DMW-1
RW-5
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
BROAD RIVER BP
RW-10
RW-8
CANOPY
RW-11
MW-1
MW-22B
MW-22A
MW-21B
MW-21A
BLDG
RW-9
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL PIT
VACUUM POINTS
ABSORBENT BOOM
MW-3
MW-6A
MW-6B
TRENCH C
TRENCH E
TRENCH B
TRENCH D
STORM DRAIN
FRENCH DRAIN
MW-11B
MW-11A
MW-10B
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, IOA #46916
COLUMBIA, SOUTH CAROLINA
REFERENCE:
SITE MAP
FIGURE 1
ENVIRO-TEST SERVICES
0 50 100
GRAPHIC SCALE - FEET
1" = 50'

ATTACHMENT A
1903 Well Forms

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: DHEC (last) (first)
Address: 2600 Bull Street
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: (803) 898-3432 Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Road
City: Columbia, SC Zip: 29018-9330
Latitude: N 34.0650391 Longitude: W 81.1174256

3. PUBLIC SYSTEM NAME: Monitor Well-22A **PUBLIC SYSTEM NUMBER:** MW-22A

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Lt Tn mxln Sndy Cly	0 ft.	2 ft.
Lt Tn fxln Cly Gumbo	2 ft.	4 ft.
Orange mxln sndy cly dry	4 ft.	8 ft.
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: DHEC Permit # UMW-27419

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 8.0 ft. Date Started: 03-7-2019 Date Completed: 03-08-2019

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to 0 ft. depth
_____ in. to 1.0 ft. depth
Height: Above/Below Surface 0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: .010 Length: 7.0 ft
Set Between: 8.0 ft. and 1.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL 0.57 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
NA 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 1.0 ft.
Effective size No. 2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 1.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 200 ft. N direction
Type Petroleum
Well Disinfected ☐ Yes ☑ No Type: _____ Amount: _____

18. PUMP: Date installed: NA 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: Terry L. Teate **CERT. NO.:** 1242
Address: (Print) P.O. Box 2237 Irmo, SC 29063
Level: A B C D (circle one) ✓
Telephone No.: 803-413-4936 Fax No.:

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: 03/24/2019

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

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: DHEC (last) (first)
Address: 2600 Bull Street
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: (803) 898-3432 Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Road
City: Columbia, SC Zip: 29018-9330
Latitude: N 34.0655340 Longitude: W 81.11751621

3. PUBLIC SYSTEM NAME: Monitor Well-16B **PUBLIC SYSTEM NUMBER:** MW-16B

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Lt TN mxln sandy-cly	0 ft.	5 ft.
Lt Brn fxln cly-snd	5 ft.	10 ft.
Tn Lt Brn fxln cly-snd	10 ft.	15 ft.
Lt Tn fxln sndy Cly	15 ft.	20 ft.
Lt Gry fxln hd snd dry	20 ft.	25 ft.
Gry fxln hd snd dry	25 ft.	30 ft.
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: DHEC Permit # UMW-27419

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 30 ft. Date Started: 03-7-2019 Date Completed: 03-08-2019

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to 0 ft. depth
_____ in. to 20 ft. depth
Height: Above/Below Surface 0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: .010 Length: 10.0 ft
Set Between: 30.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL 9.58 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
NA 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 30.0 ft. to 19.0 ft.
Effective size No. 2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 19.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 200 ft. NE direction
Type Petroleum
Well Disinfected ☐ Yes ☑ No Type: _____ Amount: _____

18. PUMP: Date installed: NA 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: Terry L. Teate **CERT. NO.:** 1242
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 2237 Irmo, SC 29063
Telephone No.: 803-413-4936 Fax No.:

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: 03/24/2019
Well Driller

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**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: DHEC (last) (first)
Address: 2600 Bull Street
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: (803) 898-3432 Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Road
City: Columbia, SC Zip: 29018-9330
Latitude: N 34.0655341 Longitude: W 81.11751622

3. PUBLIC SYSTEM NAME: Monitor Well-16A **PUBLIC SYSTEM NUMBER:** MW-16A

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Lt TN mxln sandy-cly	0 ft.	5 ft.
Lt Brn fxln cly-snd	5 ft.	10 ft.
TN Lt Brn fxln cly-snd	10 ft.	16 ft.
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: DHEC Permit # UMW-27419

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 16 ft. Date Started: 03-7-2019 Date Completed: 03-08-2019

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to 0 ft. depth
_____ in. to 6 ft. depth
Height: Above/Below Surface 0 ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: .010 Length: 10.0 ft
Set Between: 16 ft. and 6 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL 11.64 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
NA 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 16.0 ft. to 5.0 ft.
Effective size No. 2 Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 5.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 200 ft. NE direction
Type Petroleum
Well Disinfected ☐ Yes ☑ No Type: _____ Amount: _____

18. PUMP: Date installed: NA 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: Terry L. Teate **CERT. NO.:** 1242
Address: (Print) Level: A B C D (circle one)
P.O. Box 2237 Irmo, SC 29063
Telephone No.: 803-413-4936 Fax No.:

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: 03/24/2019
Well Driller

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

UST
JUN 19 2019
PROGRAM

June 12, 2019

ENVIRO-TEST SERVICES

UST
17b
Veal
DOCKETING

Ms. Carolyn Moores, Hydrogeologist
Corrective Action Section
UST Program
Bureau of Land and Waste management

RE: May 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco
Permit # 11946; CA # 59552
4335 Broad River Rd Columbia, SC
Richland County

Dear Ms. Moores,

Enviro-Test Services is continuing the removal of Free Product and petroleum contaminated water at the Play Pals Day Care.

A total of (7) Free Product Vacuum Recovery Events were performed through out the month of May. They began on May 7th and then on May 14th, May 17th, May 22nd, May 24, May 28th, and May 31st , 2019. The last week in April and the first 2 weeks of May there was no rain until May the 12th. This was the driest period so far. The water table dropped 2 to 3 ft in the recovery trench pits. Recovery Trench A continued to maintain 0.5 to 1.0 tenths of free product where as Trench B pit dropped down to an average of 0.03 tenths of product. Trench E almost dried up for the first time with very little product on the bottom. Trench D and the storm drain were dry on May 24th .

** It should be noted that this site is greatly effected by the amount of rain the BP gas station receives both from run off and increased ground water hydraulic pressure due to the BP gas station being 20 ft. higher than the Day Care.

These Events produced 7,328 gallons of contaminated petroleum water and 7 gallons of free product. See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care. There was also maintenance of the open pits and barrier nets for safety protection.

The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. The other Absorbent Booms are located in the ditch at the rear of the Day Care which leads to the storm drain that has one in it and there is another one in the ditch by the apartments.
See Site Map: Figure 1

Enviro-Test will continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed.

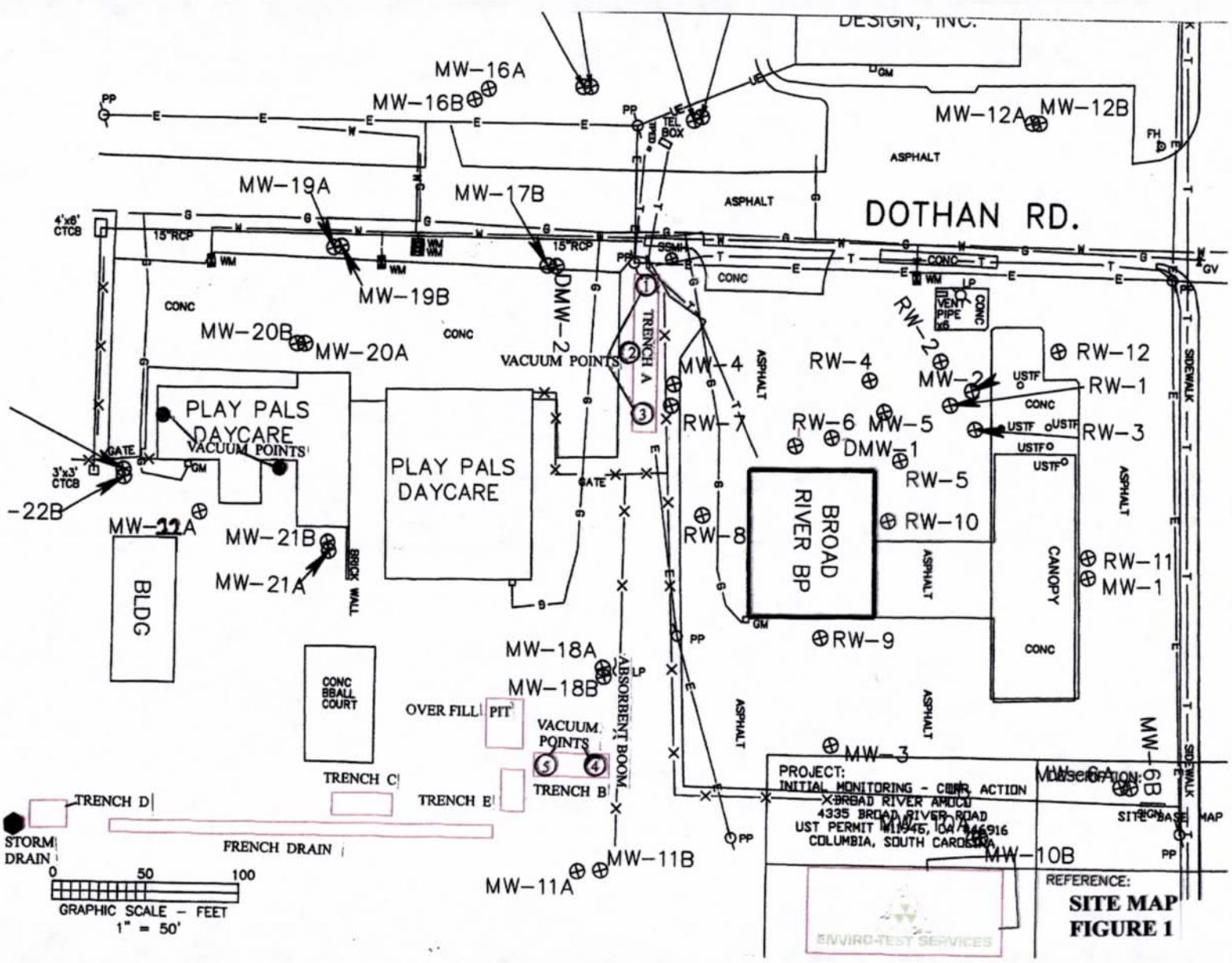
Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teate

Terry L. Teate
Project Manager
Enviro-Test Services Inc.

DISPOSAL MANIFEST
ATTACHMENT A

SITE MAP
FIGURE 1


MW-16A
MW-16B
MW-19A
MW-19B
MW-17B
DMW-2
MW-20B
MW-20A
MW-22B
MW-22A
MW-21B
MW-21A
MW-18A
MW-18B
MW-11A
MW-11B
MW-12A
MW-12B
MW-4
RW-4
MW-2
RW-2
RW-12
RW-1
RW-3
RW-7
RW-6
MW-5
DMW-1
RW-5
RW-10
RW-8
RW-11
MW-1
RW-9
MW-3
MW-6A
MW-6B
MW-10A
MW-10B
DOTHAN RD.
PLAY PALS DAYCARE
PLAY PALS DAYCARE
BROAD RIVER BP
CANOPY
BLDG
CONC BBALL COURT
TRENCH A
TRENCH B
TRENCH C
TRENCH D
TRENCH E
OVER FILL PIT
VACUUM POINTS
VACUUM POINTS
VACUUM POINTS
ABSORBENT BOOM
FRENCH DRAIN
STORM DRAIN
ASPHALT
CONC
GATE
BRICK WALL
4'x6' CTCB
3'x3' CTCB
15"RCP
VENT PIPE x6
USTF
TEL BOX
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, OR #16916
COLUMBIA, SOUTH CAROLINA
SITE BASE MAP
REFERENCE:
SITE MAP
FIGURE 1
ENVIRO-TEST SERVICES
0
50
100
GRAPHIC SCALE - FEET
1" = 50'

SITE NAME:_____

SHULTZ TANK 275 Gallon STICK MEASURMENT Conversion from Inches to Gallons

TANK No. _____ DATE_____ DHEC Permit No._____

Inches = Gallons	Inches = Gallons	Inches = Gallons	Inches = Gallons
0.00 = 0.00	10.00 = 70.50	20.00 = 141.00	30.00 = 211.50
.25 = 1.76	10.25 = 72.26	20.25 = 142.76	30.25 = 213.26
.50 = 3.52	10.50 = 74.02	20.50 = 144.52	30.50 = 215.02
.75 = 5.43	10.75 = 75.78	20.75 = 146.28	30.75 = 216.78
1.00 = 7.05	11.00 = 77.55	21.00 = 148.05	31.00 = 218.55
1.25 = 8.81	11.25 = 79.31	21.25 = 149.81	31.25 = 220.31
1.50 = 10.57	11.50 = 81.07	21.50 = 151.57	31.50 = 222.07
1.75 = 12.33	11.75 = 82.83	21.75 = 153.33	31.75 = 223.83
2.00 = 14.10	12.00 = 84.60	22.00 = 155.10	32.00 = 225.60
2.25 = 15.86	12.25 = 86.36	22.25 = 156.86	32.25 = 227.36
2.50 = 17.62	12.50 = 88.12	22.50 = 158.62	32.50 = 229.12
2.75 = 19.38	12.75 = 89.88	22.75 = 160.38	32.75 = 230.88
3.00 = 21.09	13.00 = 91.67	23.00 = 162.15	33.00 = 232.65
3.25 = 22.91	13.25 = 93.41	23.25 = 163.91	33.25 = 234.41
3.50 = 24.67	13.50 = 95.17	23.50 = 165.67	33.50 = 236.17
3.75 = 26.43	13.75 = 96.93	23.75 = 167.43	33.75 = 237.93
4.00 = 28.20	14.00 = 98.70	24.00 = 169.20	34.00 = 239.70
4.25 = 29.96	14.25 = 100.46	24.25 = 170.96	34.25 = 241.46
4.50 = 31.72	14.50 = 102.22	24.50 = 172.72	34.50 = 243.22
4.75 = 33.48	14.75 = 103.98	24.75 = 174.48	34.75 = 244.98
5.00 = 35.25	15.00 = 105.75	25.00 = 176.25	35.00 = 246.75
5.25 = 37.01	15.25 = 107.51	25.25 = 178.01	35.25 = 248.51
5.50 = 38.77	15.50 = 109.27	25.50 = 179.77	35.50 = 250.27
5.75 = 40.53	15.75 = 111.03	25.75 = 181.53	35.75 = 252.03
6.00 = 42.30	16.00 = 112.80	26.00 = 183.30	36.00 = 253.80
6.25 = 44.06	16.25 = 114.56	26.25 = 185.06	36.25 = 255.56
6.50 = 45.82	16.50 = 116.32	26.50 = 186.82	36.50 = 257.32
6.75 = 47.58	16.75 = 118.08	26.75 = 188.58	36.75 = 259.08
7.00 = 49.35	17.00 = 119.85	27.00 = 190.35	37.00 = 260.85
7.25 = 51.11	17.25 = 121.61	27.25 = 192.11	37.25 = 262.61
7.50 = 52.87	17.50 = 123.37	27.50 = 193.87	37.50 = 264.37
7.75 = 54.63	17.75 = 125.13	27.75 = 195.63	37.75 = 266.13
8.00 = 56.40	18.00 = 126.90	28.00 = 197.40	38.00 = 267.90
8.25 = 58.16	18.25 = 128.66	28.25 = 199.16	38.25 = 269.66
8.50 = 59.95	18.50 = 130.42	28.50 = 200.92	38.50 = 271.45
8.75 = 61.68	18.75 = 132.18	28.75 = 202.68	38.75 = 273.18
9.00 = 63.45	19.00 = 133.95	29.00 = 204.45	39.00 = 275.00
9.25 = 65.21	19.25 = 135.71	29.25 = 206.21	
9.50 = 68.87	19.50 = 137.40	29.50 = 207.97	Amount Measured
9.75 = 69.73	19.75 = 139.23	29.75 = 209.73	_____

NON-HAZARDOUS WASTE 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 Document No. 2388

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cucchini
4335 Broad River Rd
Columbia, S.C

12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM ENV. SVCS

6. US EPA ID Number

A. State Transorter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Hydrotime Env. Svcs.
2420 Shop Rd
Columbia, S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	4093	Gal
c.				
d.				

GENERATOR

G. Additonal Descriptions for Materials Listed Above: 5 gallons - fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

NON-HAZARDOUS WASTE

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Billy Pittenger Agent for Broad River BP / Fred Cucchini

Signature: Billy Pittenger

Date: Month 5 Day 28 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger

Signature: Billy Pittenger

Date: Month 5 Day 28 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this maifest, except as noted in item 19.

Printed/Typed Name: Guy Bouknight

Signature: Guy Bouknight

Date: Month Day Year

F-14 © 2002 LABELMASTER (800) 621-5808 www.labelmaster.com

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Rev. 3/95

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No. 2387

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cucchini, 4335 Broad River Rd, Columbia, S.C

12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM Env. Svcs.

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Hydrotime Env. Svcs., 2420 Shop Rd, Columbia, S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	TT	3235	Gal
c.				
d.				

G. Additional Descriptions for Materials Listed Above: 2 gallons - fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC.
P.O. BOX 50285
COLUMBIA, SC 29250

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Billy Pittenger Agent for Broad River BP / Fred Cucchini — Signature: Billy Pittenger — Date: Month 5 Day 8 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger — Signature: Billy Pittenger — Date: Month 5 Day 8 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name — Signature — Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Guy Bouknight — Signature: Guy Bouknight — Date: Month 5 Day 8 Year 19

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Rev. 3/95

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 17, 2019

Robert Dunn
SCHDEC
2600 Bull St
Columbia, SC 29201

RE: Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Dear Robert Dunn:
Enclosed are the analytical results for sample(s) received by the laboratory on June 07, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
(704)875-9092
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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SAMPLE SUMMARY

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92432318001	SS-1	Solid	06/06/19 08:25	06/07/19 18:35
92432318002	SS-2	Solid	06/06/19 08:35	06/07/19 18:35
92432318003	SS-3	Solid	06/06/19 08:45	06/07/19 18:35
92432318004	SS-4	Solid	06/06/19 14:09	06/07/19 18:35
92432318005	SS-5	Solid	06/06/19 14:20	06/07/19 18:35
92432318006	SS-6	Solid	06/06/19 14:30	06/07/19 18:35
92432318007	DUP	Solid	06/06/19 14:35	06/07/19 18:35
92432318008	TRIP BLANK	Water	06/06/19 00:00	06/07/19 18:35

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SAMPLE ANALYTE COUNT

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92432318001	SS-1	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318002	SS-2	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318003	SS-3	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318004	SS-4	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318005	SS-5	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318006	SS-6	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318007	DUP	EPA 8260B	SAS	20	PASI-C
		ASTM D2974-87	KDF	1	PASI-C
92432318008	TRIP BLANK	EPA 8260B	DLK	20	PASI-C

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SUMMARY OF DETECTION

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92432318001	**SS-1**					
ASTM D2974-87	Percent Moisture	8.0	%	0.10	06/10/19 13:32	
92432318002	**SS-2**					
EPA 8260B	Ethylbenzene	40.8J	ug/kg	107	06/12/19 14:09	
EPA 8260B	Naphthalene	36.5J	ug/kg	107	06/12/19 14:09	
EPA 8260B	m&p-Xylene	109J	ug/kg	215	06/12/19 14:09	
ASTM D2974-87	Percent Moisture	15.6	%	0.10	06/10/19 13:32	
92432318003	**SS-3**					
ASTM D2974-87	Percent Moisture	16.2	%	0.10	06/10/19 13:32	
92432318004	**SS-4**					
ASTM D2974-87	Percent Moisture	8.4	%	0.10	06/10/19 13:32	
92432318005	**SS-5**					
ASTM D2974-87	Percent Moisture	14.5	%	0.10	06/11/19 13:37	
92432318006	**SS-6**					
ASTM D2974-87	Percent Moisture	12.4	%	0.10	06/11/19 13:37	
92432318007	**DUP**					
EPA 8260B	Naphthalene	37.7J	ug/kg	115	06/14/19 18:45	
ASTM D2974-87	Percent Moisture	11.6	%	0.10	06/11/19 13:37	

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PROJECT NARRATIVE

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Method: **EPA 8260B**
Description: 8260 MSV
Client: SCDHEC
Date: June 17, 2019

General Information:
1 sample was analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 480927

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92431902024

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2601907)
  - Toluene
  - m&p-Xylene
- MSD (Lab ID: 2601908)
  - m&p-Xylene
  - o-Xylene

Additional Comments:

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PROJECT NARRATIVE

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Method: **EPA 8260B**
Description: 8260/5035A SC Volatile Org
Client: SCDHEC
Date: June 17, 2019

General Information:
7 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 5035A with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 480639

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92432318001

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2600150)
  - Ethanol
- MSD (Lab ID: 2600151)
  - Ethanol

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-1 **Lab ID: 92432318001** Collected: 06/06/19 08:25 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2240	470	25	06/12/19 11:05	06/12/19 13:45	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	224	24.6	25	06/12/19 11:05	06/12/19 13:45	994-05-8	
Benzene	ND	ug/kg	112	35.8	25	06/12/19 11:05	06/12/19 13:45	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2240	627	25	06/12/19 11:05	06/12/19 13:45	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2240	425	25	06/12/19 11:05	06/12/19 13:45	75-65-0	
tert-Butyl Formate	ND	ug/kg	1120	31.3	25	06/12/19 11:05	06/12/19 13:45	762-75-4	
1,2-Dichloroethane	ND	ug/kg	112	49.2	25	06/12/19 11:05	06/12/19 13:45	107-06-2	
Diisopropyl ether	ND	ug/kg	112	38.1	25	06/12/19 11:05	06/12/19 13:45	108-20-3	
Ethanol	ND	ug/kg	4480	1390	25	06/12/19 11:05	06/12/19 13:45	64-17-5	M1
Ethylbenzene	ND	ug/kg	112	40.3	25	06/12/19 11:05	06/12/19 13:45	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	224	31.3	25	06/12/19 11:05	06/12/19 13:45	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	112	33.6	25	06/12/19 11:05	06/12/19 13:45	1634-04-4	
Naphthalene	ND	ug/kg	112	26.9	25	06/12/19 11:05	06/12/19 13:45	91-20-3	
Toluene	ND	ug/kg	112	40.3	25	06/12/19 11:05	06/12/19 13:45	108-88-3	
Xylene (Total)	ND	ug/kg	224	80.6	25	06/12/19 11:05	06/12/19 13:45	1330-20-7	
m&p-Xylene	ND	ug/kg	224	80.6	25	06/12/19 11:05	06/12/19 13:45	179601-23-1	
o-Xylene	ND	ug/kg	112	42.5	25	06/12/19 11:05	06/12/19 13:45	95-47-6	
Surrogates									
Toluene-d8 (S)	103	%	70-130		25	06/12/19 11:05	06/12/19 13:45	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		25	06/12/19 11:05	06/12/19 13:45	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		25	06/12/19 11:05	06/12/19 13:45	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**8.0**	%	0.10	0.10	1		06/10/19 13:32		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-2 **Lab ID: 92432318002** Collected: 06/06/19 08:35 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2150	451	25	06/12/19 11:05	06/12/19 14:09	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	215	23.6	25	06/12/19 11:05	06/12/19 14:09	994-05-8	
Benzene	ND	ug/kg	107	34.4	25	06/12/19 11:05	06/12/19 14:09	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2150	601	25	06/12/19 11:05	06/12/19 14:09	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2150	408	25	06/12/19 11:05	06/12/19 14:09	75-65-0	
tert-Butyl Formate	ND	ug/kg	1070	30.1	25	06/12/19 11:05	06/12/19 14:09	762-75-4	
1,2-Dichloroethane	ND	ug/kg	107	47.2	25	06/12/19 11:05	06/12/19 14:09	107-06-2	
Diisopropyl ether	ND	ug/kg	107	36.5	25	06/12/19 11:05	06/12/19 14:09	108-20-3	
Ethanol	ND	ug/kg	4290	1330	25	06/12/19 11:05	06/12/19 14:09	64-17-5	
Ethylbenzene	**40.8J**	ug/kg	107	38.6	25	06/12/19 11:05	06/12/19 14:09	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	215	30.1	25	06/12/19 11:05	06/12/19 14:09	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	107	32.2	25	06/12/19 11:05	06/12/19 14:09	1634-04-4	
Naphthalene	**36.5J**	ug/kg	107	25.8	25	06/12/19 11:05	06/12/19 14:09	91-20-3	
Toluene	ND	ug/kg	107	38.6	25	06/12/19 11:05	06/12/19 14:09	108-88-3	
Xylene (Total)	ND	ug/kg	215	77.3	25	06/12/19 11:05	06/12/19 14:09	1330-20-7	
m&p-Xylene	**109J**	ug/kg	215	77.3	25	06/12/19 11:05	06/12/19 14:09	179601-23-1	
o-Xylene	ND	ug/kg	107	40.8	25	06/12/19 11:05	06/12/19 14:09	95-47-6	
Surrogates									
Toluene-d8 (S)	110	%	70-130		25	06/12/19 11:05	06/12/19 14:09	2037-26-5	
4-Bromofluorobenzene (S)	87	%	70-130		25	06/12/19 11:05	06/12/19 14:09	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		25	06/12/19 11:05	06/12/19 14:09	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**15.6**	%	0.10	0.10	1		06/10/19 13:32		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-3 **Lab ID: 92432318003** Collected: 06/06/19 08:45 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2690	566	25	06/12/19 11:05	06/12/19 14:33	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	269	29.6	25	06/12/19 11:05	06/12/19 14:33	994-05-8	
Benzene	ND	ug/kg	135	43.1	25	06/12/19 11:05	06/12/19 14:33	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2690	754	25	06/12/19 11:05	06/12/19 14:33	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2690	512	25	06/12/19 11:05	06/12/19 14:33	75-65-0	
tert-Butyl Formate	ND	ug/kg	1350	37.7	25	06/12/19 11:05	06/12/19 14:33	762-75-4	
1,2-Dichloroethane	ND	ug/kg	135	59.3	25	06/12/19 11:05	06/12/19 14:33	107-06-2	
Diisopropyl ether	ND	ug/kg	135	45.8	25	06/12/19 11:05	06/12/19 14:33	108-20-3	
Ethanol	ND	ug/kg	5390	1670	25	06/12/19 11:05	06/12/19 14:33	64-17-5	
Ethylbenzene	ND	ug/kg	135	48.5	25	06/12/19 11:05	06/12/19 14:33	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	269	37.7	25	06/12/19 11:05	06/12/19 14:33	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	135	40.4	25	06/12/19 11:05	06/12/19 14:33	1634-04-4	
Naphthalene	ND	ug/kg	135	32.3	25	06/12/19 11:05	06/12/19 14:33	91-20-3	
Toluene	ND	ug/kg	135	48.5	25	06/12/19 11:05	06/12/19 14:33	108-88-3	
Xylene (Total)	ND	ug/kg	269	97.0	25	06/12/19 11:05	06/12/19 14:33	1330-20-7	
m&p-Xylene	ND	ug/kg	269	97.0	25	06/12/19 11:05	06/12/19 14:33	179601-23-1	
o-Xylene	ND	ug/kg	135	51.2	25	06/12/19 11:05	06/12/19 14:33	95-47-6	
Surrogates									
Toluene-d8 (S)	99	%	70-130		25	06/12/19 11:05	06/12/19 14:33	2037-26-5	
4-Bromofluorobenzene (S)	97	%	70-130		25	06/12/19 11:05	06/12/19 14:33	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		25	06/12/19 11:05	06/12/19 14:33	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**16.2**	%	0.10	0.10	1		06/10/19 13:32		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-4 **Lab ID: 92432318004** Collected: 06/06/19 14:09 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2850	599	25	06/12/19 11:05	06/14/19 17:56	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	285	31.4	25	06/12/19 11:05	06/14/19 17:56	994-05-8	
Benzene	ND	ug/kg	143	45.7	25	06/12/19 11:05	06/14/19 17:56	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2850	799	25	06/12/19 11:05	06/14/19 17:56	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2850	542	25	06/12/19 11:05	06/14/19 17:56	75-65-0	
tert-Butyl Formate	ND	ug/kg	1430	40.0	25	06/12/19 11:05	06/14/19 17:56	762-75-4	
1,2-Dichloroethane	ND	ug/kg	143	62.8	25	06/12/19 11:05	06/14/19 17:56	107-06-2	
Diisopropyl ether	ND	ug/kg	143	48.5	25	06/12/19 11:05	06/14/19 17:56	108-20-3	
Ethanol	ND	ug/kg	5710	1770	25	06/12/19 11:05	06/14/19 17:56	64-17-5	
Ethylbenzene	ND	ug/kg	143	51.4	25	06/12/19 11:05	06/14/19 17:56	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	285	40.0	25	06/12/19 11:05	06/14/19 17:56	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	143	42.8	25	06/12/19 11:05	06/14/19 17:56	1634-04-4	
Naphthalene	ND	ug/kg	143	34.2	25	06/12/19 11:05	06/14/19 17:56	91-20-3	
Toluene	ND	ug/kg	143	51.4	25	06/12/19 11:05	06/14/19 17:56	108-88-3	
Xylene (Total)	ND	ug/kg	285	103	25	06/12/19 11:05	06/14/19 17:56	1330-20-7	
m&p-Xylene	ND	ug/kg	285	103	25	06/12/19 11:05	06/14/19 17:56	179601-23-1	
o-Xylene	ND	ug/kg	143	54.2	25	06/12/19 11:05	06/14/19 17:56	95-47-6	
Surrogates									
Toluene-d8 (S)	104	%	70-130		25	06/12/19 11:05	06/14/19 17:56	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		25	06/12/19 11:05	06/14/19 17:56	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		25	06/12/19 11:05	06/14/19 17:56	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**8.4**	%	0.10	0.10	1		06/10/19 13:32		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-5 **Lab ID: 92432318005** Collected: 06/06/19 14:20 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	1900	400	25	06/12/19 11:05	06/14/19 18:21	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	190	20.9	25	06/12/19 11:05	06/14/19 18:21	994-05-8	
Benzene	ND	ug/kg	95.2	30.5	25	06/12/19 11:05	06/14/19 18:21	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	1900	533	25	06/12/19 11:05	06/14/19 18:21	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	1900	362	25	06/12/19 11:05	06/14/19 18:21	75-65-0	
tert-Butyl Formate	ND	ug/kg	952	26.6	25	06/12/19 11:05	06/14/19 18:21	762-75-4	
1,2-Dichloroethane	ND	ug/kg	95.2	41.9	25	06/12/19 11:05	06/14/19 18:21	107-06-2	
Diisopropyl ether	ND	ug/kg	95.2	32.4	25	06/12/19 11:05	06/14/19 18:21	108-20-3	
Ethanol	ND	ug/kg	3810	1180	25	06/12/19 11:05	06/14/19 18:21	64-17-5	
Ethylbenzene	ND	ug/kg	95.2	34.3	25	06/12/19 11:05	06/14/19 18:21	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	190	26.6	25	06/12/19 11:05	06/14/19 18:21	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	95.2	28.6	25	06/12/19 11:05	06/14/19 18:21	1634-04-4	
Naphthalene	ND	ug/kg	95.2	22.8	25	06/12/19 11:05	06/14/19 18:21	91-20-3	
Toluene	ND	ug/kg	95.2	34.3	25	06/12/19 11:05	06/14/19 18:21	108-88-3	
Xylene (Total)	ND	ug/kg	190	68.5	25	06/12/19 11:05	06/14/19 18:21	1330-20-7	
m&p-Xylene	ND	ug/kg	190	68.5	25	06/12/19 11:05	06/14/19 18:21	179601-23-1	
o-Xylene	ND	ug/kg	95.2	36.2	25	06/12/19 11:05	06/14/19 18:21	95-47-6	
Surrogates									
Toluene-d8 (S)	110	%	70-130		25	06/12/19 11:05	06/14/19 18:21	2037-26-5	
4-Bromofluorobenzene (S)	104	%	70-130		25	06/12/19 11:05	06/14/19 18:21	460-00-4	
1,2-Dichloroethane-d4 (S)	105	%	70-130		25	06/12/19 11:05	06/14/19 18:21	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**14.5**	%	0.10	0.10	1		06/11/19 13:37		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: SS-6 **Lab ID: 92432318006** Collected: 06/06/19 14:30 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2520	529	25	06/12/19 11:05	06/12/19 15:46	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	252	27.7	25	06/12/19 11:05	06/12/19 15:46	994-05-8	
Benzene	ND	ug/kg	126	40.3	25	06/12/19 11:05	06/12/19 15:46	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2520	706	25	06/12/19 11:05	06/12/19 15:46	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2520	479	25	06/12/19 11:05	06/12/19 15:46	75-65-0	
tert-Butyl Formate	ND	ug/kg	1260	35.3	25	06/12/19 11:05	06/12/19 15:46	762-75-4	
1,2-Dichloroethane	ND	ug/kg	126	55.5	25	06/12/19 11:05	06/12/19 15:46	107-06-2	
Diisopropyl ether	ND	ug/kg	126	42.9	25	06/12/19 11:05	06/12/19 15:46	108-20-3	
Ethanol	ND	ug/kg	5040	1560	25	06/12/19 11:05	06/12/19 15:46	64-17-5	
Ethylbenzene	ND	ug/kg	126	45.4	25	06/12/19 11:05	06/12/19 15:46	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	252	35.3	25	06/12/19 11:05	06/12/19 15:46	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	126	37.8	25	06/12/19 11:05	06/12/19 15:46	1634-04-4	
Naphthalene	ND	ug/kg	126	30.3	25	06/12/19 11:05	06/12/19 15:46	91-20-3	
Toluene	ND	ug/kg	126	45.4	25	06/12/19 11:05	06/12/19 15:46	108-88-3	
Xylene (Total)	ND	ug/kg	252	90.8	25	06/12/19 11:05	06/12/19 15:46	1330-20-7	
m&p-Xylene	ND	ug/kg	252	90.8	25	06/12/19 11:05	06/12/19 15:46	179601-23-1	
o-Xylene	ND	ug/kg	126	47.9	25	06/12/19 11:05	06/12/19 15:46	95-47-6	
Surrogates									
Toluene-d8 (S)	80	%	70-130		25	06/12/19 11:05	06/12/19 15:46	2037-26-5	
4-Bromofluorobenzene (S)	99	%	70-130		25	06/12/19 11:05	06/12/19 15:46	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		25	06/12/19 11:05	06/12/19 15:46	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**12.4**	%	0.10	0.10	1		06/11/19 13:37		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: DUP **Lab ID: 92432318007** Collected: 06/06/19 14:35 Received: 06/07/19 18:35 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260/5035A SC Volatile Org	Analytical Method: EPA 8260B Preparation Method: EPA 5035A								
tert-Amyl Alcohol	ND	ug/kg	2300	483	25	06/12/19 11:05	06/14/19 18:45	75-85-4	
tert-Amylmethyl ether	ND	ug/kg	230	25.3	25	06/12/19 11:05	06/14/19 18:45	994-05-8	
Benzene	ND	ug/kg	115	36.8	25	06/12/19 11:05	06/14/19 18:45	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/kg	2300	645	25	06/12/19 11:05	06/14/19 18:45	624-95-3	
tert-Butyl Alcohol	ND	ug/kg	2300	437	25	06/12/19 11:05	06/14/19 18:45	75-65-0	
tert-Butyl Formate	ND	ug/kg	1150	32.2	25	06/12/19 11:05	06/14/19 18:45	762-75-4	
1,2-Dichloroethane	ND	ug/kg	115	50.6	25	06/12/19 11:05	06/14/19 18:45	107-06-2	
Diisopropyl ether	ND	ug/kg	115	39.1	25	06/12/19 11:05	06/14/19 18:45	108-20-3	
Ethanol	ND	ug/kg	4600	1430	25	06/12/19 11:05	06/14/19 18:45	64-17-5	
Ethylbenzene	ND	ug/kg	115	41.4	25	06/12/19 11:05	06/14/19 18:45	100-41-4	
Ethyl-tert-butyl ether	ND	ug/kg	230	32.2	25	06/12/19 11:05	06/14/19 18:45	637-92-3	
Methyl-tert-butyl ether	ND	ug/kg	115	34.5	25	06/12/19 11:05	06/14/19 18:45	1634-04-4	
Naphthalene	**37.7J**	ug/kg	115	27.6	25	06/12/19 11:05	06/14/19 18:45	91-20-3	
Toluene	ND	ug/kg	115	41.4	25	06/12/19 11:05	06/14/19 18:45	108-88-3	
Xylene (Total)	ND	ug/kg	230	82.9	25	06/12/19 11:05	06/14/19 18:45	1330-20-7	
m&p-Xylene	ND	ug/kg	230	82.9	25	06/12/19 11:05	06/14/19 18:45	179601-23-1	
o-Xylene	ND	ug/kg	115	43.7	25	06/12/19 11:05	06/14/19 18:45	95-47-6	
Surrogates									
Toluene-d8 (S)	106	%	70-130		25	06/12/19 11:05	06/14/19 18:45	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130		25	06/12/19 11:05	06/14/19 18:45	460-00-4	
1,2-Dichloroethane-d4 (S)	106	%	70-130		25	06/12/19 11:05	06/14/19 18:45	17060-07-0	
Percent Moisture	Analytical Method: ASTM D2974-87								
Percent Moisture	**11.6**	%	0.10	0.10	1		06/11/19 13:37		

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ANALYTICAL RESULTS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Sample: TRIP BLANK **Lab ID: 92432318008** Collected: 06/06/19 00:00 Received: 06/07/19 18:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
tert-Amyl Alcohol	ND	ug/L	100	65.6	1		06/13/19 17:33	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.0	1		06/13/19 17:33	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		06/13/19 17:33	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	53.9	1		06/13/19 17:33	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	91.0	1		06/13/19 17:33	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	24.1	1		06/13/19 17:33	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	2.1	1		06/13/19 17:33	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	3.5	1		06/13/19 17:33	108-20-3	
Ethanol	ND	ug/L	200	144	1		06/13/19 17:33	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.8	1		06/13/19 17:33	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	8.5	1		06/13/19 17:33	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	3.1	1		06/13/19 17:33	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.1	1		06/13/19 17:33	91-20-3	
Toluene	ND	ug/L	5.0	2.0	1		06/13/19 17:33	108-88-3	
Xylene (Total)	ND	ug/L	5.0	5.0	1		06/13/19 17:33	1330-20-7	
m&p-Xylene	ND	ug/L	10.0	4.1	1		06/13/19 17:33	179601-23-1	
o-Xylene	ND	ug/L	5.0	2.0	1		06/13/19 17:33	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		06/13/19 17:33	460-00-4	
1,2-Dichloroethane-d4 (S)	107	%	70-130		1		06/13/19 17:33	17060-07-0	
Toluene-d8 (S)	97	%	70-130		1		06/13/19 17:33	2037-26-5	

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QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

QC Batch: 480927
QC Batch Method: EPA 8260B
Analysis Method: EPA 8260B
Analysis Description: 8260 MSV SC
Associated Lab Samples: 92432318008

METHOD BLANK: 2601383
Matrix: Water
Associated Lab Samples: 92432318008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	2.1	06/13/19 16:22	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	53.9	06/13/19 16:22	
Benzene	ug/L	ND	5.0	1.7	06/13/19 16:22	
Diisopropyl ether	ug/L	ND	5.0	3.5	06/13/19 16:22	
Ethanol	ug/L	ND	200	144	06/13/19 16:22	
Ethyl-tert-butyl ether	ug/L	ND	10.0	8.5	06/13/19 16:22	
Ethylbenzene	ug/L	ND	5.0	1.8	06/13/19 16:22	
m&p-Xylene	ug/L	ND	10.0	4.1	06/13/19 16:22	
Methyl-tert-butyl ether	ug/L	ND	5.0	3.1	06/13/19 16:22	
Naphthalene	ug/L	ND	5.0	2.1	06/13/19 16:22	
o-Xylene	ug/L	ND	5.0	2.0	06/13/19 16:22	
tert-Amyl Alcohol	ug/L	ND	100	65.6	06/13/19 16:22	
tert-Amylmethyl ether	ug/L	ND	10.0	3.0	06/13/19 16:22	
tert-Butyl Alcohol	ug/L	ND	100	91.0	06/13/19 16:22	
tert-Butyl Formate	ug/L	ND	50.0	24.1	06/13/19 16:22	
Toluene	ug/L	ND	5.0	2.0	06/13/19 16:22	
Xylene (Total)	ug/L	ND	5.0	5.0	06/13/19 16:22	
1,2-Dichloroethane-d4 (S)	%	104	70-130		06/13/19 16:22	
4-Bromofluorobenzene (S)	%	106	70-130		06/13/19 16:22	
Toluene-d8 (S)	%	104	70-130		06/13/19 16:22	

LABORATORY CONTROL SAMPLE: 2601384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.3	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	1250	125	70-130	
Benzene	ug/L	50	50.8	102	70-130	
Diisopropyl ether	ug/L	50	49.6	99	70-130	
Ethanol	ug/L	2000	1970	98	70-130	
Ethyl-tert-butyl ether	ug/L	100	90.8	91	70-130	
Ethylbenzene	ug/L	50	52.8	106	70-130	
m&p-Xylene	ug/L	100	114	114	70-130	
Methyl-tert-butyl ether	ug/L	50	48.9	98	70-130	
Naphthalene	ug/L	50	46.8	94	70-130	
o-Xylene	ug/L	50	58.2	116	70-130	
tert-Amyl Alcohol	ug/L	1000	1030	103	70-130	
tert-Amylmethyl ether	ug/L	100	107	107	70-130	
tert-Butyl Alcohol	ug/L	500	484	97	70-130	
tert-Butyl Formate	ug/L	400	411	103	70-130	
Toluene	ug/L	50	47.4	95	70-130	

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QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

LABORATORY CONTROL SAMPLE: 2601384

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	173	115	70-130	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			110	70-130	
Toluene-d8 (S)	%			91	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2601907 2601908

Parameter	Units	92431902024 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	1000	1000	998	973	100	97	70-130	3	30	
3,3-Dimethyl-1-Butanol	ug/L	ND	20000	20000	21600	21100	108	105	70-130	2	30	
Benzene	ug/L	857	1000	1000	1970	1810	111	95	70-130	8	30	
Diisopropyl ether	ug/L	ND	1000	1000	1070	988	107	99	70-130	8	30	
Ethanol	ug/L	ND	40000	40000	40900	37800	102	94	70-130	8	30	
Ethyl-tert-butyl ether	ug/L	ND	2000	2000	1920	1770	96	89	70-130	8	30	
Ethylbenzene	ug/L	2970	1000	1000	3890	3780	92	81	70-130	3	30	
m&p-Xylene	ug/L	11600	2000	2000	12900	12700	63	56	70-130	1	30	M1
Methyl-tert-butyl ether	ug/L	ND	1000	1000	1050	1000	105	100	70-130	5	30	
Naphthalene	ug/L	602	1000	1000	1650	1680	105	108	70-130	2	30	
o-Xylene	ug/L	5170	1000	1000	5940	5740	77	57	70-130	3	30	M1
tert-Amyl Alcohol	ug/L	ND	20000	20000	21700	20400	109	102	70-130	6	30	
tert-Amylmethyl ether	ug/L	ND	2000	2000	2170	2090	108	105	70-130	4	30	
tert-Butyl Alcohol	ug/L	ND	10000	10000	9910	9510	99	95	70-130	4	30	
tert-Butyl Formate	ug/L	ND	8000	8000	8080	7680	101	96	70-130	5	30	
Toluene	ug/L	7420	1000	1000	8820	8330	140	91	70-130	6	30	M1
Xylene (Total)	ug/L	16800	3000	3000	18800	18500	67	57	70-130	2	30	MS
1,2-Dichloroethane-d4 (S)	%						100	93	70-130			
4-Bromofluorobenzene (S)	%						103	95	70-130			
Toluene-d8 (S)	%						104	100	70-130			

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QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

QC Batch: 480639 Analysis Method: EPA 8260B
QC Batch Method: EPA 5035A Analysis Description: 8260 MSV 5035A Volatile Organics
Associated Lab Samples: 92432318001, 92432318002, 92432318003, 92432318004, 92432318005, 92432318006, 92432318007

METHOD BLANK: 2600148 Matrix: Solid
Associated Lab Samples: 92432318001, 92432318002, 92432318003, 92432318004, 92432318005, 92432318006, 92432318007

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/kg	ND	5.0	2.2	06/12/19 10:52	
3,3-Dimethyl-1-Butanol	ug/kg	ND	100	28.0	06/12/19 10:52	
Benzene	ug/kg	ND	5.0	1.6	06/12/19 10:52	
Diisopropyl ether	ug/kg	ND	5.0	1.7	06/12/19 10:52	
Ethanol	ug/kg	ND	200	62.0	06/12/19 10:52	
Ethyl-tert-butyl ether	ug/kg	ND	10.0	1.4	06/12/19 10:52	
Ethylbenzene	ug/kg	ND	5.0	1.8	06/12/19 10:52	
m&p-Xylene	ug/kg	ND	10.0	3.6	06/12/19 10:52	
Methyl-tert-butyl ether	ug/kg	ND	5.0	1.5	06/12/19 10:52	
Naphthalene	ug/kg	ND	5.0	1.2	06/12/19 10:52	
o-Xylene	ug/kg	ND	5.0	1.9	06/12/19 10:52	
tert-Amyl Alcohol	ug/kg	ND	100	21.0	06/12/19 10:52	
tert-Amylmethyl ether	ug/kg	ND	10.0	1.1	06/12/19 10:52	
tert-Butyl Alcohol	ug/kg	ND	100	19.0	06/12/19 10:52	
tert-Butyl Formate	ug/kg	ND	50.0	1.4	06/12/19 10:52	
Toluene	ug/kg	ND	5.0	1.8	06/12/19 10:52	
Xylene (Total)	ug/kg	ND	10.0	3.6	06/12/19 10:52	
1,2-Dichloroethane-d4 (S)	%	80	70-130		06/12/19 10:52	
4-Bromofluorobenzene (S)	%	99	70-130		06/12/19 10:52	
Toluene-d8 (S)	%	108	70-130		06/12/19 10:52	

LABORATORY CONTROL SAMPLE: 2600149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/kg	50	47.8	96	70-130	
3,3-Dimethyl-1-Butanol	ug/kg	1000	1100	110	70-130	
Benzene	ug/kg	50	52.8	106	70-130	
Diisopropyl ether	ug/kg	50	43.4	87	70-130	
Ethanol	ug/kg	2000	1750	88	70-130	
Ethyl-tert-butyl ether	ug/kg	100	88.0	88	70-130	
Ethylbenzene	ug/kg	50	50.7	101	70-130	
m&p-Xylene	ug/kg	100	102	102	70-130	
Methyl-tert-butyl ether	ug/kg	50	50.7	101	70-130	
Naphthalene	ug/kg	50	48.7	97	70-130	
o-Xylene	ug/kg	50	51.2	102	70-130	
tert-Amyl Alcohol	ug/kg	1000	1090	109	70-130	
tert-Amylmethyl ether	ug/kg	100	112	112	70-130	
tert-Butyl Alcohol	ug/kg	500	469	94	70-130	
tert-Butyl Formate	ug/kg	400	411	103	70-130	
Toluene	ug/kg	50	49.8	100	70-130	

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REPORT OF LABORATORY ANALYSIS

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Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

LABORATORY CONTROL SAMPLE: 2600149

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/kg	150	154	102	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2600150 2600151

Parameter	Units	92432318001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/kg	ND	448	448	488	410	109	92	70-130	17	30	
3,3-Dimethyl-1-Butanol	ug/kg	ND	8960	8960	10000	7650	112	85	70-130	27	30	
Benzene	ug/kg	ND	448	448	515	433	115	97	70-130	17	30	
Diisopropyl ether	ug/kg	ND	448	448	511	417	114	93	70-130	20	30	
Ethanol	ug/kg	ND	17900	17900	4510	5260	25	29	70-130	15	30	M1
Ethyl-tert-butyl ether	ug/kg	ND	896	896	897	718	100	80		22		
Ethylbenzene	ug/kg	ND	448	448	510	447	114	100	70-130	13	30	
m&p-Xylene	ug/kg	ND	896	896	1030	872	115	97	70-130	16	30	
Methyl-tert-butyl ether	ug/kg	ND	448	448	482	402	108	90	70-130	18	30	
Naphthalene	ug/kg	ND	448	448	535	454	119	101	70-130	16	30	
o-Xylene	ug/kg	ND	448	448	519	436	116	97	70-130	17	30	
tert-Amyl Alcohol	ug/kg	ND	8960	8960	7850	6970	88	78	70-130	12	30	
tert-Amylmethyl ether	ug/kg	ND	896	896	1010	794	112	89	70-130	24	30	
tert-Butyl Alcohol	ug/kg	ND	4480	4480	4110	3690	92	82	70-130	11	30	
tert-Butyl Formate	ug/kg	ND	3580	3580	3820	3000	107	84	70-130	24	30	
Toluene	ug/kg	ND	448	448	505	435	113	97	70-130	15	30	
Xylene (Total)	ug/kg	ND	1350	1350	1540	1310	115	97	70-130	17	30	
1,2-Dichloroethane-d4 (S)	%						102	97	70-130			
4-Bromofluorobenzene (S)	%						102	101	70-130			
Toluene-d8 (S)	%						100	102	70-130			

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

QC Batch: 480139 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92432318001, 92432318002, 92432318003, 92432318004

SAMPLE DUPLICATE: 2597998

Parameter	Units	92432240001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	2.6	2.8	10	25	

SAMPLE DUPLICATE: 2597999

Parameter	Units	92432324002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	33.5	35.0	4	25	

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QUALITY CONTROL DATA

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

QC Batch: 480378 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 92432318005, 92432318006, 92432318007

SAMPLE DUPLICATE: 2599124

Parameter	Units	92432238001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	97.0	97.0	0	25	

SAMPLE DUPLICATE: 2599125

Parameter	Units	92432501006 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	25.2	28.2	11	25	

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Huntersville, NC 28078
(704)875-9092

QUALIFIERS

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
MS	Analyte recovery in the matrix spike was outside QC limits for one or more of the constituent analytes used in the calculated result.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: BROAD RIVER 11946/59780
Pace Project No.: 92432318

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92432318008	TRIP BLANK	EPA 8260B	480927		
92432318001	SS-1	EPA 5035A	480639	EPA 8260B	480662
92432318002	SS-2	EPA 5035A	480639	EPA 8260B	480662
92432318003	SS-3	EPA 5035A	480639	EPA 8260B	480662
92432318004	SS-4	EPA 5035A	480639	EPA 8260B	480662
92432318005	SS-5	EPA 5035A	480639	EPA 8260B	480662
92432318006	SS-6	EPA 5035A	480639	EPA 8260B	480662
92432318007	DUP	EPA 5035A	480639	EPA 8260B	480662
92432318001	SS-1	ASTM D2974-87	480139		
92432318002	SS-2	ASTM D2974-87	480139		
92432318003	SS-3	ASTM D2974-87	480139		
92432318004	SS-4	ASTM D2974-87	480139		
92432318005	SS-5	ASTM D2974-87	480378		
92432318006	SS-6	ASTM D2974-87	480378		
92432318007	DUP	ASTM D2974-87	480378		

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WO#: 92432318

CHAIN-OF-CUSTODY Analytical Request Document

Pace Analytical

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY

92432318

Page 24 of 24

Company: SC DHEC	Billing Information:
Address: 2600 Bull Street	
Report To:	Email To: dunnrac@dhec.sc.gov
Copy To: Robert Dunn	Site Collection Info/Address:
Customer Project Name/Number: Broad River	State: SC / County/City: Columbia / Time Zone Collected: [ ] PT [ ] MT [ ] CT [V] ET
Phone: (803) 898-0671 / Email:	Site/Facility ID #: 11946 / Compliance Monitoring? [ ] Yes [V] No
Collected By (print): C White	Purchase Order #: 4600704184 / Quote #: 59780 / DW PWS ID #: / DW Location Code:
Collected By (signature):	Turnaround Date Required: / Immediately Packed on Ice: [V] Yes [ ] No
Sample Disposal: [V] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply) / Field Filtered (if applicable): [ ] Yes [V] No / Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other

Container Preservative Type ** / Lab Project Manager:

Analyses: 8260B ONLY; 8011 EDB clw

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	Lab Sample # / Comments
SS-1	SL	G	6/6/19	825				6	92432318 001
SS-2				835					002
SS-3				845					003
SS-4				1409					004
SS-5				1420					005
SS-6				1430					006
DUP				1435					007
Trip Blank	GW							2	008

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y	N	NA
Custody Signatures Present	Y	N	NA
Collector Signature Present	Y	N	NA
Bottles Intact	Y	N	NA
Correct Bottles	Y	N	NA
Sufficient Volume	Y	N	NA
Samples Received on Ice	Y	N	NA
VOA - Headspace Acceptable	Y	N	NA
USDA Regulated Soils	Y	N	NA
Samples in Holding Time	Y	N	NA
Residual Chlorine Present	Y	N	NA
Cl Strips:			
Sample pH Acceptable	Y	N	NA
pH Strips:			
Sulfide Present	Y	N	NA
Lead Acetate Strips:			

LAB USE ONLY:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: (Wet) Blue Dry None

Packing Material Used: Other

Radchem sample(s) screened (<500 cpm): Y N NA

SHORT HOLDS PRESENT (<72 hours): Y (N) N/A

Lab Tracking #: 2416484

Samples received via: FEDEX UPS Client Courier (Pace Courier)

Lab Sample Temperature Info:

Temp Blank Received: Y (N) NA

Therm ID#: 92704B

Cooler 1 Temp Upon Receipt: 3.3 oC

Cooler 1 Therm Corr. Factor: 0 oC

Cooler 1 Corrected Temp: 3.3 oC

Comments:

Relinquished by/Company: (Signature) SC DHEC	Date/Time: 6/7/19 1740	Received by/Company: (Signature)	Date/Time: 6/7/1240
Relinquished by/Company: (Signature)	Date/Time: 6/7/1835	Received by/Company: (Signature) Roper Pace	Date/Time: 6/7-1835
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:

Acctnum:

Template:

Prelogin:

PM:

PB:

Trip Blank Received: (Y) N NA

(HCL) MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

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CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevent fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

ALL SHADED AREAS are for LAB USE ONLY

Company: SC DHEC	Billing Information:
Address: 2600 Bull Street	
Report To:	Email To: dunnrae@dhec.sc.gov
Copy To: Robert Dunn	Site Collection Info/Address:
Customer Project Name/Number: Broad River	State: SC / County/City: Columbia Time Zone Collected: [ ] PT [ ] MT [ ] CT [✓] ET
Phone: (803) 898-0671 Email:	Site/Facility ID#: 11946
Collected By (print): C White	Purchase Order #: 4000704184 Quote #: 59780
Collected By (signature):	Turnaround Date Required:
Sample Disposal: [✓] Dispose as appropriate [ ] Return [ ] Archive: [ ] Hold:	Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Container Preservative Type **

Lab Project Manager:

** Preservative Types: (1) nitric acid, (2) sulfuric acid, (3) hydrochloric acid, (4) sodium hydroxide, (5) zinc acetate, (6) methanol, (7) sodium bisulfate, (8) sodium thiosulfate, (9) hexane, (A) ascorbic acid, (B) ammonium sulfate, (C) ammonium hydroxide, (D) TSP, (U) Unpreserved, (O) Other _____

Compliance Monitoring? [ ] Yes [✓] No	Lab Profile/Line:
DW PWS ID #: DW Location Code:	
Immediately Packed on Ice: [✓] Yes [ ] No	
Field Filtered (if applicable): [ ] Yes [✓] No	
Analysis:	

Lab Sample Receipt Checklist:

Custody Seals Present/Intact	Y N NA
Custody Signatures Present	Y N NA
Collector Signature Present	Y N NA
Bottles Intact	Y N NA
Correct Bottles	Y N NA
Sufficient Volume	Y N NA
Samples Received on Ice	Y N NA
VOA - Headspace Acceptable	Y N NA
USDA Regulated Soils	Y N NA
Samples in Holding Time	Y N NA
Residual Chlorine Present	Y N NA
Cl Strips:	
Sample pH Acceptable	Y N NA
pH Strips:	
Sulfide Present	Y N NA
Lead Acetate Strips:	

LAB USE ONLY:
Lab Sample # / Comments:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start) Date	Collected (or Composite Start) Time	Composite End Date	Composite End Time	Res Cl	# of Ctns	8260B OXY	8011 EDB - clw
SS-1	SL	G	6/6/19	825				6	✓	✓
SS-2				835					✓	✓
SS-3				845					✓	✓
SS-4				1409					✓	✓
SS-5				1420					✓	✓
SS-6				1430					✓	✓
DUP				1435					✓	✓
Trip Blank	EW							2	✓	

Customer Remarks / Special Conditions / Possible Hazards:	Type of Ice Used: Wet Blue Dry None	SHORT HOLDS PRESENT (<72 hours): Y N N/A	Lab Sample Temperature Info:
	Packing Material Used:	Lab Tracking #: 2416484	Temp Blank Received: Y N NA
			Therm ID#:
	Radchem sample(s) screened (<500 cpm): Y N NA	Samples received via: FEDEX UPS Client Courier Pace Courier	Cooler 1 Temp Upon Receipt: ____oC
			Cooler 1 Therm Corr. Factor: ____oC
			Cooler 1 Corrected Temp: ____oC
			Comments:

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
SC DHEC	6/7/19 12:40		6/7/1240
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:

MTJL LAB USE ONLY

Table #:
Acctnum:
Template:
Prelogin:
PM:
PB:

Trip Blank Received: Y N NA
HCL MeOH TSP Other

Non Conformance(s): YES / NO

Page: _____ of: _____

Pace Analytical, LLC
1800 Elm Street SE
Minneapolis, MN 55414
Phone: 612-607-6400

Pace Analytical®

Instructions for completing Chain of Custody (COC)

1. Complete all client information at the top left of the sheet: Company name, address, phone/fax, contact (the person to contact if there are questions, and who will receive the final report), e-mail address (if available), PO#, Project Name and/or Project Number as you would like it to appear on the report.

2. Billing Information: name and address of the person who is receiving the invoice

3. Site Collection Information: A separate COC must be filled out for each day of sample collection. Record the 2 letter postal code for the US state where samples were collected as well as the county/city and time zone.

4. Regulatory Agency: List the program that is guiding the work to ensure proper regulations are followed in the customer remarks section.

5. Quote #: should be completed if a quote was provided by Pace Analytical.

6. Mark if the sample was filtered in the in the field by marking Y or N in the "Field Filtered" box.

7. The sampler should print and sign their name in the spaces provided.

8. Complete a sample description in the CUSTOMER SAMPLE ID section as you would like it to appear on the laboratory report. Include: sample matrix, sample type (G (grab) or C (composite)). When collecting a composite, the start time and end time should be documented in the respective boxes. Also record the sample temp at collection (if required by state), the total number of containers, and preservative used.

9. Requested Analysis: List required analysis and methods on the lines provided and place a check mark in the column for the samples requiring the analysis. Additional comments should be referenced in the Customer Remarks section or included in attachments for extended lists of parameters.

10. Relinquishing custody of the samples: sign relinquished by, date and time, and include you affiliation.

***Important Note:**
Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection or level of QC reported must be included on the chain of custody in the Customer Remarks box.

If you have additional questions about how to complete the Chain of Custody (COC) please contact a Pace Project Manager

dhec
Healthy People. Healthy Communities.

JUN 06 2019

ANGELA BAIONI
PACE ANALYTICAL SERVICES
9800 KINCEY AVE STE 100
HUNTERSVILLE NC 28078

Re: Laboratory Analyses Approval
(Analytical) Bid #IFB-5400012961-04/06/17-EMW; PO #4600704184

Dear Ms. Baioni:

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 listed below. Please reference the CA number and Purchase Order number on the appropriate invoice submitted for payment against the facility.

UST #	FACILITY NAME	CA #	# of SOIL Samples (Include Duplicate)	# of SW FB & TB	# of WSW Samples (Include Duplicate)	# of WSW FB & TB	Vials/ Cooler to be provided by Lab	RUSH (24hr Notice Required)
11946	Broad River Amoco	*59780*	7	4	0	0	N	N
			BTEX+Nap	*(4) 8260B*				
				(3) 8011				

If you have any questions or need further assistance, please contact Robert A. Dunn by phone (803) 898-0671 or email dunnra@dhec.sc.gov.

Sincerely,

Carolyn Moores

Carolyn Moores, Hydrogeologist
Corrective Action& Quality Assurance Section
UST Management Division
Bureau of Land & Waste Management

Enc: Approved Cost Agreement

Cc: Robert A. Dunn, UST Management Division, Corrective Action & Field Support Section
Technical File

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

June 19, 2019

Robert Dunn
SCHDEC
2600 Bull St
Columbia, SC 29201

RE: Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Dear Robert Dunn:
Enclosed are the analytical results for sample(s) received by the laboratory on June 12, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Angela M. Baioni

Angela Baioni
angela.baioni@pacelabs.com
(704)875-9092
Project Manager

Enclosures

REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Charlotte Certification IDs
9800 Kincey Ave. Ste 100, Huntersville, NC 28078
Louisiana/NELAP Certification # LA170028
North Carolina Drinking Water Certification #: 37706
North Carolina Field Services Certification #: 5342
North Carolina Wastewater Certification #: 12
South Carolina Certification #: 99006001
Florida/NELAP Certification #: E87627
Kentucky UST Certification #: 84
Virginia/VELAP Certification #: 460221

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Huntersville, NC 28078
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SAMPLE SUMMARY

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92432866001	**11946 SW-1**	Water	06/11/19 12:30	06/12/19 10:51
92432866002	**DUP-1**	Water	06/11/19 12:35	06/12/19 10:51
92432866003	**FB**	Water	06/11/19 12:40	06/12/19 10:51
92432866004	**Trip Blank**	Water	06/11/19 00:00	06/12/19 10:51

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(704)875-9092

SAMPLE ANALYTE COUNT

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92432866001	11946 SW-1	EPA 8260B	CL	62	PASI-C
92432866002	DUP-1	EPA 8260B	CL	62	PASI-C
92432866003	FB	EPA 8260B	CL	70	PASI-C
92432866004	Trip Blank	EPA 8260B	CL	70	PASI-C

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Huntersville, NC 28078
(704)875-9092

SUMMARY OF DETECTION

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92432866001	**11946 SW-1**					
EPA 8260B	Acetone	14.8J	ug/L	25.0	06/19/19 03:13	L1
EPA 8260B	Benzene	7.0	ug/L	1.0	06/19/19 03:13	
EPA 8260B	Ethylbenzene	0.62J	ug/L	1.0	06/19/19 03:13	
EPA 8260B	Toluene	19.9	ug/L	1.0	06/19/19 03:13	
EPA 8260B	Xylene (Total)	23.5	ug/L	1.0	06/19/19 03:13	
EPA 8260B	m&p-Xylene	12.7	ug/L	2.0	06/19/19 03:13	
EPA 8260B	o-Xylene	10.7	ug/L	1.0	06/19/19 03:13	
92432866002	**DUP-1**					
EPA 8260B	Acetone	15.6J	ug/L	25.0	06/19/19 03:31	L1
EPA 8260B	Benzene	6.7	ug/L	1.0	06/19/19 03:31	
EPA 8260B	Ethylbenzene	0.55J	ug/L	1.0	06/19/19 03:31	
EPA 8260B	Methyl-tert-butyl ether	0.47J	ug/L	1.0	06/19/19 03:31	
EPA 8260B	Toluene	19.2	ug/L	1.0	06/19/19 03:31	
EPA 8260B	Xylene (Total)	22.3	ug/L	1.0	06/19/19 03:31	
EPA 8260B	m&p-Xylene	11.9	ug/L	2.0	06/19/19 03:31	
EPA 8260B	o-Xylene	10.4	ug/L	1.0	06/19/19 03:31	
92432866003	**FB**					
EPA 8260B	Acetone	13.8J	ug/L	25.0	06/17/19 02:58	
92432866004	**Trip Blank**					
EPA 8260B	Acetone	23.8J	ug/L	25.0	06/17/19 03:16	

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PROJECT NARRATIVE

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Method: **EPA 8260B**
Description: 8260 MSV Low Level SC
Client: SCDHEC
Date: June 19, 2019

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

QC Batch: 481925

L1: Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

- LCS (Lab ID: 2606164)
  - Acetone

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 481925

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92432866002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2606166)
  - Bromomethane

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Method: EPA 8260B
Description: 8260 MSV
Client: SCDHEC
Date: June 19, 2019

General Information:
2 samples were analyzed for EPA 8260B. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (Including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 481423

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 92432863002

M1: Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

- MS (Lab ID: 2604344)
  - 2-Butanone (MEK)
  - Acetone
  - Dichlorodifluoromethane
  - tert-Butyl Alcohol
- MSD (Lab ID: 2604345)
  - 1,2,4-Trimethylbenzene
  - 1,3,5-Trimethylbenzene
  - 2-Butanone (MEK)
  - Acetone
  - Dichlorodifluoromethane
  - Naphthalene
  - tert-Butyl Alcohol

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PROJECT NARRATIVE

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Method: **EPA 8260B**
Description: 8260 MSV
Client: SCDHEC
Date: June 19, 2019

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: 11946 SW-1 **Lab ID: 92432866001** Collected: 06/11/19 12:30 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B								
Acetone	**14.8J**	ug/L	25.0	6.2	1		06/19/19 03:13	67-64-1	L1
Benzene	**7.0**	ug/L	1.0	0.15	1		06/19/19 03:13	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:13	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		06/19/19 03:13	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.26	1		06/19/19 03:13	75-27-4	
Bromoform	ND	ug/L	1.0	0.62	1		06/19/19 03:13	75-25-2	
Bromomethane	ND	ug/L	2.0	0.62	1		06/19/19 03:13	74-83-9	
2-Butanone (MEK)	ND	ug/L	5.0	3.3	1		06/19/19 03:13	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	0.22	1		06/19/19 03:13	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/19/19 03:13	108-90-7	
Chloroethane	ND	ug/L	1.0	0.49	1		06/19/19 03:13	75-00-3	
Chloroform	ND	ug/L	5.0	2.3	1		06/19/19 03:13	67-66-3	
Chloromethane	ND	ug/L	1.0	0.39	1		06/19/19 03:13	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.20	1		06/19/19 03:13	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.20	1		06/19/19 03:13	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	0.26	1		06/19/19 03:13	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.41	1		06/19/19 03:13	124-48-1	
Dibromomethane	ND	ug/L	1.0	0.46	1		06/19/19 03:13	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.29	1		06/19/19 03:13	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:13	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.26	1		06/19/19 03:13	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.23	1		06/19/19 03:13	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.27	1		06/19/19 03:13	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.34	1		06/19/19 03:13	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.24	1		06/19/19 03:13	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.29	1		06/19/19 03:13	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.25	1		06/19/19 03:13	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/19/19 03:13	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		06/19/19 03:13	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/19/19 03:13	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.21	1		06/19/19 03:13	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.30	1		06/19/19 03:13	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.31	1		06/19/19 03:13	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	0.22	1		06/19/19 03:13	108-20-3	
Ethylbenzene	**0.62J**	ug/L	1.0	0.26	1		06/19/19 03:13	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.44	1		06/19/19 03:13	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		06/19/19 03:13	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	0.21	1		06/19/19 03:13	99-87-6	
Methylene Chloride	ND	ug/L	5.0	3.7	1		06/19/19 03:13	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	4.5	1		06/19/19 03:13	108-10-1	
Methyl-tert-butyl ether	ND	ug/L	1.0	0.28	1		06/19/19 03:13	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.35	1		06/19/19 03:13	91-20-3	
Styrene	ND	ug/L	1.0	0.27	1		06/19/19 03:13	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.34	1		06/19/19 03:13	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		06/19/19 03:13	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.16	1		06/19/19 03:13	127-18-4	

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: 11946 SW-1 **Lab ID: 92432866001** Collected: 06/11/19 12:30 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B								
Toluene	**19.9**	ug/L	1.0	0.24	1		06/19/19 03:13	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.34	1		06/19/19 03:13	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:13	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.18	1		06/19/19 03:13	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.24	1		06/19/19 03:13	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		06/19/19 03:13	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.31	1		06/19/19 03:13	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.35	1		06/19/19 03:13	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1.4	1		06/19/19 03:13	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.24	1		06/19/19 03:13	75-01-4	
Xylene (Total)	**23.5**	ug/L	1.0	0.63	1		06/19/19 03:13	1330-20-7	
m&p-Xylene	**12.7**	ug/L	2.0	0.41	1		06/19/19 03:13	179601-23-1	
o-Xylene	**10.7**	ug/L	1.0	0.22	1		06/19/19 03:13	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		06/19/19 03:13	460-00-4	
1,2-Dichloroethane-d4 (S)	100	%	70-130		1		06/19/19 03:13	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/19/19 03:13	2037-26-5	

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: DUP-1 **Lab ID: 92432866002** Collected: 06/11/19 12:35 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B								
Acetone	**15.6J**	ug/L	25.0	6.2	1		06/19/19 03:31	67-64-1	L1
Benzene	**6.7**	ug/L	1.0	0.15	1		06/19/19 03:31	71-43-2	
Bromobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:31	108-86-1	
Bromochloromethane	ND	ug/L	1.0	0.34	1		06/19/19 03:31	74-97-5	
Bromodichloromethane	ND	ug/L	1.0	0.26	1		06/19/19 03:31	75-27-4	
Bromoform	ND	ug/L	1.0	0.62	1		06/19/19 03:31	75-25-2	
Bromomethane	ND	ug/L	2.0	0.62	1		06/19/19 03:31	74-83-9	M1
2-Butanone (MEK)	ND	ug/L	5.0	3.3	1		06/19/19 03:31	78-93-3	
Carbon tetrachloride	ND	ug/L	1.0	0.22	1		06/19/19 03:31	56-23-5	
Chlorobenzene	ND	ug/L	1.0	0.23	1		06/19/19 03:31	108-90-7	
Chloroethane	ND	ug/L	1.0	0.49	1		06/19/19 03:31	75-00-3	
Chloroform	ND	ug/L	5.0	2.3	1		06/19/19 03:31	67-66-3	
Chloromethane	ND	ug/L	1.0	0.39	1		06/19/19 03:31	74-87-3	
2-Chlorotoluene	ND	ug/L	1.0	0.20	1		06/19/19 03:31	95-49-8	
4-Chlorotoluene	ND	ug/L	1.0	0.20	1		06/19/19 03:31	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	2.0	0.26	1		06/19/19 03:31	96-12-8	
Dibromochloromethane	ND	ug/L	1.0	0.41	1		06/19/19 03:31	124-48-1	
Dibromomethane	ND	ug/L	1.0	0.46	1		06/19/19 03:31	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	1.0	0.29	1		06/19/19 03:31	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:31	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	1.0	0.26	1		06/19/19 03:31	106-46-7	
Dichlorodifluoromethane	ND	ug/L	1.0	0.23	1		06/19/19 03:31	75-71-8	
1,1-Dichloroethane	ND	ug/L	1.0	0.27	1		06/19/19 03:31	75-34-3	
1,2-Dichloroethane	ND	ug/L	1.0	0.34	1		06/19/19 03:31	107-06-2	
1,1-Dichloroethene	ND	ug/L	1.0	0.24	1		06/19/19 03:31	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	1.0	0.29	1		06/19/19 03:31	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	1.0	0.25	1		06/19/19 03:31	156-60-5	
1,2-Dichloropropane	ND	ug/L	1.0	0.19	1		06/19/19 03:31	78-87-5	
1,3-Dichloropropane	ND	ug/L	1.0	0.16	1		06/19/19 03:31	142-28-9	
2,2-Dichloropropane	ND	ug/L	1.0	0.27	1		06/19/19 03:31	594-20-7	
1,1-Dichloropropene	ND	ug/L	1.0	0.21	1		06/19/19 03:31	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	1.0	0.30	1		06/19/19 03:31	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	1.0	0.31	1		06/19/19 03:31	10061-02-6	
Diisopropyl ether	ND	ug/L	1.0	0.22	1		06/19/19 03:31	108-20-3	
Ethylbenzene	**0.55J**	ug/L	1.0	0.26	1		06/19/19 03:31	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	1.0	0.44	1		06/19/19 03:31	87-68-3	
2-Hexanone	ND	ug/L	5.0	0.57	1		06/19/19 03:31	591-78-6	
p-Isopropyltoluene	ND	ug/L	1.0	0.21	1		06/19/19 03:31	99-87-6	
Methylene Chloride	ND	ug/L	5.0	3.7	1		06/19/19 03:31	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	5.0	4.5	1		06/19/19 03:31	108-10-1	
Methyl-tert-butyl ether	**0.47J**	ug/L	1.0	0.28	1		06/19/19 03:31	1634-04-4	
Naphthalene	ND	ug/L	1.0	0.35	1		06/19/19 03:31	91-20-3	
Styrene	ND	ug/L	1.0	0.27	1		06/19/19 03:31	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	1.0	0.34	1		06/19/19 03:31	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0	0.22	1		06/19/19 03:31	79-34-5	
Tetrachloroethene	ND	ug/L	1.0	0.16	1		06/19/19 03:31	127-18-4	

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: DUP-1 **Lab ID: 92432866002** Collected: 06/11/19 12:35 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV Low Level SC	Analytical Method: EPA 8260B								
Toluene	**19.2**	ug/L	1.0	0.24	1		06/19/19 03:31	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	1.0	0.34	1		06/19/19 03:31	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	1.0	0.22	1		06/19/19 03:31	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	1.0	0.18	1		06/19/19 03:31	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	1.0	0.24	1		06/19/19 03:31	79-00-5	
Trichloroethene	ND	ug/L	1.0	0.22	1		06/19/19 03:31	79-01-6	
Trichlorofluoromethane	ND	ug/L	1.0	0.31	1		06/19/19 03:31	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	1.0	0.35	1		06/19/19 03:31	96-18-4	
Vinyl acetate	ND	ug/L	2.0	1.4	1		06/19/19 03:31	108-05-4	
Vinyl chloride	ND	ug/L	1.0	0.24	1		06/19/19 03:31	75-01-4	
Xylene (Total)	**22.3**	ug/L	1.0	0.63	1		06/19/19 03:31	1330-20-7	
m&p-Xylene	**11.9**	ug/L	2.0	0.41	1		06/19/19 03:31	179601-23-1	
o-Xylene	**10.4**	ug/L	1.0	0.22	1		06/19/19 03:31	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		06/19/19 03:31	460-00-4	
1,2-Dichloroethane-d4 (S)	101	%	70-130		1		06/19/19 03:31	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		06/19/19 03:31	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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Pace Analytical
www.pacelabs.com

Pace Analytical Services, LLC
9800 Kincey Ave. Suite 100
Huntersville, NC 28078
(704)875-9092

ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: FB **Lab ID: 92432866003** Collected: 06/11/19 12:40 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Acetone	**13.8J**	ug/L	25.0	7.7	1		06/17/19 02:58	67-64-1	
Benzene	ND	ug/L	5.0	1.7	1		06/17/19 02:58	71-43-2	
Bromobenzene	ND	ug/L	5.0	1.9	1		06/17/19 02:58	108-86-1	
Bromochloromethane	ND	ug/L	5.0	2.1	1		06/17/19 02:58	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	2.4	1		06/17/19 02:58	75-27-4	
Bromoform	ND	ug/L	5.0	3.7	1		06/17/19 02:58	75-25-2	
Bromomethane	ND	ug/L	10.0	6.0	1		06/17/19 02:58	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	7.9	1		06/17/19 02:58	78-93-3	
tert-Butyl Alcohol	ND	ug/L	100	91.0	1		06/17/19 02:58	75-65-0	
n-Butylbenzene	ND	ug/L	5.0	2.3	1		06/17/19 02:58	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	98-06-6	
Carbon tetrachloride	ND	ug/L	5.0	2.2	1		06/17/19 02:58	56-23-5	
Chlorobenzene	ND	ug/L	5.0	1.8	1		06/17/19 02:58	108-90-7	
Chloroethane	ND	ug/L	10.0	4.1	1		06/17/19 02:58	75-00-3	
Chloroform	ND	ug/L	5.0	2.8	1		06/17/19 02:58	67-66-3	
Chloromethane	ND	ug/L	5.0	2.8	1		06/17/19 02:58	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	1.8	1		06/17/19 02:58	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	3.2	1		06/17/19 02:58	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	2.3	1		06/17/19 02:58	124-48-1	
Dibromomethane	ND	ug/L	5.0	2.0	1		06/17/19 02:58	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	1.9	1		06/17/19 02:58	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	1.7	1		06/17/19 02:58	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	1.9	1		06/17/19 02:58	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	1.8	1		06/17/19 02:58	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	2.3	1		06/17/19 02:58	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	2.1	1		06/17/19 02:58	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	5.0	1		06/17/19 02:58	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	2.1	1		06/17/19 02:58	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	1.9	1		06/17/19 02:58	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	2.4	1		06/17/19 02:58	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	2.8	1		06/17/19 02:58	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	3.5	1		06/17/19 02:58	108-20-3	
Ethylbenzene	ND	ug/L	5.0	1.8	1		06/17/19 02:58	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.9	1		06/17/19 02:58	87-68-3	
2-Hexanone	ND	ug/L	10.0	4.2	1		06/17/19 02:58	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	2.1	1		06/17/19 02:58	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	99-87-6	
Methylene Chloride	ND	ug/L	5.0	3.3	1		06/17/19 02:58	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	4.7	1		06/17/19 02:58	108-10-1	

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(704)875-9092

ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: FB **Lab ID: 92432866003** Collected: 06/11/19 12:40 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Methyl-tert-butyl ether	ND	ug/L	5.0	3.1	1		06/17/19 02:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.1	1		06/17/19 02:58	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	103-65-1	
Styrene	ND	ug/L	5.0	1.9	1		06/17/19 02:58	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	2.8	1		06/17/19 02:58	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	2.0	1		06/17/19 02:58	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	1.8	1		06/17/19 02:58	127-18-4	
Toluene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	2.2	1		06/17/19 02:58	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	2.3	1		06/17/19 02:58	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	2.1	1		06/17/19 02:58	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	2.0	1		06/17/19 02:58	79-00-5	
Trichloroethene	ND	ug/L	5.0	1.8	1		06/17/19 02:58	79-01-6	
Trichlorofluoromethane	ND	ug/L	10.0	3.4	1		06/17/19 02:58	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	2.5	1		06/17/19 02:58	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	2.1	1		06/17/19 02:58	108-67-8	
Vinyl acetate	ND	ug/L	10.0	5.6	1		06/17/19 02:58	108-05-4	
Vinyl chloride	ND	ug/L	5.0	1.8	1		06/17/19 02:58	75-01-4	
m&p-Xylene	ND	ug/L	10.0	4.1	1		06/17/19 02:58	179601-23-1	
o-Xylene	ND	ug/L	5.0	2.0	1		06/17/19 02:58	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		06/17/19 02:58	460-00-4	
1,2-Dichloroethane-d4 (S)	103	%	70-130		1		06/17/19 02:58	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		06/17/19 02:58	2037-26-5	

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: Trip Blank **Lab ID: 92432866004** Collected: 06/11/19 00:00 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Acetone	**23.8J**	ug/L	25.0	7.7	1		06/17/19 03:16	67-64-1	
Benzene	ND	ug/L	5.0	1.7	1		06/17/19 03:16	71-43-2	
Bromobenzene	ND	ug/L	5.0	1.9	1		06/17/19 03:16	108-86-1	
Bromochloromethane	ND	ug/L	5.0	2.1	1		06/17/19 03:16	74-97-5	
Bromodichloromethane	ND	ug/L	5.0	2.4	1		06/17/19 03:16	75-27-4	
Bromoform	ND	ug/L	5.0	3.7	1		06/17/19 03:16	75-25-2	
Bromomethane	ND	ug/L	10.0	6.0	1		06/17/19 03:16	74-83-9	
2-Butanone (MEK)	ND	ug/L	10.0	7.9	1		06/17/19 03:16	78-93-3	
tert-Butyl Alcohol	ND	ug/L	100	91.0	1		06/17/19 03:16	75-65-0	
n-Butylbenzene	ND	ug/L	5.0	2.3	1		06/17/19 03:16	104-51-8	
sec-Butylbenzene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	135-98-8	
tert-Butylbenzene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	98-06-6	
Carbon tetrachloride	ND	ug/L	5.0	2.2	1		06/17/19 03:16	56-23-5	
Chlorobenzene	ND	ug/L	5.0	1.8	1		06/17/19 03:16	108-90-7	
Chloroethane	ND	ug/L	10.0	4.1	1		06/17/19 03:16	75-00-3	
Chloroform	ND	ug/L	5.0	2.8	1		06/17/19 03:16	67-66-3	
Chloromethane	ND	ug/L	5.0	2.8	1		06/17/19 03:16	74-87-3	
2-Chlorotoluene	ND	ug/L	5.0	1.8	1		06/17/19 03:16	95-49-8	
4-Chlorotoluene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	106-43-4	
1,2-Dibromo-3-chloropropane	ND	ug/L	5.0	3.2	1		06/17/19 03:16	96-12-8	
Dibromochloromethane	ND	ug/L	5.0	2.3	1		06/17/19 03:16	124-48-1	
Dibromomethane	ND	ug/L	5.0	2.0	1		06/17/19 03:16	74-95-3	
1,2-Dichlorobenzene	ND	ug/L	5.0	1.9	1		06/17/19 03:16	95-50-1	
1,3-Dichlorobenzene	ND	ug/L	5.0	1.7	1		06/17/19 03:16	541-73-1	
1,4-Dichlorobenzene	ND	ug/L	5.0	1.9	1		06/17/19 03:16	106-46-7	
Dichlorodifluoromethane	ND	ug/L	5.0	1.8	1		06/17/19 03:16	75-71-8	
1,1-Dichloroethane	ND	ug/L	5.0	2.3	1		06/17/19 03:16	75-34-3	
1,2-Dichloroethane	ND	ug/L	5.0	2.1	1		06/17/19 03:16	107-06-2	
1,2-Dichloroethene (Total)	ND	ug/L	5.0	5.0	1		06/17/19 03:16	540-59-0	
1,1-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	75-35-4	
cis-1,2-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	156-59-2	
trans-1,2-Dichloroethene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	156-60-5	
1,2-Dichloropropane	ND	ug/L	5.0	2.1	1		06/17/19 03:16	78-87-5	
1,3-Dichloropropane	ND	ug/L	5.0	1.9	1		06/17/19 03:16	142-28-9	
2,2-Dichloropropane	ND	ug/L	5.0	2.4	1		06/17/19 03:16	594-20-7	
1,1-Dichloropropene	ND	ug/L	5.0	2.8	1		06/17/19 03:16	563-58-6	
cis-1,3-Dichloropropene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	10061-01-5	
trans-1,3-Dichloropropene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	10061-02-6	
Diisopropyl ether	ND	ug/L	5.0	3.5	1		06/17/19 03:16	108-20-3	
Ethylbenzene	ND	ug/L	5.0	1.8	1		06/17/19 03:16	100-41-4	
Hexachloro-1,3-butadiene	ND	ug/L	5.0	2.9	1		06/17/19 03:16	87-68-3	
2-Hexanone	ND	ug/L	10.0	4.2	1		06/17/19 03:16	591-78-6	
Isopropylbenzene (Cumene)	ND	ug/L	5.0	2.1	1		06/17/19 03:16	98-82-8	
p-Isopropyltoluene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	99-87-6	
Methylene Chloride	ND	ug/L	5.0	3.3	1		06/17/19 03:16	75-09-2	
4-Methyl-2-pentanone (MIBK)	ND	ug/L	10.0	4.7	1		06/17/19 03:16	108-10-1	

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ANALYTICAL RESULTS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Sample: Trip Blank **Lab ID: 92432866004** Collected: 06/11/19 00:00 Received: 06/12/19 10:51 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260B								
Methyl-tert-butyl ether	ND	ug/L	5.0	3.1	1		06/17/19 03:16	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.1	1		06/17/19 03:16	91-20-3	
n-Propylbenzene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	103-65-1	
Styrene	ND	ug/L	5.0	1.9	1		06/17/19 03:16	100-42-5	
1,1,1,2-Tetrachloroethane	ND	ug/L	5.0	2.8	1		06/17/19 03:16	630-20-6	
1,1,2,2-Tetrachloroethane	ND	ug/L	5.0	2.0	1		06/17/19 03:16	79-34-5	
Tetrachloroethene	ND	ug/L	5.0	1.8	1		06/17/19 03:16	127-18-4	
Toluene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	108-88-3	
1,2,3-Trichlorobenzene	ND	ug/L	5.0	2.2	1		06/17/19 03:16	87-61-6	
1,2,4-Trichlorobenzene	ND	ug/L	5.0	2.3	1		06/17/19 03:16	120-82-1	
1,1,1-Trichloroethane	ND	ug/L	5.0	2.1	1		06/17/19 03:16	71-55-6	
1,1,2-Trichloroethane	ND	ug/L	5.0	2.0	1		06/17/19 03:16	79-00-5	
Trichloroethene	ND	ug/L	5.0	1.8	1		06/17/19 03:16	79-01-6	
Trichlorofluoromethane	ND	ug/L	10.0	3.4	1		06/17/19 03:16	75-69-4	
1,2,3-Trichloropropane	ND	ug/L	5.0	2.5	1		06/17/19 03:16	96-18-4	
1,2,4-Trimethylbenzene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	95-63-6	
1,3,5-Trimethylbenzene	ND	ug/L	5.0	2.1	1		06/17/19 03:16	108-67-8	
Vinyl acetate	ND	ug/L	10.0	5.6	1		06/17/19 03:16	108-05-4	
Vinyl chloride	ND	ug/L	5.0	1.8	1		06/17/19 03:16	75-01-4	
m&p-Xylene	ND	ug/L	10.0	4.1	1		06/17/19 03:16	179601-23-1	
o-Xylene	ND	ug/L	5.0	2.0	1		06/17/19 03:16	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		06/17/19 03:16	460-00-4	
1,2-Dichloroethane-d4 (S)	102	%	70-130		1		06/17/19 03:16	17060-07-0	
Toluene-d8 (S)	101	%	70-130		1		06/17/19 03:16	2037-26-5	

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

QC Batch: 481925 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Low Level SC
Associated Lab Samples: 92432866001, 92432866002

METHOD BLANK: 2606163 Matrix: Water
Associated Lab Samples: 92432866001, 92432866002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	1.0	0.34	06/19/19 02:56	
1,1,1-Trichloroethane	ug/L	ND	1.0	0.18	06/19/19 02:56	
1,1,2,2-Tetrachloroethane	ug/L	ND	1.0	0.22	06/19/19 02:56	
1,1,2-Trichloroethane	ug/L	ND	1.0	0.24	06/19/19 02:56	
1,1-Dichloroethane	ug/L	ND	1.0	0.27	06/19/19 02:56	
1,1-Dichloroethene	ug/L	ND	1.0	0.24	06/19/19 02:56	
1,1-Dichloropropene	ug/L	ND	1.0	0.21	06/19/19 02:56	
1,2,3-Trichlorobenzene	ug/L	ND	1.0	0.34	06/19/19 02:56	
1,2,3-Trichloropropane	ug/L	ND	1.0	0.35	06/19/19 02:56	
1,2,4-Trichlorobenzene	ug/L	ND	1.0	0.22	06/19/19 02:56	
1,2-Dibromo-3-chloropropane	ug/L	ND	2.0	0.26	06/19/19 02:56	
1,2-Dichlorobenzene	ug/L	ND	1.0	0.29	06/19/19 02:56	
1,2-Dichloroethane	ug/L	ND	1.0	0.34	06/19/19 02:56	
1,2-Dichloropropane	ug/L	ND	1.0	0.19	06/19/19 02:56	
1,3-Dichlorobenzene	ug/L	ND	1.0	0.22	06/19/19 02:56	
1,3-Dichloropropane	ug/L	ND	1.0	0.16	06/19/19 02:56	
1,4-Dichlorobenzene	ug/L	ND	1.0	0.26	06/19/19 02:56	
2,2-Dichloropropane	ug/L	ND	1.0	0.27	06/19/19 02:56	
2-Butanone (MEK)	ug/L	ND	5.0	3.3	06/19/19 02:56	
2-Chlorotoluene	ug/L	ND	1.0	0.20	06/19/19 02:56	
2-Hexanone	ug/L	ND	5.0	0.57	06/19/19 02:56	
4-Chlorotoluene	ug/L	ND	1.0	0.20	06/19/19 02:56	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	5.0	4.5	06/19/19 02:56	
Acetone	ug/L	ND	25.0	6.2	06/19/19 02:56	
Benzene	ug/L	ND	1.0	0.15	06/19/19 02:56	
Bromobenzene	ug/L	ND	1.0	0.22	06/19/19 02:56	
Bromochloromethane	ug/L	ND	1.0	0.34	06/19/19 02:56	
Bromodichloromethane	ug/L	ND	1.0	0.26	06/19/19 02:56	
Bromoform	ug/L	ND	1.0	0.62	06/19/19 02:56	
Bromomethane	ug/L	ND	2.0	0.62	06/19/19 02:56	
Carbon tetrachloride	ug/L	ND	1.0	0.22	06/19/19 02:56	
Chlorobenzene	ug/L	ND	1.0	0.23	06/19/19 02:56	
Chloroethane	ug/L	ND	1.0	0.49	06/19/19 02:56	
Chloroform	ug/L	ND	5.0	2.3	06/19/19 02:56	
Chloromethane	ug/L	ND	1.0	0.39	06/19/19 02:56	
cis-1,2-Dichloroethene	ug/L	ND	1.0	0.29	06/19/19 02:56	
cis-1,3-Dichloropropene	ug/L	ND	1.0	0.30	06/19/19 02:56	
Dibromochloromethane	ug/L	ND	1.0	0.41	06/19/19 02:56	
Dibromomethane	ug/L	ND	1.0	0.46	06/19/19 02:56	
Dichlorodifluoromethane	ug/L	ND	1.0	0.23	06/19/19 02:56	
Diisopropyl ether	ug/L	ND	1.0	0.22	06/19/19 02:56	

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(704)875-9092

QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

METHOD BLANK: 2606163 Matrix: Water
Associated Lab Samples: 92432866001, 92432866002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Ethylbenzene	ug/L	ND	1.0	0.26	06/19/19 02:56	
Hexachloro-1,3-butadiene	ug/L	ND	1.0	0.44	06/19/19 02:56	
m&p-Xylene	ug/L	ND	2.0	0.41	06/19/19 02:56	
Methyl-tert-butyl ether	ug/L	ND	1.0	0.28	06/19/19 02:56	
Methylene Chloride	ug/L	ND	5.0	3.7	06/19/19 02:56	
Naphthalene	ug/L	ND	1.0	0.35	06/19/19 02:56	
o-Xylene	ug/L	ND	1.0	0.22	06/19/19 02:56	
p-Isopropyltoluene	ug/L	ND	1.0	0.21	06/19/19 02:56	
Styrene	ug/L	ND	1.0	0.27	06/19/19 02:56	
Tetrachloroethene	ug/L	ND	1.0	0.16	06/19/19 02:56	
Toluene	ug/L	ND	1.0	0.24	06/19/19 02:56	
trans-1,2-Dichloroethene	ug/L	ND	1.0	0.25	06/19/19 02:56	
trans-1,3-Dichloropropene	ug/L	ND	1.0	0.31	06/19/19 02:56	
Trichloroethene	ug/L	ND	1.0	0.22	06/19/19 02:56	
Trichlorofluoromethane	ug/L	ND	1.0	0.31	06/19/19 02:56	
Vinyl acetate	ug/L	ND	2.0	1.4	06/19/19 02:56	
Vinyl chloride	ug/L	ND	1.0	0.24	06/19/19 02:56	
Xylene (Total)	ug/L	ND	1.0	0.63	06/19/19 02:56	
1,2-Dichloroethane-d4 (S)	%	101	70-130		06/19/19 02:56	
4-Bromofluorobenzene (S)	%	99	70-130		06/19/19 02:56	
Toluene-d8 (S)	%	102	70-130		06/19/19 02:56	

LABORATORY CONTROL SAMPLE: 2606164

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	52.4	105	70-130	
1,1,1-Trichloroethane	ug/L	50	51.2	102	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	49.2	98	70-130	
1,1,2-Trichloroethane	ug/L	50	54.5	109	70-130	
1,1-Dichloroethane	ug/L	50	51.8	104	70-130	
1,1-Dichloroethene	ug/L	50	52.8	106	70-130	
1,1-Dichloropropene	ug/L	50	48.2	96	70-130	
1,2,3-Trichlorobenzene	ug/L	50	54.7	109	70-130	
1,2,3-Trichloropropane	ug/L	50	49.6	99	70-130	
1,2,4-Trichlorobenzene	ug/L	50	49.6	99	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	52.8	106	70-130	
1,2-Dichlorobenzene	ug/L	50	48.6	97	70-130	
1,2-Dichloroethane	ug/L	50	49.4	99	70-130	
1,2-Dichloropropane	ug/L	50	51.3	103	70-130	
1,3-Dichlorobenzene	ug/L	50	47.8	96	70-130	
1,3-Dichloropropane	ug/L	50	48.4	97	70-130	
1,4-Dichlorobenzene	ug/L	50	48.1	96	70-130	
2,2-Dichloropropane	ug/L	50	49.9	100	70-130	
2-Butanone (MEK)	ug/L	100	118	118	70-130	

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

LABORATORY CONTROL SAMPLE: 2606164

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
2-Chlorotoluene	ug/L	50	47.7	95	70-130	
2-Hexanone	ug/L	100	104	104	70-130	
4-Chlorotoluene	ug/L	50	47.1	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	103	103	70-130	
Acetone	ug/L	100	137	137	70-130	L1
Benzene	ug/L	50	51.1	102	70-130	
Bromobenzene	ug/L	50	49.9	100	70-130	
Bromochloromethane	ug/L	50	53.0	106	70-130	
Bromodichloromethane	ug/L	50	53.1	106	70-130	
Bromoform	ug/L	50	51.7	103	70-130	
Bromomethane	ug/L	50	53.6	107	70-130	
Carbon tetrachloride	ug/L	50	50.3	101	70-130	
Chlorobenzene	ug/L	50	47.4	95	70-130	
Chloroethane	ug/L	50	55.5	111	70-130	
Chloroform	ug/L	50	51.7	103	70-130	
Chloromethane	ug/L	50	51.8	104	70-130	
cis-1,2-Dichloroethene	ug/L	50	52.8	106	70-130	
cis-1,3-Dichloropropene	ug/L	50	52.2	104	70-130	
Dibromochloromethane	ug/L	50	50.7	101	70-130	
Dibromomethane	ug/L	50	53.7	107	70-130	
Dichlorodifluoromethane	ug/L	50	42.0	84	70-130	
Diisopropyl ether	ug/L	50	53.2	106	70-130	
Ethylbenzene	ug/L	50	48.8	98	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.9	100	70-130	
m&p-Xylene	ug/L	100	96.9	97	70-130	
Methyl-tert-butyl ether	ug/L	50	52.5	105	70-130	
Methylene Chloride	ug/L	50	53.5	107	70-130	
Naphthalene	ug/L	50	53.7	107	70-130	
o-Xylene	ug/L	50	49.4	99	70-130	
p-Isopropyltoluene	ug/L	50	47.8	96	70-130	
Styrene	ug/L	50	49.2	98	70-130	
Tetrachloroethene	ug/L	50	48.3	97	70-130	
Toluene	ug/L	50	49.7	99	70-130	
trans-1,2-Dichloroethene	ug/L	50	52.4	105	70-130	
trans-1,3-Dichloropropene	ug/L	50	51.7	103	70-130	
Trichloroethene	ug/L	50	51.1	102	70-130	
Trichlorofluoromethane	ug/L	50	50.5	101	70-130	
Vinyl acetate	ug/L	100	108	108	70-130	
Vinyl chloride	ug/L	50	51.7	103	70-130	
Xylene (Total)	ug/L	150	146	98	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			101	70-130	

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

MATRIX SPIKE SAMPLE: 2606166

Parameter	Units	92432866002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	20	19.6	98	70-130	
1,1,1-Trichloroethane	ug/L	ND	20	19.6	98	70-130	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	19.2	96	70-130	
1,1,2-Trichloroethane	ug/L	ND	20	19.9	99	70-130	
1,1-Dichloroethane	ug/L	ND	20	19.6	98	70-130	
1,1-Dichloroethene	ug/L	ND	20	20.5	103	70-130	
1,1-Dichloropropene	ug/L	ND	20	19.1	96	70-130	
1,2,3-Trichlorobenzene	ug/L	ND	20	20.3	101	70-130	
1,2,3-Trichloropropane	ug/L	ND	20	19.9	99	70-130	
1,2,4-Trichlorobenzene	ug/L	ND	20	18.8	94	70-130	
1,2-Dibromo-3-chloropropane	ug/L	ND	20	19.4	97	70-130	
1,2-Dichlorobenzene	ug/L	ND	20	18.9	94	70-130	
1,2-Dichloroethane	ug/L	ND	20	18.2	91	70-130	
1,2-Dichloropropane	ug/L	ND	20	20.9	105	70-130	
1,3-Dichlorobenzene	ug/L	ND	20	19.3	97	70-130	
1,3-Dichloropropane	ug/L	ND	20	20.0	100	70-130	
1,4-Dichlorobenzene	ug/L	ND	20	19.1	95	70-130	
2,2-Dichloropropane	ug/L	ND	20	21.0	105	70-130	
2-Butanone (MEK)	ug/L	ND	40	34.0	85	70-130	
2-Chlorotoluene	ug/L	ND	20	19.6	98	70-130	
2-Hexanone	ug/L	ND	40	34.5	86	70-130	
4-Chlorotoluene	ug/L	ND	20	19.5	98	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	35.8	89	70-130	
Acetone	ug/L	15.6J	40	47.2	79	70-130	
Benzene	ug/L	6.7	20	27.7	105	70-130	
Bromobenzene	ug/L	ND	20	20.1	100	70-130	
Bromochloromethane	ug/L	ND	20	20.8	104	70-130	
Bromodichloromethane	ug/L	ND	20	20.4	102	70-130	
Bromoform	ug/L	ND	20	19.1	95	70-130	
Bromomethane	ug/L	ND	20	32.3	161	70-130	M1
Carbon tetrachloride	ug/L	ND	20	19.8	99	70-130	
Chlorobenzene	ug/L	ND	20	19.1	95	70-130	
Chloroethane	ug/L	ND	20	24.8	124	70-130	
Chloroform	ug/L	ND	20	19.5	98	70-130	
Chloromethane	ug/L	ND	20	21.3	106	70-130	
cis-1,2-Dichloroethene	ug/L	ND	20	20.3	101	70-130	
cis-1,3-Dichloropropene	ug/L	ND	20	21.3	106	70-130	
Dibromochloromethane	ug/L	ND	20	18.9	95	70-130	
Dibromomethane	ug/L	ND	20	19.6	98	70-130	
Dichlorodifluoromethane	ug/L	ND	20	20.6	103	70-130	
Diisopropyl ether	ug/L	ND	20	19.2	96	70-130	
Ethylbenzene	ug/L	0.55J	20	19.8	96	70-130	
Hexachloro-1,3-butadiene	ug/L	ND	20	18.5	93	70-130	
m&p-Xylene	ug/L	11.9	40	52.8	102	70-130	
Methyl-tert-butyl ether	ug/L	0.47J	20	20.8	101	70-130	
Methylene Chloride	ug/L	ND	20	19.4	97	70-130	
Naphthalene	ug/L	ND	20	19.7	98	70-130	

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

MATRIX SPIKE SAMPLE: 2606166

Parameter	Units	92432866002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
o-Xylene	ug/L	10.4	20	30.4	100	70-130	
p-Isopropyltoluene	ug/L	ND	20	20.6	103	70-130	
Styrene	ug/L	ND	20	20.0	100	70-130	
Tetrachloroethene	ug/L	ND	20	19.3	97	70-130	
Toluene	ug/L	19.2	20	37.6	92	70-130	
trans-1,2-Dichloroethene	ug/L	ND	20	20.6	103	70-130	
trans-1,3-Dichloropropene	ug/L	ND	20	20.0	100	70-130	
Trichloroethene	ug/L	ND	20	20.0	100	70-130	
Trichlorofluoromethane	ug/L	ND	20	20.6	103	70-130	
Vinyl acetate	ug/L	ND	40	37.5	94	70-130	
Vinyl chloride	ug/L	ND	20	22.0	110	70-130	
Xylene (Total)	ug/L	22.3	60	83.1	101	70-130	
1,2-Dichloroethane-d4 (S)	%				95	70-130	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				100	70-130	

SAMPLE DUPLICATE: 2606165

Parameter	Units	92432866001 Result	Dup Result	RPD	Max RPD	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,1-Trichloroethane	ug/L	ND	ND		30	
1,1,2,2-Tetrachloroethane	ug/L	ND	ND		30	
1,1,2-Trichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethane	ug/L	ND	ND		30	
1,1-Dichloroethene	ug/L	ND	ND		30	
1,1-Dichloropropene	ug/L	ND	ND		30	
1,2,3-Trichlorobenzene	ug/L	ND	ND		30	
1,2,3-Trichloropropane	ug/L	ND	ND		30	
1,2,4-Trichlorobenzene	ug/L	ND	ND		30	
1,2-Dibromo-3-chloropropane	ug/L	ND	ND		30	
1,2-Dichlorobenzene	ug/L	ND	ND		30	
1,2-Dichloroethane	ug/L	ND	ND		30	
1,2-Dichloropropane	ug/L	ND	ND		30	
1,3-Dichlorobenzene	ug/L	ND	ND		30	
1,3-Dichloropropane	ug/L	ND	ND		30	
1,4-Dichlorobenzene	ug/L	ND	ND		30	
2,2-Dichloropropane	ug/L	ND	ND		30	
2-Butanone (MEK)	ug/L	ND	ND		30	
2-Chlorotoluene	ug/L	ND	ND		30	
2-Hexanone	ug/L	ND	0.69J		30	
4-Chlorotoluene	ug/L	ND	ND		30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	ND		30	
Acetone	ug/L	14.8J	ND		30	
Benzene	ug/L	7.0	7.0	1	30	
Bromobenzene	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

SAMPLE DUPLICATE: 2606165

Parameter	Units	92432866001 Result	Dup Result	RPD	Max RPD	Qualifiers
Bromochloromethane	ug/L	ND	ND		30	
Bromodichloromethane	ug/L	ND	ND		30	
Bromoform	ug/L	ND	ND		30	
Bromomethane	ug/L	ND	ND		30	
Carbon tetrachloride	ug/L	ND	ND		30	
Chlorobenzene	ug/L	ND	ND		30	
Chloroethane	ug/L	ND	ND		30	
Chloroform	ug/L	ND	ND		30	
Chloromethane	ug/L	ND	ND		30	
cis-1,2-Dichloroethene	ug/L	ND	ND		30	
cis-1,3-Dichloropropene	ug/L	ND	ND		30	
Dibromochloromethane	ug/L	ND	ND		30	
Dibromomethane	ug/L	ND	ND		30	
Dichlorodifluoromethane	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	0.62J	0.70J		30	
Hexachloro-1,3-butadiene	ug/L	ND	ND		30	
m&p-Xylene	ug/L	12.7	13.3	4	30	
Methyl-tert-butyl ether	ug/L	ND	0.39J		30	
Methylene Chloride	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	0.89J		30	
o-Xylene	ug/L	10.7	11.3	5	30	
p-Isopropyltoluene	ug/L	ND	ND		30	
Styrene	ug/L	ND	ND		30	
Tetrachloroethene	ug/L	ND	ND		30	
Toluene	ug/L	19.9	20.4	3	30	
trans-1,2-Dichloroethene	ug/L	ND	ND		30	
trans-1,3-Dichloropropene	ug/L	ND	ND		30	
Trichloroethene	ug/L	ND	ND		30	
Trichlorofluoromethane	ug/L	ND	ND		30	
Vinyl acetate	ug/L	ND	ND		30	
Vinyl chloride	ug/L	ND	ND		30	
Xylene (Total)	ug/L	23.5	24.5	5	30	
1,2-Dichloroethane-d4 (S)	%	100	91			
4-Bromofluorobenzene (S)	%	100	98			
Toluene-d8 (S)	%	101	103			

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QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

QC Batch: 481423 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV SC
Associated Lab Samples: 92432866003, 92432866004

METHOD BLANK: 2603917 Matrix: Water
Associated Lab Samples: 92432866003, 92432866004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	ND	5.0	2.8	06/16/19 23:30	
1,1,1-Trichloroethane	ug/L	ND	5.0	2.1	06/16/19 23:30	
1,1,2,2-Tetrachloroethane	ug/L	ND	5.0	2.0	06/16/19 23:30	
1,1,2-Trichloroethane	ug/L	ND	5.0	2.0	06/16/19 23:30	
1,1-Dichloroethane	ug/L	ND	5.0	2.3	06/16/19 23:30	
1,1-Dichloroethene	ug/L	ND	5.0	2.2	06/16/19 23:30	
1,1-Dichloropropene	ug/L	ND	5.0	2.8	06/16/19 23:30	
1,2,3-Trichlorobenzene	ug/L	ND	5.0	2.2	06/16/19 23:30	
1,2,3-Trichloropropane	ug/L	ND	5.0	2.5	06/16/19 23:30	
1,2,4-Trichlorobenzene	ug/L	ND	5.0	2.3	06/16/19 23:30	
1,2,4-Trimethylbenzene	ug/L	ND	5.0	2.0	06/16/19 23:30	
1,2-Dibromo-3-chloropropane	ug/L	ND	5.0	3.2	06/16/19 23:30	
1,2-Dichlorobenzene	ug/L	ND	5.0	1.9	06/16/19 23:30	
1,2-Dichloroethane	ug/L	ND	5.0	2.1	06/16/19 23:30	
1,2-Dichloroethene (Total)	ug/L	ND	5.0	5.0	06/16/19 23:30	
1,2-Dichloropropane	ug/L	ND	5.0	2.1	06/16/19 23:30	
1,3,5-Trimethylbenzene	ug/L	ND	5.0	2.1	06/16/19 23:30	
1,3-Dichlorobenzene	ug/L	ND	5.0	1.7	06/16/19 23:30	
1,3-Dichloropropane	ug/L	ND	5.0	1.9	06/16/19 23:30	
1,4-Dichlorobenzene	ug/L	ND	5.0	1.9	06/16/19 23:30	
2,2-Dichloropropane	ug/L	ND	5.0	2.4	06/16/19 23:30	
2-Butanone (MEK)	ug/L	ND	10.0	7.9	06/16/19 23:30	
2-Chlorotoluene	ug/L	ND	5.0	1.8	06/16/19 23:30	
2-Hexanone	ug/L	ND	10.0	4.2	06/16/19 23:30	
4-Chlorotoluene	ug/L	ND	5.0	2.0	06/16/19 23:30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	10.0	4.7	06/16/19 23:30	
Acetone	ug/L	ND	25.0	7.7	06/16/19 23:30	
Benzene	ug/L	ND	5.0	1.7	06/16/19 23:30	
Bromobenzene	ug/L	ND	5.0	1.9	06/16/19 23:30	
Bromochloromethane	ug/L	ND	5.0	2.1	06/16/19 23:30	
Bromodichloromethane	ug/L	ND	5.0	2.4	06/16/19 23:30	
Bromoform	ug/L	ND	5.0	3.7	06/16/19 23:30	
Bromomethane	ug/L	ND	10.0	6.0	06/16/19 23:30	
Carbon tetrachloride	ug/L	ND	5.0	2.2	06/16/19 23:30	
Chlorobenzene	ug/L	ND	5.0	1.8	06/16/19 23:30	
Chloroethane	ug/L	ND	10.0	4.1	06/16/19 23:30	
Chloroform	ug/L	ND	5.0	2.8	06/16/19 23:30	
Chloromethane	ug/L	ND	5.0	2.8	06/16/19 23:30	
cis-1,2-Dichloroethene	ug/L	ND	5.0	2.2	06/16/19 23:30	
cis-1,3-Dichloropropene	ug/L	ND	5.0	2.0	06/16/19 23:30	
Dibromochloromethane	ug/L	ND	5.0	2.3	06/16/19 23:30	

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REPORT OF LABORATORY ANALYSIS

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

METHOD BLANK: 2603917 Matrix: Water
Associated Lab Samples: 92432866003, 92432866004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Dibromomethane	ug/L	ND	5.0	2.0	06/16/19 23:30	
Dichlorodifluoromethane	ug/L	ND	5.0	1.8	06/16/19 23:30	
Diisopropyl ether	ug/L	ND	5.0	3.5	06/16/19 23:30	
Ethylbenzene	ug/L	ND	5.0	1.8	06/16/19 23:30	
Hexachloro-1,3-butadiene	ug/L	ND	5.0	2.9	06/16/19 23:30	
Isopropylbenzene (Cumene)	ug/L	ND	5.0	2.1	06/16/19 23:30	
m&p-Xylene	ug/L	ND	10.0	4.1	06/16/19 23:30	
Methyl-tert-butyl ether	ug/L	ND	5.0	3.1	06/16/19 23:30	
Methylene Chloride	ug/L	ND	5.0	3.3	06/16/19 23:30	
n-Butylbenzene	ug/L	ND	5.0	2.3	06/16/19 23:30	
n-Propylbenzene	ug/L	ND	5.0	2.0	06/16/19 23:30	
Naphthalene	ug/L	ND	5.0	2.1	06/16/19 23:30	
o-Xylene	ug/L	ND	5.0	2.0	06/16/19 23:30	
p-Isopropyltoluene	ug/L	ND	5.0	2.2	06/16/19 23:30	
sec-Butylbenzene	ug/L	ND	5.0	2.2	06/16/19 23:30	
Styrene	ug/L	ND	5.0	1.9	06/16/19 23:30	
tert-Butyl Alcohol	ug/L	ND	100	91.0	06/16/19 23:30	
tert-Butylbenzene	ug/L	ND	5.0	2.2	06/16/19 23:30	
Tetrachloroethene	ug/L	ND	5.0	1.8	06/16/19 23:30	
Toluene	ug/L	ND	5.0	2.0	06/16/19 23:30	
trans-1,2-Dichloroethene	ug/L	ND	5.0	2.2	06/16/19 23:30	
trans-1,3-Dichloropropene	ug/L	ND	5.0	2.2	06/16/19 23:30	
Trichloroethene	ug/L	ND	5.0	1.8	06/16/19 23:30	
Trichlorofluoromethane	ug/L	ND	10.0	3.4	06/16/19 23:30	
Vinyl acetate	ug/L	ND	10.0	5.6	06/16/19 23:30	
Vinyl chloride	ug/L	ND	5.0	1.8	06/16/19 23:30	
1,2-Dichloroethane-d4 (S)	%	101	70-130		06/16/19 23:30	
4-Bromofluorobenzene (S)	%	98	70-130		06/16/19 23:30	
Toluene-d8 (S)	%	100	70-130		06/16/19 23:30	

LABORATORY CONTROL SAMPLE: 2603918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	50	53.0	106	70-130	
1,1,1-Trichloroethane	ug/L	50	50.2	100	70-130	
1,1,2,2-Tetrachloroethane	ug/L	50	50.1	100	70-130	
1,1,2-Trichloroethane	ug/L	50	52.0	104	70-130	
1,1-Dichloroethane	ug/L	50	51.3	103	70-130	
1,1-Dichloroethene	ug/L	50	52.5	105	70-130	
1,1-Dichloropropene	ug/L	50	46.9	94	70-130	
1,2,3-Trichlorobenzene	ug/L	50	54.5	109	70-130	
1,2,3-Trichloropropane	ug/L	50	48.9	98	70-130	
1,2,4-Trichlorobenzene	ug/L	50	47.7	95	70-130	
1,2,4-Trimethylbenzene	ug/L	50	47.5	95	70-130	

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Huntersville, NC 28078
(704)875-9092

QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

LABORATORY CONTROL SAMPLE: 2603918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromo-3-chloropropane	ug/L	50	52.2	104	70-130	
1,2-Dichlorobenzene	ug/L	50	47.6	95	70-130	
1,2-Dichloroethane	ug/L	50	49.1	98	70-130	
1,2-Dichloroethene (Total)	ug/L		103			
1,2-Dichloropropane	ug/L	50	50.9	102	70-130	
1,3,5-Trimethylbenzene	ug/L	50	47.8	96	70-130	
1,3-Dichlorobenzene	ug/L	50	47.5	95	70-130	
1,3-Dichloropropane	ug/L	50	49.4	99	70-130	
1,4-Dichlorobenzene	ug/L	50	47.5	95	70-130	
2,2-Dichloropropane	ug/L	50	47.6	95	70-130	
2-Butanone (MEK)	ug/L	100	120	120	70-130	
2-Chlorotoluene	ug/L	50	46.9	94	70-130	
2-Hexanone	ug/L	100	110	110	70-130	
4-Chlorotoluene	ug/L	50	46.9	94	70-130	
4-Methyl-2-pentanone (MIBK)	ug/L	100	109	109	70-130	
Acetone	ug/L	100	129	129	70-130	
Benzene	ug/L	50	50.1	100	70-130	
Bromobenzene	ug/L	50	48.9	98	70-130	
Bromochloromethane	ug/L	50	51.1	102	70-130	
Bromodichloromethane	ug/L	50	52.4	105	70-130	
Bromoform	ug/L	50	52.8	106	70-130	
Bromomethane	ug/L	50	59.7	119	70-130	
Carbon tetrachloride	ug/L	50	49.3	99	70-130	
Chlorobenzene	ug/L	50	47.6	95	70-130	
Chloroethane	ug/L	50	58.8	118	70-130	
Chloroform	ug/L	50	51.1	102	70-130	
Chloromethane	ug/L	50	53.3	107	70-130	
cis-1,2-Dichloroethene	ug/L	50	51.6	103	70-130	
cis-1,3-Dichloropropene	ug/L	50	51.3	103	70-130	
Dibromochloromethane	ug/L	50	52.2	104	70-130	
Dibromomethane	ug/L	50	50.5	101	70-130	
Dichlorodifluoromethane	ug/L	50	41.7	83	70-130	
Diisopropyl ether	ug/L	50	55.8	112	70-130	
Ethylbenzene	ug/L	50	49.2	98	70-130	
Hexachloro-1,3-butadiene	ug/L	50	49.4	99	70-130	
Isopropylbenzene (Cumene)	ug/L	50	48.3	97	70-130	
m&p-Xylene	ug/L	100	97.7	98	70-130	
Methyl-tert-butyl ether	ug/L	50	55.1	110	70-130	
Methylene Chloride	ug/L	50	53.0	106	70-130	
n-Butylbenzene	ug/L	50	46.1	92	70-130	
n-Propylbenzene	ug/L	50	47.3	95	70-130	
Naphthalene	ug/L	50	54.2	108	70-130	
o-Xylene	ug/L	50	49.2	98	70-130	
p-Isopropyltoluene	ug/L	50	47.5	95	70-130	
sec-Butylbenzene	ug/L	50	47.7	95	70-130	
Styrene	ug/L	50	49.1	98	70-130	
tert-Butyl Alcohol	ug/L	500	621	124	70-130	

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(704)875-9092

QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

LABORATORY CONTROL SAMPLE: 2603918

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
tert-Butylbenzene	ug/L	50	41.0	82	70-130	
Tetrachloroethene	ug/L	50	47.9	96	70-130	
Toluene	ug/L	50	50.2	100	70-130	
trans-1,2-Dichloroethene	ug/L	50	51.5	103	70-130	
trans-1,3-Dichloropropene	ug/L	50	50.1	100	70-130	
Trichloroethene	ug/L	50	51.2	102	70-130	
Trichlorofluoromethane	ug/L	50	50.2	100	70-130	
Vinyl acetate	ug/L	100	106	106	70-130	
Vinyl chloride	ug/L	50	51.2	102	70-130	
1,2-Dichloroethane-d4 (S)	%			101	70-130	
4-Bromofluorobenzene (S)	%			98	70-130	
Toluene-d8 (S)	%			99	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2604344 2604345

Parameter	Units	92432863002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1,2-Tetrachloroethane	ug/L	ND	20	20	20.4	20.0	102	100	70-130	2	30	
1,1,1-Trichloroethane	ug/L	ND	20	20	21.3	20.3	106	102	70-130	5	30	
1,1,2,2-Tetrachloroethane	ug/L	ND	20	20	19.4	19.6	97	98	70-130	1	30	
1,1,2-Trichloroethane	ug/L	ND	20	20	20.7	20.8	104	104	70-130	0	30	
1,1-Dichloroethane	ug/L	ND	20	20	21.3	20.6	106	103	70-130	3	30	
1,1-Dichloroethene	ug/L	ND	20	20	21.7	21.1	109	105	70-130	3	30	
1,1-Dichloropropene	ug/L	ND	20	20	20.3	19.4	101	97	70-130	5	30	
1,2,3-Trichlorobenzene	ug/L	ND	20	20	22.8	22.1	114	110	70-130	3	30	
1,2,3-Trichloropropane	ug/L	ND	20	20	20.5	20.7	96	97	70-130	1	30	
1,2,4-Trichlorobenzene	ug/L	ND	20	20	20.3	19.5	101	97	70-130	4	30	
1,2,4-Trimethylbenzene	ug/L	29.6	20	20	50.7	55.9	106	131	70-130	10	30	M1
1,2-Dibromo-3-chloropropane	ug/L	ND	20	20	20.5	19.2	102	96	70-130	6	30	
1,2-Dichlorobenzene	ug/L	ND	20	20	19.5	18.8	97	94	70-130	3	30	
1,2-Dichloroethane	ug/L	ND	20	20	19.8	19.7	99	99	70-130	0	30	
1,2-Dichloroethene (Total)	ug/L	ND			42.0	40.9				2	30	
1,2-Dichloropropane	ug/L	ND	20	20	20.6	19.8	103	99	70-130	4	30	
1,3,5-Trimethylbenzene	ug/L	31.3	20	20	52.5	57.9	106	133	70-130	10	30	M1
1,3-Dichlorobenzene	ug/L	ND	20	20	19.3	18.7	97	94	70-130	3	30	
1,3-Dichloropropane	ug/L	ND	20	20	19.5	19.2	97	96	70-130	1	30	
1,4-Dichlorobenzene	ug/L	ND	20	20	19.3	18.8	97	94	70-130	3	30	
2,2-Dichloropropane	ug/L	ND	20	20	19.9	19.4	100	97	70-130	3	30	
2-Butanone (MEK)	ug/L	ND	40	40	65.0	67.9	163	170	70-130	4	30	M1
2-Chlorotoluene	ug/L	ND	20	20	19.6	19.1	98	96	70-130	2	30	
2-Hexanone	ug/L	ND	40	40	42.6	42.2	106	105	70-130	1	30	
4-Chlorotoluene	ug/L	ND	20	20	19.4	18.6	97	93	70-130	5	30	
4-Methyl-2-pentanone (MIBK)	ug/L	ND	40	40	43.3	42.8	108	107	70-130	1	30	
Acetone	ug/L	ND	40	40	52.8	55.1	132	138	70-130	4	30	M1

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(704)875-9092

QUALITY CONTROL DATA

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2604344 2604345

Parameter	Units	92432863002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	8.6	20	20	29.4	30.5	104	110	70-130	4	30	
Bromobenzene	ug/L	ND	20	20	19.9	19.5	99	98	70-130	2	30	
Bromochloromethane	ug/L	ND	20	20	20.8	20.7	104	104	70-130	0	30	
Bromodichloromethane	ug/L	ND	20	20	20.3	19.3	102	97	70-130	5	30	
Bromoform	ug/L	ND	20	20	18.2	18.2	91	91	70-130	0	30	
Bromomethane	ug/L	ND	20	20	18.0	19.7	90	99	70-130	9	30	
Carbon tetrachloride	ug/L	ND	20	20	19.5	19.3	98	96	70-130	1	30	
Chlorobenzene	ug/L	ND	20	20	18.8	18.6	94	93	70-130	1	30	
Chloroethane	ug/L	ND	20	20	22.3	23.1	111	115	70-130	4	30	
Chloroform	ug/L	ND	20	20	21.0	20.2	105	101	70-130	4	30	
Chloromethane	ug/L	ND	20	20	18.5	17.8	92	89	70-130	4	30	
cis-1,2-Dichloroethene	ug/L	ND	20	20	21.1	20.3	105	101	70-130	4	30	
cis-1,3-Dichloropropene	ug/L	ND	20	20	19.7	18.6	99	93	70-130	6	30	
Dibromochloromethane	ug/L	ND	20	20	18.6	19.0	93	95	70-130	2	30	
Dibromomethane	ug/L	ND	20	20	20.9	20.4	104	102	70-130	2	30	
Dichlorodifluoromethane	ug/L	ND	20	20	12.7	12.5	63	63	70-130	1	30	M1
Diisopropyl ether	ug/L	ND	20	20	22.5	21.9	112	109	70-130	3	30	
Ethylbenzene	ug/L	ND	20	20	20.1	20.0	100	100	70-130	0	30	
Hexachloro-1,3-butadiene	ug/L	ND	20	20	19.8	19.6	99	98	70-130	1	30	
Isopropylbenzene (Cumene)	ug/L	ND	20	20	24.2	25.5	100	107	70-130	5	30	
m&p-Xylene	ug/L	ND	40	40	39.9	39.2	97	96	70-130	2	30	
Methyl-tert-butyl ether	ug/L	ND	20	20	21.6	21.6	108	108	70-130	0	30	
Methylene Chloride	ug/L	ND	20	20	20.1	19.6	101	98	70-130	3	30	
n-Butylbenzene	ug/L	ND	20	20	21.5	21.4	107	107	70-130	0	30	
n-Propylbenzene	ug/L	ND	20	20	20.4	19.6	102	98	70-130	4	30	
Naphthalene	ug/L	47.2	20	20	71.6	82.4	122	176	70-130	14	30	M1
o-Xylene	ug/L	ND	20	20	24.5	24.3	103	102	70-130	1	30	
p-Isopropyltoluene	ug/L	ND	20	20	21.6	21.0	108	105	70-130	3	30	
sec-Butylbenzene	ug/L	ND	20	20	21.0	20.8	105	104	70-130	1	30	
Styrene	ug/L	ND	20	20	19.6	19.2	98	96	70-130	2	30	
tert-Butyl Alcohol	ug/L	ND	200	200	314	308	157	154	70-130	2	30	M1
tert-Butylbenzene	ug/L	ND	20	20	17.3	16.4	86	82	70-130	5	30	
Tetrachloroethene	ug/L	ND	20	20	19.7	19.0	99	95	70-130	4	30	
Toluene	ug/L	ND	20	20	21.0	20.8	98	97	70-130	1	30	
trans-1,2-Dichloroethene	ug/L	ND	20	20	20.9	20.7	105	103	70-130	1	30	
trans-1,3-Dichloropropene	ug/L	ND	20	20	19.4	18.4	97	92	70-130	6	30	
Trichloroethene	ug/L	ND	20	20	20.2	19.4	101	97	70-130	4	30	
Trichlorofluoromethane	ug/L	ND	20	20	20.3	19.7	102	98	70-130	3	30	
Vinyl acetate	ug/L	ND	40	40	39.6	39.4	99	98	70-130	1	30	
Vinyl chloride	ug/L	ND	20	20	19.9	19.7	99	99	70-130	1	30	
1,2-Dichloroethane-d4 (S)	%						103	100	70-130			
4-Bromofluorobenzene (S)	%						100	100	70-130			
Toluene-d8 (S)	%						101	100	70-130			

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QUALIFIERS

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

A separate vial preserved to a pH of 4-5 is recommended in SW846 Chapter 4 for the analysis of Acrolein and Acrylonitrile by EPA Method 8260.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-C Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

L1 Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Broad River Amoco 11946/59780
Pace Project No.: 92432866

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92432866001	**11946 SW-1**	EPA 8260B	481925		
92432866002	**DUP-1**	EPA 8260B	481925		
92432866003	**FB**	EPA 8260B	481423		
92432866004	**Trip Blank**	EPA 8260B	481423		

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Pace Analytical®	Document Name: Sample Condition Upon Receipt(SCUR)	Document Revised: February 7, 2018 Page 1 of 2
	Document No.: F-CAR-CS-033-Rev.06	Issuing Authority: Pace Carolinas Quality Office

Laboratory receiving samples:
Asheville ☐ Eden ☐ Greenwood ☐ Huntersville ☑ Raleigh ☐ Mechanicsville ☐

Sample Condition Upon Receipt

Client Name: SCDHEC **Project #:** WO# : 92432866

92432866

Courier: ☐ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☑ Pace ☐ Other:____

Custody Seal Present? ☐ Yes ☑ No **Seals Intact?** ☐ Yes ☑ No

Date/Initials Person Examining Contents: TF 6/12/19

Packing Material: ☐ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Biological Tissue Frozen? ☐ Yes ☐ No ☑ N/A

Thermometer: ☐ IR Gun ID: 92T048 **Type of Ice:** ☑ Wet ☐ Blue ☐ None

Cooler Temp (°C): 5.9 **Correction Factor: Add/Subtract (°C)** 0.0

Cooler Temp Corrected (°C): 5.9

Temp should be above freezing to 6°C
☐ Samples out of temp criteria. Samples on ice, cooling process has begun

USDA Regulated Soil (☑ N/A, water sample)
Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

Did samples originate from a foreign source (internationally, including Hawaii and Puerto Rico)? ☐ Yes ☐ No

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6.
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Dissolved analysis: Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8.
Sample Labels Match COC? -Includes Date/Time/ID/Analysis Matrix: WT	☑ Yes	☐ No	☐ N/A	9.
Headspace in VOA Vials (>5-6mm)?	☑ Yes	☐ No	☐ N/A	10. Both TB vials
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	

COMMENTS/SAMPLE DISCREPANCY **Field Data Required?** ☐ Yes ☐ No

Lot ID of split containers:

CLIENT NOTIFICATION/RESOLUTION

Person contacted: _____ Date/Time: _____

Project Manager SCURF Review: AMB **Date:** 6-14-19

Project Manager SRF Review: AMB **Date:** 6-14-19

***Check mark top half of box if pH and/or dechlorination is verified and within the acceptance range for preservation samples.**

Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC, LLHg

****Bottom half of box is to list number of bottle**

Project # WO# : 92432866

PM: AMB Due Date: 06/19/19

CLIENT: 92-SCDHEC

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP4S-125 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP4Z-125 mL Plastic ZN Acetate & NaOH (>9)	BP4C-125 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)		BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	AG0U-100 mL Amber Unpreserved vials (N/A)	VSGU-20 mL Scintillation vials (N/A)	DG9U-40 mL Amber Unpreserved vials (N/A)
1	\				\	\	\	\			\		\	\	\	6									\	\			
2	\				\	\	\	\			\		\	\	\	6									\	\			
3	\				\	\	\	\			\		\	\	\	5									\	\			
4	\				\	\	\	\			\		\	\	\	ZTB									\	\			
5	\				\	\	\	\			\		\	\	\										\	\			
6	\				\	\	\	\			\		\	\	\										\	\			
7	\				\	\	\	\			\		\	\	\										\	\			
8	\				\	\	\	\			\		\	\	\										\	\			
9	\				\	\	\	\			\		\	\	\										\	\			
10	\				\	\	\	\			\		\	\	\										\	\			
11	\				\	\	\	\			\		\	\	\										\	\			
12	\				\	\	\	\			\		\	\	\										\	\			

pH Adjustment Log for Preserved Samples

Sample ID	Type of Preservative	pH upon receipt	Date preservation adjusted	Time preservation adjusted	Amount of Preservative added	Lot #

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. Out of hold, incorrect preservative, out of temp, incorrect containers.

Pace Analytical
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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.

Page: of

1998892

Section A Required Client Information:
Company: SC DHEC
Address: 2600 Bull Street
Columbia, SC 29201
Email To: dunnra@dhec.sc.gov
Phone: 803 898-0671 Fax:
Requested Due Date/TAT:

Section B Required Project Information:
Report To: Robert Dunn
Copy To:
Purchase Order No.:
Project Name: Broad River Amoco
Project Number: UST # 11946 CA# 59780

Section C Invoice Information:
Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Angela Baioni
Pace Profile #:

REGULATORY AGENCY
☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER SW

Site Location STATE: SC

Section D Required Client Information

Matrix Codes MATRIX / CODE
Drinking Water DW
Water WT
Waste Water WW
Product P
Soil/Solid SL
Oil OL
Wipe WP
Air AR
Tissue TS
Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analysis Test: 8260 B	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	11946 SW-1	WT	G			6/11/19	1230		6				✓				Y	X			92432866 001
2	DUP-1	WT	G			6/11/19	1235		6				✓					X			002
3	FB	WT	G			6/11/19	1240		5				✓					X			003
4	Trip Blank	WT	G						2				✓					X			004
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
Report J value	Carolyn Moores	6/12/19	10:50	PACE	6/12	1051				
		6/12	1640		6/12	1640	4.9	Y	N	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE
PRINT Name of SAMPLER: Carolyn Moores
SIGNATURE of SAMPLER: Carolyn Moores
DATE Signed (MM/DD/YY): 06/11/19

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical®
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

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Page: of 1998892

Section A Required Client Information:

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Email To: dunnra@dhec.sc.gov
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Report To: Robert Dunn
Copy To:
Purchase Order No.:
Project Name: Broad River Amoco
Project Number: USI # 11946 CA# 59780

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager: Angela Baioni
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☑ OTHER SW

Site Location STATE: SC

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED: COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test ↓ Y/N: 8260B	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	11946 SW-1	WT	G			6/11/19	1230		6				✓					X		
2	DUP-1	WT	G			6/11/19	1235		6				✓					X		
3	FB	WT	G			6/11/19	1240		5				✓					X		
4	Trip Blank	WT	G						2				✓					X		
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Requested Analysis Filtered (Y/N): Y

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
Report J value	Carolyn Moores	6/12/19	10:50	PACE	6/12	1051	

2

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Carolyn Moores
SIGNATURE of SAMPLER: Carolyn Moores
DATE Signed (MM/DD/YY): 06/11/19

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Instructions for completing Chain of Custody (COC)

1. **Section A and B:** Complete all Client information at top of sheet: company name, address, phone, fax, contact (the person to contact if there are questions, and who will receive the final report.), e-mail address (if available), PO#, Project Name and/or Project Number as you would like to see it appear on the report.

2. **Section C:** Invoice Information: Billing information is included in this section. This information should include the name and address of the person receiving the invoice.

3. Quote Reference should be completed if a quotation was provided by Pace Analytical. The Project Manager, and Profile No. will be completed by Pace Analytical Services.

4. **Site Location:** A separate COC must be filled out for each day of sample collection. Record the two letter postal code for the US state in which the samples were collected.

5. **Regulatory Agency:** List the program that is guiding the work to ensure proper regulations are followed.

6. **Section D:** Complete a Sample Description in the "SAMPLE ID' section as you would like it to appear on the laboratory report. The following information should also be included: the sample matrix, sample type (G (grab) or C (composite). When collecting a composite, the start time and end time should be documented in the respective boxes. The collection time for a grab (G) sample should be entered in the boxes marked 'Composite End/Grab'), Sample temp at collection (if required by state), the total number of containers, and preservative used.

7. Mark if the sample was filtered in the field by marking Y or N in 'Filtered' row by the Analysis requested.

8. Requested Analysis: List the required analysis and methods on the lines provided and place a check in the column for the samples requiring the analysis. Additional comments should be referenced in the bottom left hand corner or include attachments for extended lists of parameters.

9. The sampler should print their name in the space provided and sign their name followed by the date of the sampling event at the bottom of the COC in the spaces designated for 'SAMPLER NAME AND SIGNATURE'.

10. When relinquishing custody of the samples to a representative of the laboratory or other organization, indicate the Item Numbers of those samples being transferred; sign relinquished by, date and time, and include your affiliation.

***Important Note:**

Standard Turnaround Time is 2 Weeks/10 business days. Results will be delivered by end of business on the date due unless other arrangements have been made with your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be included on the chain of custody in the Additional Comments section.

CTSI

Carolina Technical Services, Inc.

GEOTECHNICAL · ENVIRONMENTAL · MATERIALS

UST 179 tech DOCKETING

UST JUL 15 2019 PROGRAM

July 12, 2019

Mr. Ed Mendenhall
South Carolina Department of Health and Environmental Control
Bureau of Land and Waste Management
UST Management Division
2600 Bull Street
Columbia, SC 29201

Project:Broad River Amoco
UST Permit #11946, CA # 59685
CTSI Project No. 18-6580

Location: **4335 Broad River Rd.**
Columbia, SC 29210

Dear Mr. Mendenhall:

Your letter dated May 31, 2019 approved the submitted Site-Specific Work Plan (SSWP) and directed the gauging and manual recovery of free phase petroleum product from selected wells at the referenced site. Additionally, one 8-hour aggressive fluid vapor recovery (AFVR) event was to be performed. Carolina Technical Services, Inc (CTSI) has performed the requested work. Figure 1 is a topographic map showing the site location. Figure 2 is a site plan.

Field Activities

CTSI personnel mobilized to the site to gauge wells and/or recover free product on thirteen days beginning on June 3, 2019 and concluding on July 5, 2019. The AFVR event took place on June 18th.

Free product gauging was performed using an ORS® electronic oil-water interface probe. Free product recovery was conducted using a peristaltic pump and polyethylene tubing, as well as a top-filling stainless steel bailer. Manually recovered free product was containerized in steel drums for subsequent disposal.

An initial gauging event for shallow onsite wells took place on June 3rd. Onsite wells were also gauged before and after the June 18th AFVR event, with wells in the vicinity of the tank pit where the AFVR was conducted gauged during the AFVR. A final gauging event took place on July 5th and included onsite wells, as well as select offsite wells near the property boundaries. A total of 312 individual well gaugings were performed with free product recovery occurring in 49 instances. The gauging data are summarized in Table 1. Field data sheets are included in the Appendix.

The AFVR event was performed by A&D Environmental, Lexington, SC using a truck-mounted vacuum pump and tank. Offgas was treated using a carbon filter.

Results

Approximately 64 gallons of free product were manually recovered from monitoring and recovery wells during June, 2019. Most of the free product recovery was from recovery well RW-C where 46.25 gallons of free product were recovered. RW-10 (6), RW-D (3.7), and MW-3 (3.2) accounted for 12.9 gallons, while an additional 5 wells accounted for the remainder of the manually recovered free product. Table 2 provides a summary of the free product recovery data for individual wells.

The AFVR report data show that over 135 vapor-equivalent gallons of free product were recovered during the June 18 AFVR while only generating 125 gallons of wastewater. Throughout the 8-hour AFVR, the concentration of VOC vapors measured in the influent gas stream exceeded the maximum concentration (15,000 ppm) that A&D's organic vapor analyzer was able to record. As such, the 135 gallons of recovered free product is considered a minimum and a greater volume of free product was likely recovered during the AFVR. A&D AFVR reports are included in the Appendix.

CTSI personnel will dispose of the manually recovered free product at TK Tank Services in Sumter, SC. The disposal manifest will be submitted under separate cover.

Observations and Recommendations

The majority of the manually recovered free product was produced from recovery well RW-C. MWR2-8, located about 6 feet from RW-C, only produced about 0.5 gallons of free product during June; whereas during free product recovery efforts performed during the course of the Tier II assessment, this well generally produced free product whenever free product was recovered from RW-C. Both of these wells are located within a disturbed/fill area of the site and both wells encountered refusal at a depth of about 13.5 feet. The current lack of free product in MWR2-8 suggests a subsurface feature may be present between RW-C and MWR2-8. Details of this feature can't be determined with the current data but this feature could conceivably be something like a buried wall or a septic tank. Regardless, based upon the continued recovery of free product in this area, it seems apparent that some sort of preferential pathway is present between the UST pit area and the RW-C location. Additional preferential pathways are also suggested between the UST pit and RW-10 and also MW-3.

We noted that water level elevations at well MWR2-1, located at the intersection of Broad River Road and Dothan Road are consistently higher than nearby wells. Due to this

wells proximity to water mains along broad River and Dothan Roads, a water line leak may be present in this area. We recommend that the Department contact the water provider to determine whether a leak is present as this may affect ground elevations and gradients I the vicinity of the UST pit.

It appears that our efforts to recover free product have been very effective in reducing the source volume and minimizing the potential for significant offsite migration of free product. During June alone about 199 gallons of free product have been removed from the subsurface. Approximately 400 gallons of free product were recovered during the course of the Tier II Assessment.

Based upon these results we strongly recommend continuation of both manual and AFVR free product removal activities until a permanent remedial alternative is in place. It makes good sense to recover as much product now from areas where it has been identified rather than to allow migration in the complex subsurface of the site. An additional longer term AFVR (48-96 hour) event should be scheduled as soon as is possible so as to remove as much mass of free product from the UST pit area as is practical before it migrates to other areas of the site and closer to downgradient property boundaries. AFVR activities in other areas of the site are not recommended at this time due to unknowns regarding preference pathways for free product migration.

If you have any questions concerning this report please contact us at 803-407-3336 or 843-610-1953.

Sincerely,

CAROLINA TECHNICAL SERVICES, INC.
UST Certification No. UCC-0263

William D. Wood, P.G.
SC Registration No. 2116

Table 1
Well Gauging and Product Recovery Data Summary
June 2019
Broad River Amoco, UST Site ID 11946

Date	Total Wells Gauged	Total Wells with FP Recovery
6/3/2019	36	1
6/6/2019	13	10
6/8/2019	13	3
6/10/2019	13	3
6/13/2019	13	3
6/15/2019	13	4
6/17/2019	39	3
6/18/2019	20	1
6/19/2019	48	4
6/21/2019	19	6
6/24/2019	13	3
6/26/2019	13	3
6/28/2019	13	5
7/5/2019	46	0
Totals	312	49

Table 2
Manual Free Product Recovery Data Summary
June 2019
Broad River Amoco, UST Site ID 11946

Date	RW-A	RW-B	RW-C	RW-D	RW-10	MWR2-6	MWR2-7	MWR2-8	MW-3	Totals
6/3/2019			8							8
6/6/2019	0.25	0.25	3.5	0.5	2.25	0.5	1.5	0.5	1.5	10.75
6/8/2019			2.5		1				0.25	3.75
6/10/2019			3.25		1.25				0.25	4.75
6/13/2019			4	0.75	0.5					5.25
6/15/2019			3.5	1	<0.25				<0.25	4.5
6/17/2019			4.5	<0.25					1	5.5
6/18/2019	AFVR									0
6/19/2019			3.5	0.25				tr	tr	3.75
6/21/2019		0.5	4	0.25	1			tr	0.1	5.85
6/24/2019			3	0.2		tr				3.2
6/26/2019			4	0.5					tr	4.5
6/28/2019		0.1	2.5	0.25		0.1			0.1	3.05
7/5/2019	Gauging Only									
Totals	0.25	0.85	46.25	3.7	6	0.6	1.5	0.5	3.2	62.85

Notes: All values in gallons; tr-trace less than 0.1 gallon

BROAD RIVER AMOCO

Well Gauging

Date: 6/3/19 Technician: C. Alexander

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MW-1		12.83		
MW-2		11.40		Sheen
MW-3	12.04	13.04		FP Clear
MW-4		9.79		
MW-5		9.67		Sheen
MW-6A		12.90		MW-68 DTW 13.01
MW-7A		~~15~~		
MW-8A				
MW-8B				
MW-9A				
MW-9B				
MW-10A				
MW-10B				
MW-11A				
MW-11B				
MW-12A				
MW-12B				
MW-13A				
MW-13B				
MW-14A				
MW-14B				
MW-15A				
MW-15B				
MW-16A				
MW-16B				
MW-17B				
MW-18A				
MW-18B				
MW-19A				
WM-19B				
WM-20A				
MW-20B				
MW-21A				
MW-21B				
MW-22A				
MW-22B				

BROAD RIVER AMOCO

Well Gauging

Date: 6/3/19 Technician: C. Alexander

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1		8.93		
MWR2-2		10.78		
MWR2-3		12.42		
MWR2-4		10.01		
MWR2-5		8.90		
MWR2-6	7.40	7.47		
MWR2-7	6.39	6.55		
MWR2-8	11.26	11.50		
MWR2-9		12.57		
MWR2-10		9.55		
MWR2-11		12.64		
MWR2-12		9.13		
MWR2-13				
MWR2-14		8.84		
MWR2-15		11.63		
MWR2-16		12.82		
DMW-1				
DMW-2				
DMW-3				
RW-1		9.82		
RW-2		11.75		
RW-3		11.34		
RW-4		11.31		
RW-5		11.00		sheen
RW-6		11.10		
RW-7		9.70		
RW-8		9.33		
RW-9		12.48		
RW-10	9.90	11.00		
RW-11		12.91		
RW-12	12.03	12.24		
RW-A	6.75	6.80		
RW-B	7.89	8.07		
RW-C	9.96	12.20	✓	
RW-D	7.66	7.68		

BROAD RIVER AMOCO

Well Gauging

Date: 6/3/19 Technician: C. Alexander

Well Name: RW-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1420	9.96	12.20	1515			6	FP Amber Colored
1525			1600	12.10	12.12	2	Total 8 gallons

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 6 Technician: KEVIN W.

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
15.56	12.33	12.53	1609	N/D	12.55	0.25	GOLDEN BROWN STRONG ODER

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 6 Technician: KEVIN W

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1457	7.45	7.50	1509				
				N/D	7.71	0.5	DARK

Well Name: MWR2-1

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1517	6.45	6.60	1531	N/D	6.52	1.5	MOSTLY WATER

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1535	7.79	7.83	1550	N/D	8.02	0.5	LOT OF WATER

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 6 Technician: KEVIN W.

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1404	6.78	6.92	1415	6.95	6.96	0.25	DARK BROWN IN COLOR

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1422	6.78	6.81	1432	N/D	7.00	0.25	DARK IN COLOR

Well Name: RW-4

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
14:42	N/D	8.74	1445				

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 6 Technician: KEVIN W.

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1248	N/D	11.56	1250				

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1251	9.82	11.51	1333	11.00	11.02	2.25	DARK IN COLOR WITH SOME WATER

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1335	N/D	1071	1345				

BROAD RIVER AMOCO

Date: JUNE 6 Well Gauging Technician: KEVIN W

Well Name: RW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1026	10.72	12.00	1110	11.98	12.00	3.5	BLACK IN COLOR

Well Name: MWR2-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
1118	10.25	10.58	1135	10.69	10.72	0.5	BLACK IN COLOR

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
~~1137~~	~~—~~	~~12.25~~	~~13.57~~				
1137	12.25	13.57	1230	N/D	13.46	1.5	GOLDEN BROWN IN COLOR

BROAD RIVER AMOCO

Date: JUNE 8 Well Gauging Technician: KEVIN W

Well Name: MW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:45	N/D	7.57	10:46				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 8 Well Gauging Technician: KEVIN W

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:24	11.01	11.78	8:54	11.81	11.85	2.25	VERY DARK

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:59	N/D	8.10	9:01				STRONG ODER

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:05	12.45	12.63	9:18	N/D	12.66	0.25	GOLDEN BROWN

BROAD RIVER AMOCO

Date: JUNE 8 Well Gauging Technician: KEVIN W

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:24	12.25	12.27	9:26				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:29	N/D	6.45	9:31				

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:31	5.86	5.87	9:33				

BROAD RIVER AMOCO

Date: JUNE 8 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:36	10.08	10.66	10:02	N/D	10.72	1	

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:07	9.75	9.76	10:08				

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:12	N/D	9.75	10:20				STRONG ODER

BROAD RIVER AMOCO

Date: JUNE 8 Well Gauging Technician: KEVIN W

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:22	N/D	11.31	10:24				

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10.30	7.42	7.45	10.32				

Well Name: MWR2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:41	N/D	6.31	10:43				

BROAD RIVER AMOCO

Date: JUNE 10 Well Gauging Technician: KEVIN W

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
2:20	11.74	11.95	2:30	11.90	11.91	-.25	

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
2:36	10.68	11.62	3:32	1.86	11.[illegible]	3.75	

Well Name: MWR2-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
3:35	N/D	8.20	3:36				STRONG [illegible]

BROAD RIVER AMOCO

Date: JUNE 10 Well Gauging Technician: KEVIN W

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
3:46	11.90	11.91	3:47				STRONG ODER

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
3:47	6:33	6:35	3:48				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
3:50	N/D	6:25	3:51				

BROAD RIVER AMOCO

Date: JUNE 10 Well Gauging Technician: KEVIN W

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
3:55	N/D	10.66	3:57				

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4:00	9.71	9.72	4:01				

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4.03	10.16	10.17	4.04				

BROAD RIVER AMOCO

Date: JUNE 10 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4:05	9.93	10.93	4.29	N/D	10.91	1.25	SOME WATER

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4:33	7.38	7.42	4:34				

Well Name: MWR2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4:35	N/D	5.92	4:36				

BROAD RIVER AMOCO

Date: JUNE 10 Well Gauging Technician: KEVIN W

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
4:38	N/D	7.40	4:39				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 13 Well Gauging Technician: KEVIN W

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:45	6.50	7.15	12:14	7.20	7.21	0.75	

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 13 Technician: KEVIN W.

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:55	N/D	10.63	10:57				

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:58	N/D	9.05	10:59				

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:00	N/D	9.95	11:02				

BROAD RIVER AMOCO

Date: JUNE 13 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:09	9.80	10.25	11:34	N/D	10.22	0.5	

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:39	7.24	7.26	11:41				

Well Name: MWR2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:42	N/D	5.60	11:44				

BROAD RIVER AMOCO

Date: JUNE 13 Well Gauging Technician: KEVIN W

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:28	10.26	11.54	10:21	N/D	11.81	4	VERY DARK

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:22	N/D	8.21	10:23				VERY DARK ON TAPE

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:35	N/D	11.02	10:37				STRONG ODER

BROAD RIVER AMOCO

Date: JUNE 13 Well Gauging Technician: KEVIN W

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:43	N/D	11.19	10:45				NO ODER

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:46	6.59	6.61	10:48				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:49	N/D	6.18	10:51				SOME ODER

BROAD RIVER AMOCO

Date: JUNE 15 Well Gauging Technician: KEVIN W

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:24	10.57	11.60	9:25	11.90	11.91	3.5	PRODUCT NOT AS DARK AS ORIGINAS

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:27	N/D	8.52	9:28				

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:35	10.81	11.31	9:53	N/D	11.41	<0.25	

BROAD RIVER AMOCO

Date: JUNE 15 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:00	9.77	9.97	10:11	N/D	9.96	<0.25	

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:12	9.20	9.21	10:13				

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:14	N/D	10.49	10.15				

BROAD RIVER AMOCO

Date: JUNE 15 Well Gauging Technician: KEVIN

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:16	N/D	15.81	10:17				

Well Name: RW-13

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:18	6.86	6.90	10:20				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:21	6.26	6.28	10:23				

BROAD RIVER AMOCO

Date: JUNE 15 Well Gauging Technician: KEVIN W

Well Name: MW R2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:28	7.40	7.45	10:30				

Well Name: MW R2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:31	N/D	5.68	10:32				

Well Name: KW-1

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:33	6.77	7.15	11:00	7.24	7.31	1	

BROAD RIVER AMOCO

Date: JUNE 15 Well Gauging Technician: KEVIN W

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:02	10,52	10.55	11:03				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 17 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1	N/D	7.13		
MWR2-2	N/D	9.92		
MWR2-3	N/D	11.02		
MWR2-4	N/D	9.30		
MWR2-5	N/D	8.56		
MWR2-6	7.28	7.30		NOT ENOUGH TO PUMP
MWR2-7	N/D	5.76		
MWR2-8	N/D	8.64		
MWR2-9	N/D	11.17		
MWR2-10	N/D	9.05		
MWR2-11	N/D	11.26		
MWR2-12	N/D	9.02		
MWR2-13				
MWR2-14	N/D	9.06		
MWR2-15	N/D	10.95		
MWR2-16	N/D	11.46		
DMW-1	N/D	11.55		
DMW-2				
DMW-3				
RW-1	N/D	9.37		
RW-2	N/D	10.70		
RW-3	N/D	10.37		
RW-4	N/D	10.38		
RW-5	10.13	10.14		NOT ENOUGH TO PUMP
RW-6	N/D	10.37		
RW-7	N/D	8.53		
RW-8	N/D	8.63		
RW-9	N/D	11.09		
RW-10	9.70	9.76		NOT ENOUGH TO PUMP
RW-11	N/D	11.50		
RW-12	N/D	10.87		
RW-A	6.31	6.32		NOT ENOUGH TO PUMP
RW-B	7.01	7.04		NOT ENOUGH TO PUMP
RW-C	10.63	11.69	4.5	ENDING DEPTH 12.21 - 12.31
RW-D	6.95	7.07	<0.25	ENDING DEPTH 7.15 - 7.17

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 17 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MW-1	N/D	11.40		
MW-2	N/D	10.36		
MW-3	10.82	10.95		ENDING DEPTH 12.20
MW-4	N/D	8.49		ODER
MW-5	9.18	9.21		NOT ENOUGH TO PUMP
MW-6A	N/D	11.60		
MW-7A				
MW-8A				
MW-8B				
MW-9A				
MW-9B				
MW-10A				
MW-10B				
MW-11A				
MW-11B				
MW-12A				
MW-12B				
MW-13A				
MW-13B				
MW-14A				
MW-14B				
MW-15A				
MW-15B				
MW-16A				
MW-16B				
MW-17B				
MW-18A				
MW-18B				
MW-19A				
WM-19B				
WM-20A				
MW-20B				
MW-21A				
MW-21B				
MW-22A				
MW-22B				

MW-6B N/D 11.69

BROAD RIVER AMOCO

Date: JUNE 17 Well Gauging Technician: KEVIN W

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:24	10.63	11.69	11:00	12.21	12.31	4.5	

Well Name: MW RZ-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:05	N/D	8.64	11:07				STRONG ODER VERY DARK ON TAPE

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:37	10.82	10.95	12.10	N/D	12.20	1	TUB HAD FELL DOWN TO MAKE TUB DEEPER.

BROAD RIVER AMOCO

Date: JUNE 17 Well Gauging Technician: KEVIN W

Well Name: RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:16	N/D	10.87	12:18				

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:18	7.01	7.04	12:20				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:20	6.31	6.32	12:22				

BROAD RIVER AMOCO

Date: JUNE 17 Well Gauging Technician: KEVIN W

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:24	N/D	10.36	12:26				

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:31	10.13	10.14	12:33				

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:28	9.70	9.76	12:30				

BROAD RIVER AMOCO

Date: JUNE 17 Well Gauging Technician: KEVIN W

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:38	9.18	9.21	12:40				

Well Name: MW RZ-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:57	7.28	7.30	12:59				

Well Name: MW RZ-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:00	N/D	5.76	13:02				

BROAD RIVER AMOCO

Date: JUNE 17 Well Gauging Technician: KEVIN W

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:15	6.95	7.07	13:32	7.15	7.17	<0.25	

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name. _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 12 Well Gauging Technician: KEVIN W

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:15	8.70	8.71	10.19	N D	8.90		USED BAILER

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:19	11.55	12.15	10:21				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 18 Well Gauging Technician: KEVIN W

Well Name: RW 5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:55	7.06	7.07					
	ND	13.15	5.25				

Well Name: RW A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:55	N/D	6.33					
	ND	13.30	5:24				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 18 Well Gauging Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1				READING AT NOON
MWR2-2	N D	9.90		
MWR2-3				
MWR2-4	N D	9.25		
MWR2-5	N D	8.53		
MWR2-6				
MWR2-7				
MWR2-8				
MWR2-9				
MWR2-10				
MWR2-11				
MWR2-12				
MWR2-13				
MWR2-14				
MWR2-15	N D	10.90		
MWR2-16				
DMW-1				
DMW-2				
DMW-3				
RW-1				
RW-2	N D	10.64		
RW-3	N D	10.35		
RW-4				
RW-5	N D	10.18		
RW-6				
RW-7				
RW-8				
RW-9				
RW-10				
RW-11				
RW-12	N/D	10.85		
RW-A				
RW-B				
RW-C				
RW-D				

BROAD RIVER AMOCO

Date: JUNE 18 Well Gauging Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1				READING AT 4 PM
MWR2-2	ND	9.88		
MWR2-3				
MWR2-4	ND	9.26		
MWR2-5	ND	8.48		
MWR2-6				
MWR2-7				
MWR2-8				
MWR2-9				
MWR2-10				
MWR2-11				
MWR2-12				
MWR2-13				
MWR2-14				
MWR2-15	ND	11.86		
MWR2-16				
DMW-1				
DMW-2				
DMW-3				
RW-1				
RW-2	ND	10.66		
RW-3	ND	10.40		
RW-4				
RW-5	ND	10.27		
RW-6				
RW-7				
RW-8				
RW-9				
RW-10				
RW-11				
RW-12	ND	10.87		
RW-A				
RW-B				
RW-C				
RW-D				

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 19 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1				8:45 AM – 9:05 AM
MWR2-2		9.63		
MWR2-3				
MWR2-4		9.22		
MWR2-5		8.45		
MWR2-6				
MWR2-7				
MWR2-8				
MWR2-9				
MWR2-10				
MWR2-11				
MWR2-12				
MWR2-13				
MWR2-14				
MWR2-15		10.81		
MWR2-16				
DMW-1				
DMW-2				
DMW-3				
RW-1				
RW-2		10.60		
RW-3				
RW-4				
RW-5	10.16	10.17		
RW-6				
RW-7				
RW-8				
RW-9				
RW-10				
RW-11				
RW-12		10.80		
RW-A		6.62		
RW-B	11.15	11.25		
RW-C				
RW-D				

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 19 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MW-1		11.32		
MW-2		10.09		
MW-3	10.76	10.88	2 TBS	
MW-4		8.25		
MW-5		9.20		
MW-6A		11.44		
MW-7A				
MW-8A				
MW-8B				
MW-9A				
MW-9B				
MW-10A				
MW-10B				
MW-11A				
MW-11B				
MW-12A				
MW-12B				
MW-13A				
MW-13B				
MW-14A				
MW-14B				
MW-15A				
MW-15B				
MW-16A				
MW-16B				
MW-17B				
MW-18A				
MW-18B				
MW-19A				
WM-19B				
WM-20A				
MW-20B				
MW-21A				
MW-21B				
MW-22A				
MW-22B				
MW-6B		11.51		

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 19 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1		7.07		
MWR2-2		9.66		
MWR2-3		11.00		
MWR2-4		9.21		
MWR2-5		8.38		
MWR2-6	7.18	7.19		
MWR2-7		5.80		
MWR2-8	8.88	8.90	TSP	9.05 ENDING
MWR2-9		11.18		
MWR2-10		8.95		
MWR2-11		11.23		
MWR2-12		9.00		
MWR2-13				
MWR2-14		8.80		
MWR2-15		10.82		
MWR2-16		11.39		
DMW-1		11.35		
DMW-2				
DMW-3				
RW-1		9.23		
RW-2		10.59		
RW-3		9.70		
RW-4		8.54		
RW-5		10.15		
RW-6		10.35		
RW-7		8.43		
RW-8		8.55		
RW-9		11.03		
RW-10	9.64	9.71		DID NO PRODUCT TOO MUCH TRAFFIC
RW-11		11.42		
RW-12		10.82		
RW-A		6.60		
RW-B	11.01	11.11		
RW-C	11.00	12.11	3.5	12.32-12.35 ENDING
RW-D	6.73	7.01	0.25	7.20-7.24 ENDING

BROAD RIVER AMOCO

Date: JUNE 19 Well Gauging Technician: KEVIN W

Well Name. RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:15	11.00	12.11	10:18	12.32	12.35	3.5	

Well Name: MW R2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:15	8.88	8.90	9:33	ND	9.05	TSP	USED HAND BAILER TO GET SMALL AMOUNT

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:33	10.76	10.88	10.41	ND	12.70	2 TBS	USED HAND BAILER TO GET SMALL AMOUNT

BROAD RIVER AMOCO

Date: JUNE/9 Well Gauging Technician: KEVIN W

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:11	6.93	7.01	12:20	7.20	7.24	0.25	USED HAND BAILER

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:31	9.64	9.71	12:50				TOO MUCH TRAFFIC AND TOO LITTLE PRODUCT

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 21 Well Gauging Technician: KEVIN L.

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:05	11.15	12.13	10:56	12.71	BOTTOM	4	SOME WATER

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:05	9.05	9.07	9:19	ND	9.38	TSP	

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:02	9.60	9.68	11:26	ND	10.01	1	

BROAD RIVER AMOCO

Date: JUNE 21 Well Gauging Technician: KEVIN W

Well Name: KW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:32	1.59	9.75	11:48	ND	9.79	.5	

Well Name: KW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11.58	6.97	7.06	12:30	ND	7.09	~25	

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 21 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MW-1				
MW-2	N D	10.32		12:10
MW-3	10.90	11.05	CUP	12:12 11.81 STOP TIME
MW-4				
MW-5	N D	9.19		12:08
MW-6A				
MW-7A				
MW-8A				
MW-8B				
MW-9A				
MW-9B				
MW-10A				
MW-10B				
MW-11A				
MW-11B				
MW-12A				
MW-12B				
MW-13A				
MW-13B				
MW-14A				
MW-14B				
MW-15A				
MW-15B				
MW-16A				
MW-16B				
MW-17B				
MW-18A				
MW-18B				
MW-19A				
WM-19B				
WM-20A				
MW-20B				
MW-21A				
MW-21B				
MW-22A				
MW-22B				

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 21 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1				
MWR2-2		9.73		START 9:20
MWR2-3				END 9:37
MWR2-4		9.24		
MWR2-5		8.41		
MWR2-6				
MWR2-7				
MWR2-8				
MWR2-9				
MWR2-10				
MWR2-11				
MWR2-12				
MWR2-13				
MWR2-14				
MWR2-15		10.81		
MWR2-16				
DMW-1				
DMW-2				
DMW-3				
RW-1		9.32		
RW-2		10.58		
RW-3				
RW-4				
RW-5		10.04		
RW-6				
RW-7				
RW-8				
RW-9				
RW-10				
RW-11				
RW-12		10.87		
RW-A		6.54		
RW-B	9.62	9.79		
RW-C				
RW-D				

BROAD RIVER AMOCO

Well Gauging

Date: JUNE 21 Technician: KEVIN W

Well Name	Depth to Free Product (ft.)	Depth to Water (ft.)	Recovery Today?	Notes
MWR2-1				
MWR2-2				
MWR2-3				
MWR2-4				
MWR2-5				
MWR2-6	7.14	7.17		12:20
MWR2-7		5.78		12:19
MWR2-8				
MWR2-9				
MWR2-10				
MWR2-11				
MWR2-12				
MWR2-13				
MWR2-14				
MWR2-15				
MWR2-16				
DMW-1				
DMW-2				
DMW-3				
RW-1				
RW-2				
RW-3				
RW-4				
RW-5				
RW-6				
RW-7				
RW-8				
RW-9				
RW-10				
RW-11				
RW-12				
RW-A				
RW-B				
RW-C				
RW-D				

BROAD RIVER AMOCO

Date: June 24 Well Gauging Technician: KEVIN W

Well Name: VW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:39	6.93	6.95	11:41				

Well Name: RW A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:42	N D	6.40	11:43				

Well Name. RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:43	N D	10.80	11:44				

BROAD RIVER AMOCO

Date: JUNE 24 Well Gauging Technician: KEVIN W

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:45	ND	10.23	11:47				

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:48	8.86	8.87	11:50				WITH ODER

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
11:51	10.02	10.04	11:53				WITH ODER

BROAD RIVER AMOCO

Date: JUNE 24 Well Gauging Technician: KEVIN W

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
12:51	7.15	7.22	13:01	ND	7.42	TBS	HAND BAILER

Well Name: MWR2-1

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:01	ND	5.64	13:03				

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:04	6.76	6.87	13:12	6.98	7.00	3 CUPS	

BROAD RIVER AMOCO

Date: JUNE 24 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:16	N D	9.55	13:18				ODD NOT HAVING PRODUCT

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:22	11.07	12.55	14:50	12.12	N D	3	PUMP NOT GETTING ANY MORE!

Well Name: MWR2-8

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
13:22	N D	8.34	13:24				

BROAD RIVER AMOCO
Well Gauging

Date: JUNE 24 Technician: KEVIN L

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
14:53	10.63	10.86	14:59				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO
Well Gauging
Date: JUNE 26 Technician: KEVIN LW

Well Name: RW-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:34	6.95	6.97	10:37				

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

BROAD RIVER AMOCO

Date: JUNE 26 Well Gauging Technician: KEVIN W

Well Name: MWR2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:56	ND	5.69	9:57				STRONG SHEEN

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:58	6.81	6.94	9:59	ND	7.10	.5	10:15 HAND BAILED

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
10:29	ND	9.60	10:32				CHECKED TWICE

BROAD RIVER AMOCO
Date: JUNE 26 Well Gauging Technician: KEVIN W

Well Name: RW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:47	N D	10.75	9:48				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:48	N D	6.42	9:49				

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:51	N D	7.28	9:52				

BROAD RIVER AMOCO

Date: JUNE 26 Well Gauging Technician: KEVIN W

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:41	ND	10.10	9:42				

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:43	ND	8.98	9:44				

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:44	ND	10.20	9:45				

BROAD RIVER AMOCO

Date: JUNE 26 Well Gauging Technician: KEVIN W

Well Name: RW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:32	11.23	12.65	10.22		BOTTOM	4	

Well Name: MWR2-B

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:32	ND	8.53	8:35				

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
9:38	10.76	10.85	9:40	ND	11.78	TSP	10:08 Stop HAND BAILED

BROAD RIVER AMOCO

Date: JUNE 28 Well Gauging Technician: KEVIN W

Well Name: MWR2-E

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
6:50	ND	8.67	6:52				

Well Name: RW-C

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
6:50	11.85	FULL DEPTH	7:54	ND	BOTTOM	2.5	

Well Name: MW-3

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:10	10.77	11.01	7:16	ND	11.70	CUP	HAND BAILED

BROAD RIVER AMOCO

Date: JUNE 28 Well Gauging Technician: KEVIN W

Well Name: RW-10

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:20	ND	9.55	7:21				

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:22	ND	10.10	7:23				

Well Name: MW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:23	ND	9.09	7:24				

BROAD RIVER AMOCO

Date: JUNE 28 Well Gauging Technician: KEVIN W

Well Name: MW-2

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:25	ND	10.25	7:26				

Well Name: RW-A

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:27	ND	6.42	7:28				

Well Name. RW-12

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:29	ND	10.81	7:30				

BROAD RIVER AMOCO

Date: JUNE 28 Well Gauging Technician: KEVIN W

Well Name: MWR2-6

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:38	7.35	~~7.35~~ 7.41	7:43	ND	7.51	CUD	HAND BAILED

Well Name: MWR2-7

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:44	ND	5.80	7:45				

Well Name: RW-D

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
7:47	6.98	7.07	7:52	ND	7.23	.25	

BROAD RIVER AMOCO

Date: JUNE 28 Well Gauging Technician: KEVIN W

Well Name: RW-5

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations
8:11	6.98	7.01	8:19	ND	7.12	CUP	HAND BAILED

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Well Name: _____

Time Start	Depth to Free Product	Depth to Water	Time Stop	Ending Depth to Free Product	Ending Depth to Water	Gallons Recovered	Observations

Broad River Amoco

Date: July 5 2019 Measured by: KEVIN WESSINGER

Instrument #: INTERFACE PROBE 1068013

Monitoring Well ID#	Depth to Water (ft)	Depth to Free Product (ft)	Comments
MW-1	11.95	ND	
MW-2	10.55	ND	
MW-3	12.74	10.97	
MW-4	8.92	8.91	
MW-5	9.23	9.22	
MW-6A	12.02	ND	
MW-6B	12.17	ND	
MW-7A	not measured		
MW-8A	not measured		
MW-8B	not measured		
MW-9A	not measured		
MW-9B	not measured		
MW-10A	6.95	ND	
MW-10B	6.87	ND	
MW-11A	3.18	ND	
MW-11B	1.85	ND	
MW-12A	not measured		
MW-12B	not measured		
MW-13A	not measured		
MW-13B	not measured		
MW-14A	not measured		
MW-14B	not measured		

Broad River Amoco

Date: July 5 2019 Measured by: KEVIN WESSINGER

Instrument #: INTERFACE PROBE 1068013

Monitoring Well ID#	Depth to Water (ft)	Depth to Free Product (ft)	Comments
MW-15A	not measured		
MW-15B	not measured		
MW-16A*	not measured		
MW-16B*	not measured		
MW-17B	not measured		
MW-18A	0.85	ND	
MW-18B	WATER TO THE TOP	ND	
MW-19B	not measured		
MW-20A	not measured		
MW-20B	not measured		
MW-21A	not measured		
MW-21B	not measured		
MW-22A*	not measured		
MW-22B	not measured		
MWR2-1	7.32	ND	
MWR2-2	10.07	ND	
MWR2-3	11.60	ND	
MWR2-4	9.51	ND	
MWR2-5	8.60	ND	
MWR2-6	7.28	ND	
MWR2-7	6.07	ND	DARK IN COLOR WITH ODOR
MWR2-8	8.96	ND	

Broad River Amoco

Date: July 5 2019 Measured by: KEVIN WESSINGER

Instrument #: INTERFACE PROBE 1068013

Monitoring Well ID#	Depth to Water (ft)	Depth to Free Product (ft)	Comments
MWR2-9	11.75	ND	
MWR2-10	9.15	ND	
MWR2-11	11.80	ND	
MWR2-12	9.02	ND	
MWR2-13	3.73	ND	
MWR2-14	8.65	ND	
MWR2-15	11.60	ND	
MWR2-16	12.00	ND	
DMW-1	11.22	ND	
DMW-2	not measured		
DMW-3	not measured		

RW-1	9.28	ND	
RW-2	11.08	ND	
RW-3	10.14	ND	
RW-4	10.36	ND	
RW-5	10.32	10.31	
RW-6	10.55	ND	
RW-7	9.02	ND	
RW-8	8.89	ND	
RW-9	11.65	ND	
RW-10	9.62	9.65	

Broad River Amoco

Date: July 5 2019 Measured by: KEVIN WESSINGER

Instrument #: INTERFACE PROBE 1068013

Monitoring Well ID#	Depth to Water (ft)	Depth to Free Product (ft)	Comments
RW-11	12.00	ND	
RW-12	11.31	ND	
RW-A	6.54	ND	
RW-B	7.26	7.21	
RW-C	12.52	10.30	
RW-D	7.30	7.18	

June 19, 2019

Mr. Bill Wood
CTSI
Office: (843) 610-1953
Email: wwood@ctsiengineering.com

RE: 8-Hour AFVR Event
4335 Broad River Rd
Columbia, SC

Mr. Wood:

A&D Environmental Services (SC) LLC (A&D) performed an 8-Hour AFVR event at the subject site on Tuesday, June 18, 2019. The event was conducted on wells RW-A and RW-B. During the event vacuum at the recovery pump was measured at -17 to -16 inches of mercury at RW-A and -15 to -13 inches of mercury at RW-B. Airflow was registered at 440 to 455 CFM and the system temperature ranged from 187.7 to 223 degrees F. Humidity ranged from a high of 7.4 percent to a low of 3.0 percent. Field gauged volatile organic compounds (VOC's) emissions exceeded >15,000 parts per-million (PPM).

Groundwater / Product Mix Recovered

During the event a total of 125 gallons of product/water mix were removed from the site and properly disposed at a certified South Carolina disposal facility. No additional free product was removed as liquid. Based on 8 hours of operation and a total of gallons recovered, the average groundwater recovery rate was calculated to be approximately 15.63 gallons per hour.

Event Results

Based on mass-removal calculations, 846.13 pounds or 135.38 gallons of VOC's were removed as vapor. Attached are the calculation spreadsheets.

A&D appreciates the opportunity to assist you with this project. If you have any questions or need further information please contact me at (336) 804-0824.

Sincerely,
A&D Environmental Services (SC) LLC

Jeff Albano, PG
Project Manager
jalbano@adenviro.com

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

2. Page 1 of

3. Emergency Response Phone

4. Waste Tracking Number: 1906-0335

5. Generator's Name and Mailing Address: BROAD RIVER C STORE LLC SAME-7

Generator's Phone:

Generator's Site Address (if different than mailing address): AMOCO 4335 Broad River Rd Columbia, SC 29210

6. Transporter 1 Company Name: A&D Environmental Service (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: US. Water 511 Old MT. Holly Rd. Goose Creek, SC 29445

U.S. EPA ID Number

Facility's Phone: 843-790-5558

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	Non Haz - Non Reg Material PCW	1	TT	125	G	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

CONSOLEDATED IN FRAC TANK 6/19/19

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: William Mask, agent

Signature: WILLIAM MASK

Month: 6 Day: 18 Year: 19

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: Terry Green

Signature: Terry Green

Month: 6 Day: 18 Year: 19

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

169-BLC-O 6 10496 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

Scanned with CamScanner

AFVR Data Sheet - Emissions Data & Calculation

Client: CTSI					Site: 4335 Broad River Rd, Columbia, SC								6/18/2019		Job#	1267
Technician:					Meters: MiniRae 2000-10.6 eV PID, TESTO 445-Vane, %RH, Temp							Response Factor:	1		Stack Dia(in):	4
Time (h:m)	Delta Time (min)	Pre PPMmea (PPMv)	Post PPMmea (PPMv)	Velocity (fpm)	Temp (^{0} F)	RH (%)	Flow (cfm)	Specific Humidity (lbW / lbDA)	Water Vapor (vol %)	Qsld (dscfm)	Dry Conc (PPMv)	Response Factor	Corrected Conc (PPMv)	Mass Conc (mg/m^3)	Mass Conc (lb/ft^3)	Mass Removed (lb)
	Start															
0945	30	15000	11.5	5216	186.7	7.4	455	0.100	0.138	320	17403	1	17403	92548	0.005778	55.49
1015	30	15000	11.1	5196	192.7	6.5	453	0.100	0.138	316	17403	1	17403	92548	0.005778	54.77
1045	30	15000	25.6	5210	200.3	6.0	454	0.100	0.138	313	17403	1	17403	92548	0.005778	54.29
115	30	15000	44.9	5183	201.5	5.5	452	0.100	0.138	311	17403	1	17403	92548	0.005778	53.91
1145	30	15000	66.9	5031	205.0	5.0	439	0.100	0.138	300	17403	1	17403	92548	0.005778	52.05
1215	30	15000	77.7	5212	209.0	4.9	455	0.100	0.138	309	17403	1	17403	92548	0.005778	53.60
1245	30	15000	89.6	5108	213.0	4.0	446	0.100	0.138	301	17403	1	17403	92548	0.005778	52.22
1315	30	15000	111.3	5126	217.0	3.7	447	0.100	0.138	301	17403	1	17403	92548	0.005778	52.09
1345	30	15000	110.9	5213	215.0	3.5	455	0.100	0.138	307	17403	1	17403	92548	0.005778	53.14
1415	30	15000	112.7	5305	218.0	3.0	463	0.100	0.138	311	17403	1	17403	92548	0.005778	53.83
1445	30	15000	116.2	5210	217.0	3.9	454	0.100	0.138	305	17403	1	17403	92548	0.005778	52.95
1515	30	15000	119.5	5106	219.0	3.7	445	0.100	0.138	298	17403	1	17403	92548	0.005778	51.74
1545	30	15000	219.9	5136	221.0	3.5	448	0.100	0.138	299	17403	1	17403	92548	0.005778	51.89
1615	30	15000	203.6	5044	223.0	4.0	440	0.100	0.138	293	17403	1	17403	92548	0.005778	50.81
1645	30	15000	234.5	5126	222.0	3.9	447	0.100	0.138	298	17403	1	17403	92548	0.005778	51.71
1715	30	15000	248.9	5118	222.0	3.6	446	0.100	0.138	298	17403	1	17403	92548	0.005778	51.63
													Total emissions, pounds			846.13
													Total emissions, gallons (6.25 lb/gal)			135.38

PPMmea = Measured VOC concentration from OVA/TVA (PPMv)

Velocity = Measured velocity (fpm)

Temp = Measured temperature (^{0}F)

RH = Measured relative humidity (%)

Flow = Actual Flow Volume (cfm)

Specific Humidity = data from psychrometric chart at measured Temp and RH (lb water/lb dry air) (lbW / lbDA)

Water Vapor = % water vapor on a volume basis = (Specific Humidity / 18 lb-mole H2O) / [(1 / 28.84 lb-mole dry air) + (Specific Humidity / 18 lb-mole H2O)]

Qstd = Flow volume on a dry basis at a standard temperature of 68^0 F = (1-Water Vapor) (Flow) [528 0R / (Temp +460)]

Dry Conc = PPMv VOC on a dry basis = [PPMmea / (1-Water Vapor)]

Response Factor of OVA/TVA meter; 1 if response factor is unknown

Corrected Conc = Dry Conc PPMv VOC corrected by Response Factor = (Dry Conc) (Response Factor)

Mass Conc (mg/m^3) = Mass concentration VOC as gasoline dry basis at standard temperature = (Corrected Conc) (128 mg/mg-mole / 24.07 m3/mg-mole)

Mass Conc (lb/ft^3) = [Mass Conc (mg/m3)] [(6.243 * 10^{-8})(lb/ft3)/(mg/m3)]

Mass Removed (lb) = [Mass Conc (lb/ft3)] [Qstd (dscfm)] [Time Interval (min)]

AFVR Field Data Sheet

Client: CTSI	Site: 4335 Broad River Rd, Columbia, SC		18-Jun-19	Job #1267
Technician:	Truck Operator: Green	Tank Vol: 2900 gal	Blower Rating at 24 in Hg: 492 scfm;	27 in Hg: 103 scfm

Time (hh:mm) Start Time: 0915	Stinger Depth (ft)	Extraction Well-head Vacuum (in Hg)								Influence On Surrounding Wells Vacuum (in water)								Adjacent Well Water Level Measurements No Product Detected							
		RW-A	RW-B	MW-	MW-	MW-	MW-	MW-	MW-	MW-R5	MW-R4	MW-21	MW-R2	RW-1	MW-R15	MW-	MW-	MW-	MW-	MW-	MW-	MW-	MW-	MW-	MW-
0945	7	-17	-13							0.00	0.00	0.00	0.00	0.00	0.00										
1015	8	-17	-13							-5.46	0.00	0.00	0.00	0.00	0.00										
1045	8	-17	-13							-7.41	0.00	0.00	0.00	0.00	0.00										
115	9	-17	-13							-8.38	0.00	0.00	0.00	0.00	0.00										
1145	10	-17	-13							-8.52	0.00	0.00	0.00	0.00	0.00										
1215	11	-17	-13							-8.41	0.00	0.00	0.00	0.00	0.00										
1245	12	-17	-13							-8.26	0.00	0.00	0.00	0.00	0.00										
1315	12	-17	-13							-7.91	0.00	0.00	0.00	0.00	0.00										
1345	12	-17	-13							-8.36	0.00	0.00	0.00	0.00	0.00										
1415	12	-17	-15							-8.17	0.00	0.00	0.00	0.00	0.00										
1445	12	-17	-15							-8.43	0.00	0.00	0.00	0.00	0.00										
1515	12	-17	-15							-8.71	0.00	0.00	0.00	0.00	0.00										
1545	12	-16	-15							-8.52	0.00	0.00	0.00	0.00	0.00										
1615	12	-16	-15							-8.86	0.00	0.00	0.00	0.00	0.00										
1645	12	-16	-15							-9.08	0.00	-0.23	-0.10	-3.0	-0.26										
1715	12	-16	-15							-11.07	-0.08	-0.36	-0.14	-3.1	-0.26										
		RW-A		RW-B																					
Depth Below Top of Casing (ft)		6.33		7.01														Depth to groundwater pre-AFVR/EFR							
																		Depth to groundwater post-AFVR/EFR							
																		Depth to groundwater 20 minutes post-AFVR/EFR							
		0.00		0.00														Depth to free product pre-AFVR/EFR							
																		Depth to free product post-AFVR/EFR							
																		Depth to free product 20 minutes post-AFVR/EFR							

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

FREDRICK N CECCHINI
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
COLUMBIA SC 29210-4009

MAR 2 6 2012

Re: Tier II Directive
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946; CA # 42065; MWA # UMW-24502
Release reported January 4, 2011
Tier I Report received April 11, 2011
Monitoring Well Installation Report received June 21, 2011
QAPP Contractor Addendum received February 21, 2012 and Revision received March 15, 2012
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) reviewed the referenced reports submitted by Enviro-Test Services, Incorporated on your behalf. The reports indicate the presence of chemicals of concern (CoC) in the groundwater and soil plus free phase product exists in monitoring well MW-5. A Tier II assessment should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) and in compliance with all applicable regulations. A copy of SCDHEC QAPP for the UST Management Division is available at http://www.scdhec. gov/environment/lwm/html/ust.htm.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement number 42065 has been approved for the amount shown on the enclosed cost agreement form for installation of up to 50 temporary, 24 shallow and 3 deep monitoring wells plus sampling the entire monitoring well network to define the extent of free phase product plus horizontal and vertical extent of dissolved CoC. Please be aware that the July 1, 2011 State Underground Petroleum Environmental Response Bank (SUPERB) Allowable Costs sheet states that "If the vertical and horizontal extent of chemicals of concern is not fully defined by the tier report, the Department may not approve additional future mobilizations for additional screening or well installation." Screening points that are converted to a permanent monitoring well will be reimbursed at the approved well installation rate. **Please contact the Department prior to well installation for concurrence regarding the final well locations. All shallow wells are to be installed with screen intervals that bracket the water table.** Shallow wells should have a 10-foot screen. **The SUPERB Account cannot reimburse costs for any shallow well with a screen that does not properly bracket the water table.**

A groundwater sample from any water supply well within 1,000 feet of the facility should be collected and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2 DCA Ethanol, and EDB. Existing groundwater monitoring wells must be purged prior collection of a groundwater sample since it has been more than 12 months since the wells were last sampled. Groundwater samples from the monitoring well network should be collected and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2 DCA, Ethanol, lead, and EDB. Analyses should be in accordance with Appendix E of the QAPP For the Underground Storage Tank Management Division to include duplicate samples, field and trip blanks.

The Tier II Assessment Report, contractor checklist, and invoice are due within 90 days from the date of this letter. The report (a signed .pdf copy on CD is preferred) submitted at the completion of these activities should include information outlined in the Master QAPP document to include the following:

- Geological cross sections that include the shallow and deep monitoring wells.
- Report the percentage of sand, percentage of silt, and percentage of clay in two shallow and two adjacent deep wells in the report and on the geological cross sections.
- Boring logs and well logs (DHEC form 1903) signed by a well driller licensed in the state of South Carolina for each new temporary or permanent monitoring well **in accordance with the South Carolina Well Standards, R.61-71**. 1903 forms are required for field screening borings (whether direct push or drilled) where a sample is extracted for analysis.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- 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 Division, shall be presented in tabular format. Historical groundwater laboratory analytical data and depth to groundwater, and product if applicable, for this and all previous monitoring events 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 second contour map will be necessary if three or more deep wells are installed.
- 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.
- According to R.61-98 Section IV.C.1 all plans, reports, invoices, and other documents relating to site rehabilitation activities which have been prepared or approved by a certified contractor shall be signed by the certified contractor and bear his certification number.

Cost agreement number 42065 has been approved for the amount shown on the enclosed cost agreement. Please note the following changes to the submitted cost agreement:

- The number of equipment mobilizations has been reduced from three to two. One for screening and a second for well installation. The number of personnel mobilizations has been reduced by two to a total of six.
- The field screening footage has been decreased to 2,000 feet. Additional footage can be approved if needed. **Please be sure that free phase product is not allowed to migrate downward when conducting deep screening.**
- The number of deep pit cased wells plus sample collection and laboratory analyses has been increased by one so the groundwater flow direction and CoC levels in the lower portion of the aquifer can be determined. The location of the third deep well will be determined once screening results are submitted.
- Costs for groundwater sample collection of two duplicate samples, two field blank samples, sampling below product for one well with the greatest thickness of product, plus gauging three wells with product have been added to the cost agreement.
- Laboratory analyses for unfiltered lead has been decreased by two, since laboratory analyses of blanks is not required for metals.
- Laboratory analyses for BTEX plus Naphthalene of a soil sample collected at a depth of 15 feet or less below the ground surface for each new permanent shallow monitoring well has been added.
- Laboratory soil grain size/hydrometer testing has been added for soil samples collected from the screen intervals of two pair of newly installed shallow and deep wells.
- As the UST Management Division staff will conduct modeling, costs associated with modeling and Tier II Risk Evaluation have been deleted from the approved cost agreement.

According to Division records, the release at the facility was reported to SCDHEC on January 4, 2011. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Account, you are responsible for the first $25,000 of site rehabilitation costs. Please be sure to

provide proof of costs that will be applied to the deductible with the invoice. Acceptable proof or payment of deductible costs include a copy of the cancelled check (front and back) that made payment to your contractor or a signed notarized statement by your site rehabilitation contractor for the amount that was paid directly to your contractor. Enviro-Test Services, Incorporated can submit an invoice for direct payment from State Underground Petroleum Environmental Response Bank (SUPERB) Account for preapproved costs that exceed the $25,000 deductible. An interim well drilling invoice may not be submitted for this scope of work as the deductible has not been met. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, 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. The UST Management Division, because of unnecessary dilution, cannot make decisions if the reporting limit of individual petroleum CoC exceeds Risk-Based Screening Levels (RBSLs). The UST Management Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release. Note that the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL. The UST Management Division requires that laboratories be certified through the SCDHEC Office of Environmental Laboratory Certification for the oxygenate compounds.

Please note that you and/or your contractor are responsible for obtaining all off-site access agreements and/or encroachment permits necessary for this scope 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 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.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

Please reference UST Permit number 11946 on all correspondence. If you have any questions, please contact me by phone at (803) 896-6669, by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

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

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)
Signed Site Specific QAPP Contractor Addendum

cc: Enviro-Test Services, PO Box 2237, Irmo, SC 29063 (with enc.)
Technical File (with enc.)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to: Enviro-Test Services, Incorporated
(on behalf of): Broad River Amoco
Facility: Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit Number: 11946
County: Richland

This approval is for the installation of 50 temporary, 24 shallow, and 3 deep groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. The 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: March 19, 2012 **Approval #: UMW-24502**

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

UST
MAR 15 2012
PROGRAM

SCANNED

UST
17Feb
DOCKETING

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Broad River Amoco, UST Permit # 11946

4335 Broad River Road, Columbia, SC – Richland County

Prepared by: Terry L. Teate
Enviro-Test Services Inc. - SCDHEC Certified Contractor No. 14
Date: February 20, 2012

Approvals

Arthur Shrader, Hydrogeologist
SCDHEC Project Manager
Signature Date 3/19/12

Terry L. Teate
Site Rehabilitation Contractor
Enviro-Test Services, Inc.
Signature Date 2-17-12

Jim Kotti, P.G
Contractor QA Manager
Signature Date 2-17-12

Ashley B. Amick
Laboratory Director
Access Analytical, Inc.
Signature Date 2-17-12

Scott Bailey
Laboratory Director
GCAL
Brenda Martinez
Wed Mar 14 2012 10:41:36
Signature Date 03/14/12

Approved Cost Agreement 42065

Facility: 11946 BROAD RIVER AMOCO
SHRADEAA
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
03 COMPREHENSIVE SURVEY					
		COMPREHENSIVE SURVEY	1.0000	1,000.00	1,000.00
04 MOB/DEMOB					
		A EQUIPMENT	2.0000	575.00	1,150.00
		B PERSONNEL	4.0000	290.00	1,160.00
06 SOIL BORINGS (DRILLED)					
		A SOIL BORINGS & FLD SCREENING	2,000.0000	17.00	34,000.00
08 ABANDONMENT					
		A ABANDONMENT 2" DIA OR LESS	2,000.0000	5.00	10,000.00
09 WELL INSTALLATION					
		B WATER TABLE (DRILLED)	720.0000	38.00	27,360.00
		C TELESCOPING	180.0000	58.00	10,440.00
10 SAMPLE COLLECTION					
		A GROUND WATER	30.0000	55.00	1,650.00
		D GROUNDWATER NO-PURGE	2.0000	35.00	70.00
		E GAUGE WELL ONLY	3.0000	20.00	60.00
		F SAMPLE BELOW PRODUCT	1.0000	50.00	50.00
		H FIELD BLANK	2.0000	5.00	10.00
11 ANALYSES					
	GW GROUNDWATER	A1 BTEXNM+OXYGS+1,2-DCA+ETH-8260B	37.0000	100.00	3,700.00
		E LEAD	35.0000	20.00	700.00
		F EDB	37.0000	55.00	2,035.00
	SOIL SOIL	Q BTEX+NAPTH	24.0000	100.00	2,400.00
		W GRAIN SIZE/HYDROMETER	4.0000	99.00	396.00
12 AQUIFER CHARACTERIZATION					
		B SLUG TEST	2.0000	150.00	300.00
17 DISPOSAL					
		A WASTEWATER	330.0000	0.80	264.00
		B1 FREE PRODUCT	10.0000	0.85	8.50
		C SOIL (TREATMENT/DISPOSAL)	4.0000	72.50	290.00
		D DRILLING FLUIDS	110.0000	0.80	88.00
19 RPT/PROJECT MNGT & COORDINATIO					
		PCT PERCENT	0.1500	97,656.50	14,648.48
			Total Amount		112,304.98

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES armenv.com

July 10, 2019

Debra Thoma, Hydrogeologist
Underground Storage Tank Section
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Soil Vapor and Air Quality Assessment
Broad River Amoco (BP)
4335 Broad River Rd., Columbia
Richland County, South Carolina
UST Permit #11946
ARM Project #12-414.3-19

Dear Ms. Thoma;

ARM Environmental Services, Inc. (ARM) has conducted additional sub-slab soil vapor and indoor and outdoor air sampling associated with the Broad River Amoco (BP) site on behalf of Enviro-Test Services, Inc. (Enviro-Test). Enviro-Test is the primary consultant for the responsible party for petroleum release #1 at the Underground Storage Tank (UST) site. The site is located along Broad River Rd. at the intersection of Dothan Rd. in Columbia, Richland County, South Carolina.

A summary of the services provided and data collected during this sampling event is documented in the following report and attached figures, tables, and appendices.

If you have any questions or comments regarding this report, please do not hesitate to contact us.

Sincerely,
ARM Environmental Services, Inc.

Michael L. Faris, P.G.
Senior Geologist

Andrew M. Wilson, P.G.
Sr. Project Manager / Principal

cc: Terry Teate, Enviro-Test Services, Inc.

Assessment Activities

In order to further evaluate the air quality and sub-slab soil vapor at the Play Pals property, the following assessment activities were completed:

Sub-Slab Soil Vapor Sampling:

Six (6) sub-slab soil vapor points (Vapor Pins), designated SG-1 through SG-6, were previously installed in the concrete slab inside the Play Pals structure closest to the subject site. The Vapor Pin sub-slab vapor monitoring points were installed in December 2018 in order to facilitate the collection of soil gas from beneath the concrete slab portion of the building. 5/8-inch diameter holes were drilled through the concrete slab at six locations and the Vapor Pins were securely placed within these holes by advancement with a dead blow hammer. The Vapor Pins included a silicone sleeve that compressed against the hole in the concrete slab, sealing the hole around the Vapor Pin. Subsequent to sample collection in 2018, each of the vapor pins were capped and left in place for potential future sampling events. The same six vapor pins were utilized during this assessment for sample collection. The six sub-slab soil vapor points are indicated on Figure 3, the Play Pals Site Sketch. The site sketch consists of a photograph of the Play Pals Day Care building evacuation plan with sample locations indicated.

The Vapor Pins were connected with tubing to 2.7L stainless steel Summa Canisters. The flow rate of soil vapor to the Summa Canisters was controlled with a flow controller set at the laboratory to continuously draw soil vapor at a rate of approximately 200 milliliters per minute (ml/min). Soil vapor sampling at less than or equal to 200 ml/min is recommended in order to minimize the potential for drawing ambient or other air / vapor into the sample (short circuiting).

The sample train tubing connections were pressure tested with a shut in test to insure no leakage within the sample train. The valve closest to the vapor pin was closed and a vacuum equivalent to 15 inches of mercury was placed on the sample train with the integrated syringe. A pressure gauge was used to monitor any vacuum loss within the train. A sample train with a vacuum loss of less than 0.5 inches of mercury over a 1 minute period was considered tight.

A leak test, using the water dam method, was also used to test the integrity of the tubing connection to the Vapor Pin and the silicone seal against the concrete hole. After installation of the Vapor Pin, a two inch PVC pipe couple was placed over the Vapor Pin and was sealed against the concrete floor with VOC free Play-Doh. When all tubing connections had been made and the "shut-in" test had been completed, distilled water was placed into the PVC pipe couple to a level above the tubing connection to the Vapor Pin. The sample point was then purged by removing approximately 3 to 5 tubing volumes of air with the syringe.

A sudden drop in water level, or the appearance of water in the tubing would indicate leakage. The connection to the syringe was then closed and the valve to the Summa Canister was opened to begin sampling. The water level in the pipe couple was monitored throughout the approximate 13 to 15 minute sampling period at each location to insure no leakage occurred during sample collection. The water level within the PVC water dam remained constant throughout sampling and no water was observed in the tubing at each location.

The sub-slab soil vapor samples (Summa canisters) were shipped overnight to a certified laboratory for analysis. Each sample was analyzed for BTEX, naphthalene, MTBE, and 1,2-DCA via EPA analytical method TO-15. The results are tabulated along with Vapor Intrusion Screening Levels (VISL) in Table 1. Vapor sampling field data logs for each sample are included in Appendix A. The complete laboratory analytical data is included in Appendix B. The locations of each of the soil vapor sample locations are indicated on Figure 3.

Indoor Air, Outdoor Air, Crawlspace Vapor Sampling:

A total of six (6) indoor air, outdoor air, and crawlspace vapor samples, designated A-1, and A-3 through A-6, were collected at the Play Pals Daycare property and from the residence located adjacent to and downgradient (southwest) of the Play Pals property. The address of the adjacent residence is 1235 Dothan Rd.

ARM utilized 6 liter (L) stainless steel Summa canisters with flow controllers set by the laboratory for 8 hours. One canister was deployed outside the Play Pals building between the building and the Broad River BP location (A-1), one canister was deployed inside the portion of the Play Pals building that is over a slab (A-3), one canister was deployed inside the portion of the Play Pals building that is over a crawlspace (A-4), two canisters were deployed in the crawlspace of the Play Pals building (one above the polyethylene moisture barrier [A-5] and one below the polyethylene moisture barrier[A-6]), and one canister was deployed in the crawlspace of the residence located at 1238 Dothan Road (A-7).

The air samples (Summa canisters) were shipped overnight to a certified laboratory and analyzed for BTEX, naphthalene, MTBE, and 1,2-DCA via EPA analytical method TO-15. The results are tabulated along with Vapor Intrusion Screening Levels (VISL) in Table 1. Vapor sampling field data logs for each sample are included in Appendix A. The complete laboratory analytical data is included in Appendix B. The locations of each of the air sample locations are indicated on Figure 3.

Conclusions

Sample results were compared to EPA VISLs indicative of a 10-6 cancer risk or a hazard quotient of 0.1 for non-carcinogens (default VISLs).

None of the sub-slab results exceeded the VISLs, indicating that vapor intrusion from the subsurface was not occurring at the time of sample collection. The weather pattern around this time had been very dry (no rain for an extended period of time). Because of the high water table, wetter weather periods have likely been a driver for pushing contaminants and/or contaminant vapors into the sub-slab environment, which is likely a porous sand base beneath the concrete slab. Therefore these recent results may be a snapshot of conditions in a favorable (dry) environment.

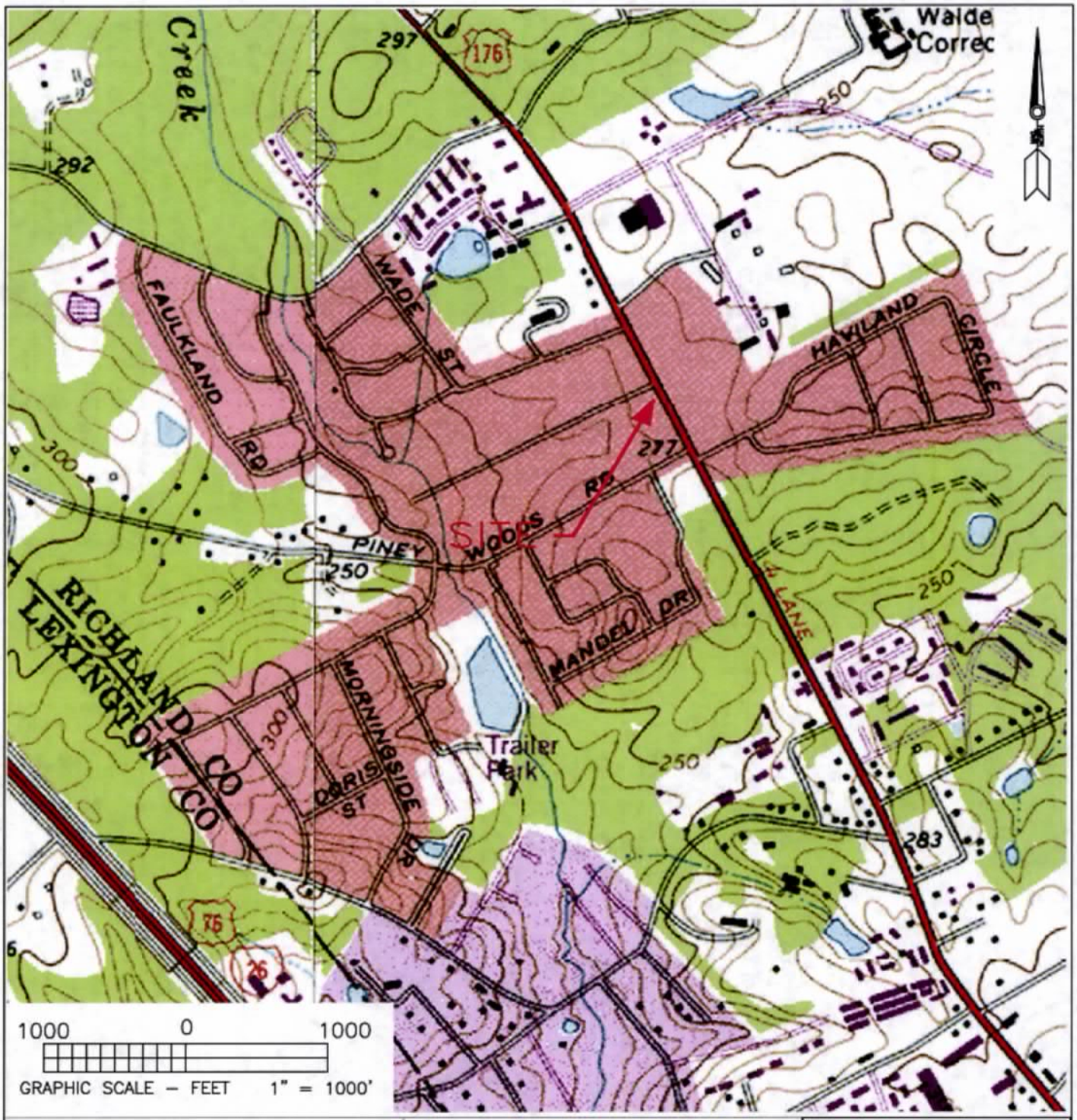
Naphthalene was detected in the indoor air space in the slab portion of the Play Pals building at a concentration exceeding the commercial and residential VISLs. Benzene was detected in the indoor air space in the crawlspace portion of the Play Pals building at a concentration exceeding the commercial and residential VISLs. A significant concentration of naphthalene was also detected in the crawlspace of the residence at 1238 Dothan Road.

Several other CoCs were detected in exterior, interior, and crawlspace areas at concentrations that do not exceed commercial VISLs, but do exceed residential VISLs.

The sub-slab results do not suggest active vapor intrusion from the subsurface into that portion of the Play Pals building. This seems to suggest that the detected CoCs in indoor air are resulting from communication with outdoor air or via preferential pathways, such as subsurface utilities. The outdoor air sample results do not seem to line up in some areas with indoor or crawlspace air results. For instance, naphthalene was not detected in the outdoor air sample but was detected in the Play Pals building and the crawlspace of 1238 Dothan Road. It should be noted that the results are "snapshots" of conditions at a point in time and that the outdoor environment may change more dynamically than the indoor or crawlspace environments, where vapors may linger or there may be a lag effect. It should also be noted that the Play Pals building has been closed up with no air conditioning for an extended period of time with only occasional entry by the owners, a situation that has potentially led to a stagnant air environment, with little circulation.

FIGURES

FIG. 1 - SITE LOCATION MAP (Topo.)
FIG. 2 - SITE BASE MAP
FIG. 3 - PLAY PALS STURCTURE SKETCH with SAMPLING LOCATIONS



PROJECT:

SOIL VAPOR / AIR QUALITY ASSESS.
BROAD RIVER AMOCO
4345 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SC
UST PERMIT #11946

DESCRIPTION:

SITE LOCATION MAP

FIGURE 1

DATE:

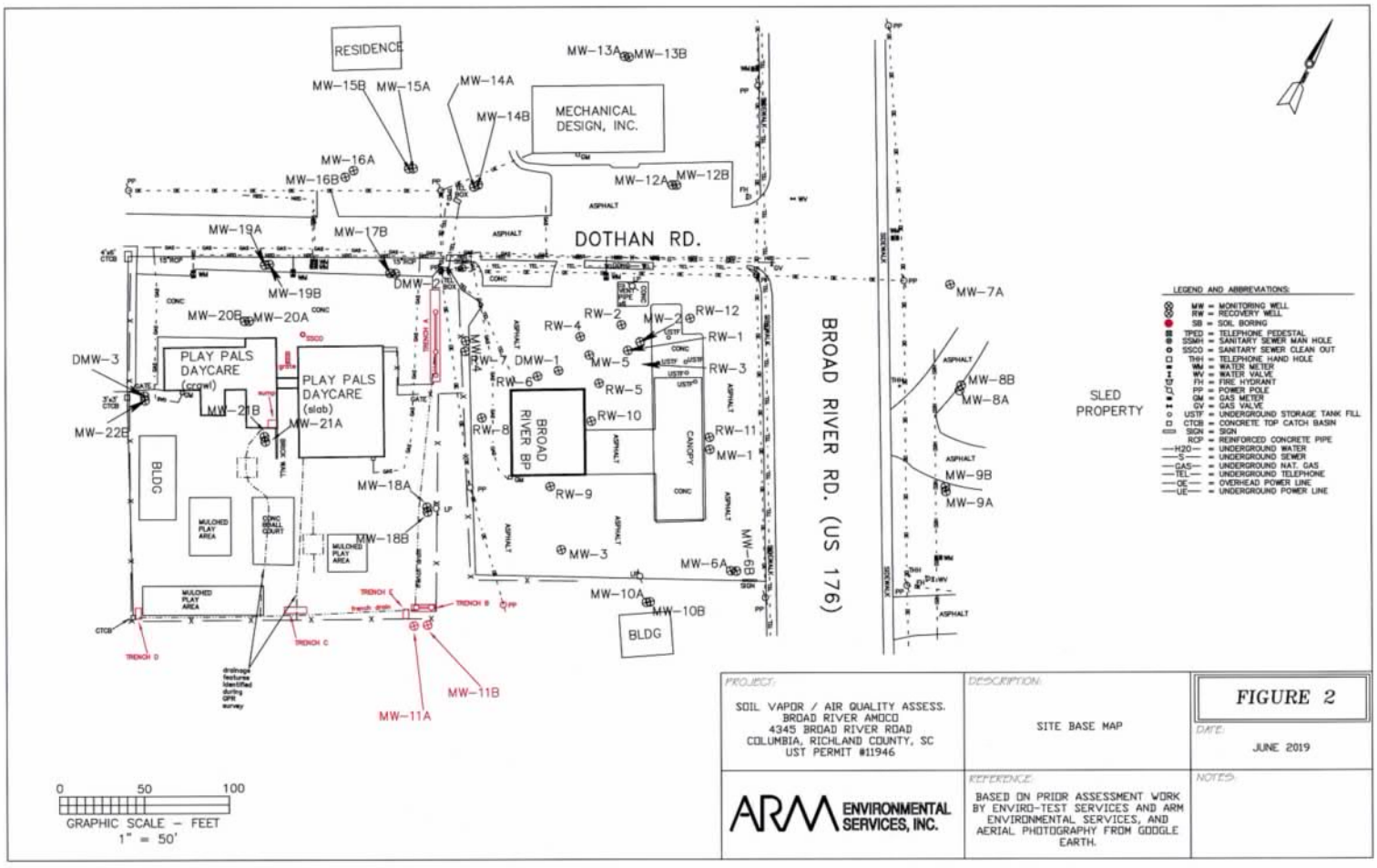
JUNE 2019

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE:

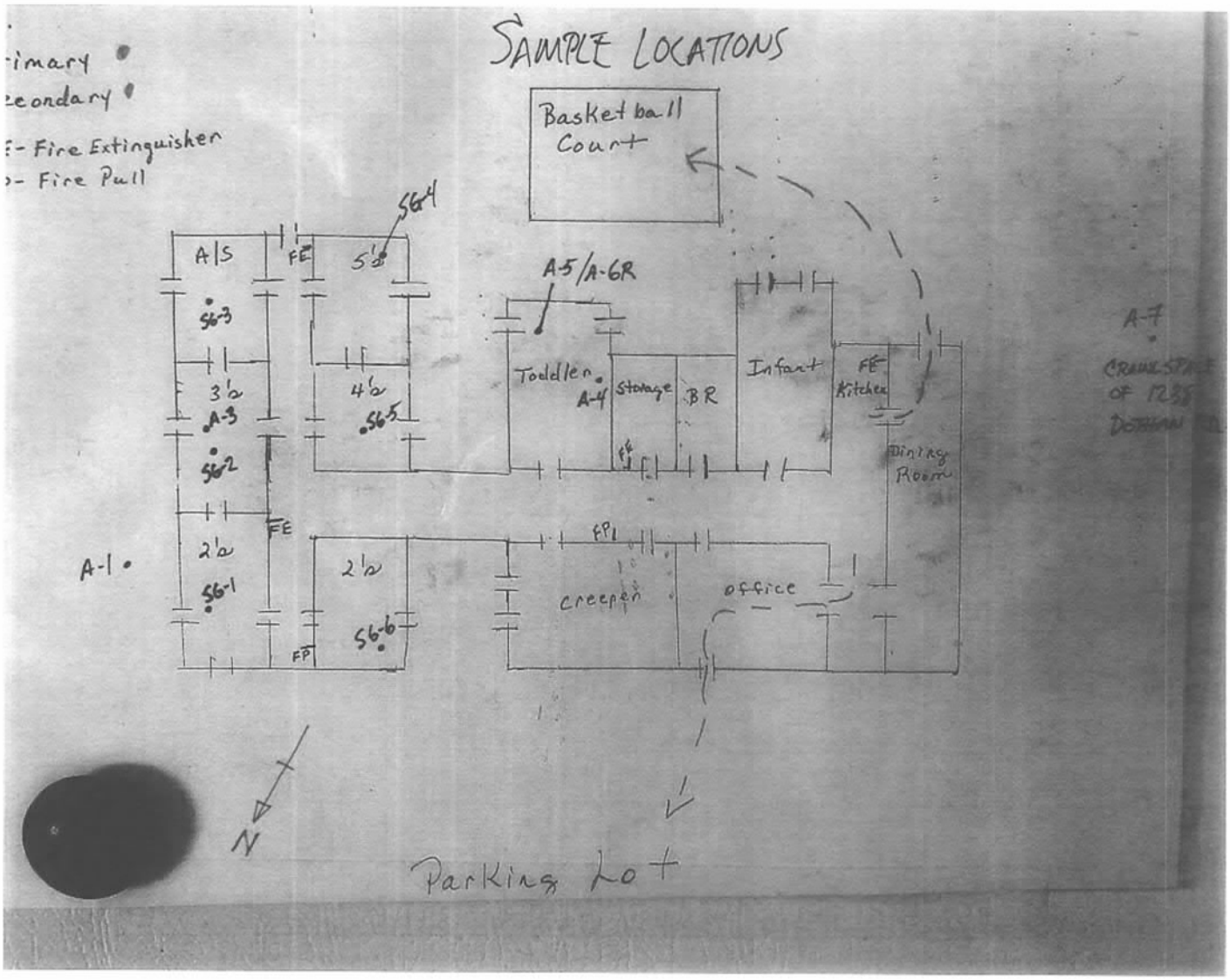
U.S.G.S. TOPOGRAPHIC MAP
(7.5 MINUTE SERIES)
COLUMBIA NORTH - 1972, REV. 1990
SOUTH CAROLINA QUADRANGLE

LEGEND:



PROJECT: SOIL VAPOR / AIR QUALITY ASSESS. BROAD RIVER AMOCO 4345 BROAD RIVER ROAD COLUMBIA, RICHLAND COUNTY, SC UST PERMIT #11946	DESCRIPTION: SITE BASE MAP	FIGURE 2
		DATE: JUNE 2019
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: BASED ON PRIOR ASSESSMENT WORK BY ENVIRO-TEST SERVICES AND ARM ENVIRONMENTAL SERVICES, AND AERIAL PHOTOGRAPHY FROM GOOGLE EARTH.	NOTES:

Figure 3


SAMPLE LOCATIONS
imary
econdary
E- Fire Extinguisher
>- Fire Pull
Basketball Court
A-5/A-6R
A-7
A-1
A-2
A-3
A-4
SG-1
SG-2
SG-3
SG-4
SG-5
SG-6
FE
FP
Toddler
Storage
BR
Infant
Kitchen
Dining Room
creeper
office
N
Parking Lot

TABLES

Table 1 - Air and Soil Vapor Analytical Data

Default VISL Results
Commercial Equation Inputs

Output generated 10DEC2018:13:17:57

Variable	Value
Exposure Scenario	Commercial
Temperature for Groundwater Vapor Concentration C	25
THQ (target hazard quotient) unitless	0.1
TR (target risk) unitless	0.000001
AT_w (averaging time - composite worker)	365
EF_w (exposure frequency - composite worker) day/yr	250
ED_w (exposure duration - composite worker) yr	25
ET_w (exposure time - composite worker) hr	8
LT (lifetime) yr	70
AF_{gw} (Attenuation Factor Groundwater) unitless	0.001
AF_{ss} (Attenuation Factor Sub-Slab) unitless	0.03

Commercial Vapor Intrusion Screening Levels (VISL)
Air Samples
1246 Dothan Rd. (Play Pals) and 1238 Dothan Rd. (Residence)
6/4/2019 and 6/5/2019

Chemical	Target Indoor Air Concentration (TCR=1E-06 or THQ=0.1) MIN($C_{ia,c}$,$C_{ia,nc}$) ($\mu g/m^3$)	A-1 (Exterior Air) (µg/m3)	A-3 (Interior of Slab Building - 1246 Dothan) (µg/m3)	A-4 (Interior of Crawlspace Building - 1246 Dothan) (µg/m3)	A-5 (Crawlspace Air - Above Poly Liner - 1246 Dothan) (µg/m3)	A-6R (Crawlspace Air - Below Poly Liner - 1246 Dothan) (µg/m3)	A-7 (Crawlspace Air - 1238 Dothan) (µg/m3)
Benzene	1.57	0.677	1.03	**2.2**	1.02	0.393	0.361
Dichloroethane, 1,2-	0.472	0.117	0.36	0.295	0.105	ND (0.081)	0.17
Ethylbenzene	4.91	0.304	4.06	0.604	0.5	0.161	0.208
Methyl tert-Butyl Ether (MTBE)	47.2	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Naphthalene	0.361	ND (1.05)	**1.32**	ND (1.05)	ND (1.05)	ND (1.05)	**21.1**
Toluene	2190	2.82	5.28	2.59	6.82	1.09	2.69
Xylenes	43.8	3.27	13.24	2.933	3.8	0.573	1.107

Residential Vapor Intrusion Screening Levels (VISL)
Air Samples
1246 Dothan Rd. (Play Pals) and 1238 Dothan Rd. (Residence)
6/4/2019 and 6/5/2019

Chemical	Target Indoor Air Concentration (TCR=1E-06 or THQ=0.1) MIN($C_{ia,c}$,$C_{ia,nc}$) ($\mu g/m^3$)	A-1 (Exterior Air) (µg/m3)	A-3 (Interior of Slab Building - 1246 Dothan) (µg/m3)	A-4 (Interior of Crawlspace Building - 1246 Dothan) (µg/m3)	A-5 (Crawlspace Air - Above Poly Liner - 1246 Dothan) (µg/m3)	A-6R (Crawlspace Air - Below Poly Liner - 1246 Dothan) (µg/m3)	A-7 (Crawlspace Air - 1238 Dothan) (µg/m3)
Benzene	0.36	**0.677**	**1.03**	**2.2**	**1.02**	**0.393**	**0.361**
Dichloroethane, 1,2-	0.108	**0.117**	0.36	**0.295**	0.105	ND (0.081)	**0.17**
Ethylbenzene	1.12	0.304	**4.06**	0.604	0.5	0.161	0.208
Methyl tert-Butyl Ether (MTBE)	10.8	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Naphthalene	0.0826	ND (1.05)	**1.32**	ND (1.05)	ND (1.05)	ND (1.05)	**21.1**
Toluene	521	2.82	5.28	2.59	6.82	1.09	2.69
Xylenes	10.4	3.27	13.24	2.933	3.8	0.573	1.107

Default VISL Results
Commercial Equation Inputs

Output generated 10DEC2018:13:17:57

Variable	Value
Exposure Scenario	Commercial
Temperature for Groundwater Vapor Concentration C	25
THQ (target hazard quotient) unitless	0.1
TR (target risk) unitless	0.000001
AT_w (averaging time - composite worker)	365
EF_w (exposure frequency - composite worker) day/yr	250
ED_w (exposure duration - composite worker) yr	25
ET_w (exposure time - composite worker) hr	8
LT (lifetime) yr	70
AF_{gw} (Attenuation Factor Groundwater) unitless	0.001
AF_{ss} (Attenuation Factor Sub-Slab) unitless	0.03

Commercial Vapor Intrusion Screening Levels (VISL)
Subslab Soil Gas
Play Pals - 1246 Dothan Rd.
6/3/2019

Chemical	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-06 or THQ=0.1) C_{sg} Target (µg/m³)	SG-1 (Classroom 1, Slab Building) (µg/m3)	SG-2 (Classroom 2, Slab Building) (µg/m3)	SG-3 (Classroom 3, Slab Building) (µg/m3)	SG-4 (Classroom 4, Slab Building) (µg/m3)	SG-5 (Classroom 5, Slab Building) (µg/m3)	SG-6 (Classroom 6, Slab Building) (µg/m3)
Benzene	52.4	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	2.21	ND (0.639)
Dichloroethane, 1,2-	15.7	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)
Ethylbenzene	164	1.06	1.44	0.921	1.65	1.8	1.26
Methyl tert-Butyl Ether (MTBE)	1570	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Naphthalene	12	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)
Toluene	73000	5.69	7.12	4.33	6.93	5.77	4.6
Xylenes	1460	4.81	6.72	4.23	7.95	6.85	5.68

Residential Vapor Intrusion Screening Levels (VISL)
Subslab Soil Gas
Play Pals - 1246 Dothan Rd.
6/3/2019

Chemical	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-06 or THQ=0.1) C_{sg} Target (µg/m³)	SG-1 (Classroom 1, Slab Building) (µg/m3)	SG-2 (Classroom 2, Slab Building) (µg/m3)	SG-3 (Classroom 3, Slab Building) (µg/m3)	SG-4 (Classroom 4, Slab Building) (µg/m3)	SG-5 (Classroom 5, Slab Building) (µg/m3)	SG-6 (Classroom 6, Slab Building) (µg/m3)
Benzene	12	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	2.21	ND (0.639)
Dichloroethane, 1,2-	3.6	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)
Ethylbenzene	37.4	1.06	1.44	0.921	1.65	1.8	1.26
Methyl tert-Butyl Ether (MTBE)	360	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Naphthalene	2.75	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)
Toluene	17400	5.69	7.12	4.33	6.93	5.77	4.6
Xylenes	348	4.81	6.72	4.23	7.95	6.85	5.68

APPENDICES

A. FIELD DATA - VAPOR SAMPLING LOGS
B. LABORATORY ANALYTICAL REPORTS

APPENDIX A

FIELD DATA – VAPOR SAMPLING LOGS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-1
Client	SCDHEC	Date of Collection	6-3-19
Project	PLAY PALS	SUMMA Canister Size	2.7 L
Location	1246 DOTHAN RD	Canister ID	2999
Project #	12-414.2-18	Flow Controller ID	01228
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CLASS 1, SLAB BLDG	Sample Intake Height	
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, ~~Sub-Slab~~ Indoor, etc.)		Time On / Off	1045 1100
PID Reading	0.0	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.14
		Temperature (Start)	80°F
		Barometric Pressure (End)	29.95~
		Canister Pressure (End)	0
		Temperature (End)	

VACUUM TEST : 15" Hg FOR 1 MIN ✓

WATER DAM TEST : PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-2
Client	SCDHEC	Date of Collection	6-3-19
Project	PLAY PALS	SUMMA Canister Size	2.7 L
Location	246 DOTHAN RD	Canister ID	3002
Project #	12-4142-18	Flow Controller ID	01195
Personnel	RC/AD	Outdoor/Indoor	
Sample Location	~~Close~~ CLASS 2, SLAB	Sample Intake Height	
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1128 1142
PID Reading	0.0	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.30
		Temperature (Start)	80°F
		Barometric Pressure (End)	
		Canister Pressure (End)	0
		Temperature (End)	

VACUUM TEST : 15" Hg FOR 1 MIN ✓

WATER DAM TEST : PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-3
Client	SCDHEC	Date of Collection	6-3-19
Project	PLAY PALS	SUMMA Canister Size	2.7 L
Location	246 DOTHAN RD	Canister ID	2994
Project #	12-414.2-18	Flow Controller ID	01182
Personnel	RC/AD	Outdoor/Indoor	
Sample Location	CLASS 3, SLAB	Sample Intake Height	
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1154 1210
PID Reading	0.0	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	60 ML
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.06
		Temperature (Start)	80°F
		Barometric Pressure (End)	
		Canister Pressure (End)	0
		Temperature (End)	0.09

VACUUM TEST: 15" Hg FOR 1 MIN ✓

WATER DAM TEST: ✓ PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-4
Client	SCDHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD	Canister ID	217
Project #	12-414.2-18	Flow Controller ID	01050
Personnel	RC/AD	Outdoor/(Indoor)	
Sample Location	CLASS 4 SLAB	Sample Intake Height	
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, (Sub-Slab) Indoor, etc.)		Time On / Off	1225 1240
PID Reading	0.0	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	60 ML
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.21
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	0.10
		Temperature (End)	

VACUUM TEST: 15" Hg FOR 1 MIN ✓

WATER DAM TEST: PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-5
Client	SC DHEC	Date of Collection	6-3-19
Project	PLAYPENS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD	Canister ID	2420
Project #	12-414.2-18	Flow Controller ID	01198
Personnel	RC/AD	Outdoor/Indoor	
Sample Location	CLASS 5, SLAB	Sample Intake Height	
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1244 / 1259
PID Reading	0.0.	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	60 mL.
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.05
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	0.10
		Temperature (End)	~~0.10~~

VACUUM TEST: 1 MIN @ 15 "Hg ✓

WATER DAM TEST: PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-6
Client	SCDHEC	Date of Collection	6-3-19
Project	1246 DOTHAN RD	SUMMA Canister Size	2.7L
Location	PLAY PALS	Canister ID	2991
Project #	12-414.2-18	Flow Controller ID	0604
Personnel	RC/AD	Outdoor/Indoor	
Sample Location	CLASS 6 SLAB	Sample Intake Height	FLUSH
Sampling Depth	VAPOR PIN	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1308 / 1324
PID Reading	0.0	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	60 ML
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.66
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	0
		Temperature (End)	

VACUUM TEST : 15" Hg, 1 MIN ✓

WATER DAM TEST : PASS

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-1
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	2568
Project #	12-414.2-18	Flow Controller ID	0761
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	EXT, E SIDE, FENCE	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	OUTDOOR, AMBIENT	Time On / Off	0924 1645
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	30.13
		Canister Pressure (Start)	30.11
		Temperature (Start)	74
		Barometric Pressure (End)	
		Canister Pressure (End)	3.24
		Temperature (End)	-

HVAC OFF FOR LONG PERIOD
NO NOTICABLE ODORS IN BLDG

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-3
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	2837
Project #	12-414.2-18	Flow Controller ID	0779
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CLASS 2, SLAB BLDG	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	0952 1729
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	29.85
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	6.75
		Temperature (End)	80°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-4
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	2702
Project #	12-414.2-18	Flow Controller ID	0422
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CLASS I, CRAWLSPACE BLDG	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	0954 1731
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	30.08
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	6.05
		Temperature (End)	80°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-5
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	2270
Project #	12-414.2-18	Flow Controller ID	0905
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CRAWLSPACE ABOVE POLY	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWLSPACE	Time On / Off	0929 1646
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	30.21
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	7.417
		Temperature (End)	89

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-6
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	1992
Project #	12-414.2-18	Flow Controller ID	~~0803~~ 0941
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CRAWLSPACE BELOW POLY	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWLSPACE	Time On / Off	0940 1647
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	27.05
		Temperature (Start)	80°
		Barometric Pressure (End)	
		Canister Pressure (End)	1605
		Temperature (End)	89

REPLACED THIS W/ A-6(R)
A-6 DID NOT COLLECT RIGHT

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-6(R)
Client	SCDHEC	Date of Collection	6-5-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	2887
Project #	12-414.2-18	Flow Controller ID	0803
Personnel	RC	Outdoor/Indoor	
Sample Location	CRAWL SPACE BELOW POLY	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWL	Time On / Off	0940 1719
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	30.04 ~~30.04~~ ~~29.97~~
		Canister Pressure (Start)	29.97
		Temperature (Start)	80°
		Barometric Pressure (End)	
		Canister Pressure (End)	6.66
		Temperature (End)	89°

THIS REPLACED A-6 WHICH DID NOT COLLECT RIGHT

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-7
Client	SC DHEC	Date of Collection	6-4-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1238 ~~DRIVE~~ DOTHAN RD	Canister ID	2891
Project #	12-414.2-18	Flow Controller ID	0679
Personnel	RC, AD	Outdoor/Indoor	
Sample Location	CRAWL UNDER 1238 DOTHAN RD	Sample Intake Height	
Sampling Depth	—	Misc. Equipment	
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWLSPACE	Time On / Off	0946 1725
PID Reading		Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	
		Barometric Pressure (Start)	
		Canister Pressure (Start)	30.21
		Temperature (Start)	
		Barometric Pressure (End)	
		Canister Pressure (End)	6.78
		Temperature (End)	

APPENDIX B

LABORATORY ANALYTICAL REPORTS

ALPHA ANALYTICAL

ANALYTICAL REPORT

Lab Number:	L1924748
Client:	ARM Environmental Services, Inc. 1210 First Street South Ext. Columbia, SC 29209
ATTN:	Richard Ciccolella
Phone:	(803) 783-3314
Project Name:	1246 DOTHAN RD.
Project Number:	Not Specified
Report Date:	06/18/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Serial_No:06181916:40

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1924748-01	A-1	AIR	1246 DOTHAN RD.	06/04/19 16:45	06/10/19
L1924748-02	A-3	AIR	1246 DOTHAN RD.	06/04/19 17:29	06/10/19
L1924748-03	A-4	AIR	1246 DOTHAN RD.	06/04/19 17:31	06/10/19
L1924748-04	A-5	AIR	1246 DOTHAN RD.	06/04/19 16:46	06/10/19
L1924748-05	A-6R	AIR	1246 DOTHAN RD.	06/04/19 17:19	06/10/19
L1924748-06	A-7	AIR	1246 DOTHAN RD.	06/04/19 17:25	06/10/19
L1924748-07	UNUSED CAN #1992	AIR	1246 DOTHAN RD.		06/10/19
L1924748-08	UNUSED CAN #1783	AIR	1246 DOTHAN RD.		06/10/19
L1924748-09	UNUSED CAN #2043	AIR	1246 DOTHAN RD.		06/10/19

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on May 29, 2019. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative

Date: 06/18/19

AIR

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-01
Client ID: A-1
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 16:45
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 18:30
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	90		60-140
Bromochloromethane	89		60-140
chlorobenzene-d5	92		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-01
Client ID: A-1
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 16:45
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 18:30
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	0.029	0.020	--	0.117	0.081	--		1
Benzene	0.212	0.100	--	0.677	0.319	--		1
Toluene	0.749	0.050	--	2.82	0.188	--		1
Ethylbenzene	0.070	0.020	--	0.304	0.087	--		1
p/m-Xylene	0.485	0.040	--	2.11	0.174	--		1
o-Xylene	0.267	0.020	--	1.16	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	90		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	91		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-02
Client ID: A-3
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:29
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 19:08
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Naphthalene	0.251	0.200	--	1.32	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	94		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	97		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-02
Client ID: A-3
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:29
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 19:08
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	0.089	0.020	--	0.360	0.081	--		1
Benzene	0.322	0.100	--	1.03	0.319	--		1
Toluene	1.40	0.050	--	5.28	0.188	--		1
Ethylbenzene	0.935	0.020	--	4.06	0.087	--		1
p/m-Xylene	1.96	0.040	--	8.51	0.174	--		1
o-Xylene	1.09	0.020	--	4.73	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	97		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-03
Client ID: A-4
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:31
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 19:47
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	94		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-03
Client ID: A-4
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:31
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 19:47
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	0.073	0.020	--	0.295	0.081	--		1
Benzene	0.690	0.100	--	2.20	0.319	--		1
Toluene	0.688	0.050	--	2.59	0.188	--		1
Ethylbenzene	0.139	0.020	--	0.604	0.087	--		1
p/m-Xylene	0.452	0.040	--	1.96	0.174	--		1
o-Xylene	0.224	0.020	--	0.973	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	94		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-04
Client ID: A-5
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 16:46
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 20:26
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	94		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-04
Client ID: A-5
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 16:46
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 20:26
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab :								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	0.026	0.020	--	0.105	0.081	--		1
Benzene	0.319	0.100	--	1.02	0.319	--		1
Toluene	1.81	0.050	--	6.82	0.188	--		1
Ethylbenzene	0.115	0.020	--	0.500	0.087	--		1
p/m-Xylene	0.607	0.040	--	2.64	0.174	--		1
o-Xylene	0.268	0.020	--	1.16	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	95		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	93		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-05
Client ID: A-6R
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:19
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 21:43
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	91		60-140
chlorobenzene-d5	88		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-05
Client ID: A-6R
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:19
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 21:43
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	0.123	0.100	--	0.393	0.319	--		1
Toluene	0.289	0.050	--	1.09	0.188	--		1
Ethylbenzene	0.037	0.020	--	0.161	0.087	--		1
p/m-Xylene	0.099	0.040	--	0.430	0.174	--		1
o-Xylene	0.033	0.020	--	0.143	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	89		60-140
chlorobenzene-d5	88		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-06
Client ID: A-7
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:25
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 22:22
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Naphthalene	4.03	0.200	--	21.1	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	89		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	87		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924748-06
Client ID: A-7
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/04/19 17:25
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 22:22
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	0.042	0.020	--	0.170	0.081	--		1
Benzene	0.113	0.100	--	0.361	0.319	--		1
Toluene	0.713	0.050	--	2.69	0.188	--		1
Ethylbenzene	0.048	0.020	--	0.208	0.087	--		1
p/m-Xylene	0.178	0.040	--	0.773	0.174	--		1
o-Xylene	0.077	0.020	--	0.334	0.087	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	89		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	88		60-140

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethyl Alcohol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
iso-Propyl Alcohol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
tert-Butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylene (Total)	ND	0.200	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Isopropyl Ether	ND	0.200	--	ND	0.836	--		1
Ethyl-Tert-Butyl-Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	0.200	--	ND	0.793	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,3-Dichloropropene, Total	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
Cyclohexane	ND	0.200	--	ND	0.688	--		1
Tertiary-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl Acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane (C9)	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
o-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
p-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane (C10)	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane (C12)	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 06/17/19 15:48

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-06 Batch: WG1249558-4								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249556-3								
Chlorodifluoromethane	94		-		70-130	-		
Propylene	**140**	Q	-		70-130	-		
Propane	88		-		70-130	-		
Dichlorodifluoromethane	109		-		70-130	-		
Chloromethane	108		-		70-130	-		
1,2-Dichloro-1,1,2,2-tetrafluoroethane	105		-		70-130	-		
Methanol	80		-		70-130	-		
Vinyl chloride	106		-		70-130	-		
1,3-Butadiene	98		-		70-130	-		
Butane	125		-		70-130	-		
Bromomethane	101		-		70-130	-		
Chloroethane	103		-		70-130	-		
Ethyl Alcohol	67		-		40-160	-		
Dichlorofluoromethane	102		-		70-130	-		
Vinyl bromide	89		-		70-130	-		
Acrolein	77		-		70-130	-		
Acetone	96		-		40-160	-		
Acetonitrile	105		-		70-130	-		
Trichlorofluoromethane	93		-		70-130	-		
iso-Propyl Alcohol	94		-		40-160	-		
Acrylonitrile	81		-		70-130	-		
Pentane	120		-		70-130	-		
Ethyl ether	77		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249556-3								
1,1-Dichloroethene	98		-		70-130	-		
tert-Butyl Alcohol	**67**	Q	-		70-130	-		
Methylene chloride	107		-		70-130	-		
3-Chloropropene	122		-		70-130	-		
Carbon disulfide	91		-		70-130	-		
1,1,2-Trichloro-1,2,2-Trifluoroethane	100		-		70-130	-		
trans-1,2-Dichloroethene	94		-		70-130	-		
1,1-Dichloroethane	100		-		70-130	-		
Methyl tert butyl ether	82		-		70-130	-		
Vinyl acetate	127		-		70-130	-		
2-Butanone	117		-		70-130	-		
cis-1,2-Dichloroethene	100		-		70-130	-		
Ethyl Acetate	115		-		70-130	-		
Chloroform	99		-		70-130	-		
Tetrahydrofuran	102		-		70-130	-		
2,2-Dichloropropane	86		-		70-130	-		
1,2-Dichloroethane	103		-		70-130	-		
n-Hexane	104		-		70-130	-		
Isopropyl Ether	86		-		70-130	-		
Ethyl-Tert-Butyl-Ether	84		-		70-130	-		
1,2-Dichloroethene (total)	96		-			-		
1,2-Dichloroethene (total)	96		-			-		
1,1,1-Trichloroethane	112		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab	Associated sample(s): 01-06		Batch: WG1249556-3					
1,1-Dichloropropene	100		-		70-130	-		
Benzene	97		-		70-130	-		
Carbon tetrachloride	**131**	Q	-		70-130	-		
Cyclohexane	107		-		70-130	-		
Tertiary-Amyl Methyl Ether	77		-		70-130	-		
Dibromomethane	100		-		70-130	-		
1,2-Dichloropropane	118		-		70-130	-		
Bromodichloromethane	113		-		70-130	-		
1,4-Dioxane	96		-		70-130	-		
Trichloroethene	99		-		70-130	-		
2,2,4-Trimethylpentane	113		-		70-130	-		
Methyl Methacrylate	95		-		40-160	-		
Heptane	124		-		70-130	-		
cis-1,3-Dichloropropene	114		-		70-130	-		
4-Methyl-2-pentanone	122		-		70-130	-		
trans-1,3-Dichloropropene	100		-		70-130	-		
1,1,2-Trichloroethane	109		-		70-130	-		
Toluene	96		-		70-130	-		
1,3-Dichloropropane	93		-		70-130	-		
2-Hexanone	108		-		70-130	-		
Dibromochloromethane	124		-		70-130	-		
1,2-Dibromoethane	100		-		70-130	-		
Butyl Acetate	98		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249556-3								
Octane	89		-		70-130	-		
Tetrachloroethene	86		-		70-130	-		
1,1,1,2-Tetrachloroethane	108		-		70-130	-		
Chlorobenzene	96		-		70-130	-		
Ethylbenzene	100		-		70-130	-		
p/m-Xylene	104		-		70-130	-		
Bromoform	127		-		70-130	-		
Styrene	94		-		70-130	-		
1,1,2,2-Tetrachloroethane	110		-		70-130	-		
o-Xylene	109		-		70-130	-		
1,2,3-Trichloropropane	97		-		70-130	-		
Nonane (C9)	107		-		70-130	-		
Isopropylbenzene	97		-		70-130	-		
Bromobenzene	92		-		70-130	-		
o-Chlorotoluene	85		-		70-130	-		
n-Propylbenzene	90		-		70-130	-		
p-Chlorotoluene	89		-		70-130	-		
4-Ethyltoluene	101		-		70-130	-		
1,3,5-Trimethylbenzene	107		-		70-130	-		
tert-Butylbenzene	98		-		70-130	-		
1,2,4-Trimethylbenzene	110		-		70-130	-		
Decane (C10)	108		-		70-130	-		
Benzyl chloride	134	Q	-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249556-3								
1,3-Dichlorobenzene	99		-		70-130	-		
1,4-Dichlorobenzene	94		-		70-130	-		
sec-Butylbenzene	103		-		70-130	-		
p-Isopropyltoluene	90		-		70-130	-		
1,2-Dichlorobenzene	104		-		70-130	-		
n-Butylbenzene	109		-		70-130	-		
1,2-Dibromo-3-chloropropane	118		-		70-130	-		
Undecane	109		-		70-130	-		
Dodecane (C12)	90		-		70-130	-		
1,2,4-Trichlorobenzene	77		-		70-130	-		
Naphthalene	83		-		70-130	-		
1,2,3-Trichlorobenzene	75		-		70-130	-		
Hexachlorobutadiene	104		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249558-3								
Methyl tert butyl ether	75		-		70-130	-		25
1,2-Dichloroethane	94		-		70-130	-		25
Benzene	83		-		70-130	-		25
Toluene	77		-		70-130	-		25
Ethylbenzene	89		-		70-130	-		25
p/m-Xylene	92		-		70-130	-		25
o-Xylene	94		-		70-130	-		25
Naphthalene	57	Q	-		70-130	-		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1249556-5 QC Sample: L1924748-04 Client ID: A-5						
Naphthalene	ND	ND	ppbV	NC		25
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1249558-5 QC Sample: L1924748-04 Client ID: A-5						
Methyl tert butyl ether	ND	ND	ppbV	NC		25
1,2-Dichloroethane	0.026	0.025	ppbV	4		25
Benzene	0.319	0.322	ppbV	1		25
Toluene	1.81	1.80	ppbV	1		25
Ethylbenzene	0.115	0.115	ppbV	0		25
p/m-Xylene	0.607	0.609	ppbV	0		25
o-Xylene	0.268	0.274	ppbV	2		25

Serial_No:06181916:40

Project Name: 1246 DOTHAN RD.

Lab Number: L1924748

Project Number:

Report Date: 06/18/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1924748-01	A-1	0761	Flow 4	06/04/19	293555		-	-	-	Pass	10.0	10.3	3
L1924748-01	A-1	2568	6.0L Can	05/29/19	292924	L1921894-01	Pass	-29.5	-7.5	-	-	-	-
L1924748-02	A-3	0779	Flow 4	06/04/19	293555		-	-	-	Pass	10.0	10.7	7
L1924748-02	A-3	2837	6.0L Can	05/29/19	292924	L1921894-03	Pass	-29.5	-6.9	-	-	-	-
L1924748-03	A-4	0422	Flow 3	06/04/19	293555		-	-	-	Pass	10.0	10.7	7
L1924748-03	A-4	2702	6.0L Can	05/29/19	292924	L1921894-03	Pass	-29.5	-6.8	-	-	-	-
L1924748-04	A-5	0905	Flow 4	06/04/19	293555		-	-	-	Pass	10.0	9.2	8
L1924748-04	A-5	2270	6.0L Can	05/29/19	292924	L1921894-03	Pass	-29.5	-4.5	-	-	-	-
L1924748-05	A-6R	0803	Flow 4	06/04/19	293555		-	-	-	Pass	10.0	9.9	1
L1924748-05	A-6R	2887	6.0L Can	05/29/19	292924	L1921894-03	Pass	-29.6	-7.1	-	-	-	-
L1924748-06	A-7	0679	Flow 4	06/04/19	293555		-	-	-	Pass	10.0	10.2	2
L1924748-06	A-7	2891	6.0L Can	05/29/19	292924	L1921894-03	Pass	-29.5	-6.5	-	-	-	-

Serial_No:06181916:40

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 05/22/19 20:03
Analyst: EW

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	101		60-140
chlorobenzene-d5	99		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 05/22/19 20:03
Analyst: EW

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	97		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	99		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 05/23/19 17:16
Analyst: TS

	ppbV			ug/m3				Dilution
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	87		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	87		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 05/23/19 17:16
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-01
Client ID: CAN 1562 SHELF 37
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	93		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 05/23/19 18:34
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	93		60-140
Bromochloromethane	94		60-140
chlorobenzene-d5	94		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 05/23/19 18:34
Analyst: TS

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921894
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921894-03
Client ID: CAN 1943 SELF 39
Sample Location:

Date Collected: 05/23/19 09:00
Date Received: 05/23/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	98		60-140
bromochloromethane	101		60-140
chlorobenzene-d5	103		60-140

Serial_No:06181916:40

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	***Custody Seal***
N/A	Present/Intact

Container Information

Container ID	***Container Type***	***Cooler***	***Initial pH***	***Final pH***	***Temp deg C***	***Pres***	***Seal***	***Frozen Date/Time***	***Analysis(*)***
L1924748-01A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-02A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-03A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-04A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-05A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-06A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30),TO15-SIM(30)
L1924748-07A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		CLEAN-FEE()
L1924748-08A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		CLEAN-FEE()
L1924748-09A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		CLEAN-FEE()

*Values in parentheses indicate holding time in days

Project Name: 1246 DOTHAN RD. **Lab Number:** L1924748

Project Number: Not Specified **Report Date:** 06/18/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Project Name: 1246 DOTHAN RD.
Project Number: Not Specified

Lab Number: L1924748
Report Date: 06/18/19

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1**: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.**

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Serial_No:06181916:40

AIR ANALYSIS

CHAIN OF CUSTODY PAGE 1 OF 1

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd In Lab: 6/10/19

ALPHA Job #: L1924748

Client Information
Client: ARM ENVIRONMENTAL SVCS
Address: 1210 FIRST ST. SOUTH EXT
COLUMBIA SC 29209
Phone: 803 783 3314
Fax: 803 783 2587
Email: RICICOLELLA@ARMENV.COM
☐ These samples have been previously analyzed by Alpha

Project Information
Project Name: 1246 DOTHAN RD
Project Location: 1246 DOTHAN RD
Project #:
Project Manager: RICHARD CICCOLELLA
ALPHA Quote #:

Turn-Around Time
☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables
☐ FAX
☑ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information
☑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm
EPA	CSWDER/UIC	RES

Other Project Specific Requirements/Comments:
Project-Specific Target Compound List: PLEASE LIMIT REPORTING TO THE ATTACHED LIST

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SIM	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	☐	Sample Comments (i.e. PID)
24748.01	A-1	6/4/19	0924	1645	30.11	3.24	AA	RC	6	2568	0761	X						
.02	A-3	6/4/19	0952	1729	29.85	6.75	AA	RC	6	2837	0779	X						LIMIT TO ATTACHED LIST
.03	A-4	6/4/19	0954	1731	30.08	6.05	AA	RC	6	2702	0422	X						
.04	A-5	6/4/19	0929	1646	30.21	7.47	AA	RC	6	2270	0905	X						
	A-6	6/4/19	DO NOT ANALYZE - CAN MALFUNCTION															DO NOT ANAL A-6
.05	A-6(R)	6/5/19	0940	1719	29.97	6.66	AA	RC	6	2887	0803	X						
.06	A-7	6/4/19	0946	1725	30.21	6.78	AA	RC	6	2891	0699	X						

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
Richard Ciccolella 6-6-19	6/6/19/1300	FedEx	
FedEx		[signature] ALPHA	6/10/19 12:20

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

(25-Sep-15)

ARM ENVIRONMENTAL SERVICES

For Play Pals site, 1246 Dothan Road, Columbia, SC

*Please limit reporting to the following list:

- Methyl Tert Butyl Ether
- 1,2-Dichloroethane
- Benzene
- Toluene
- Ethylbenzene
- p/m Xylene
- o–Xylene
- Naphthalene

LIMIT TO THESE

ANALYTICAL REPORT

Lab Number:	L1924733
Client:	ARM Environmental Services, Inc. 1210 First Street South Ext. Columbia, SC 29209
ATTN:	Richard Ciccolella
Phone:	(803) 783-3314
Project Name:	1246 DOTHAN RD.
Project Number:	12-414.2-18
Report Date:	06/18/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1924733-01	SG-1	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 11:00	06/10/19
L1924733-02	SG-2	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 11:42	06/10/19
L1924733-03	SG-3	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 12:10	06/10/19
L1924733-04	SG-4	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 12:40	06/10/19
L1924733-05	SG-5	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 12:59	06/10/19
L1924733-06	SG-6	SOIL_VAPOR	1246 DOTHAN RD.	06/03/19 13:24	06/10/19

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on May 29, 2019. The canister certification results are provided as an addendum.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative

Date: 06/18/19

AIR

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-01
Client ID: SG-1
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 11:00
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 23:00
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.51	0.200	--	5.69	0.754	--		1
Ethylbenzene	0.243	0.200	--	1.06	0.869	--		1
p/m-Xylene	0.822	0.400	--	3.57	1.74	--		1
o-Xylene	0.286	0.200	--	1.24	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	92		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-02
Client ID: SG-2
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 11:42
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/17/19 23:39
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.89	0.200	--	7.12	0.754	--		1
Ethylbenzene	0.331	0.200	--	1.44	0.869	--		1
p/m-Xylene	1.15	0.400	--	5.00	1.74	--		1
o-Xylene	0.396	0.200	--	1.72	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	96		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-03
Client ID: SG-3
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 12:10
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/18/19 00:18
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.15	0.200	--	4.33	0.754	--		1
Ethylbenzene	0.212	0.200	--	0.921	0.869	--		1
p/m-Xylene	0.715	0.400	--	3.11	1.74	--		1
o-Xylene	0.259	0.200	--	1.12	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	97		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	97		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-04
Client ID: SG-4
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 12:40
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/18/19 00:56
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.84	0.200	--	6.93	0.754	--		1
Ethylbenzene	0.379	0.200	--	1.65	0.869	--		1
p/m-Xylene	1.35	0.400	--	5.86	1.74	--		1
o-Xylene	0.482	0.200	--	2.09	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	95		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-05
Client ID: SG-5
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 12:59
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/18/19 01:35
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	0.692	0.200	--	2.21	0.639	--		1
Toluene	1.53	0.200	--	5.77	0.754	--		1
Ethylbenzene	0.414	0.200	--	1.80	0.869	--		1
p/m-Xylene	1.18	0.400	--	5.13	1.74	--		1
o-Xylene	0.397	0.200	--	1.72	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	93		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

SAMPLE RESULTS

Lab ID: L1924733-06
Client ID: SG-6
Sample Location: 1246 DOTHAN RD.

Date Collected: 06/03/19 13:24
Date Received: 06/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 06/18/19 02:14
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.22	0.200	--	4.60	0.754	--		1
Ethylbenzene	0.291	0.200	--	1.26	0.869	--		1
p/m-Xylene	0.943	0.400	--	4.10	1.74	--		1
o-Xylene	0.363	0.200	--	1.58	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	90		60-140
Bromochloromethane	97		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 06/17/19 15:09

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-06 Batch: WG1249556-4								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-06 Batch: WG1249556-3								
Methyl tert butyl ether	82		-		70-130	-		
1,2-Dichloroethane	103		-		70-130	-		
Benzene	97		-		70-130	-		
Toluene	96		-		70-130	-		
Ethylbenzene	100		-		70-130	-		
p/m-Xylene	104		-		70-130	-		
o-Xylene	109		-		70-130	-		
Naphthalene	83		-		70-130	-		

Serial_No:06181916:29

Project Name: 1246 DOTHAN RD.

Lab Number: L1924733

Project Number: 12-414.2-18

Report Date: 06/18/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1924733-01	SG-1	01228	SV200	05/29/19	292924		-	-	-	Pass	221	194	13
L1924733-01	SG-1	2999	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-
L1924733-02	SG-2	01195	SV200	05/29/19	292924		-	-	-	Pass	220	196	12
L1924733-02	SG-2	3002	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-
L1924733-03	SG-3	01182	SV200	05/29/19	292924		-	-	-	Pass	221	198	11
L1924733-03	SG-3	2994	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-
L1924733-04	SG-4	01050	SV200	05/29/19	292924		-	-	-	Pass	220	188	16
L1924733-04	SG-4	217	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-
L1924733-05	SG-5	01198	SV200	05/29/19	292924		-	-	-	Pass	218	194	12
L1924733-05	SG-5	2420	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-
L1924733-06	SG-6	0604	SV200	05/29/19	292924		-	-	-	Pass	218	193	12
L1924733-06	SG-6	2991	2.7L Can	05/29/19	292924	L1921628-01	Pass	-29.1	0.0	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 05/22/19 20:03
Analyst: EW

	ppbV			ug/m3				Dilution
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1
Dibromomethane	ND	0.200	--	ND	1.42	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	101		60-140
chlorobenzene-d5	99		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 05/22/19 20:03
Analyst: EW

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1921628
Report Date: 06/18/19

Air Canister Certification Results

Lab ID: L1921628-01
Client ID: CAN 156 SHELF 3
Sample Location:

Date Collected: 05/22/19 09:00
Date Received: 05/22/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	97		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	99		60-140

Serial_No:06181916:29

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.2-18

Lab Number: L1924733
Report Date: 06/18/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	***Custody Seal***
N/A	Present/Intact

Container Information

Container ID	***Container Type***	***Cooler***	***Initial pH***	***Final pH***	***Temp deg C***	***Pres***	***Seal***	***Frozen Date/Time***	***Analysis(*)***
L1924733-01A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)
L1924733-02A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)
L1924733-03A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)
L1924733-04A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)
L1924733-05A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)
L1924733-06A	Canister - 2.7 Liter	N/A	NA			Y	Present/Intact		TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name: 1246 DOTHAN RD. **Lab Number:** L1924733

Project Number: 12-414.2-18 **Report Date:** 06/18/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	1246 DOTHAN RD.	**Lab Number:**	L1924733
Project Number:	12-414.2-18	**Report Date:**	06/18/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	1246 DOTHAN RD.	**Lab Number:**	L1924733
Project Number:	12-414.2-18	**Report Date:**	06/18/19

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D.**

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Serial_No:06181916:29

AIR ANALYSIS

ALPHA ANALYTICAL — CHAIN OF CUSTODY

PAGE 1 OF 1

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 6/10/19

ALPHA Job #: L1924733

Client Information

Client: ARM ENVIRONMENTAL SVCS
Address: 1210 FIRST ST. SOUTH EXT
COLUMBIA SC 29209
Phone: 803 783 3314
Fax: 803 783 2587
Email: RCICCOLELLA@ARMENV.COM
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 1246 DOTHAN RD
Project Location: 1246 DOTHAN RD
Project #: 12-414.2-18
Project Manager: RICHARD CICCOLELLA
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☑ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☑ Same as Client info PO #: R.CICCO

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm
EPA	OSWER/UIIC	RES

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ✱ PLEASE LIMIT REPORTING TO THE ATTACHED LIST

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I.D. Can	I.D. - Flow Controller	ANALYSIS TO-15	TO-15 SIM	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
4733.01	SG-1	6/3/19	1045	1100	29.14	0	SV	RC	2.7	2899	01228	X					SEE TARGET COMPOUND LIST ATTACHED
.02	SG-2	6/3/19	1128	1142	29.30	0	SV	RC	2.7	3002	01195	X					
.03	SG-3	6/3/19	1154	1210	29.06	0	SV	RC	2.7	2999	01182	X					
.04	SG-4	6/3/19	1225	1240	29.21	0.10	SV	RC	2.7	217	01050	X					
.05	SG-5	6/3/19	1244	1259	29.05	0.10	SV	RC	2.7	2420	01198	X					
.06	SG-6	6/3/19	1308	1324	29.66	0	SV	RC	2.7	2991	0604	X					

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
FedEx	6/4/19/1300	Fedex [illegible] - ALPHA	6/10/19 12:26

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Form No: 101-02 Rev: (25-Sep-15)

ARM ENVIRONMENTAL SERVICES

For Play Pals site, 1246 Dothan Road, Columbia, SC

*Please limit reporting to the following list:

- Methyl Tert Butyl Ether
- 1,2-Dichloroethane
- Benzene
- Toluene
- Ethylbenzene
- p/m Xylene
- o–Xylene
- Naphthalene

LIMIT TO THESE

11946

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

CTSI ENVIRONMENTAL
7130 BROAD RIVER RD
IRMO, SC

Generator's Phone:

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

BROAD RIVER AMOCO
4335 BROAD RIVER RD
COLUMBIA, SC

181 tech DOCKETED

6. Transporter 1 Company Name: T K TANK SERVICES,INC. — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address

T K TANK SERVICES INC.
425 BOULEVARD RD.
SUMTER, SC

U.S. EPA ID Number:

Facility's Phone: 803-418-5314

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON-HAZARDOUS PETROLEUM CONTAMINATED WATER/PRODUCT	1	2DM	110	G	
2.						
3.						
4.						

UST
6d
JUL 26 2019
PROGRAM

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Steve Bush — Signature — Month: 7 Day: 23 Year: 19

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: RICHARD SMOOT — Signature — Month: 7 Day: 23 Year: 19

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

169-BLC-O 5 11977 (P-

DESIGNATED FACILITY'S COPY

dhec
Healthy People Healthy Communities

AUG 2 0 2019

MR FREDERICK N CECCHINI
429 PRESS LINDLER ROAD
COLUMBIA SC 29212-8322

UST 182 Tech DOCKETING

Re: **Air Quality Vapor Sampling and Receptor Survey Directive**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST# 11946; CA# 60146
Release reported January 4, 2011
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (DHEC) has reviewed the referenced Cost Proposal submitted on your behalf by Enviro-Test Services, Inc. The next appropriate scope of work at the site is an air quality vapor sampling event. DHEC has requested that the current HVAC system in the Play Pals Daycare building be turned on and in operation to analyze the impact of vapor intrusion during fully operational conditions. DHEC has also requested that preferential pathways on site be recognized and recorded. All work should be conducted in accordance with Enviro-Test Services, Inc.'s approved Annual Contractor Quality Assurance Plan (ACQAP), industry standards, and must be conducted in compliance with all applicable regulations. Enviro-Test Services, Inc. can use the UST Quality Assurance Program Plan (QAPP) Revision 3.1 as a guideline. A copy of the UST QAPP is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Air quality vapor sampling and receptor survey activities at the site should begin immediately upon receipt of this letter. Cost agreement #60146 has been approved for the amount shown on the enclosed cost agreement form for conducting the sampling associated with the referenced release. Air quality samples should be collected and analyzed for BTEX, naphthalene, MTBE, 1, 2-DCA after electricity to the Play Pals Daycare HVAC has been restored. The receptor survey should be for preferential pathways in which the contaminants may be moving.

In accordance with Enviro-Test Services, Inc.'s ACQAP, a weekly status report of the project should be provided via e-mail. If any quality assurance problems arise, you must contact the project manager within 24 hours via phone or e-mail. In addition, a discussion of the problem(s) encountered, including quality assurance problems, the actions taken, and the results must be included in the final report submitted to the UST Management Division.

The Monitoring Report, contractor checklist (QAPP Appendix K), 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 Enviro-Test Services, Inc.'s ACQAP. 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.

Enviro-Test Services, Inc. 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 laboratory 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 from DHEC is obtained. If for any reason additional tasks will be completed, these additional tasks and the associated cost must be pre-approved by DHEC for the cost to be paid. DHEC 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, DHEC 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 chemicals of concern (CoC) in excess of Risk-Based Screening Levels (RBSLs), the data cannot be used. In those cases, the Division 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.

DHEC 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 Enviro-Test Services, Inc.'s ACQAP. 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 #11946. If you have any questions regarding this correspondence, please contact me by telephone at (803) 898-0605, by fax at (803) 898-0673, or by email at baldwiba@dhec.sc.gov.

Sincerely,

Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Enc: Approved Cost Agreement

Cc: Terry Teate, Enviro-Test Services, Inc., PO Box 2237, Irmo, SC 29063 (w/enc)
Michael Faris, ARM Environmental Services, Inc., 1210 First Street South, Columbia, SC 29209 (w/ enc)
Technical File (w/ enc)

Approved Cost Agreement 60146

Facility: 11946 BROAD RIVER AMOCO
BALDWIBA
PO Number:

Task / Description Categories	Item Description	Qty / Pct	Unit Price	Amount
02 RECEPTOR SURVEY				
	A1 RECEPTOR SURVEY	1.0000	$551.000	551.00
04 MOB/DEMOB				
	B1 PERSONNEL	3.0000	$423.000	1,269.00
18 MISCELLANEOUS				
	12 CANNISTERS AND DELIVERY	1.0000	$1,150.000	1,150.00
	LAB ANALYSIS FOR INDOOR, OUTDOOR, AND SUBL	12.0000	$275.000	3,300.00
	PERSONNEL: SCIENTIST AND TECH	1.0000	$3,497.000	3,497.00
19 RPT/PROJECT MNGT & COORDINATIO				
	PRT REPORT PREPARATION	0.1200	$9,767.000	1,172.04
			Total Amount	10,939.04

August 20, 2019

ENVIRO-TEST SERVICES

UST
AUG 2 2 2019
PROGRAM

Mr. Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
UST Program
Bureau of Land and Waste management

UST
83
STOCKETING

RE: July 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco and Play Pals Day Care
Permit # 11946; CA # 60099
4335 Broad River Rd Columbia, SC
Richland County

Dear Mr. Baldwin

Enviro-Test Services is continuing the removal of Free Product and petroleum contaminated water at the Play Pals Day Care.

A total of (8) Free Product Vacuum Recovery Events were performed through out the month of July. They began on July 1st and then on July 8th, July 10th , and July 11th, July 22nd , July 24th , July 26th , and July 28th 2019. There was an increase in Free Product Recovery events performed due to the increase amount of rain fall in July. The groundwater level is between 2.75 ft. and 4.03 in Recovery Trench A. The free product stays constant at 0.10 to 0.15 ft. where as Trench B pit groundwater level is 1.64 ft to 1.83 ft and for the first time has no free product or sheen on top of the recovery well. Trench E and the over fill pit, Trench C and Trench D also have no sheen on top of the water. There is also no sign of Free Product or a sheen on top of any water under the Play Pals Day Care.
There was a total of 7,376 gallons of contact water recovered and 24 gallons of free product recovered which was an increase of 16 gallons more of Free Product than last month.

These Events produced 7,376 gallons of contaminated petroleum water and 24 gallons of free product. See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care. There was also maintenance of the open pits and barrier nets for safety protection. On July 11th the grass was mowed in order to get to the effected areas.

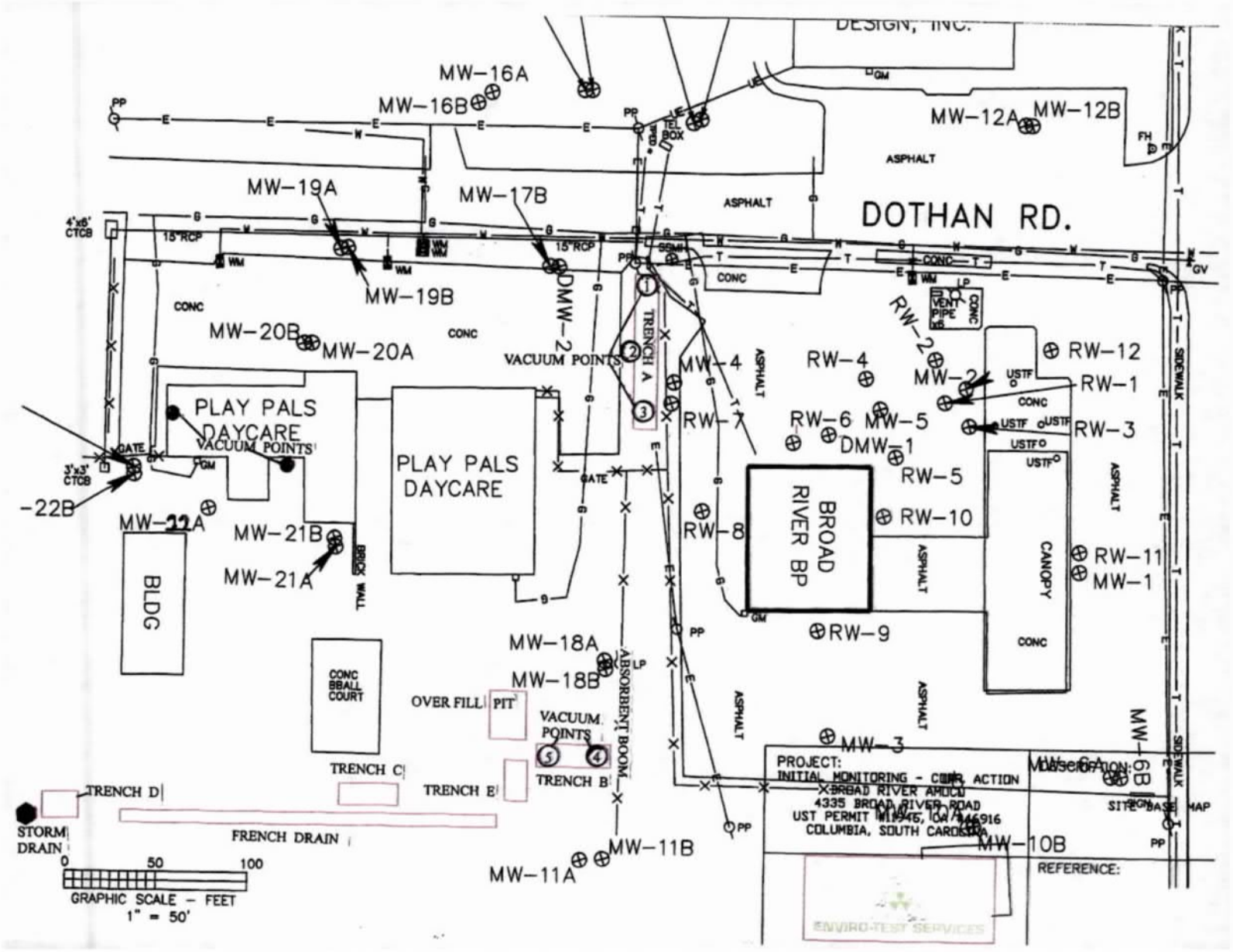
The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. The other Absorbent Booms are located in the ditch at the rear of the Day Care which leads to the storm drain that has one in it and there is another one in the ditch by the apartments.
See Site Map: Figure 1

Enviro-Test will continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed.

Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teate
Project Manager
Enviro-Test Services Inc.

Site Map


MW-16A
MW-16B
MW-12A
MW-12B
MW-19A
MW-17B
DOTHAN RD.
MW-19B
DMW-2
MW-20B
MW-20A
VACUUM POINTS
TRENCH A
MW-4
RW-4
RW-2
MW-2
RW-12
RW-1
RW-7
RW-6
MW-5
RW-3
DMW-1
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
RW-5
BROAD RIVER BP
RW-10
RW-8
MW-22A
MW-21B
MW-21A
BLDG
CANOPY
RW-11
MW-1
RW-9
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL PIT
VACUUM POINTS
ABSORBENT BOOM
MW-3
MW-6A
MW-6B
TRENCH C
TRENCH E
TRENCH B
TRENCH D
FRENCH DRAIN
STORM DRAIN
MW-11B
MW-11A
MW-10B
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER ARCO
4335 BROAD RIVER ROAD
UST PERMIT M19945, ID# 7946916
COLUMBIA, SOUTH CAROLINA
REFERENCE:
SITE BASE MAP
ENVIRO-TEST SERVICES
0 50 100
GRAPHIC SCALE - FEET
1" = 50'

ATTACHMENT A

NON-HAZARDOUS WASTE 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 Document No. 2436

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP/Fred Cucchini 4335 Broad River Rd Columbia, S.C

12-4M.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM

6. US EPA ID Number

A. State Transorter's ID

7. Transporter 2 Company Name

8. US EPA ID Number

B. Transporter 1 Phone

C. State Transporter's ID

9. Designated Facility Name and Site Address: TK Tank Services 425 Boulevard Rd Sumter, S.C

10. US EPA ID Number

D. Transporter 2 Phone

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2285	Gal
c.				
d.				

G. Additonal Descriptions for Materials Listed Above: 9 gallons - fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Broad River BP/Fred Cucchini Billy P. Pittenger Agent for | Signature: Billy Pittenger | Date: Month 7 Day 31 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger | Signature: Billy Pittenger | Date: Month 7 Day 31 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this mailest, except as noted in item 19.

Printed/Typed Name: Ashley Turner | Signature: Ashley Turner | Date: Month 7 Day 31 Year 19

NON-HAZARDOUS WASTE

F-14 © 2002 LABEL MASTER (800) 621-5808 www.labelmaster.com

PRINTED ON RECYCLED PAPER USING SOYBEAN INK PRINTED WITH SOY INK

Rev. 3/95

NON-HAZARDOUS WASTE 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 Document No. 2421

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cucchini, 4335 Broad River Rd, Columbia, S.C

12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM

6. US EPA ID Number

A. State Transorter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: TK Tank Services, 425 Boulevard Rd, Sumter, S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2158	Gal
c.				
d.				

G. Additonal Descriptions for Materials Listed Above: 7 gallons - fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

GENERATOR

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Broad River BP / Fred Cucchini

Printed/Typed Name: Billy Pittenger Agent for | Signature: Billy Pittenger | Date: Month 7 Day 18 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger | Signature: Billy Pittenger | Date: Month 7 Day 18 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Casey Newman | Signature: Casey Newman | Date: Month 7 Day 18 Year 19

NON-HAZARDOUS WASTE

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Rev. 3/95

NON-HAZARDOUS WASTE 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 Document No. 2417

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cocchini, 4335 Broad River Rd, Columbia, S.C

12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM Env.

6. US EPA ID Number

A. State Transorter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Hydrotime Env. 2420 Shop Rd Columbia, S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2933	Gal
c.				
d.				

GENERATOR

G. Additonal Descriptions for Materials Listed Above: 8 gallons- fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Billy Pitteger Agent for Broad River BP Fred Cocchini | Signature: Billy Pitteger | Date: Month 7 Day 1 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pitteger | Signature: Billy Pitteger | Date: Month 7 Day 1 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this maifest, except as noted in item 19.

Printed/Typed Name: Guy Bowknight | Signature: Guy Bowknight | Date: Month 7 Day 18 Year 19

NON-HAZARDOUS WASTE

F-14 © 2002 LABELMASTER ®(800) 621-5808 www.labelmaster.com

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Rev. 3/95

CERTIFICATE OF DISPOSAL

T K TANK SERVICES, INC.

Certifies to all that

2,285 GALLONS

Of Nonhazardous, Petroleum Contaminated Water / Product

Have been disposed of in accordance with EPA regulations on petroleum contaminated water.

This product was generated at

BROAD RIVER BP/FRED CUCCHINI

07/31/2019

DATE

SIGNATURE

CERTIFICATE OF DISPOSAL

T K TANK SERVICES, INC.

Certifies to all that

2,158 GALLONS

Of Nonhazardous, Petroleum Contaminated Water / Product

Have been disposed of in accordance with EPA regulations on petroleum contaminated water.

This product was generated at

BROAD RIVER BP / FRED CUCCHINI

7/18/2019

DATE

SIGNATURE

UST
SEP 17 2019
PROGRAM

September 15, 2019

ENVIRO-TEST SERVICES

Mr. Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
UST Program
Bureau of Land and Waste management

UST

RE: August 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco and Play Pals Day Care
Permit # 11946; CA # 60283
4335 Broad River Rd Columbia, SC
Richland County

Dear Mr. Baldwin

Enviro-Test Services is continuing the removal of Free Product and petroleum contaminated water at the Play Pals Day Care.

A total of (5) Free Product Vacuum Recovery Events were performed through out the month of August. They began on August 5th and then on August 11th, August 20th , August 23rd and August 30th . There was a decrease in Free Product Recovery events performed due to the decrease amount of rain fall in August . The groundwater level has dropped 2 ft. to a GWL of 5.27 ft. in Recovery Trench A. The free product stays constant at 0.10 to 0.15 ft. where as Trench B pit groundwater level has dropped 1.53 ft. to GWL of 4.45 ft. and still has no free product or sheen on top of the recovery well. Trench E and the over fill pit, Trench C and Trench D also have no sheen on top of the water. There is also no sign of Free Product or a sheen on top of any water under the Play Pals Day Care.
There was a total of 1,366 gallons of contact water recovered and 7 gallons of free product recovered which was a decrease of 17 gallons less of Free Product than last month.

These Events produced 1,366 gallons of contaminated petroleum water and 7 gallons of free product.
See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care. There was no maintenance of the open pits and barrier nets for safety protection this month

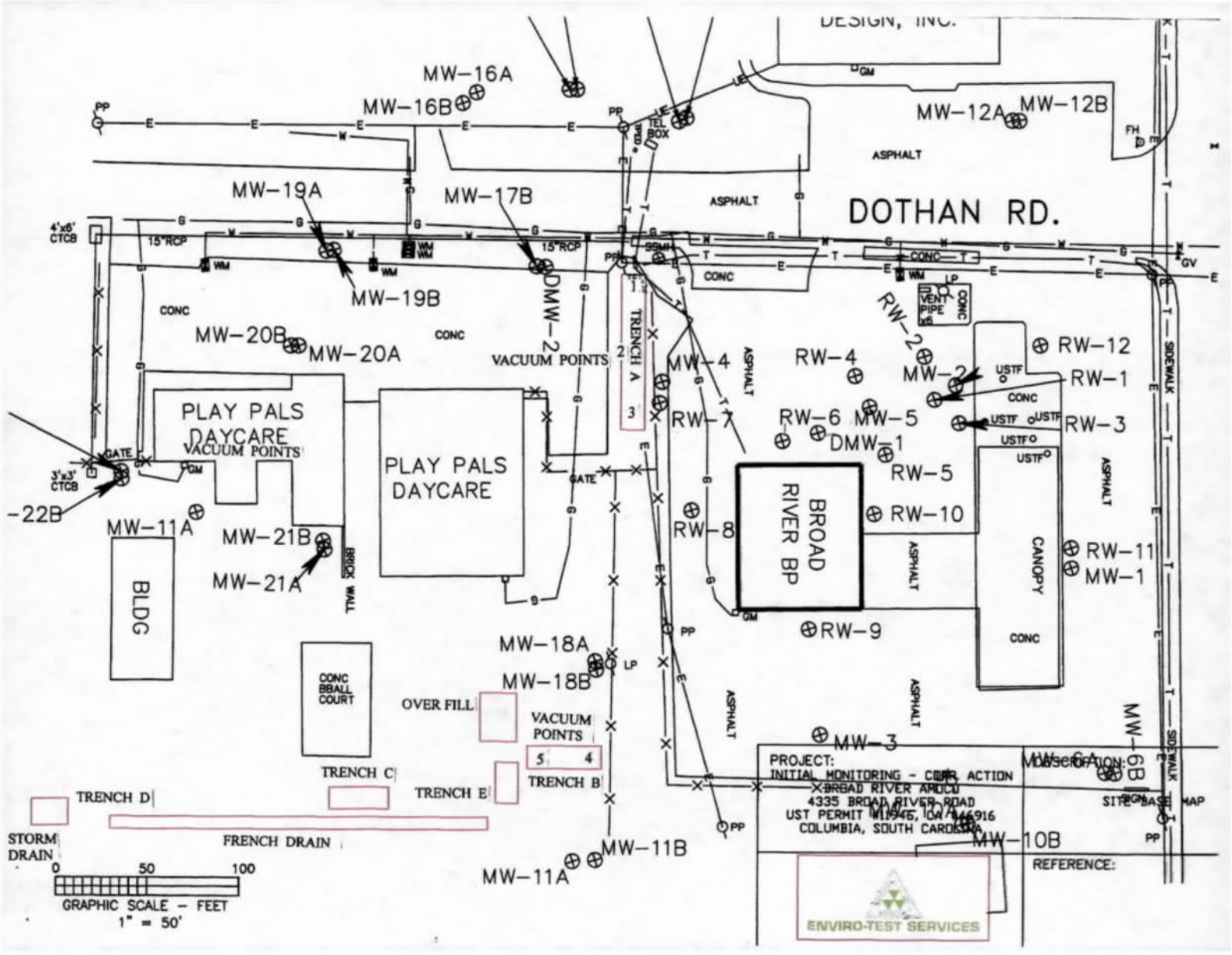
The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. The other Absorbent Booms are located in the ditch at the rear of the Day Care which leads to the storm drain that has one in it and there is another one in the ditch by the apartments. There was no replacement of absorbent booms this month. The electric power to the day care is scheduled to be reconnected in order to perform Soil Vapor & Air Sampling event inside the day care with the air condition running.
See Site Map: Figure 1

Enviro-Test will continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed.

Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teate
Project Manager
Enviro-Test Services Inc.

Site Map
Figure 1


DESIGN, INC.
MW-16A
MW-16B
MW-12A
MW-12B
MW-19A
MW-17B
DOTHAN RD.
ASPHALT
MW-19B
MW-20B
MW-20A
VACUUM POINTS
TRENCH A
MW-4
RW-4
MW-2
RW-12
RW-1
RW-2
RW-7
RW-6
MW-5
RW-3
DMW-1
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
RW-5
BROAD RIVER BP
RW-10
RW-8
CANOPY
RW-11
MW-1
MW-11A
MW-21B
MW-21A
BLDG
RW-9
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL
VACUUM POINTS
MW-3
MW-6A
MW-6B
TRENCH C
TRENCH B
TRENCH E
TRENCH D
FRENCH DRAIN
STORM DRAIN
MW-11B
MW-10B
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, OA #46916
COLUMBIA, SOUTH CAROLINA
REFERENCE:
SITE BASE MAP
ENVIRO-TEST SERVICES
GRAPHIC SCALE - FEET
1" = 50'

ATTACHMENT A

NON-HAZARDOUS WASTE 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 Document No. 2443

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cucchini 12-414.2-18
4335 Broad River Rd
Columbia, S.C

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM

6. US EPA ID Number

A. State Transorter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Hydrotime Env.
Columbia, S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	1366	Gal
c.				
d.				

GENERATOR

G. Additonal Descriptions for Materials Listed Above: 7 gallons fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Broad River BP / Fred Cucchini

Printed/Typed Name: Billy Pittenger Agent for | Signature: Billy Pittenger | Date: Month 8 Day 30 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger | Signature: Billy Pittenger | Date: Month 8 Day 30 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Guy Bouknight | Signature: Guy Bouknight | Date: Month 8 Day 30 Year 19

NON-HAZARDOUS WASTE

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Rev. 3/95

63475579

TICKET NUMBER

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CAT SCALE COMPANY
P.O. BOX 630
WALCOTT, IA 52773
(563) 284-6263
www.catscale.com

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WEIGH WHAT WE SAY OR WE PAY®

If you get an overweight fine from the state **AFTER** one of our CAT Scales showed a legal weight, we will immediately check our scale and we will:

(1) Reimburse you for the cost of the overweight fine if our scale is wrong, **OR**
(2) A representative of CAT Scale Company will appear in court **WITH** the driver as an expert witness if we believe our scale was correct.

IF YOU SHOULD GET AN OVERWEIGHT FINE, YOU SHOULD DO THE FOLLOWING TO GET THE PROBLEM RESOLVED:

1) Post bond and request a court date.
2) Call CAT Scale Company direct 24 hours a day at 1-877-CAT-SCALE, ext. 7 (Toll Free) or visit www.catscaleguarantee.com for instructions.
3) **IMMEDIATELY** send a copy of the citation, CAT Scale Ticket, your name, company, address, and phone number to CAT Scale Company Attn: Guarantee Department.

*The four weights shown below are separate weights. The GROSS WEIGHT is the CERTIFIED WEIGHT and was weighed on a full length platform scale. All weights are guaranteed by CAT Scale.

DATE: 8-30-19

14:08
63475579

SCALE: 1886
LOCATION: PETRO
I 77 EXIT 5
COLUMBIA SC

PUBLIC WEIGHMASTER'S CERTIFICATE OF WEIGHT & MEASURE

STEER AXLE	11020 lb
DRIVE AXLE	30540 lb
TRAILER AXLE	00 lb
*GROSS WEIGHT	41560 lb

IMPRINT SEAL HERE (IF APPLICABLE)

This is to certify that the following described merchandise was weighed, counted, or measured by a public or deputy weighmaster, and when properly signed and sealed shall be prima facia evidence of the accuracy of the weight shown as prescribed by law.

manifest 2443 1366 gallons

LIVESTOCK, PRODUCE, PROPERTY, COMMODITY, OR ARTICLE WEIGHED FREIGHT ALL KINDS

COMPANY ARM ENV TRACTOR # _____ TRAILER # _____

WEIGH NUMBER
5579

FEE $11.50

WEIGHMASTER OR WEIGHER SIGNATURE MARCEDA HARRIS

TICKET # OF FULL $ WEIGH (IF REWEIGH) _____

DRIVER IN TRUCK UNLESS CHECKED HERE: ☐

STOMER COPY

© CAT Scale® Reg 3067 7/18

October 10, 2019

ENVIRO-TEST SERVICES

UST
OCT 10 2019
PROGRAM

UST
185
DOCKETING

Mr. Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
UST Program
Bureau of Land and Waste management

RE: August 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco and Play Pals Day Care
Permit # 11946; CA # 60368
4335 Broad River Rd Columbia, SC
Richland County

Dear Mr. Baldwin

Enviro-Test Services is continuing the removal of Free Product and petroleum contaminated water at the Play Pals Day Care.

A total of (5) Free Product Vacuum Recovery Events were performed through out the month of August. They began on September 3rd and then September 10th, September 17th , September 21st and September 30th . The Free Product Recovery events performed remained the same as in August. There was only one good rain storm at the end of September and the site is very dry. The groundwater level continues to drop to a GWL of 5.68 ft. in Recovery Trench A. The free product has decreased to 0.10 ft. where as Trench B pit groundwater level has dropped to a GWL of 4.63 ft. and still has no free product or sheen on top of the recovery well. Trench E and the over fill pit, Trench C and Trench D also have no sheen on top of the water. There is also no standing water in the sumps under the Play Pals Day Care.

There was a total of 2,791 gallons of contact water recovered and 26 gallons of free product recovered which was an increase of 1,425 gallons of contact water and 19 gallons more of Free Product than last month.

These Events produced 2,791 gallons of contaminated petroleum water and 26 gallons of thick very dark brown-black free product.
See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care. There was one hour of maintenance of the open pits and barrier nets for safety protection this month

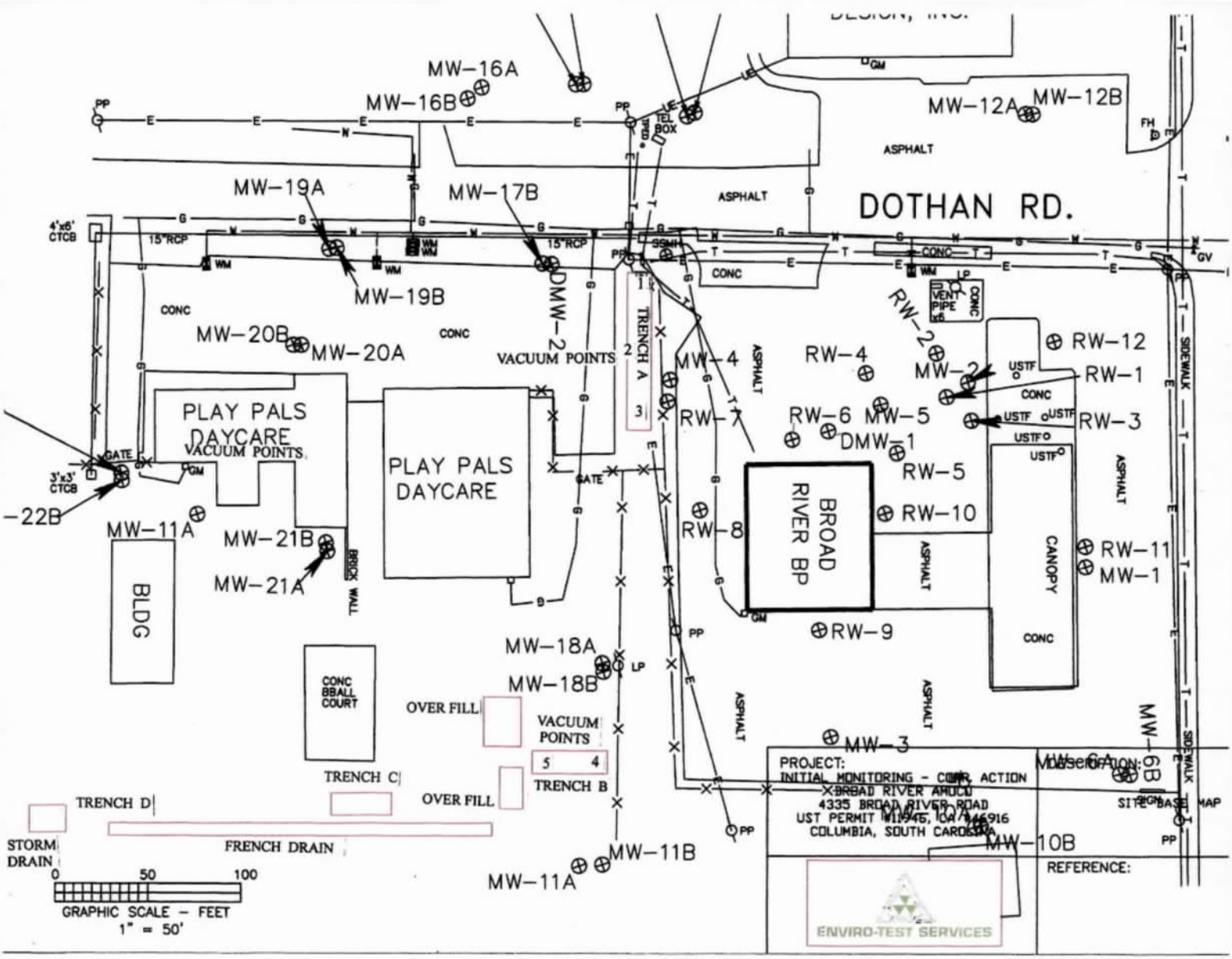
The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. The other Absorbent Booms are located in the ditch at the rear of the Day Care which leads to the storm drain that has one in it and there is another one in the ditch by the apartments. There was no replacement of absorbent booms this month. The electric power to the day care has been reconnected and the air condition running.
See Site Map: Figure 1

Enviro-Test will continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed.

Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teate
Project Manager
Enviro-Test Services Inc.

FIGURE 1
Site Map


MW-16A
MW-16B
MW-12A
MW-12B
MW-19A
MW-17B
DOTHAN RD.
MW-19B
DMW-2
MW-20B
MW-20A
VACUUM POINTS
TRENCH A
MW-4
RW-4
MW-2
RW-12
RW-1
RW-2
RW-7
RW-6
MW-5
RW-3
DMW-1
RW-5
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
BROAD RIVER BP
RW-10
RW-8
CANOPY
RW-11
MW-1
MW-22B
MW-11A
MW-21B
MW-21A
BLDG
RW-9
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL
VACUUM POINTS
5 4
TRENCH C
TRENCH B
OVER FILL
MW-3
MW-6A
MW-6B
TRENCH D
FRENCH DRAIN
STORM DRAIN
MW-11B
MW-11A
MW-10B
0 50 100
GRAPHIC SCALE - FEET
1" = 50'
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11945, CA #946916
COLUMBIA, SOUTH CAROLINA
REFERENCE:
SITE BASE MAP
ENVIRO-TEST SERVICES

ATTACHMENT A
Disposal Manifest

NON-HAZARDOUS WASTE 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 Document No. 2455 | 2. Page 1 of

3. Generator's Name and Mailing Address: Broad River BP / Fred Cucchini
4335 Broad River Rd
Columbia, S.C
12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM | 6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name | 8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: TK Tank Services
425 Boulevard Rd
Sumter, SC | 10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2791	Gal
c.				
d.				

G. Additional Descriptions for Materials Listed Above: 26 gallons - fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations

Broad River BP / Fred Cucchini

Printed/Typed Name: Billy P. Henger Agent for | Signature: Billy Pittenger | Date: Month 10 Day 4 Year 19

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger | Signature: Billy Pittenger | Date: Month 10 Day 4 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19

Printed/Typed Name: DAVID JONES | Signature | Date: Month 10 Day 4 Year 19

NON-HAZARDOUS WASTE

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Rev. 3/95

CERTIFICATE OF DISPOSAL

T K TANK SERVICES, INC.

Certifies to all that

2,791 GALLONS

Of Nonhazardous, Petroleum Contaminated Water / Product

Have been disposed of in accordance with EPA regulations on petroleum contaminated water.

This product was generated at

BROAD RIVER BP / FRED CUCCHINI

10/4/2019

DATE

SIGNATURE

ARM ENVIRONMENTAL SERVICES, INC.

ASSESSMENT & REMEDIAL SERVICES *armenv.com*

October 23, 2019

Brad Baldwin, Hydrogeologist
UST Management Division
Bureau of Land and Waste Management
South Carolina Department of Health & Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Soil Vapor and Air Quality Assessment
Broad River Amoco (BP)
4335 Broad River Rd., Columbia
Richland County, South Carolina
UST Permit #11946; CA #60146
ARM Project #12-414.4-19

Dear Mr. Baldwin;

ARM Environmental Services, Inc. (ARM) has conducted additional sub-slab soil vapor and indoor and outdoor air sampling at the Broad River Amoco (BP) site on behalf of Enviro-Test Services, Inc. (Enviro-Test). The site is located along Broad River Rd. at the intersection of Dothan Rd. in Columbia, Richland County, South Carolina.

A summary of the services provided and data collected during this sampling event is documented in the following report and attached figures, tables, and appendices. Additionally, an updated receptor's survey was also conducted and is detailed in this report.

If you have any questions or comments regarding this report, please do not hesitate to contact us.

Sincerely,
ARM Environmental Services, Inc.

Michael L. Faris, P.G.
Senior Geologist / Principal

Andrew M. Wilson, P.G.
Sr. Project Manager / Principal

cc: Terry Teate, Enviro-Test Services, Inc.

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Broad River Amoco (BP)
Soil Vapor and Air Quality Assessment

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1.2 Indoor Air, Outdoor Air, Crawlspace Vapor Sampling . . 2

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Table 3 Sub-Slab Soil Vapor Results – (Historical Summary)
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Figure 3 Play Pals Structure Sketch with Vapor Sample Locations

Appendices:
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Appendix B Laboratory Analytical Reports

1.0 Assessment Activities

Prior to this assessment, the electricity was restored to the Play Pals structure. Once the electricity was restored, the HVAC system was turned back on and allowed to run normally for approximately one to two weeks prior to sample collection. The HVAC system was in normal operation during the indoor and outdoor sampling activities. In order to further evaluate the air quality and sub-slab soil vapor at the Play Pals property, the following assessment activities were completed:

1.1 Sub-Slab Soil Vapor Sampling:

Six (6) sub-slab soil vapor points (Vapor Pins), designated SG-1 through SG-6, were previously installed in the concrete slab inside the Play Pals structure closest to the subject site. The vapor pin sub-slab vapor monitoring points were installed in December 2018 in order to facilitate the collection of soil gas from beneath the concrete slab portion of the building. 5/8-inch diameter holes were drilled through the concrete slab at six locations and the vapor pins were securely placed within these holes by advancement with a dead blow hammer. The vapor pins included a silicone sleeve that compressed against the hole in the concrete slab, sealing the hole around the Vapor Pin. Subsequent to sample collection in 2018, each of the vapor pins were capped and left in place for potential future sampling events. The same six vapor pins were utilized during a sampling event in June 2019 and during this assessment for sample collection. The six sub-slab soil vapor points are indicated on Figure 3, the Play Pals Site Sketch. The site sketch consists of a photograph of the Play Pals Day Care building evacuation plan with sample locations indicated.

ARM mobilized to the site on September 13, 2019 and reconnected the vapor pins with tubing to 2.7L stainless steel Summa Canisters. The flow rate of soil vapor to the Summa Canisters was controlled with a flow controller set at the laboratory to continuously draw soil vapor at a rate of approximately 200 milliliters per minute (ml/min). Soil vapor sampling at less than or equal to 200 ml/min is recommended in order to minimize the potential for drawing ambient or other air / vapor into the sample (short circuiting).

The sample train tubing connections were pressure tested with a shut in test to insure no leakage within the sample train. The valve closest to the vapor pin was closed and a vacuum equivalent to 15 inches of mercury was placed on the sample train with the integrated syringe. A pressure gauge was used to monitor any vacuum loss within the train. A sample train with a vacuum loss of less than 0.5 inches of mercury over a 1 minute period was considered tight.

A leak test, using the water dam method, was also used to test the integrity of the tubing connection to the Vapor Pin and the silicone seal against the concrete hole. A two-inch PVC pipe couple was placed over the Vapor Pin and was sealed against the concrete floor with VOC free Play-Doh. When all tubing connections had been made and the "shut-in" test had been completed, distilled water was placed into the PVC pipe couple to a level above the tubing connection to the Vapor Pin. The sample point was then purged by removing approximately 3 to 5 tubing volumes of air with the syringe.

A sudden drop in water level, or the appearance of water in the tubing would indicate leakage. The connection to the syringe was then closed and the valve to the Summa Canister was opened to begin sampling. The water level in the pipe couple was monitored throughout the approximate 13 to 15 minute sampling period at each location to insure no leakage occurred during sample collection. The water level within the PVC water dam remained constant throughout sampling and no water was observed in the tubing at each location during this sampling event.

The sub-slab soil vapor samples (Summa canisters) were shipped overnight to a certified laboratory for analysis. Each sample was analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), naphthalene, methyl tertiary-butyl ether (MTBE), and 1,2-dichloroethane (1,2-DCA) by EPA analytical method TO-15. The results are tabulated along with Vapor Intrusion Screening Levels (VISL) in Table 1. The commercial and residential VISLs are indicated on Tables 1A and 1B, respectively. A historical summary of all sub-slab soil vapor data is included on Table 3. Vapor sampling field data logs for each sample are included in Appendix A. The complete laboratory analytical data is included in Appendix B. The locations of each of the soil vapor samples are indicated on Figure 3.

1.2 Indoor Air, Outdoor Air, Crawlspace Vapor Sampling:

A total of six (6) indoor air, outdoor air, and crawlspace vapor samples, designated A-1, and A-3 through A-6, were collected at the Play Pals Daycare property and from the residence located adjacent to and downgradient (southwest) of the Play Pals property. The address of the adjacent residence is 1235 Dothan Rd.

ARM utilized 6 liter (L) stainless steel Summa canisters with flow controllers set by the laboratory for 8 hours. One canister was deployed outside the Play Pals building between the building and the Broad River BP location (A-1), one canister was deployed inside the portion of the Play Pals building that is over a slab (A-3), one canister was deployed inside the portion of the Play Pals building that is over a crawlspace (A-4), two canisters were deployed in the crawlspace of the Play Pals building (one above the polyethylene moisture barrier [A-5] and one below the polyethylene moisture barrier[A-6]), and one canister was deployed in the crawlspace of the residence located at 1238 Dothan Road (A-7).

The air samples (Summa canisters) were shipped overnight to a certified laboratory and analyzed for BTEX, naphthalene, MTBE, and 1,2-DCA via EPA analytical method TO-15. The results are tabulated along with Vapor Intrusion Screening Levels (VISL) in Table 2. The commercial and residential VISLs are indicated on Tables 2A and 2B, respectively. A historical summary of all indoor air, outdoor air, and crawlspace vapor data is included on Table 4. Vapor sampling field data logs for each sample are included in Appendix A. The complete laboratory analytical data is included in Appendix B. The locations of each of the air sample locations are indicated on Figure 3.

2.0 Potential Receptor Survey:

During this assessment, ARM personnel conducted an updated receptor survey.

Receptor Survey Questions	No	Yes*
Is there a drinking water supply well (public or private) or surface water supply intake within 1,000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1,000 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:

2.1 Subsurface Utilities / Surface Water:

Based on the location of the known contaminant plume, and previous assessment data, it is apparent that the sanitary sewer system along Dothan Road has been previously impacted by the contamination. It is understood that the sewer system owner made repairs to the sewer line near the western corner of the Broad River BP site. Based on information provided by DHEC representatives it appears that no additional detections of elevated petroleum vapors have been identified in the sanitary sewer system since the repair. The sanitary sewer system remains a potential receptor of the contamination.

A series of storm drains are located downgradient of the subject property. One of the storm drains located in the southwestern corner of the Play Pals property was identified as a point of exposure during the emergency response effort. The local utility that maintains the storm water system was contacted and assisted in evaluating the flow to and from the drain. The storm drain collects surface water from the Play Pals property, as well as properties along Dothan Rd. from Broad River Rd. toward the southwest. Surface water then flows in a large diameter black corrugated pipe through the woods, and discharges into a wet-weather drainage ditch located behind the Rolling Pines community along Rolling Pines Way to the southwest of the Play Pals property.

The drainage ditch eventually flows into Stoop Creek several thousand feet southwest of the subject site.

Free-phase product was found flowing into the referenced storm drain system and drainage ditch during the emergency response effort. Petroleum absorbent booms were installed in the storm drain, at the discharge end of the black corrugated pipe, and at several locations along the aforementioned drainage ditch behind the Rolling Pines community. Product was observed flowing out of a subsurface french drain system on the Play Pals property into the storm drain. The french drain was capped on the Play Pals property along the southern property boundary in order to stop the flow of product into the storm drain. Product was vacuumed as often as observed in order to keep it out of the storm water system as much as possible. Petroleum absorbent booms were removed and replaced several times during the emergency response. Product and contaminated groundwater has been observed in the trenches connected to the remaining french drain system since the emergency response. Enviro-Test has continued to remove all free product and contaminated groundwater that may enter the storm water system since the emergency response.

The storm water system on the Play Pals property, including the french drain system and storm water draining piping and catch basins, remain a preferential pathway for the contamination.

A potential former septic tank system was identified on the southern side of the Play Pals property during a geophysical survey of the site during the emergency response. Based on the subsurface features identified, it is possible that the former septic tank and associated lines may act as a preferential pathway for the contaminants to flow beneath the portion of the Play Pals structure build on a crawlspace, particularly during a sudden rise in water levels.

2.2 Air Quality

Because of the high water table, wetter weather periods have likely been a driver for pushing contaminants and/or contaminant vapors into the sub-slab environment, which is likely a porous sand base beneath the concrete slab. Although recent indoor air quality results have been mostly below screening levels, it is important to recognize that the air sampling conducted in 2019 is merely a snapshot of conditions. Furthermore the conditions during the June and September 2019 air sampling were very dry. Should the water table quickly rise and more contaminants get transported downhill from the Broad River BP site toward the Play Pals property, outdoor and indoor air quality may once again degrade. At least a portion of the petroleum source still remains upgradient on the Broad River BP property. Therefore, the breathing zone of occupants of the Play Pals property is considered a potential receptor of the contamination.

2.3 Contaminated Soils & Excavations:

During the emergency response, free-phase product was observed flowing across the Play Pals property, particularly along the unpaved area south of the facility structure, and in the playground area of the property. The contaminated soils may be a potential receptor for dermal contact and potential ingestion.

It should be noted that several open excavations, primarily trenches and pits, remain open in the yard of the Play Pals property. The open excavations represent a potential exposure pathway to the dissolved and free-phase product, and potentially contaminated soils. The excavations also represent a potential safety hazard. It is recommended that all open excavations on the Play Pals property should be filled in and compacted to grade. Immediately prior to the closure of open excavations, any contaminated groundwater and free product present should be vacuumed up, and transported and disposed of at an approved disposal facility.

3.0 Conclusions

Sample results were compared to EPA VISLs indicative of a 10-6 cancer risk or a hazard quotient of 0.1 for non-carcinogens (default VISLs).

None of the sub-slab results exceeded the VISLs, indicating that vapor intrusion from the subsurface was not occurring at the time of sample collection. The weather pattern around this time had been very dry (no rain for an extended period of time). Because of the high water table, wetter weather periods have likely been a driver for pushing contaminants and/or contaminant vapors into the sub-slab environment, which is likely a porous sand base beneath the concrete slab. Therefore these recent results may be a snapshot of conditions in a favorable (dry) environment. Additionally, in this case, the HVAC system was operational, which may cause a periodic positive pressure in the building, helping to slow potential vapor intrusion.

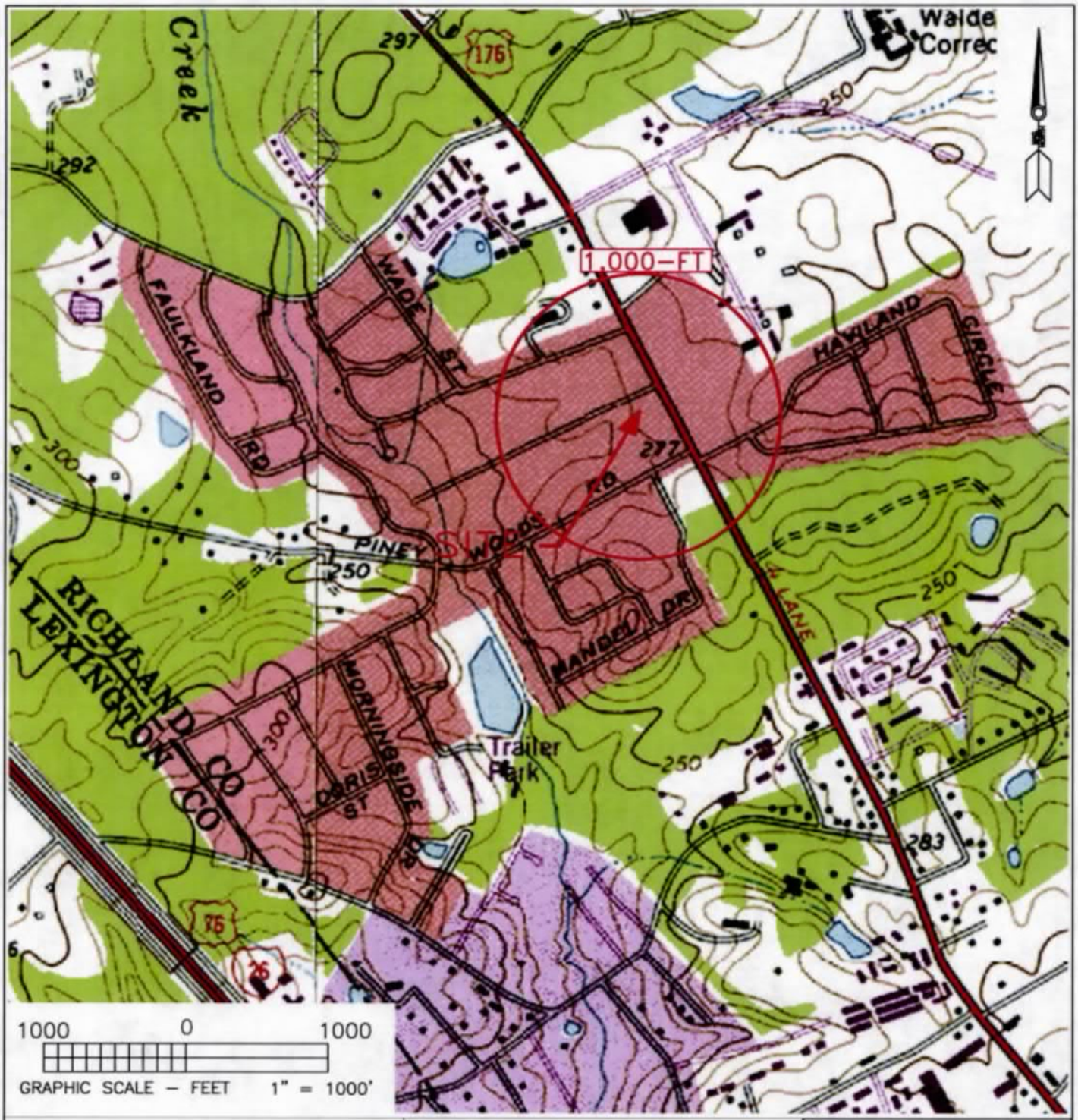
Benzene was detected in the indoor air space in the crawlspace portion of the Play Pals building at a concentration exceeding the residential VISL. However, benzene was also detected in the exterior air sample and in the crawlspace portion of the Play Pals building, which may indicate that the source of the indoor benzene detection is from exterior and/or crawlspace air.

A significant concentration of naphthalene was detected in the crawlspace of the residence at 1238 Dothan Road. This concentration is, however, less than the naphthalene detected in this crawlspace during the June 2019 investigation.

The sub-slab results do not suggest active vapor intrusion from the subsurface into that portion of the Play Pals building. This seems to suggest that the detected CoCs in indoor air are resulting from communication with outdoor air. It should be noted that the results are "snapshots" of conditions at a point in time and that the outdoor environment may change more dynamically than the indoor or crawlspace environments, where vapors may linger or there may be a lag effect.

FIGURES

FIG. 1 - SITE LOCATION MAP (Topo.)
FIG. 2 - SITE BASE MAP
FIG. 3 - PLAY PALS STRUCTURE SKETCH with VAPOR SAMPLING LOCATIONS



PROJECT:

SOIL VAPOR / AIR QUALITY ASSESS.
BROAD RIVER AMOCO
4345 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SC
UST PERMIT #11946

DESCRIPTION:

SITE LOCATION MAP

FIGURE 1

DATE:

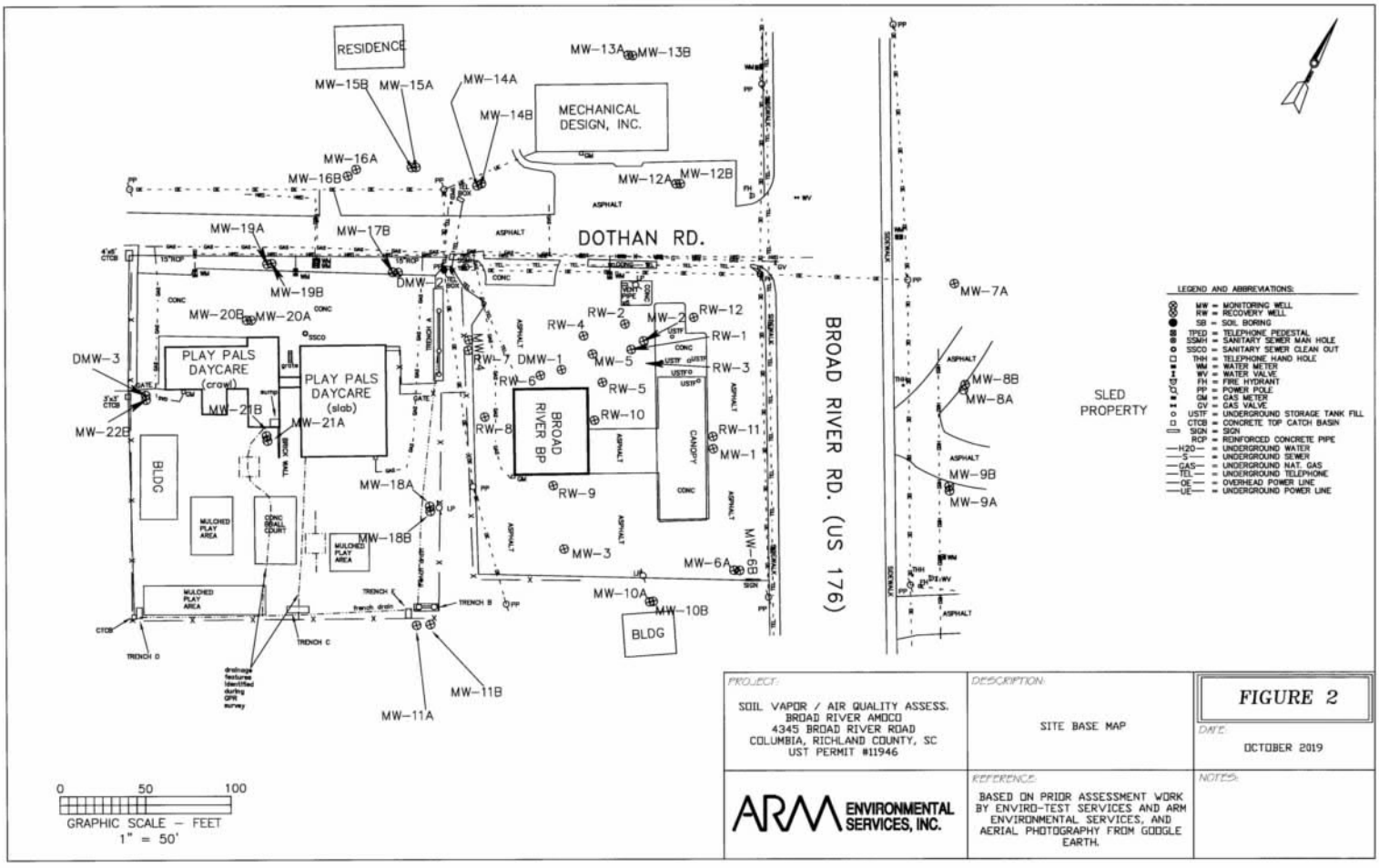
OCTOBER 2019

ARM ENVIRONMENTAL SERVICES, INC.

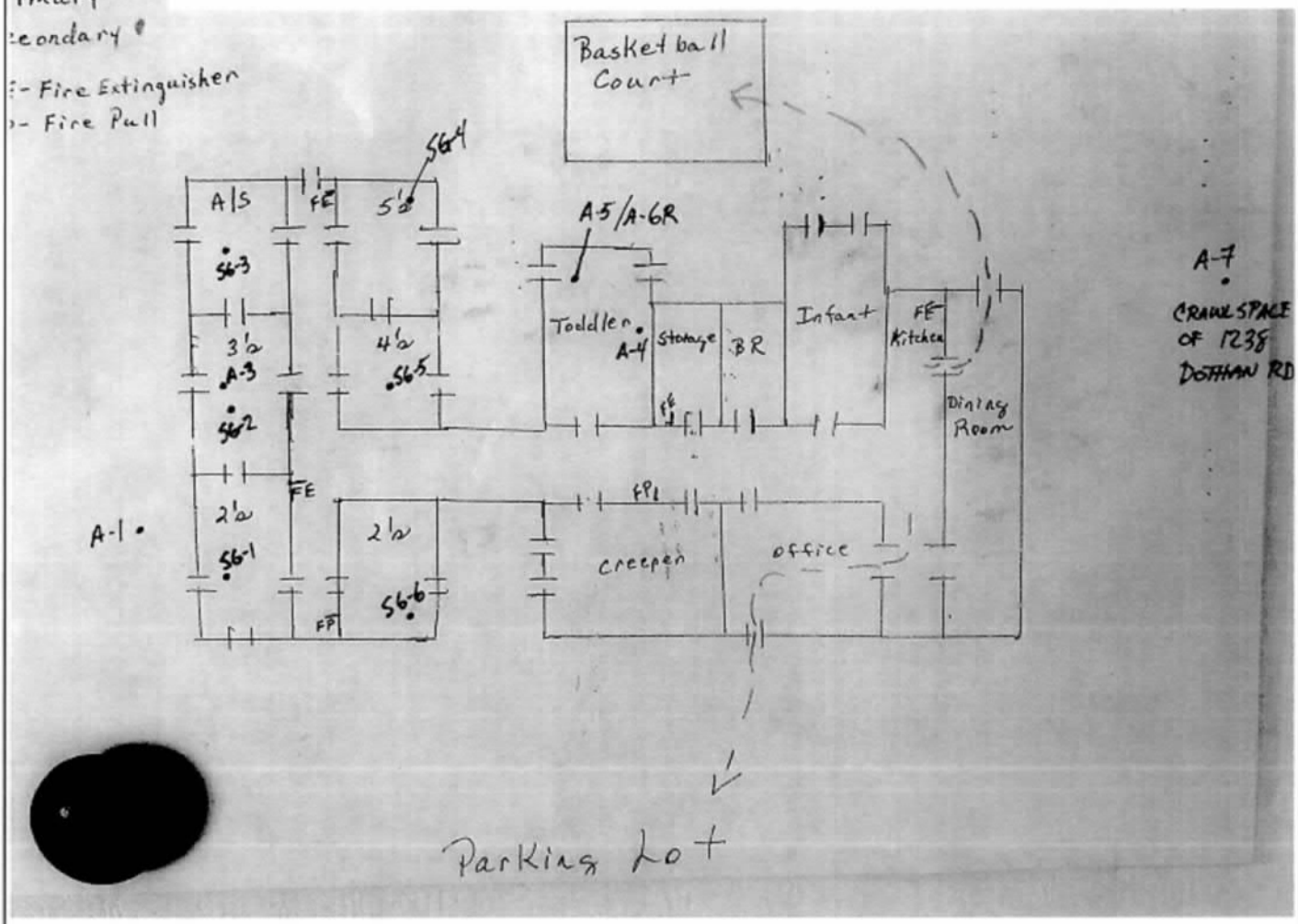
REFERENCE:

U.S.G.S. TOPOGRAPHIC MAP
(7.5 MINUTE SERIES)
COLUMBIA NORTH - 1972, REV. 1990
SOUTH CAROLINA QUADRANGLE

LEGEND:



PROJECT: SOIL VAPOR / AIR QUALITY ASSESS. BROAD RIVER AMOCO 4345 BROAD RIVER ROAD COLUMBIA, RICHLAND COUNTY, SC UST PERMIT #11946	DESCRIPTION: SITE BASE MAP	**FIGURE 2** DATE: OCTOBER 2019
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: BASED ON PRIOR ASSESSMENT WORK BY ENVIRO-TEST SERVICES AND ARM ENVIRONMENTAL SERVICES, AND AERIAL PHOTOGRAPHY FROM GOOGLE EARTH.	NOTES:



25 0 25

APPROX. SCALE – FEET 1" = 25'

PROJECT: SOIL VAPOR / AIR QUALITY ASSESS. BROAD RIVER AMOCO 4345 BROAD RIVER ROAD COLUMBIA, RICHLAND COUNTY, SC UST PERMIT #11946	DESCRIPTION: PLAY PALS STRUCTURE SKETCH WITH AIR / VAPOR SAMPLE LOCATIONS	**FIGURE 3** DATE: OCTOBER 2019
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: SITE SKETCH IS THE BUILDING LAYOUT AND EVACUATION PLAN FROM PLAY PALS DAYCARE	LEGEND:

TABLES

Table 1 - Sub-Slab Soil Vapor Results – Sept. 2019
Table 2 - Indoor Air, Outdoor Air, Crawlspace Vapor Results – Sept. 2019
Table 3 - Sub-Slab Soil Vapor Results – (Historical Summary)
Table 4 - Indoor Air, Outdoor Air, Crawlspace Vapor Results – (Historical Summary)

Table 1A - Commercial Vapor Intrusion Screening Levels (VISL)
Subslab Soil Gas
Play Pals - 1246 Dothan Rd.
9/13/2019

Chemical	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-06 or THQ=0.1) C_{sg} Target ($\mu g/m^3$)	SG-1 (Classroom 1, Slab Building) (µg/m3)	SG-2 (Classroom 2, Slab Building) (µg/m3)	SG-3 (Classroom 3, Slab Building) (µg/m3)	SG-4 (Classroom 4, Slab Building) (µg/m3)	SG-5 (Classroom 5, Slab Building) (µg/m3)	SG-6 (Classroom 6, Slab Building) (µg/m3)
Benzene	52.4	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)
Toluene	73000	3.00	3.84	4.18	3.13	1.86	2.59
Ethylbenzene	164	0.947	1.12	1.19	ND (0.869)	ND (0.869)	ND (0.869)
Xylenes	1460	4.28	5.08	5.39	3.81	2.01	3.71
Naphthalene	12	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)
Methyl tert-Butyl Ether (MTBE)	1570	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Dichloroethane, 1,2-	15.7	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)

Table 1B - Residential Vapor Intrusion Screening Levels (VISL)
Subslab Soil Gas
Play Pals - 1246 Dothan Rd.
9/13/2019

Chemical	Target Sub-Slab and Near-source Soil Gas Concentration (TCR=1E-06 or THQ=0.1) C_{sg} Target ($\mu g/m^3$)	SG-1 (Classroom 1, Slab Building) (µg/m3)	SG-2 (Classroom 2, Slab Building) (µg/m3)	SG-3 (Classroom 3, Slab Building) (µg/m3)	SG-4 (Classroom 4, Slab Building) (µg/m3)	SG-5 (Classroom 5, Slab Building) (µg/m3)	SG-6 (Classroom 6, Slab Building) (µg/m3)
Benzene	12	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)	ND (0.639)
Toluene	17400	3.00	3.84	4.18	3.13	1.86	2.59
Ethylbenzene	37.4	0.947	1.12	1.19	ND (0.869)	ND (0.869)	ND (0.869)
Xylenes	348	4.28	5.08	5.39	3.81	2.01	3.71
Naphthalene	2.75	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)	ND (1.05)
Methyl tert-Butyl Ether (MTBE)	360	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)
Dichloroethane, 1,2-	3.6	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)	ND (0.809)

Table 2A - Commercial Vapor Intrusion Screening Levels (VISL)
Air Samples
1246 Dothan Rd. (Play Pals) and 1238 Dothan Rd. (Residence)
9/12/2019

Chemical	Target Indoor Air Concentration (TCR=1E-06 or THQ=0.1) MIN($C_{ia,c}$,$C_{ia,nc}$) ($\mu g/m^3$)	A-1 (Exterior Air) (µg/m3)	A-3 (Interior of Slab Building - 1246 Dothan) (µg/m3)	A-4 (Interior of Crawlspace Building - 1246 Dothan) (µg/m3)	A-5 (Crawlspace Air - Above Poly Liner - 1246 Dothan) (µg/m3)	A-6R (Crawlspace Air - Below Poly Liner - 1246 Dothan) (µg/m3)	A-7 (Crawlspace Air - 1238 Dothan) (µg/m3)
Benzene	1.57	0.639	ND (0.319)	0.45	0.329	0.319	ND (0.466)
Toluene	2190	2.69	1.72	0.897	0.648	0.92	1.72
Ethylbenzene	4.91	0.404	0.339	0.152	0.109	1.15	0.304
Xylenes	43.8	2.899	1.473	0.656	0.539	0.642	1.244
Naphthalene	0.361	ND (0.262)	ND (0.262)	ND (0.262)	ND (0.262)	ND (0.262)	**5.82**
Methyl tert-Butyl Ether (MTBE)	47.2	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (1.05)
Dichloroethane, 1,2-	0.472	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.118)

Table 2B - Residential Vapor Intrusion Screening Levels (VISL)
Air Samples
1246 Dothan Rd. (Play Pals) and 1238 Dothan Rd. (Residence)
9/12/2019

Chemical	Target Indoor Air Concentration (TCR=1E-06 or THQ=0.1) MIN($C_{ia,c}$,$C_{ia,nc}$) ($\mu g/m^3$)	A-1 (Exterior Air) (µg/m3)	A-3 (Interior of Slab Building - 1246 Dothan) (µg/m3)	A-4 (Interior of Crawlspace Building - 1246 Dothan) (µg/m3)	A-5 (Crawlspace Air - Above Poly Liner - 1246 Dothan) (µg/m3)	A-6R (Crawlspace Air - Below Poly Liner - 1246 Dothan) (µg/m3)	A-7 (Crawlspace Air - 1238 Dothan) (µg/m3)
Benzene	0.36	**0.639**	ND (0.319)	**0.45**	0.329	0.319	ND (0.466)
Toluene	521	2.69	1.72	0.897	0.648	0.92	1.72
Ethylbenzene	1.12	0.404	0.339	0.152	0.109	**1.15**	0.304
Xylenes	10.4	2.899	1.473	0.656	0.539	0.642	1.244
Naphthalene	0.0826	ND (0.262)	ND (0.262)	ND (0.262)	ND (0.262)	ND (0.262)	**5.82**
Methyl tert-Butyl Ether (MTBE)	10.8	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (0.721)	ND (1.05)
Dichloroethane, 1,2-	0.108	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.081)	ND (0.118)

Table 3 - Vapor Intrusion Screening Levels (VISLs)
Subslab Soil Gas - Historical Summary
Play Pals - 1246 Dothan Rd.

Chemical	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	MTBE	1,2-Dichloroethane
Commercial Vapor Intrusion Screening Level	- - -	**52.4**	**73,000**	**164**	**1,460**	**12**	**1,570**	**15.7**
Residential Vapor Intrusion Screening Level	- - -	**12**	**17,400**	**37.4**	**348**	**2.75**	**360**	**3.6**
SG-1 - Classroom 1	12/6/2018	**28.6**	23.5	ND (23.6)	ND (47.3)	ND (**28.5**)	ND (19.6)	ND (**22.0**)
	6/3/2019	ND (0.639)	5.69	1.06	4.81	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	3.00	0.947	4.28	ND (1.05)	ND (0.721)	ND (0.809)
SG-2 - Classroom 2	12/6/2018	ND (6.39)	30.4	ND (8.69)	47.1	ND (**10.5**)	ND (7.21)	ND (**8.09**)
	6/3/2019	ND (0.639)	7.12	1.44	6.72	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	3.84	1.12	5.08	ND (1.05)	ND (0.721)	ND (0.809)
SG-3 - Classroom 3	12/6/2018	5.69	43.3	11.2	64.5	2.69	ND (0.721)	ND (0.809)
	6/3/2019	ND (0.639)	4.33	0.921	4.23	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	4.18	1.19	5.39	ND (1.05)	ND (0.721)	ND (0.809)
SG-4 - Classroom 4	12/6/2018	3.45	32.8	9.16	55.6	1.64	ND (0.721)	ND (0.809)
	6/3/2019	ND (0.639)	6.93	1.65	7.95	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	3.13	ND (0.869)	3.81	ND (1.05)	ND (0.721)	ND (0.809)
SG-5 - Classroom 5	12/6/2018	4.54	40.3	12.2	73.9	2.63	ND (0.721)	ND (0.809)
	6/3/2019	2.21	5.77	1.80	6.85	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	1.86	ND (0.869)	2.01	ND (1.05)	ND (0.721)	ND (0.809)
SG-6 - Classroom 6	12/6/2018	**22.8**	52.4	12.6	73.8	ND (**10.5**)	ND (0.721)	ND (**8.09**)
	6/3/2019	ND (0.639)	4.60	1.26	5.68	ND (1.05)	ND (0.721)	ND (0.809)
	9/13/2019	ND (0.639)	2.59	ND (0.869)	3.71	ND (1.05)	ND (0.721)	ND (0.809)

Note:

All units expressed in µg/m3 (PPB)
ND - Not Detected at or above Limit of Quantitation (LOQ)
Bold - Greater than Residential VISL
Highlighted - Greater than Residential & Commercial VISL

Table 4 - Vapor Intrusion Screening Levels (VISLs)
Indoor Air, Outdoor Air & Crawlspace Vapor - Historical Summary
Play Pals - 1246 Dothan Rd.

Chemical	Date	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	MTBE	1,2-Dichloroethane
Commercial Vapor Intrusion Screening Level	- - -	**1.57**	**2,190**	**4.91**	**43.8**	**0.361**	**47.2**	**0.472**
Residential Vapor Intrusion Screening Level	- - -	**0.36**	**521**	**1.12**	**10.4**	**0.083**	**10.8**	**0.108**
A-1 (Exterior Air)	12/5/2019	**2.6**	9.91	**2.03**	10.36	ND (**1.05**)	ND (0.721)	ND (**0.809**)
	6/4/2019	**0.677**	2.82	0.304	3.27	ND (**1.05**)	ND (0.721)	**0.117**
	9/12/2019	**0.639**	2.69	0.404	2.90	ND (**0.262**)	ND (0.721)	ND (0.081)
A-3 (Interior of Slab Building) 1246 Dothan Rd.	12/5/2019	**183**	**1,790**	**530**	**2,956**	**12.9**	ND (0.721)	ND (**0.809**)
	6/4/2019	**1.03**	5.28	**4.06**	**13.24**	**1.32**	ND (0.721)	**0.36**
	9/12/2019	ND (0.319)	1.72	0.339	1.47	ND (**0.262**)	ND (0.721)	ND (0.081)
A-4 (Interior of Crawlspc. Bldg.) 1246 Dothan Rd.	12/5/2019	**19.0**	120	**29.4**	**199**	**2.43**	ND (0.721)	ND (**0.809**)
	6/4/2019	**2.2**	2.59	0.604	2.933	ND (**1.05**)	ND (0.721)	**0.295**
	9/12/2019	**0.45**	0.897	0.152	0.656	ND (**0.262**)	ND (0.721)	ND (0.081)
A-5 (Crawlspc. Air - above poly) 1246 Dothan Rd.	12/7/2018	**15.3**	81.4	**15.4**	**110.3**	**3.2**	ND (0.721)	ND (**0.809**)
	6/4/2019	**1.02**	6.82	0.5	3.8	ND (**1.05**)	ND (0.721)	0.105
	9/12/2019	0.329	0.648	0.109	0.539	ND (**0.262**)	ND (0.721)	ND (0.081)
A-6 (Crawlspc. Air - below poly) 1246 Dothan Rd.	12/7/2018	**57.5**	347	**66**	**496**	**36.4**	ND (0.721)	ND (**0.809**)
	6/4/2019	**0.393**	1.09	0.161	0.573	ND (**1.05**)	ND (0.721)	ND (0.081)
	9/12/2019	0.319	0.92	**1.15**	0.642	ND (**0.262**)	ND (0.721)	ND (0.081)
A-7 (Crawlspace Air) 1238 Dothan Rd.	12/7/2018	**2.34**	5.54	ND (0.869)	2.14	ND (**1.05**)	ND (0.721)	ND (**0.809**)
	6/4/2019	**0.361**	2.69	0.208	1.107	**21.1**	ND (0.721)	**0.17**
	9/12/2019	ND (**0.466**)	1.72	0.304	1.244	**5.82**	ND (1.05)	ND (**0.118**)

Note:

All units expressed in µg/m3 (PPB)
ND - Not Detected at or above Limit of Quantitation (LOQ)
Bold - Greater than Residential VISL
Highlighted - Greater than Residential & Commercial VISL

APPENDICES

A. FIELD DATA - VAPOR SAMPLING LOGS
B. LABORATORY ANALYTICAL REPORTS

APPENDIX A

FIELD DATA – VAPOR SAMPLING LOGS

Day 1

DO NOT FORGET TO LABEL EACH CANISTER TAG

The two big blue boxes are the air cans. There are two extras. Both are set up for tubing.

- Set outdoor air canister = **A-1**
- Set crawlspace canister beneath Play Pals above poly = **A-5**
- Set crawlspace canister beneath Play Pals beneath poly with tubing = **A-6**
- Set crawlspace canister beneath house next door = **A-7**
- Set indoor air canister in slab building – **Classroom 2 = A-3**
- Set indoor air canister in crawlspace building – **Classroom 1 = A-4**

Set canisters in the morning and pick up in the afternoon before the gauges read 0. Try to check each canister at least 30 minutes before the full 8 hours.

Day 2

- Label canister on the tag
- For each Pin – place PVC and Playdo, connect sample train, and connect Multi Meter to tubing to check organic vapor concentration
- For each pin, record the VOC reading
- Connect summa canister
- Pressure test – you want 15 on the gauge and watch the needle for 1 minute
- Fill PVC couple with water. Watch.
- Purge sample train. Purge out half of a syringe (30 ml). Watch water.
- Start sampling and watch water. Make sure all valves are in the right position so air is flowing correctly.
- Make sure data sheet is filled out correctly.

Leave Vapor Pins in place and put a cone at each location with a sign.

Make sure each Vapor Pin is covered

Vapor Intrusion Equipment Checklist				
Vapor Pin Case				
Sample Trains				
Syringe / Gauge Assembly				
Gloves				
Tubing				
Silicone / Tygon Tubing				
Scissors				
DI Water				
Water Dam PVC Couples				
Play-Do / Clay				
Summa Canisters and Flow Controllers				
Data Sheets				
Wrenches				
Syringe for sucking out water dam				
3/16" ID Tubing = 5.43 ml/ft				

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-1
Client	SC DHEC	Date of Collection	9-13-19
Project	PLAY PALS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD	Canister ID	2362
Project #	12-414.4-19	Flow Controller ID	01196
Personnel	AD	Outdoor/(Indoor)	
Sample Location	CLASS 1. SLAB BLDG	Sample Intake Height	Ground Level/(Sub Slab)
Sampling Depth	VAPOR PIN	Misc. Equipment	/
Sample Type (Soil Gas, (Sub-Slab) Indoor, etc.)		Time On / Off	0858
			0913
PID Reading	[redacted] 7.3	Time of Collection	15 min.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml/syringe
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.61
		Temperature (Start)	79°
		Barometric Pressure (End)	30.15
		Canister Pressure (End)	0.06
		Temperature (End)	79°

VACUUM TEST: 15" Hg FOR 1 MIN

WATER DAM TEST:

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-2
Client	SC DHEC	Date of Collection	9-13-19
Project	PLAY PALS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD.	Canister ID	2867
Project #	12-414.4-19	Flow Controller ID	0535
Personnel	AD	Outdoor/~~Indoor~~	
Sample Location	CLASS 2, SLAB BLDG	Sample Intake Height	Ground Level / Sub Slab
Sampling Depth	VAPOR PIN	Misc. Equipment	/
Sample Type (Soil Gas, (Sub-Slab) Indoor, etc.)		Time On / Off	0926 0942
PID Reading	5.3	Time of Collection	16 min.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml / Syringe
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.56
		Temperature (Start)	79°
		Barometric Pressure (End)	30.15
		Canister Pressure (End)	0.00
		Temperature (End)	79°

VACUUM TEST: 15" Hg FOR 1 MIN

WATER DAM TEST:

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-3
Client	SC DHEC	Date of Collection	9-13-19
Project	PLAY PALS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD.	Canister ID	444
Project #	12-414.4-19	Flow Controller ID	0540
Personnel	AD	Outdoor/~~Indoor~~	
Sample Location	CLASS 3; SLAB BLDG	Sample Intake Height	Ground Level / Sub Slab
Sampling Depth	VAPOR PIN	Misc. Equipment	/
Sample Type (Soil Gas, ~~Sub-Slab~~ Indoor, etc.)		Time On / Off	0956 1012
PID Reading	3.0	Time of Collection	16 min.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.62
		Temperature (Start)	79°
		Barometric Pressure (End)	30.16
		Canister Pressure (End)	0 00
		Temperature (End)	81°

VACUUM TEST: 15" Hg FOR 1 MIN

WATER DAM TEST:

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-4
Client	SC DHEC	Date of Collection	9-13-19
Project	PLAY PALS	SUMMA Canister Size	2.7L
Location	1246 DOTHAN RD.	Canister ID	2213
Project #	12-414.4-19	Flow Controller ID	01182
Personnel	AD	Outdoor/Indoor	[redacted]
Sample Location	CLASS 4, SCAB BLDG	Sample Intake Height	Ground Level / Sub Slab
Sampling Depth	VAPOR PIN	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1023 / 1039
PID Reading	6.5	Time of Collection	16 min.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml / syringe
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	29.50
		Temperature (Start)	82°
		Barometric Pressure (End)	30.16
		Canister Pressure (End)	0.00
		Temperature (End)	82°

VACUUM TEST: 15" Hg FOR 1 MIN

WATER DAM TEST:

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-5
Client	SC DHEC	Date of Collection	9-13-19
Project	Play Pals	SUMMA Canister Size	2.7 L
Location	1246 Dothan Rd.	Canister ID	450
Project #	12.414.4-19	Flow Controller ID	0995
Personnel	AD	Outdoor/~~Indoor~~	
Sample Location	Class S / Slab Building	Sample Intake Height	Ground Level / Sub Slab
Sampling Depth	Vapor Pin	Misc. Equipment	/
Sample Type (Soil Gas, ~~Sub-Slab~~, Indoor, etc.)		Time On / Off	1102 1119
PID Reading	3.3	Time of Collection	17 min
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml / syringe
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	30.03
		Temperature (Start)	87°
		Barometric Pressure (End)	30.16
		Canister Pressure (End)	0.10
		Temperature (End)	87°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	SG-6
Client	SC DHEC	Date of Collection	9-13-19
Project	PLAY PALS	SUMMA Canister Size	2.7 L
Location	1246 DOTHAN RD.	Canister ID	535
Project #	12-414.4-19	Flow Controller ID	01052
Personnel	AD	Outdoor / (Indoor)	
Sample Location	CLASS 6, SLAB BLDG	Sample Intake Height	Ground level / Sub slab
Sampling Depth	VAPOR PIN	Misc. Equipment	/
Sample Type (Soil Gas, (Sub-Slab) Indoor, etc.)		Time On / Off	1130 / 1445
PID Reading	1.2	Time of Collection	
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	30 ml / syringe
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	29.70
		Temperature (Start)	87°
		Barometric Pressure (End)	30.16
		Canister Pressure (End)	
		Temperature (End)	87°

VACUUM TEST: 15" Hg FOR 1 MIN

WATER DAM TEST:

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-1
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	1404
Project #	12-414.4-19	Flow Controller ID	0758
Personnel	AD	Outdoor/Indoor	Outdoor
Sample Location	EXT, E SIDE, FENCE	Sample Intake Height	3'
Sampling Depth	—	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	OUTDOOR AMBIENT	Time On / Off	0956 1756
PID Reading	0.0	Time of Collection	8 hr.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.90
		Temperature (Start)	78°
		Barometric Pressure (End)	30.03
		Canister Pressure (End)	6.41
		Temperature (End)	94°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-3
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD.	Canister ID	2715 (2715)
Project #	12-414.4-19	Flow Controller ID	0490
Personnel	AD	Outdoor/Indoor	Indoor
Sample Location	CLASS 2, SLAB BLDG	Sample Intake Height	2.5'-3.0'
Sampling Depth	—	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)		Time On / Off	1004 1804
PID Reading	0.0	Time of Collection	8 hr
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.98
		Temperature (Start)	78°
		Barometric Pressure (End)	30.03
		Canister Pressure (End)	5.64
		Temperature (End)	94° (outside)

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-4
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD.	Canister ID	2286
Project #	12-414.4-19	Flow Controller ID	0038
Personnel	AD	Outdoor/(Indoor)	Indoor
Sample Location	CLASS I, CRAWLSPACE BLDG	Sample Intake Height	3.0'
Sampling Depth	—	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, (Indoor) etc.)		Time On / Off	1010 / 1810
PID Reading	0.0	Time of Collection	8 hr.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.15
		Canister Pressure (Start)	29.89
		Temperature (Start)	79°
		Barometric Pressure (End)	30.03
		Canister Pressure (End)	5.66
		Temperature (End)	94° (Outside)

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-5
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD.	Canister ID	2326
Project #	12-414.4-19	Flow Controller ID	0018
Personnel	AD	~~Outdoor~~/Indoor	Outdoor / Crawlspace
Sample Location	CRAWLSPACE ABOVE POLY	Sample Intake Height	Ground Level
Sampling Depth	—	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWLSPACE	Time On / Off	1018 1818
PID Reading	0.0	Time of Collection	8 hrs
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	30.06
		Temperature (Start)	80°
		Barometric Pressure (End)	30.03
		Canister Pressure (End)	6.14
		Temperature (End)	94°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-6
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	1710
Project #	12-414.4-19	Flow Controller ID	0076
Personnel	AD	~~Outdoor~~/Indoor	Outdoor / Crawlspace
Sample Location	CRAWL SPACE · BELOW POLY	Sample Intake Height	Ground Level
Sampling Depth	—	Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWL SPACE	Time On / Off	1026 1826
PID Reading	6.1	Time of Collection	8 hr.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	30.03
		Temperature (Start)	82°
		Barometric Pressure (End)	30.03
		Canister Pressure (End)	4.56
		Temperature (End)	94°

Vapor Sampling Log

ARM ENVIRONMENTAL SERVICES, INC.		Sample Collection Log	
		Sample ID	A-7
Client	SC DHEC	Date of Collection	9-12-19
Project	PLAY PALS	SUMMA Canister Size	6L
Location	1246 DOTHAN RD	Canister ID	1667
Project #	12-414.4-19	Flow Controller ID	0010
Personnel	AD	~~Outdoor~~/Indoor	Outdoor / Crawlspace
Sample Location	CRAWL SPACE UNDER 1238 DOTHAN RD	Sample Intake Height	Ground Level
Sampling Depth		Misc. Equipment	/
Sample Type (Soil Gas, Sub-Slab, Indoor, etc.)	CRAWLSPACE	Time On / Off	1035 1735
PID Reading	0.0	Time of Collection	8hr.
	3/16" ID Tubing = 5.43 ml/ft Hand pump = 15 ml/stroke	Approximate Purge Volume & Method	/
		Barometric Pressure (Start)	30.16
		Canister Pressure (Start)	29.46
		Temperature (Start)	82°
		Barometric Pressure (End)	30.04
		Canister Pressure (End)	15.66
		Temperature (End)	92°

APPENDIX B

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

Lab Number:	L1942598
Client:	ARM Environmental Services, Inc. 1210 First Street South Ext. Columbia, SC 29209
ATTN:	Richard Ciccolella
Phone:	(803) 783-3314
Project Name:	1246 DOTHAN RD.
Project Number:	12-414.4-19
Report Date:	09/24/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Serial_No:09241916:14

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1942598-01	A-1	AIR	1246 DOTHAN RD.	09/12/19 17:56	09/17/19
L1942598-02	A-3	AIR	1246 DOTHAN RD.	09/12/19 18:04	09/17/19
L1942598-03	A-4	AIR	1246 DOTHAN RD.	09/12/19 18:10	09/17/19
L1942598-04	A-5	AIR	1246 DOTHAN RD.	09/12/19 18:18	09/17/19
L1942598-05	A-6	AIR	1246 DOTHAN RD.	09/12/19 18:26	09/17/19
L1942598-06	A-7	AIR	1246 DOTHAN RD.	09/12/19 18:35	09/17/19
L1942598-07	SG-1	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 09:13	09/17/19
L1942598-08	SG-2	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 09:42	09/17/19
L1942598-09	SG-3	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 10:12	09/17/19
L1942598-10	SG-4	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 10:39	09/17/19
L1942598-11	SG-5	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 11:19	09/17/19
L1942598-12	SG-6	SOIL_VAPOR	1246 DOTHAN RD.	09/13/19 11:45	09/17/19
L1942598-13	UNUSED CAN #1850	SOIL_VAPOR	1246 DOTHAN RD.		09/17/19
L1942598-14	UNUSED CAN #1863	SOIL_VAPOR	1246 DOTHAN RD.		09/17/19
L1942598-15	UNUSED CAN #2866	SOIL_VAPOR	1246 DOTHAN RD.		09/17/19

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on September 4, 2019. The canister certification results are provided as an addendum.

L1942598-06 : The canister vacuum measured on receipt at the laboratory was > 15 in. Hg. Prior to sample analysis, the canisters were pressurized with UHP Nitrogen in order to facilitate the transfer of sample to the Gas Chromatograph. The addition of Nitrogen resulted in a dilution of the samples. The reporting limits have been elevated accordingly.

The WG1286753-3 LCS recovery for 1,2,4-trichlorobenzene (132%) is above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of this analyte.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative

Date: 09/24/19

AIR

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-01
Client ID: A-1
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 17:56
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/20/19 20:58
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0 200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	0.200	0 100	--	0.639	0.319	--		1
Toluene	0.713	0 050	--	2.69	0.188	--		1
Ethylbenzene	0.093	0 020	--	0.404	0.087	--		1
p/m-Xylene	0.467	0 040	--	2.03	0.174	--		1
o-Xylene	0 200	0.020	--	0.869	0.087	--		1
Naphthalene	ND	0.050	--	ND	0 262	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	96		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	98		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-02
Client ID: A-3
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 18:04
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/20/19 21:38
Analyst: TS

	ppbV			ug/m3				Dilution
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	ND	0 100	--	ND	0.319	--		1
Toluene	0.456	0.050	--	1.72	0.188	--		1
Ethylbenzene	0.078	0 020	--	0 339	0.087	--		1
p/m-Xylene	0.237	0.040	--	1.03	0.174	--		1
o-Xylene	0.102	0.020	--	0 443	0.087	--		1
Naphthalene	ND	0 050	--	ND	0.262	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	95		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	98		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-03
Client ID: A-4
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 18:10
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/20/19 22:58
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	0.141	0.100	--	0.450	0.319	--		1
Toluene	0.238	0.050	--	0.897	0.188	--		1
Ethylbenzene	0.035	0.020	--	0.152	0.087	--		1
p/m-Xylene	0.105	0.040	--	0.456	0.174	--		1
o-Xylene	0.046	0.020	--	0.200	0.087	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	95		60-140
bromochloromethane	97		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-04
Client ID: A-5
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 18:18
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/20/19 23:37
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	0.103	0.100	--	0.329	0.319	--		1
Toluene	0.172	0.050	--	0.648	0.188	--		1
Ethylbenzene	0.025	0.020	--	0.109	0.087	--		1
p/m-Xylene	0.084	0.040	--	0.365	0.174	--		1
o-Xylene	0.040	0.020	--	0.174	0.087	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	95		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-05
Client ID: A-6
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 18:26
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/21/19 00:17
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	0.100	0.100	--	0.319	0.319	--		1
Toluene	0.244	0.050	--	0.920	0.188	--		1
Ethylbenzene	0.265	0.020	--	1.15	0.087	--		1
p/m-Xylene	0.103	0.040	--	0.447	0.174	--		1
o-Xylene	0.045	0.020	--	0.195	0.087	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	96		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	98		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-06 D
Client ID: A-7
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/12/19 18:35
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 09/21/19 00:57
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Methyl tert butyl ether	ND	0.291	--	ND	1.05	--		1.456
1,2-Dichloroethane	0.045	0.029	--	0.183	0.118	--		1.456
Benzene	ND	0.146	--	ND	0.466	--		1.456
Toluene	0.456	0.073	--	1.72	0.274	--		1.456
Ethylbenzene	0.070	0.029	--	0.304	0.126	--		1.456
p/m-Xylene	0.208	0.058	--	0.903	0.253	--		1.456
o-Xylene	0.079	0.029	--	0.341	0.126	--		1.456
Naphthalene	1.11	0.073	--	5.82	0.382	--		1.456

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	92		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-07
Client ID: SG-1
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 09:13
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 01:37
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.795	0.200	--	3.00	0.754	--		1
Ethylbenzene	0.218	0.200	--	0.947	0.869	--		1
p/m-Xylene	0.717	0.400	--	3.11	1.74	--		1
o-Xylene	0.269	0.200	--	1.17	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	97		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	97		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-08
Client ID: SG-2
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 09:42
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 02:56
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.02	0.200	--	3.84	0.754	--		1
Ethylbenzene	0.259	0.200	--	1.12	0.869	--		1
p/m-Xylene	0.862	0.400	--	3.74	1.74	--		1
o-Xylene	0.309	0.200	--	1.34	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	98		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-09
Client ID: SG-3
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 10:12
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 03:36
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	1.11	0.200	--	4.18	0.754	--		1
Ethylbenzene	0.275	0.200	--	1.19	0.869	--		1
p/m-Xylene	0.915	0.400	--	3.97	1.74	--		1
o-Xylene	0.326	0.200	--	1.42	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-Difluorobenzene	100		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	101		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-10
Client ID: SG-4
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 10:39
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 04:16
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.831	0.200	--	3.13	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.659	0.400	--	2.86	1.74	--		1
o-Xylene	0.218	0.200	--	0.947	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	100		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-11
Client ID: SG-5
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 11:19
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 04:56
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.493	0.200	--	1.86	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.463	0.400	--	2.01	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	99		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

SAMPLE RESULTS

Lab ID: L1942598-12
Client ID: SG-6
Sample Location: 1246 DOTHAN RD.

Date Collected: 09/13/19 11:45
Date Received: 09/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 09/21/19 05:36
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	0.686	0.200	--	2.59	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	0.627	0.400	--	2.72	1.74	--		1
o-Xylene	0.228	0.200	--	0.990	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	100		60-140
Bromochloromethane	100		60-140
chlorobenzene-d5	96		60-140

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 09/20/19 15:21

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 07-12 Batch: WG1286751-4								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 09/20/19 16:00

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-06 Batch: WG1286753-4								
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 07-12 Batch: WG1286751-3								
Methyl tert butyl ether	92		-		70-130	-		
1,2-Dichloroethane	103		-		70-130	-		
Benzene	75		-		70-130	-		
Toluene	92		-		70-130	-		
Ethylbenzene	92		-		70-130	-		
p/m-Xylene	91		-		70-130	-		
o-Xylene	92		-		70-130	-		
Naphthalene	107		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-06 Batch: WG1286753-3								
Methyl tert butyl ether	95		-		70-130	-		25
1,2-Dichloroethane	99		-		70-130	-		25
Benzene	74		-		70-130	-		25
Toluene	91		-		70-130	-		25
Ethylbenzene	92		-		70-130	-		25
p/m-Xylene	86		-		70-130	-		25
o-Xylene	90		-		70-130	-		25
Naphthalene	104		-		70-130	-		25

Lab Duplicate Analysis
Batch Quality Control

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 07-12 QC Batch ID: WG1286751-5 QC Sample: L1942598-07 Client ID: SG-1						
Methyl tert butyl ether	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
Benzene	ND	ND	ppbV	NC		25
Toluene	0.795	0.818	ppbV	3		25
Ethylbenzene	0.218	0.212	ppbV	3		25
p/m-Xylene	0.717	0.712	ppbV	1		25
o-Xylene	0.269	0.264	ppbV	2		25
Naphthalene	ND	ND	ppbV	NC		25
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1286753-5 QC Sample: L1942598-02 Client ID: A-3						
Methyl tert butyl ether	ND	ND	ppbV	NC		25
1,2-Dichloroethane	ND	ND	ppbV	NC		25
Benzene	ND	0.102	ppbV	NC		25
Toluene	0.456	0.472	ppbV	3		25
Ethylbenzene	0.078	0.081	ppbV	4		25
p/m-Xylene	0.237	0.243	ppbV	3		25
o-Xylene	0.102	0.103	ppbV	1		25
Naphthalene	ND	ND	ppbV	NC		25

Serial_No:09241916:14

Project Name: 1246 DOTHAN RD.

Lab Number: L1942598

Project Number: 12-414.4-19

Report Date: 09/24/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1942598-01	A-1	0758	Flow 3	09/04/19	301014		-	-	-	Pass	10.0	9.4	6
L1942598-01	A-1	1904	6.0L Can	09/04/19	301014	L1938543-03	Pass	-29.6	-7.5	-	-	-	-
L1942598-02	A-3	0490	Flow 3	09/04/19	301014		-	-	-	Pass	10.0	9.3	7
L1942598-02	A-3	2715	6.0L Can	09/04/19	301014	L1938543-04	Pass	-29.1	-5.8	-	-	-	-
L1942598-03	A-4	0038	Flow 4	09/04/19	301014		-	-	-	Pass	10.0	8.3	19
L1942598-03	A-4	2286	6.0L Can	09/04/19	301014	L1938543-03	Pass	-29.2	-5.8	-	-	-	-
L1942598-04	A-5	0018	Flow 4	09/04/19	301014		-	-	-	Pass	10.0	9.9	1
L1942598-04	A-5	2326	6 0L Can	09/04/19	301014	L1938543-03	Pass	-2.96	-6.3	-	-	-	-
L1942598-05	A-6	0076	Flow 3	09/04/19	301014		-	-	-	Pass	10.0	12.3	21
L1942598-05	A-6	1710	6.0L Can	09/04/19	301014	L1938543-03	Pass	-29.6	-4.9	-	-	-	-
L1942598-06	A-7	0010	Flow 4	09/04/19	301014		-	-	-	Pass	10.0	11.1	10
L1942598-06	A-7	1667	6.0L Can	09/04/19	301014	L1938543-03	Pass	-29.6	-15.6	-	-	-	-
L1942598-07	SG-1	01196	SV200	09/04/19	301014		-	-	-	Pass	217	190	13
L1942598-07	SG-1	2362	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-08	SG-2	0535	SV200	09/04/19	301014		-	-	-	Pass	216	193	11

Serial_No:09241916:14

Project Name: 1246 DOTHAN RD.

Lab Number: L1942598

Project Number: 12-414.4-19

Report Date: 09/24/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1942598-08	SG-2	2867	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-09	SG-3	0540	SV200	09/04/19	301014		-	-	-	Pass	216	194	11
L1942598-09	SG-3	474	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-10	SG-4	01182	SV200	09/04/19	301014		-	-	-	Pass	214	195	9
L1942598-10	SG-4	2213	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-11	SG-5	0995	SV200	09/04/19	301014		-	-	-	Pass	215	188	13
L1942598-11	SG-5	450	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-12	SG-6	01052	SV200	09/04/19	301014		-	-	-	Pass	215	190	12
L1942598-12	SG-6	535	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	0.0	-	-	-	-
L1942598-13	UNUSED CAN #1850	01029	Flow 4	09/04/19	301014		-	-	-	Pass	10.0	11.5	14
L1942598-13	UNUSED CAN #1850	1850	6.0L Can	09/04/19	301014	L1938543-05	Pass	-28.6	-29.4	-	-	-	-
L1942598-14	UNUSED CAN #1863	0733	Flow 4	09/04/19	301014		-	-	-	Pass	10.0	11.8	17
L1942598-14	UNUSED CAN #1863	1863	6.0L Can	09/04/19	301014	L1938543-03	Pass	-29.5	-29.4	-	-	-	-
L1942598-15	UNUSED CAN #2866	01194	SV200	09/04/19	301014		-	-	-	Pass	219	196	11
L1942598-15	UNUSED CAN #2866	2866	2.7L Can	09/04/19	301014	L1938709-01	Pass	-29.6	-11.6	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/26/19 18:45
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	92		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/26/19 18:45
Analyst: TS

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-03
Client ID: CAN 983 SHELF 37
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	92		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/26/19 19:24
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	91		60-140
Bromochloromethane	93		60-140
chlorobenzene-d5	87		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/26/19 19:24
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-04
Client ID: CAN 694 SHELF 38
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	91		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/26/19 20:04
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	90		60-140
Bromochloromethane	92		60-140
chlorobenzene-d5	88		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/26/19 20:04
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938543
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938543-05
Client ID: CAN 1809 SHELF 39
Sample Location:

Date Collected: 08/24/19 12:00
Date Received: 08/26/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	90		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	92		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 08/27/19 07:59
Analyst: TS

	ppbV			ug/m3				Dilution
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Factor
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	86		60-140
Bromochloromethane	88		60-140
chlorobenzene-d5	81		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 08/27/19 07:59
Analyst: TS

	ppbV			ug/m3				
Parameter	Results	RL	MDL	Results	RL	MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT

Lab Number: L1938709
Report Date: 09/24/19

Air Canister Certification Results

Lab ID: L1938709-01
Client ID: CAN 482 SHELF 7
Sample Location:

Date Collected: 08/26/19 16:00
Date Received: 08/27/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	86		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	83		60-140

Serial_No:09241916:14

Project Name: 1246 DOTHAN RD.
Project Number: 12-414.4-19

Lab Number: L1942598
Report Date: 09/24/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	***Custody Seal***
NA	Present/Intact

Container Information

Container ID	***Container Type***	***Cooler***	***Initial pH***	***Final pH***	***Temp deg C***	***Pres***	***Seal***	***Frozen Date/Time***	***Analysis(*)***
L1942598-01A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-02A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-03A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-04A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-05A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-06A	Canister - 6 Liter	NA	NA			Y	Present/Intact		TO15-SIM(30)
L1942598-07A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-08A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-09A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-10A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-11A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-12A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		TO15-LL(30)
L1942598-13A	Canister - 6 Liter	NA	NA			Y	Present/Intact		CLEAN-FEE()
L1942598-14A	Canister - 6 Liter	NA	NA			Y	Present/Intact		CLEAN-FEE()
L1942598-15A	Canister - 2.7 Liter	NA	NA			Y	Present/Intact		CLEAN-FEE()

*Values in parentheses indicate holding time in days

Project Name:	1246 DOTHAN RD.	**Lab Number:**	L1942598
Project Number:	12-414.4-19	**Report Date:**	09/24/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	1246 DOTHAN RD.	**Lab Number:**	L1942598
Project Number:	12-414.4-19	**Report Date:**	09/24/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensates" are byproducts of the extraction/concentration procedures when acetone is introduced in the process.

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

Project Name:	1246 DOTHAN RD.	**Lab Number:**	L1942598
Project Number:	12-414.4-19	**Report Date:**	09/24/19

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology. **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

Serial_No:09241916:14

AIR ANALYSIS

PAGE 1 OF 2

CHAIN OF CUSTODY

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 9/17/19

ALPHA Job #: L1942598

Client Information

Client: ARM ENVIRONMENTAL SVCS
Address: 1210 FIRST STREET SOUTH
COLUMBIA SC 29209
Phone: 803 783 3314
Fax: 803 783 2587
Email: RCICCOLELLA@ARMENV.com
☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 1246 DOTHAN RD
Project Location: 1246 DOTHAN RD
Project #: 12-414.4-19
Project Manager: RICHARD CICCOLELLA
ALPHA Quote #:

Turn-Around Time

☑ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☐ FAX
☑ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☑ Same as Client info PO #: 12-414.4-19

Regulatory Requirements/Report Limits

State/Fed	Program	Res/Comm
EPA/OSWER	VISL	

Other Project Specific Requirements/Comments:
Project-Specific Target Compound List: * PLEASE LIMIT REPORTING TO ATTACHED LIST

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I.D. Can	I.D. - Flow Controller	TO-15	TO-15 SIM	APH	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
L1942598 .01	A-1	9/12/19	0956	1756	29.90	6.41	AA	AD	6	1904	0758	X					
	~~A-2~~																
.02	A-3	9/12/19	1004	1804	29.98	5.64	AA	AD	6	2715	0490	X					
.03	A-4	9/12/19	1010	1810	29.89	5.66	AA	AD	6	2286	0038	X					
.04	A-5	9/12/19	1018	1818	30.06	6.14	AA	AD	6	2326	0018	X					
.05	A-6	9/12/19	1026	1826	30.03	4.56	AA	AD	6	1710	0076	X					
.06	A-7	9/12/19	1035	1835	29.46	15.66	AA	AD	6	1667	0010	X					

SEE TARGET COMPOUND LIST ATTACHED

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:
[illegible] RICHARD CICCOLELLA FedEx	9/13/19 1300	FedEx [illegible]	9/17/19 12:45

Serial_No:09241916:14

AIR ANALYSIS

PAGE 1 OF 2

CHAIN OF CUSTODY

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 9/17/19

ALPHA Job #: L1942598

Client Information
Client: ARM ENVIRONMENTAL SVCS
Address: 1210 FIRST STREET SOUTH
COLUMBIA SC 29209
Phone: 803 783 3314
Fax: 803 783 2587
Email: RCICCOLELLA@ARMENV.COM
☐ These samples have been previously analyzed by Alpha

Project Information
Project Name: 1246 DOTHAN RD
Project Location: 1246 DOTHAN RD
Project #: 12-414.4-19
Project Manager: RICHARD CICCOLELLA
ALPHA Quote #:

Turn-Around Time
☑ Standard ☐ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables
☐ FAX
☑ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☑ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information
☑ Same as Client Info PO #: 12-414.4-19

Regulatory Requirements/Report Limits

State/Fed	Program	Res/Comm
EPA/OSWER	VISL	

Other Project Specific Requirements/Comments:
Project-Specific Target Compound List: PLEASE LIMIT REPORTING TO ATTACHED LIST

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SIM	APH (Method has reference TO-3 ☐)	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
L1942598.07	SG-1	9/13/19	0858	0913	29.61	0	SV	AO	2.7	2362	01196	X					SEE TARGET COMPOUND LIST ATTACHED
.08	SG-2	9/13/19	0926	0942	29.56	0	SV	AO	2.7	2867	0535	X					
.09	SG-3	9/13/19	0956	1012	29.62	0	SV	AO	2.7	474	0540	X					
.10	SG-4	9/13/19	1023	1039	29.80	0	SV	AO	2.7	2213	01182	X					
.11	SG-5	9/13/19	1102	1119	30.03	0	SV	AO	2.7	450	0555	X					
.12	SG-6	9/13/19	1130	1145	29.7	0	SV	AO	2.7	535	01052	X					

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
Richard Ciccolella / RICHARD CICCOLELLA	9/13/19 (1300)	[illegible]	9/17/19 1345

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Rev: (25-Sep-15)

ARM ENVIRONMENTAL SERVICES

For Play Pals site, 1246 Dothan Road, Columbia, SC

*Please limit reporting to the following list:

- Methyl Tert Butyl Ether
- 1,2-Dichloroethane
- Benzene
- Toluene
- Ethylbenzene
- p/m Xylene
- o-Xylene
- Naphthalene

LIMIT TO THESE

September 2019

1246 Dothan Road
Columbia, SC

Please Note: The attached chain of custody may cover samples in multiple boxes. If so, a copy of the appropriate chain of custody is included in each box.

Also returned in the boxes may be unlabeled canisters and flow controllers that were not used.

Please make sure to limit reporting to the list attached to the chain.

Thanks,

Richard Ciccolella
ARM Environmental Services, Inc.
1210 First Street South
Columbia, SC 29209
rciccolella@armenv.com
ph: 803 783-3314
fax: 803 783-2587

November 7, 2019

UST
NOV 08 2019
PROGRAM

ENVIRO-TEST SERVICES

UST
187
Tech
DOCKETING

Mr. Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
UST Program
Bureau of Land and Waste management

RE: October 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco and Play Pals Day Care
Permit # 11946; CA # 60595
4335 Broad River Rd Columbia, SC
Richland County

Dear Mr. Baldwin

Enviro-Test Services is continuing the removal of Free Product and petroleum contaminated water at the Play Pals Day Care.

A total of (6) Free Product Vacuum Recovery Events were performed through out the month of October. They began on October 1st and then October 7th, October 11th , October 20th October 23rd and October 31st . The Free Product Recovery events performed increased by one in October. There was very little rain the first 2 weeks of the month but there were several heavy rain storms at the end of the month. The groundwater level continues to stay low at 5.90 ft. in Recovery Trench A. And GWL of 4.63 in Trench B from TOC.

On October 23, 2019 is the first time there was No measurable Free Product in Recovery Trench A since the Release last year in November ,2018, although if you shine a flash light in Vacuum point 2 you can see globs of free product go by as you vacuum from Vacuum point 3. Trench B pit groundwater level continues to stay low at 3.40 ft. and still has no free product or sheen on top of the recovery well. Trench E and the over fill pit, Trench C and Trench D also have no sheen on top of the water. There has been an increase of standing water in the sumps under the Play Pals Day Care due to the heavy rains at the end of the month.

There was a total of 2,619 gallons of contact water recovered and 2 gallons of free product recovered which was a decrease of 172 gallons of contact water and 24 gallons less of Free Product than last month.

These Events produced 2,619 gallons of contaminated petroleum water and 2 gallons of thick very dark brown-black free product.
See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care. There was one hour of maintenance of absorbent booms and barrier nets for safety protection this month

The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. The other Absorbent Booms are located in the ditch at the rear of the Day Care which leads to the storm drain that has one in it and there is another one in the ditch by the apartments. There was no replacement of absorbent booms this month.
See Site Map : Figure 1

ARM Environmental performed an air sample event on September 13, 2019 in side and around Play Pals day care the report has been turned in to DHEC along with a Receptor Survey.

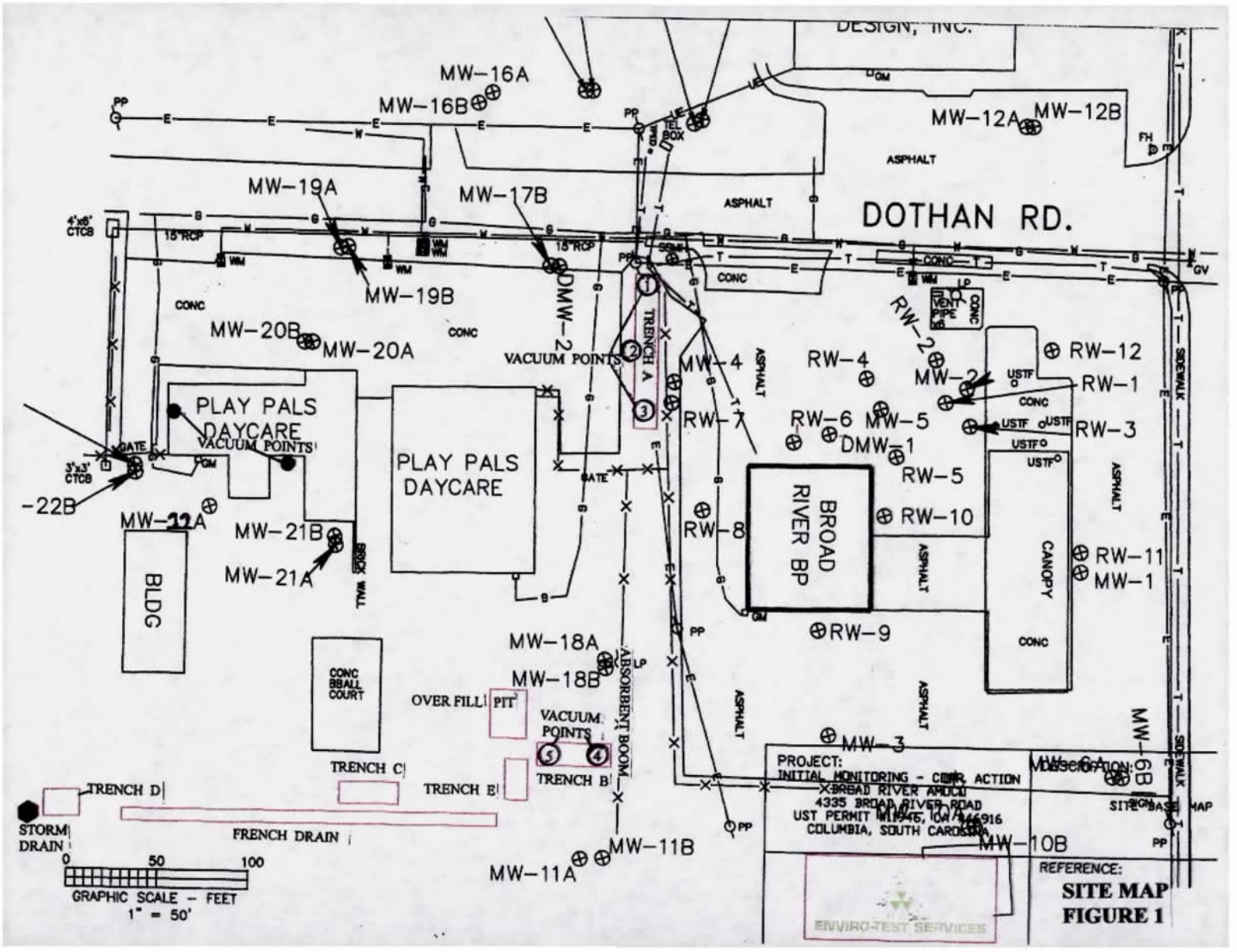
Enviro-Test will continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed.

Thank You, for Recognizing our commitment to continue working on this site.

Terry L. Teatte
Project Manager
Enviro-Test Services Inc.

FIGURE 1

Site Map


DESIGN, INC.
MW-16A
MW-16B
MW-12A
MW-12B
ASPHALT
DOTHAN RD.
MW-19A
MW-17B
MW-19B
DMW-2
TRENCH A
VACUUM POINTS
MW-20B
MW-20A
CONC
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
MW-4
RW-4
MW-2
RW-2
RW-12
RW-1
RW-7
RW-6
MW-5
RW-3
DMW-1
RW-5
BROAD RIVER BP
RW-10
RW-8
CANOPY
RW-11
MW-1
RW-9
MW-22B
MW-22A
MW-21B
MW-21A
BLDG
BRICK WALL
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL PIT
VACUUM POINTS
ABSORBENT BOOM
TRENCH C
TRENCH B
TRENCH D
TRENCH E
FRENCH DRAIN
STORM DRAIN
MW-3
MW-6A
MW-6B
MW-10A
MW-10B
MW-11B
MW-11A
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #1946, CR #946916
COLUMBIA, SOUTH CAROLINA
DESCRIPTION:
SITE BASE MAP
REFERENCE:
SITE MAP
FIGURE 1
ENVIRO-TEST SERVICES
0 50 100
GRAPHIC SCALE - FEET
1" = 50'

ATTACHMENT 1

DISPOSAL MANAFEST

NON-HAZARDOUS WASTE 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 Document No 2471

2. Page 1 of

3 Generator's Name and Mailing Address: Broad River BP / Fred
4335 Broad River Rd
Columbia, S.C

12-414.2-18

4 Generator's Phone ( )

5. Transporter 1 Company Name: ARM

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7 Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: TK Tank Services
425 Boulevard Rd
Sumter, S.C

10. US EPA ID Number

E State Facility's ID

F Facility's Phone

11 WASTE DESCRIPTION	12 Containers No.	12 Containers Type	13 Total Quantity	14. Unit Wt./Vol
a NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2621	Gal
c				
d				

GENERATOR

G Additional Descriptions for Materials Listed Above

2 gallons - fuel

H Handling Codes for Wastes Listed Above

15 Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

16 **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Billy Pittenger Agent for Broad River BP Fred Cuschin

Signature: Billy Pittenger

Date: Month 10 Day 30 Year 19

TRANSPORTER

17 Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy P. Ittenger

Signature: Billy Pittenger

Date: Month 10 Day 30 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19 Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of the waste materials covered by this manifest, except as noted in item 19

Printed/Typed Name: Casey Newman

Signature: Casey Newman

Date: Month 10 Day 30 Year 19

NON-HAZARDOUS WASTE

F 14 © 2002 LABELMASTER (800) 621-5808 www.labelmaster.com

PRINTED ON RECYCLED PAPER

Rev 3/95

CERTIFICATE OF DISPOSAL

T K TANK SERVICES, INC.

Certifies to all that

2,623 GALLONS

Of Nonhazardous, Petroleum Contaminated Water / Product

Have been disposed of in accordance with EPA regulations on petroleum contaminated water.

This product was generated at

BROAD RIVER BP

10/30/2019

DATE

SIGNATURE

Underground Storage Tank Management Division
Field Activity Request Form

Date of Request: 11/19/19

Type of Request (Check one):
- ☐ Emergency (<2 Working Days)
- ☑ Specific (1-5 Working Days)
- ☐ Routine (10 Working Days)

Please specify type of work to be completed:

Site ID #: 11946

Site Name: Broad River Amoco

Site Address: 3445 Broad River Road, Columbia, SC

County: Richland

Project Manager: B. Baldwin

Remember to Establish Cost Proposals

PACE CA#: _____ PACE PO#: _____

Field Staff Information:

Date Field Activity Completed: 11/19/19

Completed By: C. White

Date Field Notes Entered into EFIS: 11/21/19

Notes: Gauge all the wells.

dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 11/19/19	Site ID #: 11946	Site Name: Broad River Amoco
County: Richland	Project Manager: B. Baldwin	Field Personnel: C. White

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-1A	25.5	15.5-25.5	—	16.58	—			Y	2/2	Y
MW-1B	38.5	28.5-38.5	—	16.67	—			Y	2/2	Y
MW-R2-9	18	8-18	—	16.47	—			Y	2/2	Y
MW-R2-16	19	9-19	—	16.58	—			Y	2/2	N
MW-R2-11	18	8-18	—	16.47	—			Y	2/2	Y
RW-9	40	10-40	—	16.32	—			Cracked	2/2	Y
MW-3			14.69	19.80	5.11			N/A	4	N
R2-8	125	2.5-12.5	—	7.78	—			Y	2/2	Y
RW-C	13	3-13	10.58	11.58	1.00			Y	2/2	Y
R2-12	18	8-18	10.08	10.44	0.36			Y	2/2	Y
RW-8	32	2-32	—	11.04	—			Y	2/2	Y
RW-7	40	10-40	—	10.94	—			Y	2/2	Y
MW-4			—	11.01	—			Y	2/2	Y

Notes: MW-3 cap busted.

Signature: C White

-UST Field Data Information Sheet – Monitoring Well Gauging

-Purpose of the form is to record information gathered during a monitoring well gauging event
-DHEC UST Project Managers and Field Staff
-Item-by-item instructions for completing the form:
    Fill in all Site Information boxes
    Record Well Gauging Information for all necessary wells
    Record any applicable notes
    Sign the form
-Form is scanned and saved electronically; Record Group Number 169, Retention Schedule 10304

dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 11/19/19	Site ID #: 11946	Site Name: Broad River Amoco
County: Richland	Project Manager: B. Baldwin	Field Personnel: C. White

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
R2-14			—	10.86	—			Y	2/2	Y
R2-6	15	5-15	9.71	9.74	0.03'			Y	2/2	Y
R2-7	15	5-15	8.35	14.80	6.45'			Y	2/2	Y
RW-D			—	9.89	—			cracked	2/2	Y
RW-6	35	5-35	—	~~12.73~~ 13.39	—			Y	1/2	Y
QW-1			—	12.13	—			Y	1/2	Y
MW-14A	20	10-20	—	[redacted]	—			Y	1/2	Y
MW-14B	38.5	28.5-38.5	—	14.45	—			Y	1/2	Y
MW-15A	17	7-17	—	16.90	—			Y	2/2	N
MW-15B	40	30-40	—	15.89	—			Y	2/2	N
MW-D2	65	60-65	—	8.39	—			Y	2/2	N
MW-17B	39.5	29.5-39.5	—	~~8.64~~	—			Y	2/2	Y
MW-19B	34	24-34	—	8.40	—			None	No	Y

Notes: MW-19B: Casing C Y

Signature: _____

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dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date:	Site ID #:	Site Name:
County:	Project Manager:	Field Personnel:

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW20A	15	5-15	—	2.25	—			Y	2/2	Y
MW20B	35	25-35	—	4.09	—			Y	1/2	Y
DW-3	65	60-65	—	2.20	—			Y	2/2	Y
22B	35	25-35	—	2.24	—			Y	2/2	Y
22A	8	1-8	—	less than 1ft	—			Y	2/2	Y
21A	12	2-12	—	TOC	—				2/2	Y
21B	35	25-35	—	2.23	—			Y	2/2	Y
18A	13	3-13		OGC				Y	2/2	Y
19B	35	25-35	—	1.58	—			Y	2/2	Y

Notes: Total FP = 21.64'

Signature: _____

-UST Field Data Information Sheet – Monitoring Well Gauging

-Purpose of the form is to record information gathered during a monitoring well gauging event
-DHEC UST Project Managers and Field Staff
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    Record any applicable notes
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dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 11/19/19	Site ID #: 11946	Site Name: Broad River Amoco
County: Richland	Project Manager: B. Baldwin	Field Personnel: C. White

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-9B			–	16.06	–	–	N	Crack	Y	Y
MW-9A			–	16.08	–	–	N	Crack	Y	Y
MW-8B			–	15.06	–	–	N	Y	Y	N
MW-8A			–	15.34	–	–	N	Y	Y	Y
MWR-2-1			–	12.75	–	–	N	Y	Y	Y
MWR-2-4			–	14.32	–	–	N	Y	-1	Y
odor MWR-2-5				14.05					Y	Y
odor RW-A			7.21	7.24	0.03'				Y	Y
RW-2			–	14.69	–				Y	Y
RW-1			–	14.59	–				N	Y
RW-3			–	15.01	–				N	Y
RW-5		18-38	13.62	13.65	0.03'			Crack		
MW-5	19.52		13.02	14.18						

Notes: _____

Signature: _____

DHEC 0424 (10/2012)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

-UST Field Data Information Sheet – Monitoring Well Gauging

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dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 11/19/19	Site ID #: 11946	Site Name: Broad River Amoco
County: Richland	Project Manager: B. Baldwin	Field Personnel: C. White

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MWR-7-15		8-18	—	16.24	—	~	N	Y	Y	Y
RW-10		10-40	13.66	22.30	8.64	—	N	Y	Y	Y
RV-10			13.69	22.31	8.62	~	N	Crack	Y	Y
RW-4		20.5-40.5	—	19.93	—	—	N	Crack	N	Y
MWR-2-10		7-17	—	13.79	—	—	N	Y	Y	Y
RV-12			15.94	~~15.96~~	0.02	—	N	Y	Y	Y
MWR-7-2		8-18		13.01		—	N	Y	-1	Y
RV-11		10-40		16.54			N	Y	Y	Y
MWR-2-3		9-19		16.78			N	Y	Y	Y
MW-10A		7.5-17.5		4.87				Y	Y	Y
MW-10B		29-39		12.32				Y	Y	N
MW-7-13		1-11		9.49				Y	Y	Y
MW-11A				6.13				Y	-1	N
MW-11B				5.83				Y	-1	N

Notes: _____

Signature: _____

-UST Field Data Information Sheet – Monitoring Well Gauging

-Purpose of the form is to record information gathered during a monitoring well gauging event
-DHEC UST Project Managers and Field Staff
-Item-by-item instructions for completing the form:
    Fill in all Site Information boxes
    Record Well Gauging Information for all necessary wells
    Record any applicable notes
    Sign the form
-Form is scanned and saved electronically; Record Group Number 169, Retention Schedule 10304

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 11/19/19	Site ID #: 11946	Site Name: Broad River Amoco
County: Richland	Project Manager: B. Baldwin	Field Personnel: C. White

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-12A		10 - 20		13.76			N	Y	- /	Y
MW-12B		26.5 - 36.5		13.00			N	Y	Y	Y
MW-13A		12 - 22		18.69			~	Y	Y	N
MW-13B		25.5 - 35.5		18.17			~	Y	Y	N
MW-7A				15.82			Y	Y	Y	Y

Notes: 8.69 FP
12.45
21.64 T.D FP

Signature: C White

-UST Field Data Information Sheet – Monitoring Well Gauging

-Purpose of the form is to record information gathered during a monitoring well gauging event
-DHEC UST Project Managers and Field Staff
-Item-by-item instructions for completing the form:
    Fill in all Site Information boxes
    Record Well Gauging Information for all necessary wells
    Record any applicable notes
    Sign the form
-Form is scanned and saved electronically; Record Group Number 169, Retention Schedule 10304

UST
2019
PROGRAM

November 13, 2019

ENVIRO-TEST SERVICES

UST
189
Wells
DOCKETING

Mr. Bradly Baldwin, Hydrogeologist
Corrective Action & Quality Assurance Section
UST Program
Bureau of Land and Waste management

RE: November 2019 Summary Report for Emergency Free Product Abatement
Broad River Amoco and Play Pals Day Care
Permit # 11946; CA # 60772
4335 Broad River Rd Columbia, SC
Richland County

Dear Mr. Baldwin,

Enviro-Test Services was terminate from the Free Product Abatement project on November 21, 2019 and told to remove all equipment at the Play Pals Day Care.

A total of (6) Free Product Vacuum Recovery Events were performed through out the month of November. They began on November 1st and then November 8th, November 11th. November 15th November 19th and November 20th . The Free Product Recovery events were the same number as the month of October. There were several heavy rain storms this month. The groundwater level has increased to 3.75 ft. in Recovery Trench (A). And GWL of 1.47 ft. in Recovery Trench (B).
On November there was 0.15 ft of free product in Trench A. on November 20th there was no measurable free product in trench A. Trench B pit groundwater level has risen to 1.47 ft. and still has no free product or sheen on top of the recovery well. Trench E and the over fill pit, Trench C and Trench D also have no sheen on top of the water. There has been a decrease of standing water under the Play Pals Day Care due to the automatic electric sump pumps are back on. There still need to be explosion proof electric Sump and ventilation motors installed as part of the Corrective Action.

(NOTE): ARM informed us the Air Sampling event showed there were petroleum vapors present in the family residence next to the day care.

There was a total of 2,684 gallons of contact water recovered and 100 gallons of free product recovered which was an increase of 64 gallons of contact water and 98 gallons more of Free Product than last month.

These Events produced 2,684 gallons of contaminated petroleum water and 100 gallons of thick very dark brown-black free product.
See Disposal Manifest Attachment A:

These Task include vacuuming petroleum contact water from 5 Recovery wells in 2 Recovery trenches, and 2 open Pits, Storm drains and under the building of Play Pals Day Care.
The Absorbent booms are replaced when they no longer absorb the free product. They are located against the fence between the BP station and the day care where the free product flows out of the embankment. And the drainage path to the storm drain at rear of the day care.

See Site Map: Figure 1

Enviro-Test Services will not continue Emergency Free Product Abatement until the Corrective Action begins at the above facilities as directed on November 21, 2019.

Enviro-Test Services has demobilized and removed the AFVR equipment and the tanks from the site and installed safety barriers around the open pits. The fence around the day care remains in place until the Corrective Action contractor takes over the project per the request from DHEC project manager Brad Baldwin.

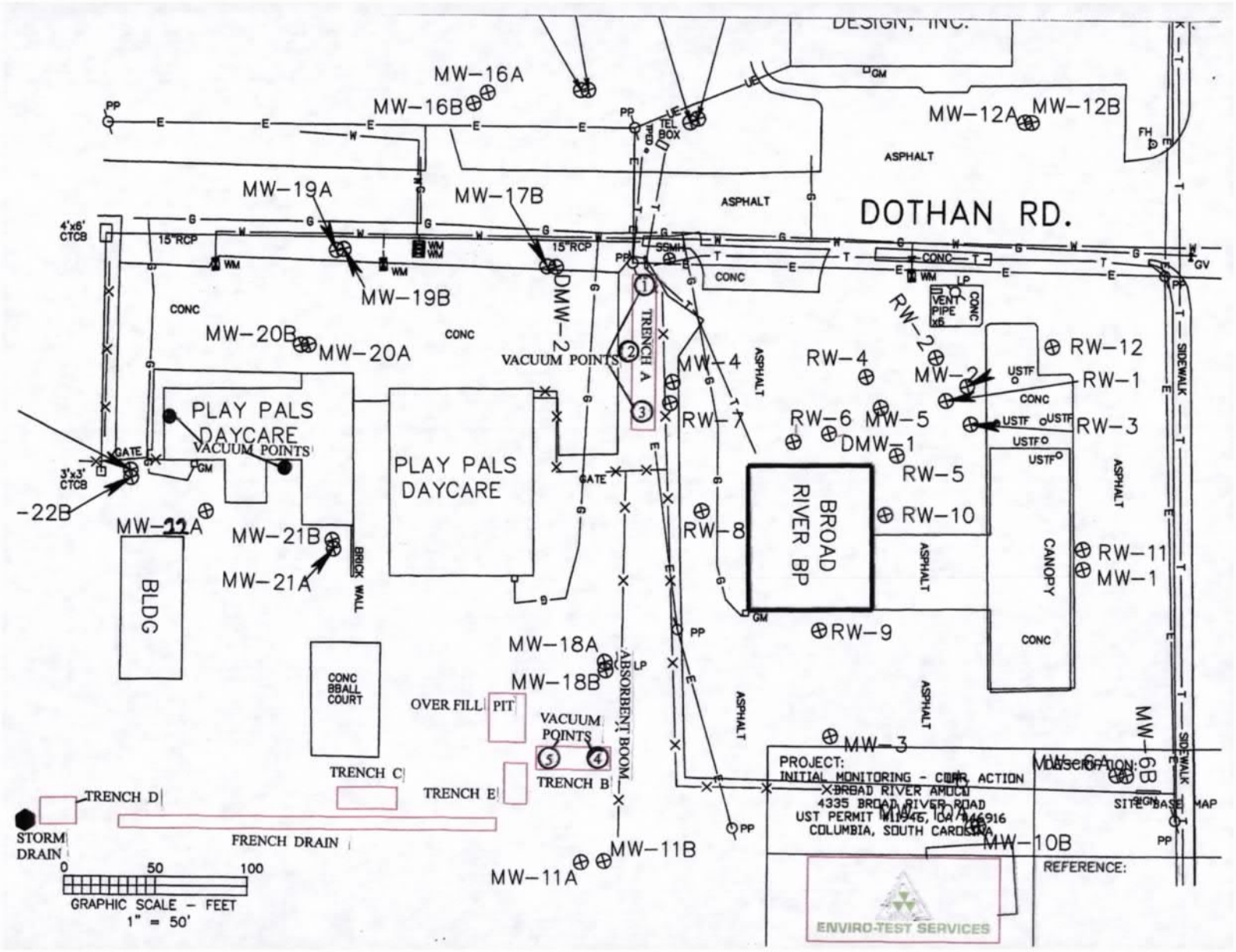
Thank You, for Recognizing our commitment to work on this project.

Terry L. Teate

Terry L. Teate
Project Manager,
Enviro-Test Services Inc.

FIGURE 1

SITE MAP


DESIGN, INC.
MW-16A
MW-16B
MW-12A
MW-12B
ASPHALT
DOTHAN RD.
MW-19A
MW-17B
MW-19B
DMW-2
MW-20B
MW-20A
VACUUM POINTS
TRENCH A
MW-4
RW-4
MW-2
RW-12
RW-1
RW-2
RW-7
RW-6
MW-5
RW-3
DMW-1
RW-5
PLAY PALS DAYCARE
VACUUM POINTS
PLAY PALS DAYCARE
BROAD RIVER BP
RW-10
RW-8
RW-11
MW-1
CANOPY
MW-22B
MW-22A
MW-21B
MW-21A
BLDG
BRICK WALL
RW-9
MW-18A
MW-18B
CONC BBALL COURT
OVER FILL PIT
VACUUM POINTS
ABSORBENT BOOM
MW-3
MW-6A
MW-6B
TRENCH C
TRENCH E
TRENCH B
TRENCH D
FRENCH DRAIN
STORM DRAIN
MW-11B
MW-11A
MW-10B
PROJECT:
INITIAL MONITORING - CORR. ACTION
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11945, ID# 446916
COLUMBIA, SOUTH CAROLINA
DESCRIPTION:
SITE BASE MAP
REFERENCE:
ENVIRO-TEST SERVICES
0 50 100
GRAPHIC SCALE - FEET
1" = 50'

ATTACHMENT A

DISPOSAL MANAFEST

NON-HAZARDOUS WASTE 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 Document No. 2475

2. Page 1 of

3. Generator's Name and Mailing Address: Broad River Rd BP, 4335 Broad River Rd, Columbia, S.C

12-414.2-18

4. Generator's Phone ( )

5. Transporter 1 Company Name: ARM

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address: Tk Tank Services, 425 Boulevard Rd, Sumter S.C

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLUEM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLUEM CONTAMINATED WATER	1	TT	2684 2784	GAL
c.				
d.				

G. Additonal Descriptions for Materials Listed Above: 180 Xgallon fuel

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC
P.O. BOX 50285
COLUMBIA, SC 29250

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Billy Pitterger Agent for Broad River Rd BP Fred Cuchin

Signature: Billy Pitterger

Date: Month 11 Day 20 Year 19

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pitterger

Signature: Billy Pitterger

Date: Month 11 Day 20 Year 19

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Casey Newman

Signature: Casey Newman

Date: Month Day Year

NON-HAZARDOUS WASTE

F-14 © 2002 LABELMASTER (800) 621-5808 www.labelmaster.com

PRINTED ON RECYCLED PAPER USING SOYBEAN INK

Rev. 3/95

CERTIFICATE OF DISPOSAL

T K TANK SERVICES, INC.

Certifies to all that

2,784 GALLONS

Of Nonhazardous, Petroleum Contaminated Water / Product

Have been disposed of in accordance with EPA regulations on petroleum contaminated water.

This product was generated at

BROAD RIVER RD BP

11/20/2019

DATE

SIGNATURE

ARM ENVIRONMENTAL SERVICES, INC.

ASSESSMENT & REMEDIAL SERVICES *armenv.com*

TRANSMITTAL COVER SHEET

TO: **Arthur Shrader, Hydrogeologist**

COMPANY / AGENCY: **UST Program / Bureau of Land and Waste Management**

FROM: **Michael Faris**

RE: **Broad River Amoco; UST Permit #11946**
QAPP Appendix B, Revision 2

DATE: **June 15, 2012**

TRANSMITTAL VIA: **_✓_ Standard US Mail** **___ Priority US Mail**
___ Overnight Courier **___ Hand Delivery**

COMMENTS:

Enclosed you will find the revised QAPP Appendix B Contractor Addendum text for the Assessment requested at the site. This was a Terry Teate (ETS) site that already had an approved QAPP addendum. The text has been revised to reflect ARM's personnel and QA/QC information

Please do not hesitate to give me a call if you have any questions or if further information is required.

Sincerely,
ARM Environmental Services, Inc.

Michael Faris, P.G.
Senior Geologist

1210 1st STREET SOUTH EXTENSION / COLUMBIA, SC 29209 / phone 803-783-3314 fax 803-783-2587

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
Broad River Amoco, UST Permit # 11946

4335 Broad River Road, Columbia, SC – Richland County

Prepared by: Michael Faris
ARM Environmental Services Inc. - SCDHEC Certified Contractor No. 4
Date: June 14, 2012

Approvals

Arthur Shrader, Hydrogeologist SCDHEC Project Manager	_____ Signature	Date_____
Andrew Wilson, P.G. Contractor QA Manager	Andrew Wilson Signature	Date 6/15/12
Michael Faris, P.G. Site Rehabilitation Contractor	Michael Faris Signature	Date 6/15/12
Michael Woodrum Laboratory Director	Michael A. Woodrum Signature	Date 6/15/12

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Attachment A: Tier II Assessment Plan and Assessment Component Cost Agreement
Attachment B: Standard Operating Procedures (SOP)
Attachment C: Access Analytical, Inc. – Chain of Costody

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Arthur Shrader, Hydrogeologist	SCDHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Michael Faris, PG	Site Rehabilitation Contractor	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	mfaris@armenv.com
Joseph Goings, PG	Field Manager,	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	jgoings@armenv.com
Andrew Wilson, PG	Project QA Manager	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	awilson@armenv.com
Michael Woodrum	Laboratory Director	Shealy Environmental Services,Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803 791-9700	803 791-9111	mwoodrum@shealylab.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
Technical Project Manager	Arthur Shrader, Hydrogeologist	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Site Rehabilitation Contractor	Michael Faris, PG	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	mfaris@armenv.com
Field Manager	Terry Teate	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	jgoings@armenv.com
Project QA Manager	Andrew Wilson, PG	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	awilson@armenv.com
Analytical	Michael	Shealy Environmental	803 791-9700	803 791-9111	mwoodrum@sh

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Laboratory Director	Woodrum	Services,Inc. 106 Vantage Point Dr. West Columbia, SC 29172			ealylab.com

Table 2A Addendum Role Identification and Contact Information

Technical Project Manager: The Technical Project Manager (Art Shrader) is responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites. The Technical Project Manager performs day-to-day review of plans and reports related to site rehabilitation activities on his or her assigned sites. These reviews include verification and analysis of data laboratories and recommendations for future work. The Technical Project Manager is responsible for the review of and approval of the site-specific QAPPs to ensure compliance with the UST Master QAPP. The Technical Project Manager is also responsible for validating the Project Data.

Site Rehabilitation Contractor: The role of the Contractor (ARM Environmental Services, Inc.) is to manage and coordinate field and office activities in order to complete all phases of the project. This includes, but not limited to, preparation of Quality Assurance Project Plan Contractor Addendum, property access, oversight of field activities, data analysis and interpretation, validating and verifying project data and preparation of a report. ARM is a Class I and Class II site Rehabilitation Contractor.

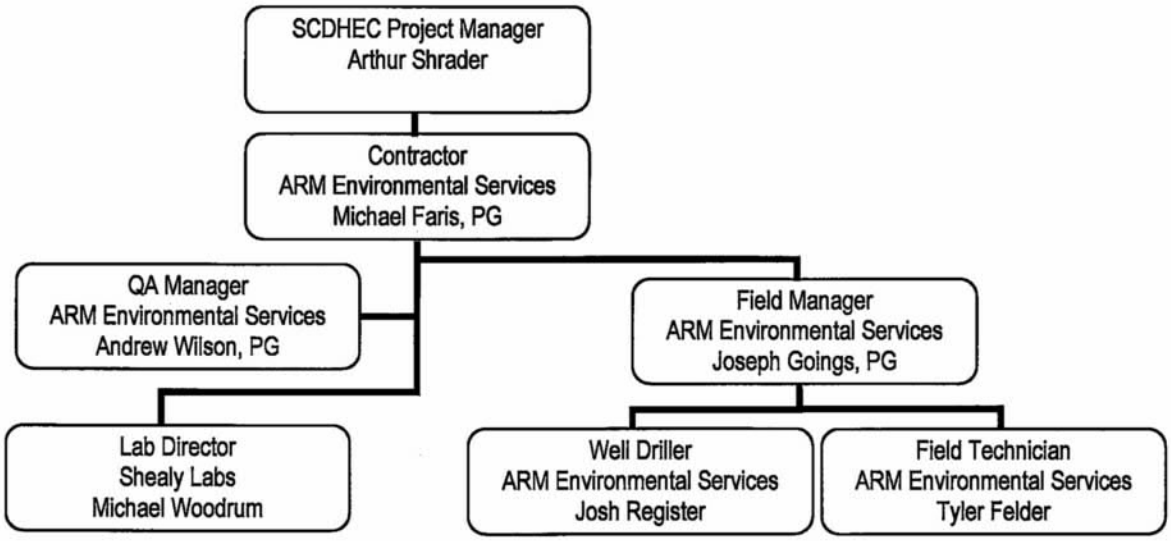
Project QA Manager: The Contractor Quality Assurance Manager is responsible for the oversight of all quality assurance activities associated with this project, including independent review of field data and laboratory analytical data. The QA Manager will resolve any issues when correctitude actions are needed to address data quality issues.

Field Manager: Responsibilities of the Field include, but are not limited to, preparation of field files detailing the project description and necessary task for the field crewman, oversight of field activities conducted by the technician, onsite data collection and decision making, verification of the collected field and laboratory analytical data and report preparation.

Field Technician: The Field Technician will collect groundwater samples for analytical qualitative and quantitative analyses.

Field Staff: The Field Staff will assist the Field Manager with field activities as necessary to complete the project.

Figure 1A: Organizational Chart



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.

From the Richland County Geographic Information System (GIS), a 1939 aerial photograph shows that the subject property was utilized for agriculture and was partially wooded. Broad River Road appears as a two-lane road. Information available through the Richland County Assessors Office indicates that property was owned by B.O. Derrick in 1955 and a 1959 aerial photograph indicates that the property had apparently been developed as a petroleum retail facility. Subsequently, the property was acquired by Associated Oils of South Carolina, Inc. in February 1988, and the previous UST system (B.O. Derrick) was properly closed, as reported to the SCDHEC in 1989. Reportedly, the closure included proper abandonment by removal of one 2,000-gallon UST and one 3,000-gallon UST. Additionally, the property redevelopment activities of 1988 and 1989 reportedly included the demolition of pre-existing structures and construction of the existing store building, dispenser islands and UST system. Subsequently, the property was acquired by Mr. Frederick N. Cecchini in June 1997, and Mr. Cecchini remains the current owner.

Reportedly, no soil samples were collected for analysis at the time of proper abandonment of the previous UST system as reported to SCDHEC in 1989. In December 2010, a Phase II Subsurface Investigation was performed by Partner Engineering and Science, Inc. of El Segundo, California. The Phase II investigation included the installation of four soil borings and a Temporary Monitoring Well Permit (Approval No. 4053) was obtained from the SCDHEC for the purpose of groundwater sample collection. Reportedly, the soil borings extended to terminal depths of 26 feet below land surface (BLS) utilizing direct push penetration technology with continuous soil sample collection. Drilling refusal was encountered in all four soil borings before groundwater was encountered; therefore, no groundwater samples were collectable for laboratory analysis. Eight soil samples (two from each soil boring) were submitted for laboratory analysis for Volatile Organic Compounds (VOC) and Polynuclear Aromatic Hydrocarbons (PAH). The laboratory analytical results indicated the detection of various VOC and PAH chemical compounds at concentrations deemed reportable to the SCDHEC.

An Initial Groundwater Assessment (IGWA) was completed by Enviro-Test Services, Inc. during January, 2011 and an IGWA report was submitted on February 4, 2011. On January 20, 2011, the soil boring for monitoring well MW-1 was installed. The soil sample from the 10 to 15 feet sampling interval yielded the highest PID reading of 1,782 ppm and accordingly was submitted for laboratory analysis for BTEX, MTBE, naphthalene, PAH and lead. Moderately elevated concentrations of toluene, ethylbenzene, xylenes and naphthalene were detected in the soil sample. Saturated sediments were encountered at the depth interval of 35 to 40 feet below grade level (BGL). As such, monitoring well MW-1 was installed to a depth of 40 feet BGL and was screened from 40 to 20 feet BGL. On January 21, 2011, a groundwater sample was collected from monitoring well MW-1 and laboratory analysis for BTEX, naphthalene, MTBE, PAH and lead was performed. The depth to groundwater in monitoring well MW-1 was measured from the top-of-casing to be 20.92 feet. The groundwater sample yielded detected COC concentrations as follows: benzene (929 ug/l), toluene (10,300 ug/l), ethylbenzene (684 ug/l), MTBE (243 ug/l) and naphthalene (922 ug/l). Following review of the IGWA report, the SCDHEC requested a Tier I Assessment in correspondence dated February 7, 2011.

Field activities for the Tier I Assessment were commenced on February 24 and 25, 2011 with the completion of soil borings SB-1 through SB-9. Laboratory analysis of soil samples for BTEX, MTBE and PAH yielded elevated concentrations of benzene and naphthalene above RBSL in soil borings SB-1 (10 ft), SB-2 (5 ft), SB-3 (8 ft) and 5 (6 ft) which were installed proximal to the existing UST basin (SB-1 and SB-2) and product pipeline/dispenser islands (SB-3 and SB-5). Monitoring wells MW-2, MW-3 and MW-4 were completed on February 25, 2011 and were subsequently sampled on March 5, 2011. Laboratory analysis of the groundwater samples yielded concentrations of

benzene as follows: MW-1 (1,760 ug/l), MW-2 (1,650 ug/l), MW-3 (9.93 ug/l) and MW-4 (1,830 ug/l). Additionally, concentrations of MTBE were also detected in wells MW-2 (3,420 ug/l) and MW-4 (3,100 ug/l). Naphthalene by EPA method 8260 was detected in wells MW-1 (4,070J ug/l), MW-2 (462J ug/l) and MW-4 (598 ug/l). Also, elevated concentrations of toluene were detected in wells MW-1 (16,400 ug/l) and MW-2 (3,230 ug/l) and ethylbenzene in wells MW-1 (1,270 ug/l) and MW-4 (1,270 ug/l). A Tier I Assessment Report was submitted to SCDHEC on April 8, 2011.

Subsequent to review of the Tier I Assessment Report, the Technical Project Manager and Section Manager, as applicable, expressed concern regarding the depth of the screened interval of each monitoring well in relation to the measured groundwater levels due to the fact that none of the monitoring wells were bracketing the water table of the site surficial aquifer. The contention of Enviro-Test Services, Inc. was that during soil boring and monitoring well installations no saturated sediments were encountered until the 35 to 40-ft depth interval of drilling at each well location; therefore, the monitoring wells were installed at depths somewhat deeper than preferable. Also, during drilling activities for installation of monitoring well MW-4, where elevated COC's were later detected in the March 5, 2011 groundwater sample, no petroleum hydrocarbon odors or elevated PID readings were noted to be present in apparent vadose soils; however, upon encountering saturated soils at approximately 35 feet, strong odors and elevated PID readings were readily apparent. Consequently, the Technical Project Manager decided that an additional monitoring well (MW-5) should be installed at a shallower, bracketing depth to determine the availability of groundwater for sample collection in what appeared to be unsaturated, vadose soils. Accordingly, on May 27, 2011 monitoring well MW-5 was installed to a depth of 20 feet, with a 10-ft screen at a location adjacent to the north corner of the existing convenience store building. The infiltration of groundwater was noted to be exceedingly slow; as such, groundwater was allowed to seep into the well casing for several days. On June 3, 2011, the depth to groundwater was measured at 13.80 feet and free product (gasoline) of a degraded appearance was measured at 13.68 feet (a free product thickness of 0.12 feet). Again, on June 20, 2011, depth to the groundwater was measured at 14.05 feet and free product at 13.75 feet (a free product thickness of 0.30 feet). These findings were submitted to the SCDHEC Technical Project Manager on June 20, 2011.

In correspondence dated July 13, 2011, the SCDHEC UST Management Division requested a Tier II Assessment Plan and Cost Agreement for the Broad River Amoco (BP). On behalf of Mr. Fredrick N. Cecchini, a Tier II Assessment Plan and Cost Agreement were submitted on July 22, 2011. Subsequently, in correspondence entitled "QAPP Contractor Addendum Directive for Tier II" (dated January 20, 2012), the SCDHEC UST Management Section requested submittal of this QAPP Contractor Addendum. In conversation with the Technical Project Manager on February 9, 2012, the Project QA Manager was informed that the July 22, 2011 Tier II Assessment Plan remains valid for the purpose of defining the horizontal and vertical extent of contaminant migration at the subject site; however, a revised Cost Agreement, compatible with the SCDHEC document entitled "SUPERB Account Allowable Costs" (dated July 1, 2012) was specifically requested. As such, the July 22, 2012 Tier II Assessment Plan is included I this QAPP Contractor Addendum as Attachment A, as is the revised Cost Agreement.

Please answer the following: Does this project fall under UST or Brownfields area?

This project falls under the UST area of SCDHEC.

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).***

Completion of a Tier II Assessment in order to delineate the horizontal and vertical extent of petroleum hydrocarbon contaminants at the Broad River Amoco (BP).

2. ***The work will begin within*** 14 days ***after cost approval and Tier II Assessment sampling should be complete within*** 120 days ***of initiation.***

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.***

As indicated in the Tier II Assessment Plan included in Attachment A of this QAPP Contractor Addendum, groundwater field screening will include installation of temporary monitoring wells constructed of 1-inch diameter PVC well screen and casing. The temporary monitoring wells are to be installed in two separate stratified depth zones as follows: Zone 1: terminal depth of approximately 20 feet for field screening of interstitial groundwater, and Zone 2: terminal depth of approximately 40 feet for field screening of groundwater of saturated soils of the site surficial aquifer. The seepage of groundwater into the Zone 1 temporary monitoring wells is expected to be very slow and may require 24 to 48 hours before adequate quantities of groundwater have accumulated for sample collection.

Additionally, permission to access adjacent and/or down-gradient private or public property will most likely be required for groundwater field screening and subsequent permanent monitoring well installation. Also, various subsurface utilities, overhead electrical lines and building structures may inhibit physical access and/or maneuverability for drilling equipment.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

See attached Figures 1 and 2.

The subject site is located in northwest Richland County in Columbia, South Carolina and is situated on the southwest side of Broad River Road, a five-lane local thoroughfare. The site is comprised of approximately 0.85 acres and is currently owned and operated as a petroleum retail facility, convenience store and restaurant (Broad River BP). Currently, the property is improved with a store building of 2,000 square feet. The store building is located toward the rear (southwest) area of the property. Fronting the store building are three product dispensers covered by a canopy. An underground storage tank (UST) basin is located proximal (north) to the dispenser islands. An automobile water and vacuum servicing unit is located adjacent to the northwest property boundary, Dothan Road. The surface of the property is paved primarily with asphalt except over the area of the UST basin and proximal to the dispenser islands where concrete is present. Nearly the entire property is developed on apparent fill material. The property slopes moderately from Broad River Road southwest toward the curbed edge of the asphalt pavement behind the store building. The curbed edge directs rainfall runoff toward a drainage culvert near the west corner of the property and ultimately to a subsurface municipal storm water sewer system beneath Dothan Road. The west corner is the lowest area of the subject property. Just beyond the curbed edge of the asphalt pavement, a chain link fence is situated at the top of an earthen embankment which slopes steeply toward the southwest property line, located parallel to the foot of the embankment.

The subject property is bounded by Broad River Road to the northeast and beyond Broad River Road, a property currently occupied by the South Carolina Law Enforcement Division (SCLED). The adjacent property to the southeast is apparently commercially utilized (Nail and Beauty Salon). The adjacent property to the southwest is commercially utilized as a nursery school and day care (Play Pal Day Care). The Play Pal Day Care facility encompasses two properties fronting Dothan Road. The subject property is bounded to the northwest by Dothan Road and a commercially utilized property beyond (MDC Associates, an apparent mechanical engineering firm). The commercial usage of the subject property and adjacent properties is expected to remain the same in the future.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Lab Manager	Michael Woodrum	NA	NA	Lab Certification	SC32010
Contractor QA Manager	Andrew Wilson, PG	Professional Geologist	5/6/1991	Professional Geologist	805
Contractor	Michael Faris, PG	Professional Geologist	8/27/2004	Professional Geologist	2379
Contractor Field Mgr.	Joseph Goings, PG	Professional Geologist	8/25/2010	Professional Geologist	2530
Well Driller	Josh Register	Certified Well Driller	7/10/2007	Certified Well Driller	1921
Field Technician	Tyler Felder	OSHA 8hr. refresher	11/18/11		

Table 3A Required Training and Licenses

Christy Smith of ARM Environmental Services, Inc. is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: secure digital copy on ARM server, as well as in personnel files located in locked file cabinet. Server and file cabinet are located onsite at ARM office.

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 Shealy Environmental Services, Inc.
Name of Lab Director Michael Woodrum
SC DHEC Certification Number 32010

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)

__x__US Mail ____Courier _x___Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Laboratory	Hardcopy and Electronic	Hardcopy: Offsite 7years Electronic: External hard drive 10 years	Yes
Lab Report	Laboratory	Electronic	External hard drive 10 years	Yes
Field Data and Assessment Report	ARM Environmental Services, Inc.	Hardcopy and Electronic	Hardcopy: Onsite for 5 years Electronic: Onsite and offsite for 10 years	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

NOTE: The Tier II Assessment will commence within 14 days of approval of the QAPP Contractor Addendum and is projected to be completed within 120 days (or 17 weeks) of commencement. The date of QAPP approval is unknown, as are the dates of implementation and completion of assessment task components. Also unknown are the assessment component tasks that will be approved or disapproved. Provided below are idealized time estimations for sequential completion of the Tier II Assessment task components based on an arbitrarily selected date of commencement (April 2, 2012). The estimations are based on the assumption that the Tier II Assessment Plan included in Attachment A will be approved as proposed.

Item	Start Date	End Date	Comments
Groundwater Field Screening - Zone 1 Week 1	April 2, 2012	April 8, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 1 Week 2	April 9, 2012	April 15, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.

Item	Start Date	End Date	Comments
Groundwater Field Screening - Zone 1 Week 3	April 16, 2012	April 22, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 4	April 23, 2012	April 29, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 5	April 30, 2012	May 6, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 6	May 7, 2012	May 13, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening – Vertical Plume Delineation Week 7	May 14, 2012	May 20, 2012	Following groundwater field screening for the delineation of horizontal COC distribution, an indication of vertical COC distribution will be performed as follows: at three locations along the estimated center line of the horizontal COC plume (COC source or sources, plume mid-point and plume leading edge) a cluster of temporary monitoring wells will be installed. At each cluster, groundwater samples will be collected at projected depths of 45, 50 and 55 BLS feet with the installation of 1-inch PVC well screen and riser pipe.
Installation of Monitoring Wells Week 8	May 21, 2012	May 27, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a terminal depth of approximately 20 feet each. Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Monitoring Wells Week 9	May 28, 2012	June 3, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a terminal depth of approximately 20 feet each. Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Monitoring Wells	June 4, 2012	June 10, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a

Item	Start Date	End Date	Comments
Week 10			terminal depth of approximately 20 feet each. Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Deep Monitoring Wells Week 11	June 11, 2012	June 17, 2012	Two (2) deep wells will be installed to a projected terminal depth of approximately 60 feet each. The deep wells will be installed as "telescoping wells" with 6-inch diameter PVC surface casing installed to 50 to 55 feet and 2-inch diameter, PVC well screen and casing to 60 feet. The length of screen for the deep well will be 5 feet.
Groundwater Sample Collection Week 12	June 18, 2012	June 24, 2012	Prior to groundwater sample collection, all newly installed wells will be developed by evacuation of at least three well volumes of groundwater. All existing wells found not to be bracketing interstitial groundwater will be purged prior to sample collection. Wells with measurable free product thicknesses will not be sampled unless otherwise advised by the Technical Project Manager.
Laboratory Analysis of Groundwater Samples Weeks 13 and 14	June 25, 2012	July 8, 2012	Laboratory analysis will be performed by Access Analytical, Inc. and GCAL, a partner and subcontracted laboratory to Access Analytical, Inc.
Aquifer Testing Week 13 or 14	June 25, 2012	July 8, 2012	A day will be scheduled on which aquifer testing will be performed on two monitoring wells, one installed in Zone 1 of interstitial groundwater and one installed in Zone 2 saturated soils.
Comprehensive Survey Week 13 or 14	June 25, 2012	July 8, 2012	A comprehensive survey will be performed and certified by a SC Registered Land Surveyor. The survey will provide a scale base map and elevations for the monitoring well network.
Tier II Report Preparation Weeks 15, 16 and 17.	July 9, 2012	July 30, 2012	A Tier II Assessment report will be prepared and submitted to the Technical Project Manager no later than July 30, 2012.

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

***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	0
Trip Blank	1
Field Blank	2
Duplicates	2
Total number of Water samples	36

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.

N/A

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

All sampling equipment is disposable with the exception of the ORS Oil/Water Interface Probe, the YSI Dissolved Oxygen (DO) Meter, the Hanna pH/Conductivity Meter and the Martini MI415 Turbidity Meter.

Drilling tools, including solid stem auger, hollow stem auger, drill rod for mud rotary, direct push (Geoprobe™) drill rod and stainless-steel retractable well screen, are instrumental for soil and groundwater sample collection and for monitoring well installation. Obviously, these items are non-disposable.

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.

The ORS Oil/Water Interface Probe, the YSI DO Meter and the Hanna ph/Conductivity Meter will be cleaned and decontaminated between each use. Decontamination procedures will consist of: 1) donning a new pair of nitrile gloves, 2) washing of each unit with a soap (Alconox™) solution, 3) rinsing with distilled water, 4) rinsing with Isopropanol and 5) a final rinsing with distilled water. Disposable items and used decontamination fluids and materials will be containerized pending proper disposal.

All drilling tools and associated equipment as applicable (including solid stem auger, hollow stem auger, drill rod for mud rotary, Geoprobe™ direct push drill rod and stainless-steel retractable well screens, wrenches, hammers, shovels, mud pans, etc.) will be decontaminated by method of high pressure steam cleaning prior to mobilization to the site. Additionally, all drilling rods and associated equipment as applicable will be decontaminated (high pressure steam cleaning) between each soil boring and/or well installation. Decontamination will proceed as follows: 1) a decontamination pad will be established at a secure area reasonably proximal to drilling locations, 2) the drilling rods and tools as applicable will be decontaminated by steam cleaning under high pressure, 3) decontamination fluids and soil cuttings as applicable will be containerized pending proper disposal.

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.

A rotary auger drill rig and Geoprobe direct push machine with appropriate down-hole tooling will be needed in order to complete the tasks outlined in this plan. It is anticipated that one of ARM's track-mounted Geoprobe direct push units with a rotary auger attachment will be used to complete the deep field screening and shallow well installation activities at the site. A photoionization detector with a calibration kit will be required in order to conduct field screening of the soil and groundwater onsite. A Mobile B-57 rotary auger rig will be used with mud-rotary equipment for the installation of the telescoping monitoring wells. An ARM steam cleaner will be utilized with a portable decontamination station to clean the auger and mud rotary equipment and to capture the decontamination fluids generated during the cleaning process.

Typical equipment for sampling monitoring wells will be needed. Equipment required: water/product level meter, pH/specific conductivity/temperature meter with spare pH tip and calibration supplies, dissolved oxygen meter with spare DO membranes and calibration supplies, extra batteries for meters, disposable hand bailers, colorless nylon bailer twine, powder free nitrile gloves, pre-labeled sample bottles with preservative(s) appropriate for the required analyses provided by laboratory in insulated cooler, ice, field notebook and permanent pens/markers, field file with necessary maps, historical data, contact info., chain of custody and field data sheets, decontamination supplies as detailed in Appendix H in the *Programmatic QAPP, Rev. 1*, 5-gallon plastic buckets, 55-gallon steel drum(s), hand tools and key(s) for entry into well vaults and drums, trash bag(s), metal detector, autolevel with tripod and surveyors rod.

TK Tank Services of Sumter, South Carolina will be utilized as the disposal facility for any contaminated soils generated during this assessment. Development and purge water and/or by products from decontamination generated by ARM during this scope of work will be disposed of at U.S. Water Recovery in Holly Hill, South Carolina.

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
Off-Site Property Access	Notify Technical Project Manager; participate in further negotiations.	Telephone and/or e-mail correspondence to SCDHEC placed in project file.	Field Manager Joseph Goings
Drill Rig Malfunction	Make repairs in field or obtain replacement drilling equipment; Notify Technical Project Manager of any impending delays in project schedule.	Make note of malfunction in Project Field Notes; place in Project File.	SC Certified Well Driller: Josh Register
Destroyed or Lost Monitoring Wells	Notify Technical Project Manager	Document in field log and written report, if necessary.	Field Manager Joseph Goings
Hitting a utility line during drilling.	Halt drilling immediately. Notify appropriate authorities; change drilling location.	Document in field log and written report, if necessary.	Field Manager Joseph Goings
Drilling Refusal	Contact Technical Project Manager on permissibility of completing soil boring or monitoring well at shallower depth; discuss feasibility of installation of a deep well.	Document in field log and written report, if necessary.	SC Certified Well Driller: Josh Register
Groundwater encountered at a shallower depth than expected (this possibility is enhanced at areas of lower surface elevation, often at down-gradient locations)	If deemed prudent, contact Technical Project Manager on permissibility of completing soil boring or monitoring well at shallower depth.	Document in field log and written report, if necessary.	SC Certified Well Driller: Josh Register
Malfunction of ORS Oil/Water Interface Probe	Notify field manager of equipment failure. Clean indicator and/or change batteries in the field. If problem persists, use back-up oil/water interface probe.	Document in field log and written report, if necessary.	Field Manager Joseph Goings Field Staff Tyler Felder

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?***

The samples will be maintained on ice in an insulated cooler during collection onsite and during transport. The cooler will be sealed during transport from the site to the ARM office. A laboratory courier will pick up and deliver the samples under chain of custody to the laboratory within less than 24 hours of sample collection.

2. ***How will the contactors cool the samples and keep the samples cool?***

   Samples will be packed in natural ice immediately after collection and surrounded by ice at all times until delivery to the laboratory. If samples are to be stored, they will be kept in a temperature controlled refrigerator at 4 degrees C.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***

   A calibrated thermometer is used to check temperature of sample containers immediately upon arrival at the laboratory.

4. ***Where will the samples be stored in the Lab once they are received?***

   All samples are stored in clean refrigeration units monitored and maintained at 4 degrees C + or – 2 degrees. Volatile organic samples are stored separately from all other samples.

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.***

   A chain of custody (COC) will be filled out for each sampling event at each project site. COC to be signed by Contractor Field Technician and Shealy Environmental lab staff at time physical transfer of samples occurs to courier. Shealy uses the following COC procedures to protect sample integrity following pickup by their courier: A full time Sample Receiving Technician receives all samples and completes a Sample Receipt Checklist (SRC), which will identify any anomalies, if any exist the Sample Receiving Technician or Project Manager must resolve the deviation internally and/or notify the client to resolve the anomaly.

B4 Analytical Methods

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
VOC's (BTEX/Napth/MTBE/DCA.)	GCMSV-003 r22	8260B	GC/MS	
Oxygenates	GCMSV-004 r1	8260B	GC/MS	
EDB	GC-034 r6	8011	GC	
Lead	MET-013 r18	6010C	ICP	

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
GCMSV-003	Method 8260B GCMSV-003 r22	STANDARD OPERATING PROCEDURE FOR THE ANALYSIS OF VOLATILE MASS SPEC SAMPLES BY METHOD 8260B
GCMSV-004	Oxygenates GCMSV-004 r1	STANDARD OPERATING PROCEDURE FOR THE ANALYSIS OF OXYGENATES BY METHOD 8260B
GC-034	Method 8011 GC-034 r6	STANDARD OPERATING PROCEDURE FOR METHOD 8011
ICP Met-010	ICP Met-010 r18	STANDARD OPERATING PROCEDURE FOR ANALYSIS OF METALS BY ICP

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
Various sample matrix or related failures at laboratory	Corrective Action Initiated (see section 4.7 of lab or QAPP for detailed info)	Non-Conformance / Corrective Action Form kept at lab in controlled logbook	Laboratory QC/QA Manager
Surrogate Failure on Organics Analysis	Corrective Action Initiated, Samples are re-extracted and/or analyzed if surrogate recoveries outside of control limits. Data reported with qualifiers if necessary.	Non-Conformance / Corrective Action Form kept at lab in controlled logbook, LIMS	Analyst, Laboratory QC/QA Manager
Sample Containers Broken During Transit or at Lab	Client Notified via phone or email	Sample Receiving Checklist Form, LIMS	Sample Login Staff, Laboratory Project Manager, Analyst
Holding Time Exceeded	Client Notified via phone or email	Sample Receiving Checklist Form, LIMS	Sample Login Staff, Laboratory Project Manager, Analyst
Positive Hits in Method Blank	Corrective Action Initiated, Samples are re-extracted and/or analyzed if MB has hits above the RL's for compounds being analyzed.	Non-Conformance / Corrective Action Form kept at lab in controlled logbook, LIMS	Analyst, Laboratory QC/QA Manager

Table 9A Corrective Action Procedures

3. *Identify sample disposal procedures.*

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
All	Soil, chemical materials	60 days after analysis the sample custodian will stage completed samples for disposal. The sample custodian will scan all the samples segregated for	55-gallon open top steel drum located in the Satellite Accumulation Area. Labeled according to the characteristics of the waste and the waste stream.	Waste disposal is provided by various DOT certified vendors who come to the facility and label, placard, and manifest the drums

		disposal as "STD" (sent to disposal) using the Horizon LIMS system.	Waste streams are determined by analysis of the waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	according to 49 CFR Part 173 before transporting to their facility.
All	Water	60 days after analysis the sample custodian will stage completed samples for disposal. The sample custodian will scan all the samples segregated for disposal as "STD" (sent to disposal) using the Horizon LIMS system.	55-gallon tight head poly drum located in the Satellite Accumulation Area. Labeled according to the characteristics and waste stream. Waste streams are determined by analysis of the waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	Waste disposal is provided by various DOT certified vendors who come to the facility and label, placard, and manifest the drums according to 49 CFR Part 173 before transporting to their facility.

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).***

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. Not the availability and location of spare parts.***

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Water level / interface probe	ALL	Check battery level & electronics, sensing probe tip and/or prism; and quality of measuring tape / replace/repair as necessary	weekly	Spare batteries and spare sensing probe tip repair kit with tape pigtail located inside metal cabinet in sample equipment room at ARM office	Michael Faris, P.G.
Photolonization Detector	ALL	Check battery, electronics, lamp, internal pump, hydrophobic water trap, and probe tip	Periodic – according to manufact. specs	Spare water traps and probe tip located inside metal cabinet in sample equipment room at ARM office	Joseph Goings, P.G.
DO meter	ALL	Check DO membrane / replace if necessary	Periodic – according	Inside metal cabinet in sample equipment	Tyler Felder – Shop Maintenance (ARM)

			to manufact. specs	room at ARM office	
pH / specific conductivity / temperature meter	ALL	Clean and check pH bulb and spec. conductivity probe for wear / replace if necessary	Periodic – according to manufact. specs	.Inside metal cabinet in sample equipment room at ARM office	Tyler Felder – Shop Maintenance (ARM)
Turbidity meter	ALL	Clean and check cuvets for wear, replace if necessary	Periodic – according to manufact. specs	.Inside metal cabinet in sample equipment room at ARM office	Tyler Felder – Shop Maintenance (ARM)
Volatiles Mass Spec	ALL	Change traps, clean ion source, replace filaments	Periodic	Laboratory	MSV Analyst
Semi-volatiles Mass Spec	ALL	Injection port maintenance, ion source maintenance, column replacement	Periodic	Laboratory	MSSV Analyst
ECD GC	ALL	Injection port maintenance, column replacement	Periodic	Laboratory	GC Analyst
Dionex IC	ALL	Replace auto sampler filter, tubing, line filter, sample Line and Waste Line, as needed. Check Reagent levels, flow rate, waste line.	Periodic	Laboratory	IC Analyst
ICP	ALL	Clean Sample introduction system , auto sampler, torch, Change spray chamber, torch tubing, tubing	Periodic	Laboratory	ICP Analyst
Leeman Mercury Analyzer	ALL	Clean GLS, Change Pump tubing, Nafion Dryer, Lamp	Periodic	Laboratory	Mercury Analyst
Flow Injection Analysis – Lachat 8000	ALL	Replace sample and reagent lines, replace light source, re-wrap heating coil, replace column	Periodic/As Needed	Laboratory	Nitrate Analyst

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.

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
Photolonization detector	Daily check for proper function of battery, electronics, and calibration	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Water level / interface probe	Daily check for proper function of battery, electronics, measuring tape, and sensing probe tip/prism	According to manufacturer's specifications	Field Technician	Replace or repair component(s) if found faulty or damaged
DO meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
pH / specific conductivity / temperature meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Turbidity Meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Volatiles Mass Spec	Daily calibration check	Method Requirements	MSV Analyst	Recalibration or instrument maintenance
Semi-volatiles Mass Spec	Daily calibration check	Method Requirements	MSSV Analyst	Recalibration or instrument maintenance
ECD GC	Daily calibration check	Method Requirements	GC Analyst	Recalibration or instrument maintenance
Dionex IC	Daily calibration check	Method Requirements	Nitrate Analyst	Recalibration or instrument maintenance
ICP	Daily calibration check	Method Requirements	ICP Analyst	Recalibration or instrument maintenance
Instrument/Equipment & Serial Number	**Type of Inspection**	**Requirement**	**Individual Responsible**	**Resolution of Deficiencies**
Leeman Mercury Analyzer	Daily calibration check	Method Requirements	Mercury Analyst	Recalibration or instrument maintenance
Flow Injection Analysis – Lachat 8000	Daily and continuing calibration check	See calibration criteria	INM Analyst	Recalibration or instrument

				maintenance

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*
Photolonization detector	Zero with zero gas, calibrate with known span gas, adjust response factor to site conditions when appropriate	Daily calibration	Within 10% of standards	Recalibration or instrument maintenance	Field Technician, PM if necessary	
Water level / interface probe	The tape will be compared against an invar steel surveyors chain	Per manufacturers specifications (Solinst / Heron)	0.01 feet per 10 feet of tape length	Replace tape if not within acceptance criteria	Michael Faris, P.G.	Sampling SOP
DO meter	Enter elevation and expected salinity for geographic area, then calibrate to DO standard	Daily calibration	Within 5% of DO standard	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
pH / specific conductivity / temperature meter	Immerse pH probe in singles packets of pH 4.0, 7.0, 10.0, with rinses in between	Daily calibration	Pass / fail according to automatic meter calibration	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP
Turbidity meter	Place standard (<0.1, 15, 100 NTU) in cuvet and measure	Daily calibration	Within 10% of each standard	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP
Volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by continuous calibration verification standard	Method Criteria	Detailed in SOP	MSV Analyst	S-VO-002
Semi-volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSSV Analyst	S-SV-021
GC ECD	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	GC Analyst	S-SV-012
Dionex IC	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	IC Analyst	S-IN-010
ICP	Minimum of 3 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	ICP Analyst	S-IM-022
Cetac Mercury Analyzer	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	Mercury Analyst	S-IM-006
Lacaht QuickChem 8000	Minimum of 5 calibration standards	Daily or when indicated by calibration verification standard	Method Criteria	Detailed in SOP	Nitrate Analyst	S-IN-042

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.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Nitrile gloves	ECT Manufacturing	Each box of gloves is sealed in non-damaged sipping box, Certificate of analysis	Metal cabinet in sample equipment room at ARM office	Joseph Goings - ARM
Disposable hand bailers	Pine Environmental	Each bailer individually sealed in plastic bag in non-damaged box	In box in sample equipment room at ARM office	Michael Faris - ARM
Bailer twine rolls	Pine Environmental	Each roll individually sealed in plastic bag in non-damaged box	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Photolonization Standards	Pine Environmental	Each canister sealed with certificate of analysis	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Sample meter calibration fluids (standards)	Lab Safety Supply, Ben Meadows	Each fluid in individually sealed bottle or bag in undamaged box, certificates of analysis	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Sample meter spare parts	Lab Safety Supply, Fondriest	Each component in sealed container in undamaged box	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Decontamination Fluids (DI water, Isopropanol)	Smith and Jones Dist. Co.	Unopened, unused, labeled bottles in labeled boxes picked up locally, certificates of analysis	In boxes in shop at ARM office	Yerin Flores - ARM
Laboratory-grade non-phosphate soap	Lab Safety Supply	Individually sealed single use containers in undamaged shipping box	In boxes in shop at ARM office	Yerin Flores - ARM
Laboratory Chemicals	Fisher,VWR	Certificates of analysis and laboratory testing	Laboratory storage	Receiving and laboratory personnel
Laboratory standards	O2Si, Restek, High Purity, VHG, Supelco	Certificates of analysis and laboratory verifications	Vendor specific storage conditions	Laboratory Analysts
Sample Containers	Daniels Scientific, QEC	Certificates of analysis and laboratory testing	Bottle storage area	Sample receiving personnel

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
Richland County GIS	Identifying adjacent property owners, property boundaries, subsurface municipal utilities, etc.	Facilitate access to adjacent properties, history of usage and/or ownership of the subject property and adjacent properties.	This website also provides detailed topographic maps and information regarding storm-water runoff.
Phase II Subsurface Investigation Report, Broad River BP, Partner Engineering and Science, Inc., El Segundo, California, December, 2010	Preliminary information concerning soil quality and groundwater occurrence	The laboratory analytical results from the Phase II subsurface investigation were reported to the SCDHEC as an apparent release (January 4, 2011).	A copy of the report was provided to ARM by Mr. Fredrick N. Cecchini.

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.
   Not applicable to this scope of work.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

As generated by the Environmental Rehabilitation Contractor (ARM Environmental Services, Inc.) in completing Tier II Assessment component tasks, field notes and logs will be stored in hardback bound field books and/or on 8 ½ x 11" field data sheets. Field data sheets are signed by staff upon completion of daily work. Copies of field notes and driller 1903 forms are provided on a daily basis and placed in the project file. Field boring logs are kept on a backed-up digital library.

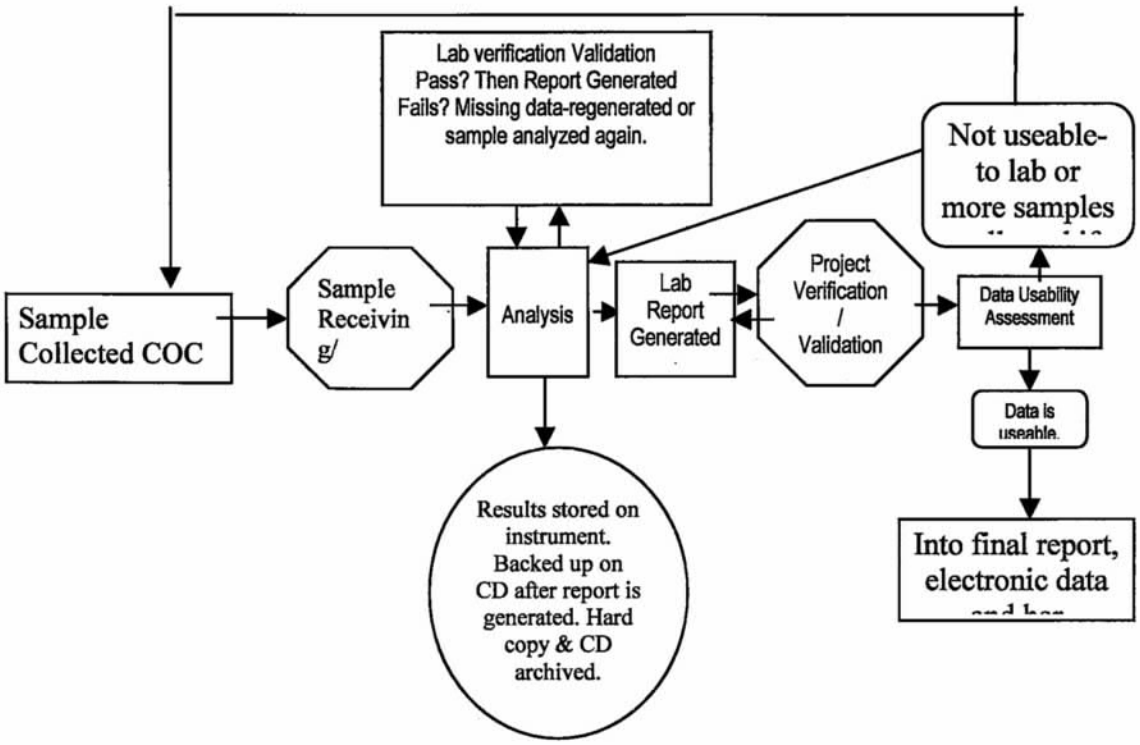


Figure 5: Laboratory Data Management Scheme (Source: Sample QAPP, South Carolina Department of Health and Environmental Control, March 21, 2001)

2. 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?

   Copies of field notes and boring logs are reviewed by the Field Manager and placed in the project file. Additionally, field notes/logs are scanned, password secured, and placed into the digital project file. Original data sheets will also be kept by the field staff in field notebooks/folders for a minimum of three years.

   All data is recorded in bound books and/or by instrument printout. If data is recorded by hand, it must be done in ink. It is inappropriate to have pencils, erasers, or correction fluid at the bench. Data is kept either as a hardcopy, electronically, or both. All data must be protected by the use of audit trails, passwords, and controlled logbooks. If changes or corrections are necessary, it must be performed in a way that maintains the integrity of the data. Changes must be initialed and dated and corrections made using a single line strikeout. If the record does not allow space to clearly show the change, write it in the comments or at the bottom of the page. If electronic files must be changed, the file must be renamed so original information is not lost. If an entire batch of data must be reprocessed all files must be renamed. Reasons for doing so must be written in the comments and/or fully documented using a correction form. At no time shall data be obliterated for any reasons.

3. 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.

   All data reported includes three levels of data review including calculations used to generate the reported analytical results. This review is performed by the analyst performing the test, the supervisor, and report

generation manager or designee. Data reduction includes all activities that convert instrument/computer responses into reportable results. Manually entered information is reviewed for accuracy in the LIMS and in the signed copy of the client report.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Hard copies of final reports are contained in the specific folder in ARM's file library. Additionally, each report is converted to digital format and stored in its applicable digital folder. Hard copy storage will be for a minimum of three years. Digital storage will be indefinite. Digital data is backed-up on a weekly basis on a four month rolling schedule. For security purposes current week data is stored at an off-site location.

The laboratory will retain all records related to sample analysis including raw test data, calculations, derived data, calibrations and copies of test reports including chain of custodies. These records are archived in accordance with regulatory requirements for a minimum of ten years or as required by specific client contracts. Software/hardware permitting the access of electronic data must be maintained. The copy of client reports is stored in a room requiring key-card access. All reports must be signed out using the archived reports logbook. Client reports and chain of custodies are also scanned for electronic storage. Written and printed data records (bench sheets, logbooks, electronic printouts, etc.) are scanned before being boxed and placed in storage. Electronic data is stored on a dedicated server, which is backed-up daily. The safety officer keeps safety and disposal information. Archived data is stored on-site until capacity is met. The oldest archived data is then moved to a secure storage facility. The storage and on-site facility are monitored and protected from fire and theft. Electronic data storage is free from magnetic sources. It is the goal of the lab to have redundant copies (hard and electronic) to prevent loss of records due to being misplaced or environmental deterioration or catastrophe.

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?*

Either Michael Faris, PG – Senior Geologist (ARM Project Manager), or Joseph Goings, PG – Staff Geologist (Field Manager) will be responsible for observing field personnel on a daily basis depending on the week's schedule. Each of these ARM employees has the authority to stop the work if significant problems are observed.

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?*

The laboratory submits annual Proficiency Testing (PT) samples to Wibby Environmental. Wibby is an approved vendor that submits PT results to the office of environmental laboratory certification. The laboratory director has the authority to stop work and submit Corrective Actions if problems are severe.

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).

Please Return to: **Arthur Shrader**
Assessment Section, UST Division
2600 Bull Street
Columbia, SC 29201

UST
JAN 19 2011
PROGRAM

2nd UST DOCKET

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit#11946, I would like to use the contractor or person(s)* listed below and request that they represent me for:

X IGWA
X All future assessment scopes.**

Name of Contractor/Person(s) Enviro-Test Services Inc.

Address Terry TeaTe
P.O.Box 2237
Irmo, SC, 29063

Telephone Number _____ Certification # _____

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

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 _____

Date Signed 1-14-11

D H E C
PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

JUN 2 2 2012

FREDRICK N CECCHINI
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
COLUMBIA SC 29210-4009

Re: Revised Tier II Directive
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946; CA # 42065; MWA # UMW-24502
Release reported January 4, 2011
Tier I Report received April 11, 2011
Monitoring Well Installation Report received June 21, 2011
QAPP Contractor Addendum received February 21, 2012 and Revision received March 15, 2012 by EnviroTest
Tier II Directive dated May 21, 2012
QAPP Contractor Addendum by ARM received June 20, 2012
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) reviewed the referenced UST Quality Assurance Program Plan (QAPP) submitted by ARM Environmental Services. Assessment activities at the site should be conducted in accordance with the SCDHEC QAPP for the UST Management Division. A copy of SCDHEC QAPP for the UST Management Division is available at http://www.scdhec.gov/environment/lwm/html/ust.htm.

Tier II Directive dated May 21, 2012 is still applicable for definition of the free phase product as well as the horizontal and vertical extent of petroleum Chemicals of Concern (CoC). A **Tier II Report is due on or before October 5, 2012.** The referenced QAPP by ARM is approved and a signed Title and Approval Page is enclosed. The monitoring well approval has been revised for ARM Environmental Services, and a copy is enclosed for your records.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

Please reference UST Permit number 11946 on all correspondence. If you have any questions, please contact me by phone at (803) 896-6669, by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

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

enc: Monitoring Well Approval (MWA)
Signed Site Specific QAPP Contractor Addendum

cc: ARM Environmental Services, Inc. PO Box PO Box 50285, Columbia, SC 29250 (with enc.)
Enviro-Test Services, PO Box 2237, Irmo, SC 29063 (with enc.)
Technical File (with enc.)

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES
armenv.com

UST
DEC 0 4 2012
PROGRAM

TRANSMITTAL COVER SHEET

UST
21 tech
DOCKETING

TO: **Arthur Shrader, Hydrogeologist**

COMPANY / AGENCY: **UST Program / Bureau of Land and Waste Management**

FROM: **Michael Faris**

RE: **Broad River Amoco; UST Permit #11946**
QAPP Appendix B, Revision 3

DATE: **November 28, 2012**

TRANSMITTAL VIA: **_✓_ Standard US Mail** **___ Priority US Mail**
___ Overnight Courier **___ Hand Delivery**

COMMENTS:

Enclosed you will find the revised QAPP Appendix B Contractor Addendum text for the Assessment requested at the site. The text has been revised to reflect the use of Access Analytical as the laboratory instead of Shealy Environmental.

Please do not hesitate to give me a call if you have any questions or if further information is required.

Sincerely,
ARM Environmental Services, Inc.

Michael Faris, P.G.
Senior Geologist

1210 1st STREET SOUTH EXTENSION / COLUMBIA, SC 29209 / phone 803-783-3314 fax 803-783-2587

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Broad River Amoco, UST Permit # 11946

4335 Broad River Road, Columbia, SC – Richland County

Prepared by: Michael Faris
ARM Environmental Services Inc. - SCDHEC Certified Contractor No. 4
Date: November 28, 2012

Approvals

Arthur Shrader, Hydrogeologist
SCDHEC Project Manager
_____ Date_____
Signature

Andrew Wilson, P.G.
Contractor QA Manager
Andrew Wil Date 11/29/12
Signature

Michael Faris, P.G.
Site Rehabilitation Contractor
Michael Faris Date 11/28/12
Signature

Ashley B. Amick
Laboratory Director, Access Analytical, Inc.
_____ Date 11/29/12
Signature

Scott Bailey
Laboratory Director, GCAL
Brenda Martinez
Wed Nov 28 2012 16:19:42
_____ Date 11/28/12
Signature

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Attachment A: Access Analytical, Inc. – Chain of Custody

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
Arthur Shrader, Hydrogeologist	SCDHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Michael Faris, PG	Site Rehabilitation Contractor	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	mfaris@armenv.com
Joseph Goings, PG	Field Manager,	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	jgoings@armenv.com
Andrew Wilson, PG	Project QA Manager	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	awilson@armenv.com
Ashley B. Amick	Laboratory Director, Access	Access Analytical, Inc. 7478 Carlisle St. Irmo, SC 29063	803 781-4243	803 781-4303	aamick@axs-inc.com
Scott Bailey	Laboratory Director, GCAL	GCAL 7979 GSRI Rd. Baton Rouge, LA 70820	225 769-4900	225 767-5717	scott.bailey@gcal.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
Technical Project Manager	Arthur Shrader, Hydrogeologist	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6669	803-896-6245	shradeaa@dhec.sc.gov
Site Rehabilitation Contractor	Michael Faris, PG	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	mfaris@armenv.com
Field Manager	Joseph Goings, PG	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	jgoings@armenv.com
Project QA Manager	Andrew Wilson, PG	ARM Environmental Services, Inc. P.O. Box 50285 Columbia, SC 29250	803 783-3314	803 783-2587	awilson@armenv.com
Analytical	Ashley B. Amick	Access Analytical, Inc.	803 781-4243	803-781-4303	aamick@axs-

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
Laboratory Director		7478 Carlisle St. Irmo, SC 29063			inc.com

Table 2A Addendum Role Identification and Contact Information

Technical Project Manager: The Technical Project Manager (Art Shrader) is responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites. The Technical Project Manager performs day-to-day review of plans and reports related to site rehabilitation activities on his or her assigned sites. These reviews include verification and analysis of data laboratories and recommendations for future work. The Technical Project Manager is responsible for the review of and approval of the site-specific QAPPs to ensure compliance with the UST Master QAPP. The Technical Project Manager is also responsible for validating the Project Data.

Site Rehabilitation Contractor: The role of the Contractor (ARM Environmental Services, Inc.) is to manage and coordinate field and office activities in order to complete all phases of the project. This includes, but not limited to, preparation of Quality Assurance Project Plan Contractor Addendum, property access, oversight of field activities, data analysis and interpretation, validating and verifying project data and preparation of a report. ARM is a Class I and Class II site Rehabilitation Contractor.

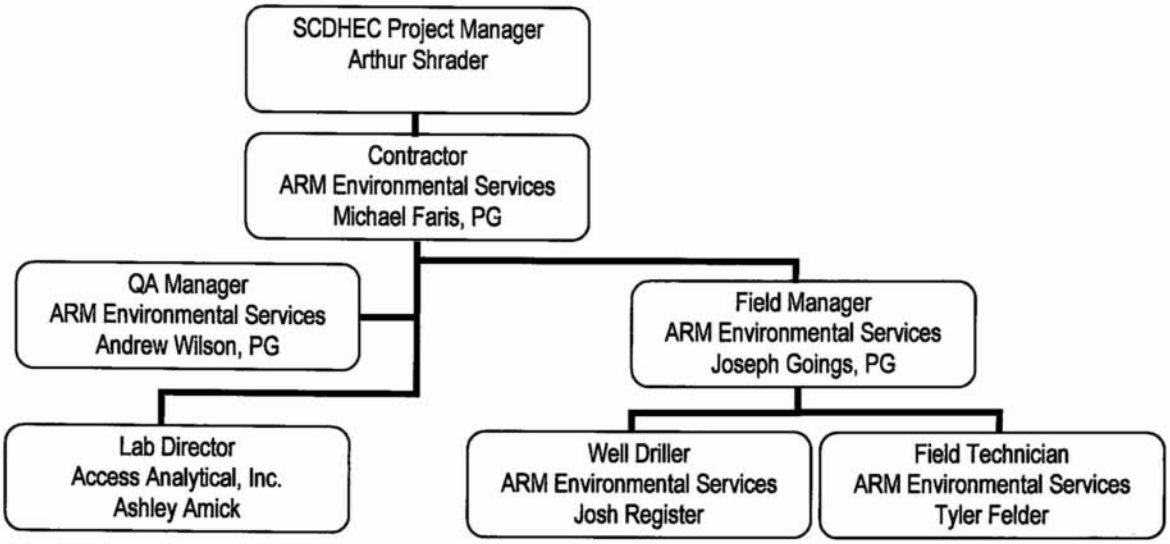
Project QA Manager: The Contractor Quality Assurance Manager is responsible for the oversight of all quality assurance activities associated with this project, including independent review of field data and laboratory analytical data. The QA Manager will resolve any issues when correctitude actions are needed to address data quality issues.

Field Manager: Responsibilities of the Field include, but are not limited to, preparation of field files detailing the project description and necessary task for the field crewman, oversight of field activities conducted by the technician, onsite data collection and decision making, verification of the collected field and laboratory analytical data and report preparation.

Field Technician: The Field Technician will collect groundwater samples for analytical qualitative and quantitative analyses.

Field Staff: The Field Staff will assist the Field Manager with field activities as necessary to complete the project.

Figure 1A: Organizational Chart



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.

From the Richland County Geographic Information System (GIS), a 1939 aerial photograph shows that the subject property was utilized for agriculture and was partially wooded. Broad River Road appears as a two-lane road. Information available through the Richland County Assessors Office indicates that property was owned by B.O. Derrick in 1955 and a 1959 aerial photograph indicates that the property had apparently been developed as a petroleum retail facility. Subsequently, the property was acquired by Associated Oils of South Carolina, Inc. in February 1988, and the previous UST system (B.O. Derrick) was properly closed, as reported to the SCDHEC in 1989. Reportedly, the closure included proper abandonment by removal of one 2,000-gallon UST and one 3,000-gallon UST. Additionally, the property redevelopment activities of 1988 and 1989 reportedly included the demolition of pre-existing structures and construction of the existing store building, dispenser islands and UST system. Subsequently, the property was acquired by Mr. Frederick N. Cecchini in June 1997, and Mr. Cecchini remains the current owner.

Reportedly, no soil samples were collected for analysis at the time of proper abandonment of the previous UST system as reported to SCDHEC in 1989. In December 2010, a Phase II Subsurface Investigation was performed by Partner Engineering and Science, Inc. of El Segundo, California. The Phase II investigation included the installation of four soil borings and a Temporary Monitoring Well Permit (Approval No. 4053) was obtained from the SCDHEC for the purpose of groundwater sample collection. Reportedly, the soil borings extended to terminal depths of 26 feet below land surface (BLS) utilizing direct push penetration technology with continuous soil sample collection. Drilling refusal was encountered in all four soil borings before groundwater was encountered; therefore, no groundwater samples were collectable for laboratory analysis. Eight soil samples (two from each soil boring) were submitted for laboratory analysis for Volatile Organic Compounds (VOC) and Polynuclear Aromatic Hydrocarbons (PAH). The laboratory analytical results indicated the detection of various VOC and PAH chemical compounds at concentrations deemed reportable to the SCDHEC.

An Initial Groundwater Assessment (IGWA) was completed by Enviro-Test Services, Inc. during January, 2011 and an IGWA report was submitted on February 4, 2011. On January 20, 2011, the soil boring for monitoring well MW-1 was installed. The soil sample from the 10 to 15 feet sampling interval yielded the highest PID reading of 1,782 ppm and accordingly was submitted for laboratory analysis for BTEX, MTBE, naphthalene, PAH and lead. Moderately elevated concentrations of toluene, ethylbenzene, xylenes and naphthalene were detected in the soil sample. Saturated sediments were encountered at the depth interval of 35 to 40 feet below grade level (BGL). As such, monitoring well MW-1 was installed to a depth of 40 feet BGL and was screened from 40 to 20 feet BGL. On January 21, 2011, a groundwater sample was collected from monitoring well MW-1 and laboratory analysis for BTEX, naphthalene, MTBE, PAH and lead was performed. The depth to groundwater in monitoring well MW-1 was measured from the top-of-casing to be 20.92 feet. The groundwater sample yielded detected COC concentrations as follows: benzene (929 ug/l), toluene (10,300 ug/l), ethylbenzene (684 ug/l), MTBE (243 ug/l) and naphthalene (922 ug/l). Following review of the IGWA report, the SCDHEC requested a Tier I Assessment in correspondence dated February 7, 2011.

Field activities for the Tier I Assessment were commenced on February 24 and 25, 2011 with the completion of soil borings SB-1 through SB-9. Laboratory analysis of soil samples for BTEX, MTBE and PAH yielded elevated concentrations of benzene and naphthalene above RBSL in soil borings SB-1 (10 ft), SB-2 (5 ft), SB-3 (8 ft) and 5 (6 ft) which were installed proximal to the existing UST basin (SB-1 and SB-2) and product pipeline/dispenser islands (SB-3 and SB-5). Monitoring wells MW-2, MW-3 and MW-4 were completed on February 25, 2011 and were subsequently sampled on March 5, 2011. Laboratory analysis of the groundwater samples yielded concentrations of

benzene as follows: MW-1 (1,760 ug/l), MW-2 (1,650 ug/l), MW-3 (9.93 ug/l) and MW-4 (1,830 ug/l). Additionally, concentrations of MTBE were also detected in wells MW-2 (3,420 ug/l) and MW-4 (3,100 ug/l). Naphthalene by EPA method 8260 was detected in wells MW-1 (4,070J ug/l), MW-2 (462J ug/l) and MW-4 (598 ug/l). Also, elevated concentrations of toluene were detected in wells MW-1 (16,400 ug/l) and MW-2 (3,230 ug/l) and ethylbenzene in wells MW-1 (1,270 ug/l) and MW-4 (1,270 ug/l). A Tier I Assessment Report was submitted to SCDHEC on April 8, 2011.

Subsequent to review of the Tier I Assessment Report, the Technical Project Manager and Section Manager, as applicable, expressed concern regarding the depth of the screened interval of each monitoring well in relation to the measured groundwater levels due to the fact that none of the monitoring wells were bracketing the water table of the site surficial aquifer. The contention of Enviro-Test Services, Inc. was that during soil boring and monitoring well installations no saturated sediments were encountered until the 35 to 40-ft depth interval of drilling at each well location; therefore, the monitoring wells were installed at depths somewhat deeper than preferable. Also, during drilling activities for installation of monitoring well MW-4, where elevated COC's were later detected in the March 5, 2011 groundwater sample, no petroleum hydrocarbon odors or elevated PID readings were noted to be present in apparent vadose soils; however, upon encountering saturated soils at approximately 35 feet, strong odors and elevated PID readings were readily apparent. Consequently, the Technical Project Manager decided that an additional monitoring well (MW-5) should be installed at a shallower, bracketing depth to determine the availability of groundwater for sample collection in what appeared to be unsaturated, vadose soils. Accordingly, on May 27, 2011 monitoring well MW-5 was installed to a depth of 20 feet, with a 10-ft screen at a location adjacent to the north corner of the existing convenience store building. The infiltration of groundwater was noted to be exceedingly slow; as such, groundwater was allowed to seep into the well casing for several days. On June 3, 2011, the depth to groundwater was measured at 13.80 feet and free product (gasoline) of a degraded appearance was measured at 13.68 feet (a free product thickness of 0.12 feet). Again, on June 20, 2011, depth to the groundwater was measured at 14.05 feet and free product at 13.75 feet (a free product thickness of 0.30 feet). These findings were submitted to the SCDHEC Technical Project Manager on June 20, 2011.

In correspondence dated July 13, 2011, the SCDHEC UST Management Division requested a Tier II Assessment Plan and Cost Agreement for the Broad River Amoco (BP). On behalf of Mr. Fredrick N. Cecchini, a Tier II Assessment Plan and Cost Agreement were submitted on July 22, 2011. Subsequently, in correspondence entitled "QAPP Contractor Addendum Directive for Tier II" (dated January 20, 2012), the SCDHEC UST Management Section requested submittal of this QAPP Contractor Addendum. In conversation with the Technical Project Manager on February 9, 2012, the Project QA Manager was informed that the July 22, 2011 Tier II Assessment Plan remains valid for the purpose of defining the horizontal and vertical extent of contaminant migration at the subject site; however, a revised Cost Agreement, compatible with the SCDHEC document entitled "SUPERB Account Allowable Costs" (dated July 1, 2012) was specifically requested. As such, the July 22, 2012 Tier II Assessment Plan is included I this QAPP Contractor Addendum as Attachment A, as is the revised Cost Agreement.

Please answer the following: Does this project fall under UST or Brownfields area?

This project falls under the UST area of SCDHEC.

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).***

Completion of a Tier II Assessment in order to delineate the horizontal and vertical extent of petroleum hydrocarbon contaminants at the Broad River Amoco (BP).

2. ***The work will begin within*** 14 days ***after cost approval and Tier II Assessment sampling should be complete within*** 120 days ***of initiation.***

3. ***Are there are time or resource constraints? Include those factors that may interfere with the tentative schedule.***

As indicated in the Tier II Assessment Plan included in Attachment A of this QAPP Contractor Addendum, groundwater field screening will include installation of temporary monitoring wells constructed of 1-inch diameter PVC well screen and casing. The temporary monitoring wells are to be installed in two separate stratified depth zones as follows: Zone 1: terminal depth of approximately 20 feet for field screening of interstitial groundwater, and Zone 2: terminal depth of approximately 40 feet for field screening of groundwater of saturated soils of the site surficial aquifer. The seepage of groundwater into the Zone 1 temporary monitoring wells is expected to be very slow and may require 24 to 48 hours before adequate quantities of groundwater have accumulated for sample collection.

Additionally, permission to access adjacent and/or down-gradient private or public property will most likely be required for groundwater field screening and subsequent permanent monitoring well installation. Also, various subsurface utilities, overhead electrical lines and building structures may inhibit physical access and/or maneuverability for drilling equipment.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

See attached Figures 1 and 2.

The subject site is located in northwest Richland County in Columbia, South Carolina and is situated on the southwest side of Broad River Road, a five-lane local thoroughfare. The site is comprised of approximately 0.85 acres and is currently owned and operated as a petroleum retail facility, convenience store and restaurant (Broad River BP). Currently, the property is improved with a store building of 2,000 square feet. The store building is located toward the rear (southwest) area of the property. Fronting the store building are three product dispensers covered by a canopy. An underground storage tank (UST) basin is located proximal (north) to the dispenser islands. An automobile water and vacuum servicing unit is located adjacent to the northwest property boundary, Dothan Road. The surface of the property is paved primarily with asphalt except over the area of the UST basin and proximal to the dispenser islands where concrete is present. Nearly the entire property is developed on apparent fill material. The property slopes moderately from Broad River Road southwest toward the curbed edge of the asphalt pavement behind the store building. The curbed edge directs rainfall runoff toward a drainage culvert near the west corner of the property and ultimately to a subsurface municipal storm water sewer system beneath Dothan Road. The west corner is the lowest area of the subject property. Just beyond the curbed edge of the asphalt pavement, a chain link fence is situated at the top of an earthen embankment which slopes steeply toward the southwest property line, located parallel to the foot of the embankment.

The subject property is bounded by Broad River Road to the northeast and beyond Broad River Road, a property currently occupied by the South Carolina Law Enforcement Division (SCLED). The adjacent property to the southeast is apparently commercially utilized (Nail and Beauty Salon). The adjacent property to the southwest is commercially utilized as a nursery school and day care (Play Pal Day Care). The Play Pal Day Care facility encompasses two properties fronting Dothan Road. The subject property is bounded to the northwest by Dothan Road and a commercially utilized property beyond (MDC Associates, an apparent mechanical engineering firm). The commercial usage of the subject property and adjacent properties is expected to remain the same in the future.

A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Lab Director, Access	Ashley B. Amick	BS – Biology	05-1991	SCDHEC Certified Lab	32575001
Lab Director, GCAL	Scott Bailey	BS – Environmental Health	12-1991	SCDHEC Certified Lab	73006001
Contractor QA Manager	Andrew Wilson, PG	Professional Geologist	5/6/1991	Professional Geologist	805
Contractor	Michael Faris, PG	Professional Geologist	8/27/2004	Professional Geologist	2379
Contractor Field Mgr.	Joseph Goings, PG	Professional Geologist	8/25/2010	Professional Geologist	2530
Well Driller	Josh Register	Certified Well Driller	7/10/2007	Certified Well Driller	1921
Field Technician	Tyler Felder	OSHA 8hr. refresher	11/18/11		

Table 3A Required Training and Licenses

Christy Smith of ARM Environmental Services, Inc. is responsible to ensuring that personnel participating in this project receive the proper training. All training records will be stored in the following location: secure digital copy on ARM server, as well as in personnel files located in locked file cabinet. Server and file cabinet are located onsite at ARM office.

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 Access Analytical, Inc.
Name of Lab Director Ashley B. Amick
SC DHEC Certification Number 32575001

Parameters this Lab will analyze for this project:

N/A (field parameters if required)

Full Name of the Laboratory GCAL (Note: partner / sub lab for Access)
Name of Lab Director Scott Bailey
SC DHEC Certification Number 73006001
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)

_x_US Mail ____Courier _x___Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Laboratory	Hardcopy and Electronic	Hardcopy: Offsite 7years Electronic: External hard drive 10 years	Yes
Lab Report	Laboratory	Electronic	External hard drive 10 years	Yes
Field Data and Assessment Report	ARM Environmental Services, Inc.	Hardcopy and Electronic	Hardcopy: Onsite for 5 years Electronic: Onsite and offsite for 10 years	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

NOTE: The Tier II Assessment will commence within 14 days of approval of the QAPP Contractor Addendum and is projected to be completed within 120 days (or 17 weeks) of commencement. The date of QAPP approval is unknown, as are the dates of implementation and completion of assessment task components. Also unknown are the assessment component tasks that will be approved or disapproved. Provided below are idealized time estimations for sequential completion of the Tier II Assessment task components based on an arbitrarily selected date of commencement (April 2, 2012). The estimations are based on the assumption that the Tier II Assessment Plan included in Attachment A will be approved as proposed.

Item	Start Date	End Date	Comments
Groundwater Field Screening - Zone 1 Week 1	April 2, 2012	April 8, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass

Item	Start Date	End Date	Comments
			Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 1 Week 2	April 9, 2012	April 15, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 1 Week 3	April 16, 2012	April 22, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 20 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 4	April 23, 2012	April 29, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 5	April 30, 2012	May 6, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening - Zone 2 Week 6	May 7, 2012	May 13, 2012	Ten (10) 1-inch diameter, PVC well screen and casing points will be installed to 40 feet each. Sufficient time will be allowed for groundwater infiltration into each well. A groundwater sample will be collected for analysis by Gas Chromatograph – Mass Spectrometer. Review of GC data. Plan formulation.
Groundwater Field Screening – Vertical Plume Delineation Week 7	May 14, 2012	May 20, 2012	Following groundwater field screening for the delineation of horizontal COC distribution, an indication of vertical COC distribution will be performed as follows: at three locations along the estimated center line of the horizontal COC plume (COC source or sources, plume mid-point and plume leading edge) a cluster of temporary monitoring wells will be installed. At each cluster, groundwater samples will be collected at projected depths of 45, 50 and 55 BLS feet with the installation of 1-inch PVC well screen and riser pipe.
Installation of Monitoring Wells Week 8	May 21, 2012	May 27, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a terminal depth of approximately 20 feet each. Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Monitoring Wells Week 9	May 28, 2012	June 3, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a terminal depth of approximately 20 feet each.

Item	Start Date	End Date	Comments
			Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Monitoring Wells Week 10	June 4, 2012	June 10, 2012	Eight (8) permanent monitoring wells will be installed. Monitoring wells installed within Zone 1 will be designed to bracket interstitial groundwater with a terminal depth of approximately 20 feet each. Monitoring wells installed into saturated soils of Zone 2 will be installed to a terminal depth of approximately 40 feet each. All wells will be constructed on 2-inch diameter PVC well screen and casing.
Installation of Deep Monitoring Wells Week 11	June 11, 2012	June 17, 2012	Two (2) deep wells will be installed to a projected terminal depth of approximately 60 feet each. The deep wells will be installed as "telescoping wells" with 6-inch diameter PVC surface casing installed to 50 to 55 feet and 2-inch diameter, PVC well screen and casing to 60 feet. The length of screen for the deep well will be 5 feet.
Groundwater Sample Collection Week 12	June 18, 2012	June 24, 2012	Prior to groundwater sample collection, all newly installed wells will be developed by evacuation of at least three well volumes of groundwater. All existing wells found not to be bracketing interstitial groundwater will be purged prior to sample collection. Wells with measurable free product thicknesses will not be sampled unless otherwise advised by the Technical Project Manager.
Laboratory Analysis of Groundwater Samples Weeks 13 and 14	June 25, 2012	July 8, 2012	Laboratory analysis will be performed by Access Analytical, Inc. and GCAL, a partner and subcontracted laboratory to Access Analytical, Inc.
Aquifer Testing Week 13 or 14	June 25, 2012	July 8, 2012	A day will be scheduled on which aquifer testing will be performed on two monitoring wells, one installed in Zone 1 of interstitial groundwater and one installed in Zone 2 saturated soils.
Comprehensive Survey Week 13 or 14	June 25, 2012	July 8, 2012	A comprehensive survey will be performed and certified by a SC Registered Land Surveyor. The survey will provide a scale base map and elevations for the monitoring well network.
Tier II Report Preparation Weeks 15, 16 and 17.	July 9, 2012	July 30, 2012	A Tier II Assessment report will be prepared and submitted to the Technical Project Manager no later than July 30, 2012.

Table 5A Sampling Activities

B2 Sampling Methods

Please note: The contractor must follow sampling protocols as given in the UST QAPP.

***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	0
Trip Blank	1
Field Blank	2
Duplicates	2
Total number of Water samples	36

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.

N/A

Will Sampling Equipment have to be cleaned and decontaminated or is everything disposable?

All sampling equipment is disposable with the exception of the ORS Oil/Water Interface Probe, the YSI Dissolved Oxygen (DO) Meter, the Hanna pH/Conductivity Meter and the Martini MI415 Turbidity Meter.

Drilling tools, including solid stem auger, hollow stem auger, drill rod for mud rotary, direct push (Geoprobe™) drill rod and stainless-steel retractable well screen, are instrumental for soil and groundwater sample collection and for monitoring well installation. Obviously, these items are non-disposable.

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.

The ORS Oil/Water Interface Probe, the YSI DO Meter and the Hanna ph/Conductivity Meter will be cleaned and decontaminated between each use. Decontamination procedures will consist of: 1) donning a new pair of nitrile gloves, 2) washing of each unit with a soap (Alconox™) solution, 3) rinsing with distilled water, 4) rinsing with Isopropanol and 5) a final rinsing with distilled water. Disposable items and used decontamination fluids and materials will be containerized pending proper disposal.

All drilling tools and associated equipment as applicable (including solid stem auger, hollow stem auger, drill rod for mud rotary, Geoprobe™ direct push drill rod and stainless-steel retractable well screens, wrenches, hammers, shovels, mud pans, etc.) will be decontaminated by method of high pressure steam cleaning prior to mobilization to the site. Additionally, all drilling rods and associated equipment as applicable will be decontaminated (high pressure steam cleaning) between each soil boring and/or well installation. Decontamination will proceed as follows: 1) a decontamination pad will be established at a secure area reasonably proximal to drilling locations, 2) the drilling rods and tools as applicable will be decontaminated by steam cleaning under high pressure, 3) decontamination fluids and soil cuttings as applicable will be containerized pending proper disposal.

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.

A rotary auger drill rig and Geoprobe direct push machine with appropriate down-hole tooling will be needed in order to complete the tasks outlined in this plan. It is anticipated that one of ARM's track-mounted Geoprobe direct push units with a rotary auger attachment will be used to complete the deep field screening and shallow well installation activities at the site. A photoionization detector with a calibration kit will be required in order to conduct field screening of the soil and groundwater onsite. A Mobile B-57 rotary auger rig will be used with mud-rotary equipment for the installation of the telescoping monitoring wells. An ARM steam cleaner will be utilized with a portable decontamination station to clean the auger and mud rotary equipment and to capture the decontamination fluids generated during the cleaning process.

Typical equipment for sampling monitoring wells will be needed. Equipment required: water/product level meter, pH/specific conductivity/temperature meter with spare pH tip and calibration supplies, dissolved oxygen meter with spare DO membranes and calibration supplies, extra batteries for meters, disposable hand bailers, colorless nylon bailer twine, powder free nitrile gloves, pre-labeled sample bottles with preservative(s) appropriate for the required analyses provided by laboratory in insulated cooler, ice, field notebook and permanent pens/markers, field file with necessary maps, historical data, contact info., chain of custody and field data sheets, decontamination supplies as detailed in Appendix H in the *Programmatic QAPP, Rev. 1*, 5-gallon plastic buckets, 55-gallon steel drum(s), hand tools and key(s) for entry into well vaults and drums, trash bag(s), metal detector, autolevel with tripod and surveyors rod.

TK Tank Services of Sumter, South Carolina will be utilized as the disposal facility for any contaminated soils generated during this assessment. Development and purge water and/or by products from decontamination generated by ARM during this scope of work will be disposed of at U.S. Water Recovery in Holly Hill, South Carolina.

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
Off-Site Property Access	Notify Technical Project Manager; participate in further negotiations.	Telephone and/or e-mail correspondence to SCDHEC placed in project file.	Field Manager Joseph Goings
Drill Rig Malfunction	Make repairs in field or obtain replacement drilling equipment; Notify Technical Project Manager of any impending delays in project schedule.	Make note of malfunction in Project Field Notes; place in Project File.	SC Certified Well Driller: Josh Register
Destroyed or Lost Monitoring Wells	Notify Technical Project Manager	Document in field log and written report, if necessary.	Field Manager Joseph Goings
Hitting a utility line during drilling.	Halt drilling immediately. Notify appropriate authorities; change drilling location.	Document in field log and written report, if necessary.	Field Manager Joseph Goings
Drilling Refusal	Contact Technical Project Manager on permissibility of completing soil boring or monitoring well at shallower depth; discuss feasibility of installation of a deep well.	Document in field log and written report, if necessary.	SC Certified Well Driller: Josh Register
Groundwater encountered at a shallower depth than expected (this possibility is enhanced at areas of lower surface elevation, often at down-gradient locations)	If deemed prudent, contact Technical Project Manager on permissibility of completing soil boring or monitoring well at shallower depth.	Document in field log and written report, if necessary.	SC Certified Well Driller: Josh Register
Malfunction of ORS Oil/Water Interface Probe	Notify field manager of equipment failure. Clean indicator and/or change batteries in the field. If problem persists, use back-up oil/water interface probe.	Document in field log and written report, if necessary.	Field Manager Joseph Goings Field Staff Tyler Felder

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?***

   The samples will be maintained on ice in an insulated cooler during collection onsite and during transport. The cooler will be sealed during transport from the site to the ARM office. A laboratory courier will pick up and deliver the samples under chain of custody to the laboratory within less than 24 hours of sample collection.

Once samples are received from client by Access they are temp checked for compliance using a NIST traceable thermometer and the temperature is recorded on the COC. Samples are then kept on ice until they are shipped out (normally samples are shipped on the same day they are received by Access). Samples are shipped according to the established SOP that Access has for environmental sample shipment. This SOP addresses temperature control issues and specifies how samples are to be packed so that they remain between 0-6 degrees C while in transit to the receiving lab (GCAL).

2. ***How will the contactors cool the samples and keep the samples cool?***

Wet ice will be used to keep the samples cool in an insulated cooler while in the field and during transit. A clean, designated sample refrigerator will be used until samples are picked up under chain of custody by laboratory personnel.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***

Temperatures are checked with a NIST traceable thermometer. Sample temperatures are checked by Access staff when samples are received and checked again at the receiving laboratory (GCAL) once they arrive. Yes, temperature blanks are normally utilized.

4. ***Where will the samples be stored in the Lab once they are received?***

Once samples arrive at the receiving lab (GCAL) they are logged in and subsequently moved to dedicated, temperature controlled coolers within the lab until ready for analysis.

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.***

It is the labs policy to maintain a Continuous Chain of Custody. A continuous chain of custody sets protocols for keeping an unbroken, or continuous, chain of custody. A complete chain of custody is maintained by Access / GCAL. Each sample(s) when submitted is accompanied by a Chain of Custody form. These forms contain pertinent information about the sample(s) including specific analytical requests, sampling notes, sample condition, customer name and address. Additionally, information concerning the site name, field identification marks, date and time of collection, sampler signature, and preservation data is recorded.

Upon receipt signature and subsequent login of samples at the receiving laboratory facility (GCAL) all COCs are scanned into the LIMS system and associated with the individual project they represent. The COC is then included along with the final report when it is sent to the client. Original copies of the COC document can be returned to the client via postal mail upon request.

B4 Analytical Methods

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
pH	Field Purge Meters SOP	9040C	Field mutlimeter	ThermoOrion 4 Star
temperature	Field Purge Meters SOP	SM-2550B	Field mutlimeter	ThermoOrion 4 Star
Speific conductivity	Field Purge Meters SOP	9050A	Field mutlimeter	ThermoOrion 4 Star
Dissolved oxygen	Field Purge Meters SOP	SM-4500 OG	Field meter	YSI 55
turbidity	Field Purge Meters SOP	SM-2130B	Field meter	Hanna HI 98703
BTEX+Naph+MTBE+Oxygentes	S-VO-002	8260B	GC/MS	
PAH's	S-SV-021	8270D	GC/MS	
EDB	S-SV-012	8011	GC	
Lead,T.	S-IM-022	6010C	ICP	
Ferrous Iron	S-IN-009	SM 3500-FED	Spectrophotometer	
Nitrate	S-IN-042	353.2	Auto-analyzer/Leachate	
Sulfate	S-IN-010	300.0	Ion Chromatograph	
Methane	S-VO-004	RSK-175	GC	
TOC	S-IN-030	Walkley-Black	N/A	
DRO - TPH	S-SV-001	8015C	GC	

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
GCMSV-003	Method 8260B GCMSV-003 r22	STANDARD OPERATING PROCEDURE FOR THE ANALYSIS OF VOLATILE MASS SPEC SAMPLES BY METHOD 8260B
GCMSV-004	Oxygenates GCMSV-004 r1	STANDARD OPERATING PROCEDURE FOR THE ANALYSIS OF OXYGENATES BY METHOD 8260B
GC-034	Method 8011 GC-034 r6	STANDARD OPERATING PROCEDURE FOR METHOD 8011
GCMSSV-004	Method 8270D GCMSSV-004 r3	STANARD OPERATING PROCEDURE FOR THE ANALYSIS OF SEMI-VOLATILE MAS SPEC SAMPLE BY METHOD 8270D
ICP Met-010	ICP Met-010 r18	STANDARD OPERATING PROCEDURE FOR ANALYSIS OF METALS BY ICP
IC WL-042	IC WL-042 r15	STANDARD OPERATING PROCEDURE FOR IC
GC-024	Dissolved Gas GC-024 r6	STANDARD OPERATING PROCEDURE FOR THE ANALYSIS OF DISSOLVED GAS IN GROUNDWATER
WL-047	Ferrous Iron WL-047 r5	STANDARD OPERATING PROCEDURE FOR THE ANALSYSIS OF FERROUS IRON

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
DO meter does not match the equilibration charts	Re Calibrate, check again. If still out, replace membrane and recalibrate.	Documented in the Purging Meter Calibration Sheet	Tyler Felder
pH meter does not match the equilibration charts	Re Calibrate, check again. If still out, replace pH sensor.	Documented in the Purging Meter Calibration Sheet	Tyler Felder
turbidity meter does not match the equilibration charts	Clean cuvets, re-calibrate, check again. If still out, replace meter	Documented in the Purging Meter Calibration Sheet	Field Technician
COC or Sample Receiving issues	Call Client	Sample Receiving Checklist (SRC)	Analyst, Laboratory QC/QA Manager

Failure	Response	Documented Where?	Individual Responsible
Surrogate Failure on Organics Analysis	Corrective Action Initiated, Samples are re-extracted and/or analyzed if surrogate recoveries outside of control limits. Data reported with qualifiers if necessary.	Non-Conformance / Corrective Action Form kept at lab in controlled logbook, LIMS	Analyst, Laboratory QC/QA Manager
Sample Containers Broken During Transit or at Lab	Client Notified via phone or email	Sample Receiving Checklist Form, LIMS	Sample Login Staff, Laboratory Project Manager, Analyst
Holding Time Exceeded	Client Notified via phone or email	Sample Receiving Checklist Form, LIMS	Sample Login Staff, Laboratory Project Manager, Analyst
Positive Hits in Method Blank	Corrective Action Initiated, Samples are re-extracted and/or analyzed if MB has hits above the RL's for compounds being analyzed.	Non-Conformance / Corrective Action Form kept at lab in controlled logbook, LIMS	Analyst, Laboratory QC/QA Manager

Table 9A Corrective Action Procedures

3. *Identify sample disposal procedures.*

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
All	Soil, chemical materials	60 days after analysis the sample custodian will stage completed samples for disposal. The sample custodian will scan all the samples segregated for disposal as "STD" (sent to disposal) using the Horizon LIMS system.	55-gallon open top steel drum located in the Satellite Accumulation Area. Labeled according to the characteristics of the waste and the waste stream. Waste streams are determined by analysis of the waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	Waste disposal is provided by various DOT certified vendors who come to the facility and label, placard, and manifest the drums according to 49 CFR Part 173 before transporting to their facility.
All	Water	60 days after analysis the sample custodian will stage completed samples for disposal. The sample custodian will scan all the samples segregated for disposal as "STD" (sent to disposal) using the Horizon LIMS system.	55-gallon tight head poly drum located in the Satellite Accumulation Area. Labeled according to the characteristics and waste stream. Waste streams are determined by analysis of the waste and through process knowledge. When the drum is full it is moved to the Central Accumulation Area for disposal.	Waste disposal is provided by various DOT certified vendors who come to the facility and label, placard, and manifest the drums according to 49 CFR Part 173 before transporting to their facility.

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).***

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. Not the availability and location of spare parts.***

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Water level / interface probe	ALL	Check battery level & electronics, sensing probe tip and/or prism; and quality of measuring tape / replace/repair as necessary	weekly	Spare batteries and spare sensing probe tip repair kit with tape pigtail located inside metal cabinet in sample equipment room at ARM office	Michael Faris, P.G.
Photolonization Detector	ALL	Check battery, electronics, lamp, internal pump, hydrophobic water trap, and probe tip	Periodic – according to manufact. specs	Spare water traps and probe tip located inside metal cabinet in sample equipment room at ARM office	Joseph Goings, P.G.
DO meter	ALL	Check DO membrane / replace if necessary	Periodic – according to manufact. specs	Inside metal cabinet in sample equipment room at ARM office	Tyler Felder – Shop Maintenance (ARM)
pH / specific conductivity / temperature meter	ALL	Clean and check pH bulb and spec. conductivity probe for wear / replace if necessary	Periodic – according to manufact. specs	.Inside metal cabinet in sample equipment room at ARM office	Tyler Felder – Shop Maintenance (ARM)
Turbidity meter	ALL	Clean and check cuvets for wear, replace if necessary	Periodic – according to manufact. specs	.Inside metal cabinet in sample equipment room at ARM office	Tyler Felder – Shop Maintenance (ARM)
Volatiles Mass Spec	ALL	Change traps, clean ion source, replace filaments	Periodic	Laboratory	MSV Analyst

Semi-volatiles Mass Spec	ALL	Injection port maintenance, ion source maintenance, column replacement	Periodic	Laboratory	MSSV Analyst
ECD GC	ALL	Injection port maintenance, column replacement	Periodic	Laboratory	GC Analyst
Dionex IC	ALL	Replace auto sampler filter, tubing, line filter, sample Line and Waste Line, as needed. Check Reagent levels, flow rate, waste line.	Periodic	Laboratory	IC Analyst
ICP	ALL	Clean Sample introduction system , auto sampler, torch, Change spray chamber, torch tubing, tubing	Periodic	Laboratory	ICP Analyst
Leeman Mercury Analyzer	ALL	Clean GLS, Change Pump tubing, Nafion Dryer, Lamp	Periodic	Laboratory	Mercury Analyst
Flow Injection Analysis – Lachat 8000	ALL	Replace sample and reagent lines, replace light source, re-wrap heating coil, replace column	Periodic/As Needed	Laboratory	Nitrate Analyst

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.***

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
Photolonization detector	Daily check for proper function of battery, electronics, and calibration	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Water level / interface probe	Daily check for proper function of battery, electronics, measuring tape, and sensing probe tip/prism	According to manufacturer's specifications	Field Technician	Replace or repair component(s) if found faulty or damaged

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
DO meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
pH / specific conductivity / temperature meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Turbidity Meter	Daily calibration check	According to manufacturer's specifications	Field Technician	Recalibration or instrument maintenance
Volatiles Mass Spec	Daily calibration check	Method Requirements	MSV Analyst	Recalibration or instrument maintenance
Semi-volatiles Mass Spec	Daily calibration check	Method Requirements	MSSV Analyst	Recalibration or instrument maintenance
ECD GC	Daily calibration check	Method Requirements	GC Analyst	Recalibration or instrument maintenance
Dionex IC	Daily calibration check	Method Requirements	Nitrate Analyst	Recalibration or instrument maintenance
ICP	Daily calibration check	Method Requirements	ICP Analyst	Recalibration or instrument maintenance
Leeman Mercury Analyzer	Daily calibration check	Method Requirements	Mercury Analyst	Recalibration or instrument maintenance
Flow Injection Analysis – Lachat 8000	Daily and continuing calibration check	See calibration criteria	INM Analyst	Recalibration or instrument maintenance

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*
Photolonization detector	Zero with zero gas, calibrate with known span gas, adjust response factor to site conditions when appropriate	Daily calibration	Within 10% of standards	Recalibration or instrument maintenance	Field Technician, PM if necessary	
Water level / interface probe	The tape will be compared against an invar steel surveyors chain	Per manufacturers specifications (Solinst / Heron)	0.01 feet per 10 feet of tape length	Replace tape if not within acceptance criteria	Michael Faris, P.G.	Sampling SOP
DO meter	Enter elevation and expected salinity for geographic area, then calibrate to DO standard	Daily calibration	Within 5% of DO standard	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
pH / specific conductivity / temperature meter	Immerse pH probe in singles packets of pH 4.0, 7.0, 10.0, with rinses in between	Daily calibration	Pass / fail according to automatic meter calibration	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP
Turbidity meter	Place standard (<0.1, 15, 100 NTU) in cuvet and measure	Daily calibration	Within 10% of each standard	Recalibration or instrument maintenance	Field Technician, PM if necessary	Sampling SOP
Volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by continuous calibration verification standard	Method Criteria	Detailed in SOP	MSV Analyst	S-VO-002
Semi-volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSSV Analyst	S-SV-021
GC ECD	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	GC Analyst	S-SV-012
Dionex IC	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	IC Analyst	S-IN-010
ICP	Minimum of 3 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	ICP Analyst	S-IM-022
Cetac Mercury Analyzer	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	Mercury Analyst	S-IM-006
Lacaht QuickChem 8000	Minimum of 5 calibration standards	Daily or when indicated by calibration verification standard	Method Criteria	Detailed in SOP	Nitrate Analyst	S-IN-042

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.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Nitrile gloves	ECT Manufacturing	Each box of gloves is sealed in non-damaged sipping box, Certificate of analysis	Metal cabinet in sample equipment room at ARM office	Joseph Goings - ARM
Disposable hand bailers	Pine Environmental	Each bailer individually sealed in plastic bag in non-damaged box	In box in sample equipment room at ARM office	Michael Faris - ARM
Bailer twine rolls	Pine Environmental	Each roll individually sealed in plastic bag in non-damaged box	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Photolonization Standards	Pine Environmental	Each canister sealed with certificate of analysis	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Sample meter calibration fluids (standards)	Lab Safety Supply, Ben Meadows	Each fluid in individually sealed bottle or bag in undamaged box, certificates of analysis	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Sample meter spare parts	Lab Safety Supply, Fondriest	Each component in sealed container in undamaged box	Metal cabinet in sample equipment room at ARM office	Michael Faris - ARM
Decontamination Fluids (DI water, Isopropanol)	Smith and Jones Dist. Co.	Unopened, unused, labeled bottles in labeled boxes picked up locally, certificates of analysis	In boxes in shop at ARM office	Yerin Flores - ARM
Laboratory-grade non-phosphate soap	Lab Safety Supply	Individually sealed single use containers in undamaged shipping box	In boxes in shop at ARM office	Yerin Flores - ARM
Laboratory Chemicals	Fisher,VWR	Certificates of analysis and laboratory testing	Laboratory storage	Receiving and laboratory personnel
Laboratory standards	O2Si, Restek, High Purity, VHG, Supelco	Certificates of analysis and laboratory verifications	Vendor specific storage conditions	Laboratory Analysts
Sample Containers	Daniels Scientific, QEC	Certificates of analysis and laboratory testing	Bottle storage area	Sample receiving personnel

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
Richland County GIS	Identifying adjacent property owners, property boundaries, subsurface municipal utilities, etc.	Facilitate access to adjacent properties, history of usage and/or ownership of the subject property and adjacent properties.	This website also provides detailed topographic maps and information regarding storm-water runoff.
Phase II Subsurface Investigation Report, Broad River BP, Partner Engineering and Science, Inc., El Segundo, California, December, 2010	Preliminary information concerning soil quality and groundwater occurrence	The laboratory analytical results from the Phase II subsurface investigation were reported to the SCDHEC as an apparent release (January 4, 2011).	A copy of the report was provided to ARM by Mr. Fredrick N. Cecchini.

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.
   Not applicable to this scope of work.

B10 Data Management

1. Describe the data management scheme from field to final use and storage.

As generated by the Environmental Rehabilitation Contractor (ARM Environmental Services, Inc.) in completing Tier II Assessment component tasks, field notes and logs will be stored in hardback bound field books and/or on 8 ½ x 11" field data sheets. Field data sheets are signed by staff upon completion of daily work. Copies of field notes and driller 1903 forms are provided on a daily basis and placed in the project file. Field boring logs are kept on a backed-up digital library.

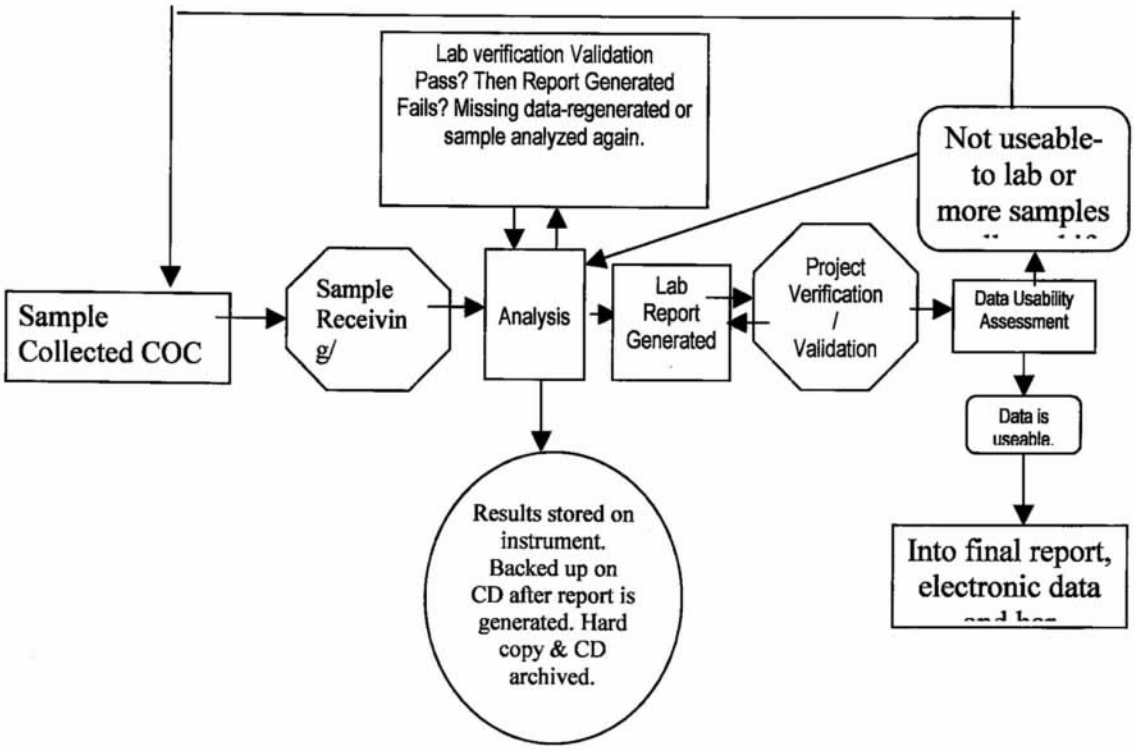


Figure 5: Laboratory Data Management Scheme (Source: Sample QAPP, South Carolina Department of Health and Environmental Control, March 21, 2001)

2. 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?

   Copies of field notes and boring logs are reviewed by the Field Manager and placed in the project file. Additionally, field notes/logs are scanned, password secured, and placed into the digital project file. Original data sheets will also be kept by the field staff in field notebooks/folders for a minimum of three years.

   All data is recorded in bound books and/or by instrument printout. If data is recorded by hand, it must be done in ink. It is inappropriate to have pencils, erasers, or correction fluid at the bench. Data is kept either as a hardcopy, electronically, or both. All data must be protected by the use of audit trails, passwords, and controlled logbooks. If changes or corrections are necessary, it must be performed in a way that maintains the integrity of the data. Changes must be initialed and dated and corrections made using a single line strikeout. If the record does not allow space to clearly show the change, write it in the comments or at the bottom of the page. If electronic files must be changed, the file must be renamed so original information is not lost. If an entire batch of data must be reprocessed all files must be renamed. Reasons for doing so must be written in the comments and/or fully documented using a correction form. At no time shall data be obliterated for any reasons.

3. 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.

   All data reported includes three levels of data review including calculations used to generate the reported analytical results. This review is performed by the analyst performing the test, the supervisor, and report

generation manager or designee. Data reduction includes all activities that convert instrument/computer responses into reportable results. Manually entered information is reviewed for accuracy in the LIMS and in the signed copy of the client report.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Hard copies of final reports are contained in the specific folder in ARM's file library. Additionally, each report is converted to digital format and stored in its applicable digital folder. Hard copy storage will be for a minimum of three years. Digital storage will be indefinite. Digital data is backed-up on a weekly basis on a four month rolling schedule. For security purposes current week data is stored at an off-site location.

The laboratory will retain all records related to sample analysis including raw test data, calculations, derived data, calibrations and copies of test reports including chain of custodies. These records are archived in accordance with regulatory requirements for a minimum of ten years or as required by specific client contracts. Software/hardware permitting the access of electronic data must be maintained. The copy of client reports is stored in a room requiring key-card access. All reports must be signed out using the archived reports logbook. Client reports and chain of custodies are also scanned for electronic storage. Written and printed data records (bench sheets, logbooks, electronic printouts, etc.) are scanned before being boxed and placed in storage. Electronic data is stored on a dedicated server, which is backed-up daily. The safety officer keeps safety and disposal information. Archived data is stored on-site until capacity is met. The oldest archived data is then moved to a secure storage facility. The storage and on-site facility are monitored and protected from fire and theft. Electronic data storage is free from magnetic sources. It is the goal of the lab to have redundant copies (hard and electronic) to prevent loss of records due to being misplaced or environmental deterioration or catastrophe.

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?*

Either Michael Faris, PG – Senior Geologist (ARM Project Manager), or Joseph Goings, PG – Staff Geologist (Field Manager) will be responsible for observing field personnel on a daily basis depending on the week's schedule. Each of these ARM employees has the authority to stop the work if significant problems are observed.

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?*

-RESPONSE:

I. Access Analytical, Inc. is an SCDHEC certified lab for field parameters. Access participates in annual proficiency testing (PT) audit studies in order to maintain its DHEC

certification. The audit samples are provided by Wibby Environmental who is a producer of analytical standards and unknown audit samples. Wibby Environmental is an approved vendor for the SCDHEC laboratory certification group (see www.scdhec.gov/environment/envserv/lcptrequirements.htm for a list of approved vendors). Access does not hold other certifications as it is not required for this work.

II. GCAL is certified by DHEC and numerous other states. In addition to the applicable SCDHEC certifications GCAL also participates in the following:

- Louisiana Environmental Laboratory Accreditation Program – This assessment is conducted every two years. During that assessment the lab is assessed to the TNI Standards and the Louisiana Department of Environmental Qualities certification regulations. Theses assessment is based on the ISO 17025 requirements and ISO 17011 requirements as found in the TNI standards.

- DOD certification – This assessment is scheduled every two years and is completed by ACLASS. The assessment is based on the DOD QSM requirements.

- The lab performs 2 PT studies every year.

- California ELAP – requires an assessment every two years and is conducted by the state's assessors. The assessment is to verify compliance with the requirements of the state of California.

- Arizona – requires an assessment every year and is conducted by the state's assessment team. The assessment is to verify compliance with the requirements of the state of Arizona.

- North Carolina – at the time of application standard operating procedures, quality assurance project plan, and PT results are submitted for review. Assessments are conducted every two years.

- Client Assessments – GCAL's clients can and do require assessment using a third party assessor such as Environmental Standards. The contracted assessment team verifies that GCAL is meeting the requirements of the clients contract and is compliant with EPA requirements and compliant with state regulations.

When or how often are these done?

- REPONSE: Answer to this question is included in the above response.

Who will the results be given to and who has the ability to stop work if problems are severe?

- RESPONSE: The results of the audits are reviewed by the associated regulating bodies. Any of these organizations have the right to cease work being done which falls under their program area if sufficient deficiencies are found.

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).

Access Analytical - Chain of Custody Record

Project Submission #:_____ **RUSH #** _____ **Laboratory ID:**_____ **PO # :**_____

Company Name:	Preservative: (*see codes below)									
Address:										
City: State: Zip:										
Project Name:										
Report To:										
Sampled By (print):										

Sample Label	Date Collected	Time Collected	Matrix	# of Cont	→ REQUESTED LAB ANALYSIS: →	BTEX/Napth/MTBE/...	EDB by 8260 / 8011 (circle one)	PAH's by 8270	Nitrate / Sulfate	Total Lead	Ferrous Iron	Methane	NOTES / COMMENTS

ACCESS ANALYTICAL, INC.
Main Office:
1248 Lake Murray Blvd.
Irmo, SC 29063

Phone: 803.781.4243 / 888.315.4243 (toll free)
Fax: 803.781.4303

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?
___Yes
___No

Project Location:
___SC
___NC
___Other _____(specify)

Relinquished By:	Date:	Time:	Received By:

*** 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

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

DEC 0 4 2012

UST 22 Rec'd DOCKETING

FREDRICK N CECCHINI
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
COLUMBIA SC 29210-4009

Re: Revised Tier II Directive
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946; CA # 42065; MWA # UMW-24502
Release reported January 4, 2011
Tier I Report received April 11, 2011
Monitoring Well Installation Report received June 21, 2011
QAPP Contractor Addendum received February 21, 2012 and Revision received March 15, 2012 by EnviroTest
Tier II Directive dated May 21, 2012
QAPP Contractor Addendum by ARM received June 20, 2012
Revised Tier II Directive dated June 22, 2012
QAPP Contractor Addendum by ARM received December 4, 2012
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (SCDHEC) reviewed the referenced UST Quality Assurance Program Plan (QAPP) submitted by ARM Environmental Services received on December 4, 2012. The QAPP Contractor Addendum changing the laboratory to Access Analytical and GCAL is approved. A copy of the signed QAPP is enclosed for your reference and records. **A Tier II assessment report that defines the product, as well as the dissolved plume both shallow and deep is due on or before January 25, 2013.**

Please reference UST Permit number 11946 on all correspondence. If you have any questions, please contact me by phone at (803) 896-6669, by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

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

enc: Signed Site Specific QAPP Contractor Addendum

cc: ARM Environmental Services, Inc. PO Box PO Box 50285, Columbia, SC 29250 (with enc.)
Enviro-Test Services, PO Box 2237, Irmo, SC 29063 (with enc.)
Technical File (with enc.)

Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Broad River Amoco, UST Permit # 11946

4335 Broad River Road, Columbia, SC – Richland County

Prepared by: Michael Faris
ARM Environmental Services Inc. - SCDHEC Certified Contractor No. 4
Date: November 28, 2012

Approvals

Arthur Shrader, Hydrogeologist
SCDHEC Project Manager
Signature Date 12/4/12

Andrew Wilson, P.G.
Contractor QA Manager
Signature Date 11/29/12

Michael Faris, P.G.
Site Rehabilitation Contractor
Signature Date 11/28/12

Ashley B. Amick
Laboratory Director, Access Analytical, Inc.
Signature Date 11/29/12

Scott Bailey
Laboratory Director, GCAL
Brenda Martinez
Wed Nov 28 2012 16:19:42
Signature Date 11/28/12

D H E C
PROMOTE PROTECT PROSPER

Shrader, Art A. <shradeaa@dhec.sc.gov>

Screening Data Review

Broad River Amoco; UST Permit #11946

4 messages

UST 23 tech DOCKETING

Michael Faris <mfaris@armenv.com> Tue, Feb 12, 2013 at 4:54 PM
To: "ArtShrader @DHEC" <SHRADEAA@dhec.sc.gov>

Art,
Please review the final in a long saga of well proposal maps for the site. I am hopeful that we will fully delineate the contaminant plume with this final round of wells.

Upon reviewing the available lithology and historical information from many boreholes on and around the release, it is apparent that groundwater can be found in several layers at the site. The most shallow water encountered at the site is generally found between 15' - 20' below ground surface (bgs). This shallow water is very slow to accumulate in the boreholes (wells). Typically it took at least several days for the water levels to come to equilibrium. It is likely that this most shallow water is present in small volume in the sandy clayey silt due to localized recharge and capillarity. The soils become more clayey (a silty clay) and mostly dry beginning at approximately 25' bgs. The second layer of water encountered in the subsurface is typically found at an approximate depth of 35'-40'. The water in this second water bearing zone is generally under pressure and immediately enters the borehole and comes up many feet in the wells.

The two layers of water are clearly connected in some fashion as contamination has been identified at both depths during this Tier II investigation. There is an aquitard comprised of mostly dry silty clay (with a small % of sand) between the two above-described zones of water across the area of study. Because the contaminants have been identified at both depths in and near the source area, there clearly is transmissivity between the two layers. Therefore, the silty clay is not considered true aquiclude, but is acting at least as a partial confining unit. There was no 'smoking gun' layer of high permeability identified that was clearly a preferential pathway for migration of the contaminants. Therefore, I believe that we must continue the well installation effort and complete the delineation of the contaminants in both zones of groundwater.

Once the wells are installed and the survey completed, cross sections will be completed more clearly depicting what was described above lithologically.

Thank,
Michael

Michael L. Faris, P.G.
ARM Environmental Services, Inc.
1210 First Street South
Columbia, SC 29209
mfaris@armenv.com
ph: 803 783-3314
cell: 803 269-3913

2 attachments

BroadRiverAmoco_WellApproval021213.pdf
147K

BroadRiverAmoco_ScreeningResults092012.pdf
16K

Shrader, Art A. <shradeaa@dhec.sc.gov> Tue, Feb 12, 2013 at 5:14 PM
To: Michael Faris <mfaris@armenv.com>

Michael,

I agree the dissolved plume is not defined and additional monitoring well are required.

I do not fee the product is defined either. The wells you installed are screening data. Will product migrate to FP9, FP10 or FP11 in the future? With the complex geology and slow recharge a series of recovery wells with long screens will be required to define the product and a starting point to recover product. I would be really interested in a free product recovery test/ bail down test on the well with the greatest product thickness also. Since we must remove all measurable product to even consider conditional closure, how to attack the product might be the most important assessment data.

Art
[Quoted text hidden]
--
Arthur Shrader, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management
tel: (803) 896-6669
fax: (803) 896-6245

Michael Faris <mfaris@armenv.com> Tue, Feb 12, 2013 at 5:18 PM
To: "Shrader, Art A." <shradeaa@dhec.sc.gov>

Art,
Agreed regarding free product.
I would really like to get back onto drilling this one. This one keeps me up at night. I wish to complete this project.
What can we agree needs to be drilled in order to finish this assessment. While working out what to do regarding the product, what can we get done downgradient to complete the dissolved-phase delineation?
I understand recovery wells are desired. Would it be prudent to install additional 2" monitoring wells in the vicinity of the product, then install recovery wells based on what is found after a few sampling events? or do you want recovery wells now as part of this assessment?

Michael

From: Shrader, Art A.
Sent: Tuesday, February 12, 2013 5:14 PM
To: Michael Faris
Subject: Re: Broad River Amoco; UST Permit #11946
[Quoted text hidden]

Shrader, Art A. <shradeaa@dhec.sc.gov> Tue, Feb 12, 2013 at 5:32 PM
To: Michael Faris <mfaris@armenv.com>

Michael,

This is one is not easy. That might be some of the reason Terry passed this one to ARM.

This is like New China Restaurant. This is one of those sites where if you can define the geology, you can define

the plume (product and dissolved) vs stabbing wells in the ground and stopping when you have 8 shallow and 3 deep wells.

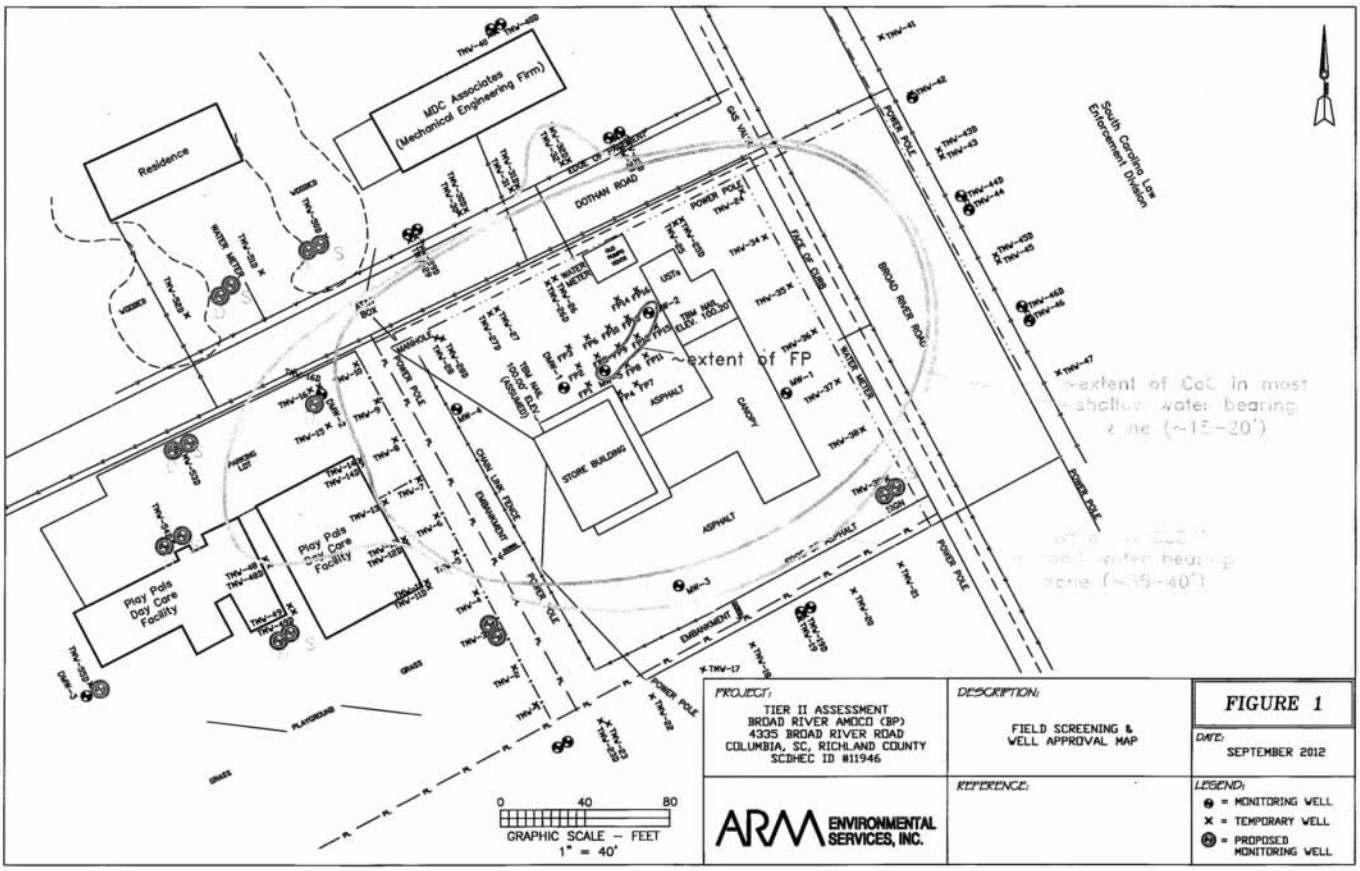
You defined the product with screening wells, so we need wells to define the product in the future. Recovery wells are monitoring wells only better since they are larger diameter to collect product (a definite plus in clay and up welling pressure) or they can be sampled if there is no product. I think 2 inch monitoring wells would be a waste, recovery wells would be a step in the right direction in the area of product.

Monitoring wells (shallow and deep) as you have proposed are needed to address the dissolved product and define the geology outside the area with product.

If every site was a sandbox for geology, there would be no challenge.

Art

[Quoted text hidden]


MDC Associates
(Mechanical Engineering Firm)
Residence
DOTHAN ROAD
BROAD RIVER ROAD
South Carolina Law Enforcement Division
Play Pals Day Care Facility
Play Pals Day Care Facility
STORE BUILDING
CANOPY
ASPHALT
USTs
~extent of FP
~extent of CoC in most shallow water bearing zone (~15-20')
~extent of CoC in deep water bearing zone (~35-40')
CHAIN LINK FENCE
EMBANKMENT
POWER POLE
GAS VALVE
WATER METER
PLAYGROUND
GRASS
0 40 80
GRAPHIC SCALE – FEET
1" = 40'
PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO (BP)
4335 BROAD RIVER ROAD
COLUMBIA, SC, RICHLAND COUNTY
SCDHEC ID #11946
DESCRIPTION:
FIELD SCREENING & WELL APPROVAL MAP
REFERENCE:
ARM ENVIRONMENTAL SERVICES, INC.
FIGURE 1
DATE:
SEPTEMBER 2012
LEGEND:
= MONITORING WELL
= TEMPORARY WELL
= PROPOSED MONITORING WELL

Broad River Amoco (BP); UST Permit #11946
Tabulated Field Screening Results
As of 9/14/2012

Temp. Well ID	Date	Total Depth	Benzene	MTBE	BTEXM
RBSLs			5.0	40	N/A
TMW-1	5/17/12	15.0	>1	>1	>1
TMW-2	5/17/12	15.0	>1	>1	>1
TMW-3	5/17/12	15.0	>1	>1	>1
TMW-4	5/17/12	15.0	>1	>1	1.51
TMW-5	5/17/12	15.0	**59.3**	1.75	139.9
TMW-6	5/18/12	15.0	3.65	2.50	84.2
TMW-7	5/18/12	15.0	**80.3**	**322.4**	973
TMW-8	5/18/12	15.0	>1	1.04	38.2
TMW-9	5/18/12	15.0	**73.5**	**142.8**	249.8
TMW-10	5/18/12	15.0	**7.3**	9.69	24.8
TMW-11	5/24/12	15.0	>1	>1	19.7
TMW-11D	7/24/12	34.5	2	1	3
TMW-12	5/24/12	15.0	>1	1.68	3.12
TMW-12D	7/25/12	34.0	1	8	9
TMW-13	5/24/12	15.0	**12**	14.9	32.9
TMW-14	5/24/12	15.0	1	4.06	5.1
TMW-14D	7/20/12	39.0	0	2	3
TMW-15	5/25/12	15.0	>1	0.80	3.34
TMW-16	5/25/12	15.0	0.57	>1	2.24
TMW-16D	7/24/12	39.5	4	**113**	118
TMW-17	5/25/12	15.0	>1	>1	>1
TMW-18	6/13/12	19.0	0	0	5.0
TMW-19	6/13/12	19.0	0	0	0
TMW-19D	7/17/12	40.0	1	0	9
TMW-20	6/13/12	19.0	>1	>1	9
TMW-21	6/13/12	19.0	>1	>1	4
TMW-22	6/13/12	19.0	>1	7	0
TMW-23	6/19/12	20.0	>1	>1	7
TMW-23D	6/19/12	42.0	>1	>1	2
TMW-24	6/21/12	19.0	3	23	63
TMW-25	7/5/12	19.0	**266**	**234**	1212
TMW-25D	7/19/12	40.0	**138**	**440**	1239
TMW-26	refusal due to rubble at ~ 4-5 feet				
TMW-26D	refusal due to rubble at ~ 4-5 feet				
TMW-27	6/20/12	20.0	**81**	**127**	938
TMW-27D	7/5/12	39.0	**130**	**147**	446
TMW-28	6/20/12	20.0	**102**	**270**	888
TMW-28D	6/20/12	40.0	**132**	**196**	751
TMW-29	7/5/12	20.0	>1	>1	25
TMW-29D	7/16/12	40.0	0	0	19

Note: Results expressed in ug/L (PPB)

Broad River Amoco (BP); UST Permit #11946
Tabulated Field Screening Results (Cont.)
As of 9/14/2012

Temp. Well ID	Date	Total Depth	Benzene	MTBE	BTEXM
RBSLs			5.0	40	N/A
TMW-30	7/05/12	20.0	1	>1	7
TMW-30D	7/17/12	40.0	0	0	28
TMW-31	7/05/12	20.0	>1	>1	2
TMW-31D	7/05/12	37.0	>1	>1	23
TMW-32	7/05/12	19.0	>1	>1	7
TMW-32D	7/19/12	40.0	**70**	2.2	170.0
TMW-33	7/05/12	20.0	>1	>1	2
TMW-33D	7/25/12	39.0	>1	>1	>1
TMW-34	7/12/12	20.0	**226**	**378**	1275
TMW-35	7/12/12	20.0	**125**	**355**	1100
TMW-36	7/12/12	20.0	**130**	**220**	1026
TMW-37	7/17/12	23.0	**62**	1.0	108
TMW-38	7/13/12	25.0	**28**	1.0	140
TMW-39	7/17/12	25.0	0	0	3
TMW-40	7/23/12	25.0	>1	>1	62
TMW-40D	7/23/12	39.5	>1	>1	2
TMW-41	7/26/12	24.0	>1	>1	>1
TMW-42	7/26/12	20.0	>1	>1	>1
TMW-43	7/26/12	26.0	>1	>1	>1
TMW-43D	8/6/12	39.0	>1	>1	>1
TMW-44	8/6/12	24.0	>1	>1	>1
TMW-44D	8/6/12	39.0	>1	>1	>1
TMW-45	8/7/12	24.0	>1	>1	>1
TMW-45D	8/7/12	39.0	>1	>1	>1
TMW-46	8/7/12	24.0	>1	>1	>1
TMW-46D	8/7/12	35.0	>1	>1	>1
TMW-47	7/27/12	23.0	>1	>1	>1
TMW-48	7/25/12	20.0	>1	19	32
TMW-48D	7/25/12	34.0	>1	35	42
TMW-49	7/26/12	19.0	>1	15	15
TMW-49D	7/26/12	34.0	>1	1	1
TMW-50D	9/13/12	40.0	>1	>1	>1
TMW-51D	9/13/12	39.0	>1	>1	2
TMW-52D	9/13/12	38.0	>1	>1	>1
TMW-53D	9/14/12	38.0	>1	>1	>1
TMW-54D	9/14/12	38.0	>1	1	4
TMW-55D	9/14/12	38.0	>1	>1	>1

Note: Results expressed in ug/L (PPB)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Certified Letter
91 7199 9991 7031 3719 2715

APR 10 2013

UST DOCKETING

FREDRICK N CECCHINI
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
COLUMBIA SC 29210-4009

Re: **Notice of Alleged Violation**
Broad River Amoco, 4335 Broad River Road, Columbia, SC
UST Permit # 11946; CA # 42065; MWA # UMW-24502
Release reported January 4, 2011
Tier I Report received April 11, 2011
Monitoring Well Installation Report received June 21, 2011
QAPP Contractor Addendum received February 21, 2012 and Revision received March 15, 2012 by EnviroTest
Tier II Directive dated May 21, 2012
QAPP Contractor Addendum received June 20, 2012 by ARM Environmental Services Inc.
Revised Tier II Directive dated June 22, 2012
QAPP Contractor Addendum received December 4, 2012 by ARM Environmental Services
Revised Tier II Directive dated December 4, 2012
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) directed you in May 2012 to complete a Tier II Assessment to define the extent of the product plus horizontal and vertical extent of petroleum Chemicals of Concern with the report due on or before August 30, 2012. Due to another contractor conducting the assessment on behalf of Enviro-Test Services and change of laboratory, the due date was extended to January 25, 2013. To date the required report has not been received. In accordance with Section 280.65 of the South Carolina Underground Storage Tank Regulations, the assessment must be conducted as chemicals of concern are above the risk-based-screening levels.

Implementation of this scope of work should proceed upon receipt of this correspondence. **Please submit the report on or before May 30, 2013. Should you not submit the complete Tier II Assessment Report on or before this date, this office will initiate further enforcement action.**

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

Please reference UST Permit number 11946 on all correspondence. If you have any questions, please contact me by phone at (803) 896-6669, by fax at (803) 896-6245, or by email at shradeaa@dhec.sc.gov.

Sincerely,

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

cc: ARM Environmental Services, Inc. PO Box PO Box 50285, Columbia, SC 29250
Enviro-Test Services, PO Box 2237, Irmo, SC 29063
Technical File

ARM ENVIRONMENTAL SERVICES, INC.

ASSESSMENT & REMEDIAL SERVICES *armenv.com*

May 28, 2013

Arthur Shrader, Hydrogeologist
Underground Storage Tank Section
Bureau of Land and Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Re: Broad River Amoco
4335 Broad River Rd., Columbia
Richland County, South Carolina
UST Permit #11946; CA #42065
ARM Project #06-414.1-12

Dear Mr. Shrader;

ARM Environmental Services, Inc. (ARM) has completed the Tier II Assessment requested for the former Broad River Amoco property located in Columbia, South Carolina. The pertinent information regarding this assessment, including conclusions and recommendations, is presented on the following pages and in the attached Figures, Tables, and Appendices.

Based on the analytical data collected during this assessment, it is apparent that free-phase petroleum product is present north of the store building on the property. Additionally, dissolved-phase Chemicals of Concern (CoC) are present in groundwater at concentrations above their respective Risk-Based Screening Levels (RBSLs) in several monitoring wells associated with the release. Based on the data collected during this assessment, the extent of free-phase and dissolved-phase groundwater contaminant plumes appear to be defined.

If you should have any questions regarding the results of this assessment, or should you need additional information, please do not hesitate to contact our office.

Sincerely,
ARM Environmental Services, Inc.
Contractor Certification #4

Michael L. Faris, P.G.
Senior Geologist

Andrew M. Wilson, P.G.
Principal / Sr. Project Manager

cc: Fredrick Cecchin

Background

The subject site is located in northwest Richland County in Columbia, South Carolina and is situated on the southwest side of Broad River Road, a five-lane local thoroughfare. The site is comprised of approximately 0.85 acres and is currently owned and operated as a petroleum retail facility, convenience store and restaurant (Broad River BP).

A 1939 aerial photograph from the Richland County Geographic Information System (GIS) shows that the subject property was utilized for agriculture and was partially wooded. Broad River Road appears as a two-lane road. Information available through the Richland County Assessor's Office indicates the property was owned by B.O. Derrick in 1955 and a 1959 aerial photograph indicates that the property had apparently been developed as a petroleum retail facility. Subsequently, the property was acquired by Associated Oils of South Carolina, Inc. in February 1988, and the previous UST system (B.O. Derrick) was properly closed, as reported to the SCDHEC in 1989. Reportedly, the closure included proper abandonment by removal of one 2,000-gallon UST and one 3,000-gallon UST. Additionally, the property redevelopment activities of 1988 and 1989 reportedly included the demolition of pre-existing structures and construction of the existing store building, dispenser islands and UST system. Subsequently, the property was acquired by Mr. Frederick N. Cecchini in June 1997, and Mr. Cecchini remains the current owner.

UST #	Product	Date Installed	Currently in use (Yes or No)	If not in use, Date Removed
1	Gasoline (2,000 gallon)	(?)	No	1989
2	Gasoline (3,000 gallon)	(?)	No	1989
3	Diesel (3,000 gallon)	1989	Yes	-
4	Gasoline Unleaded (3,000 gallon)	1989	Yes	-
5	Gasoline Plus (3,000 gallon)	1989	Yes	-
6	Gasoline Plus (8,000 gallon)	1989	Yes	-
7	Gasoline Super (8,000 gallon)	1989	Yes	-
8	Kerosene (1,000 gallon)	1989	Yes	-

Reportedly, no soil samples were collected for analysis at the time of proper abandonment of the previous UST system as reported to SCDHEC in 1989. In December 2010, a Phase II Subsurface Investigation was performed by Partner Engineering and Science, Inc. of El Segundo, California. The Phase II investigation included the installation of four soil borings and a Temporary Monitoring Well Permit (Approval No. 4053) was obtained from the SCDHEC for the purpose of groundwater sample collection. Reportedly, the soil borings extended to terminal depths of 26 feet below land surface (BLS) utilizing direct push penetration technology with continuous soil sample collection.

Drilling refusal was encountered in all four soil borings before groundwater was encountered; therefore, no groundwater samples were collected for laboratory analysis. Eight soil samples (two from each soil boring) were submitted for laboratory analysis for Volatile Organic Compounds (VOC) and Polynuclear Aromatic Hydrocarbons (PAH). The laboratory analytical results indicated the detection of various VOC and PAH chemical compounds at concentrations deemed reportable to the SCDHEC.

An Initial Groundwater Assessment (IGWA) was completed by Enviro-Test Services, Inc. during January, 2011 and an IGWA report was submitted on February 4, 2011. On January 20, 2011, the soil boring for monitoring well MW-1 was installed. The soil sample from the 10 to 15 feet sampling interval yielded the highest PID reading of 1,782 ppm and accordingly was submitted for laboratory analysis for BTEX, MTBE, naphthalene, PAH and lead. Moderately elevated concentrations of toluene, ethylbenzene, xylenes and naphthalene were detected in the soil sample. Saturated sediments were encountered at the depth interval of 35 to 40 feet below grade level (BGL). As such, monitoring well MW-1 was installed to a depth of 40 feet BGL and was screened from 40 to 20 feet BGL. On January 21, 2011, a groundwater sample was collected from monitoring well MW-1 and laboratory analysis for BTEX, naphthalene, MTBE, PAH and lead was performed. The depth to groundwater in monitoring well MW-1 was measured from the top-of-casing to be 20.92 feet. The groundwater sample yielded COC concentrations as follows: benzene (929 ug/l), toluene (10,300 ug/l), ethylbenzene (684 ug/l), MTBE (243 ug/l) and naphthalene (922 ug/l). Following review of the IGWA report, the SCDHEC requested a Tier I Assessment in correspondence dated February 7, 2011.

Field activities for the Tier I Assessment were commenced on February 24 and 25, 2011 with the completion of soil borings SB-1 through SB-9. Laboratory analysis of soil samples for BTEX, MTBE and PAH yielded elevated concentrations of benzene and naphthalene above RBSL in soil borings SB-1 (10 ft), SB-2 (5 ft), SB-3 (8 ft) and 5 (6 ft) which were installed proximal to the existing UST basin (SB-1 and SB-2) and product pipeline/dispenser islands (SB-3 and SB-5). Monitoring wells MW-2, MW-3 and MW-4 were completed on February 25, 2011 and were subsequently sampled on March 5, 2011. Laboratory analysis of the groundwater samples yielded concentrations of benzene as follows: MW-1 (1,760 ug/l), MW-2 (1,650 ug/l), MW-3 (9.93 ug/l) and MW-4 (1,830 ug/l). Additionally, concentrations of MTBE were also detected in wells MW-2 (3,420 ug/l) and MW-4 (3,100 ug/l). Naphthalene by EPA method 8260 was detected in wells MW-1 (4,070J ug/l), MW-2 (462J ug/l) and MW-4 (598 ug/l). Also, elevated concentrations of toluene were detected in wells MW-1 (16,400 ug/l) and MW-2 (3,230 ug/l) and ethylbenzene in wells MW-1 (1,270 ug/l) and MW-4 (1,270 ug/l). A Tier I Assessment Report was submitted to SCDHEC on April 8, 2011.

Subsequent to review of the Tier I Assessment Report, the Technical Project Manager and Section Manager, as applicable, expressed concern regarding the depth of the screened interval of each monitoring well in relation to the measured groundwater levels due to the fact that none of the monitoring wells were bracketing the water table of the site surficial aquifer.

Enviro-Test Services, Inc. stated that during soil boring and monitoring well installations no saturated sediments were encountered until the 35 to 40-ft depth interval of drilling at each well location; therefore, the monitoring wells were installed at depths somewhat deeper than preferable. Also, during drilling activities for installation of monitoring well MW-4, where elevated COC's were later detected in the March 5, 2011 groundwater sample, no petroleum hydrocarbon odors or elevated PID readings were noted to be present in apparent vadose soils; however, upon encountering saturated soils at approximately 35 feet, strong odors and elevated PID readings were readily apparent. Consequently, the Technical Project Manager decided that an additional monitoring well (MW-5) should be installed at a shallower, bracketing depth to determine the availability of groundwater for sample collection in what appeared to be unsaturated, vadose soils. Accordingly, on May 27, 2011 monitoring well MW-5 was installed to a depth of 20 feet, with a 10-ft screen at a location adjacent to the north corner of the existing convenience store building. The infiltration of groundwater was noted to be exceedingly slow; as such, groundwater was allowed to seep into the well casing for several days. On June 3, 2011, the depth to groundwater was measured at 13.80 feet and free product (gasoline) of a degraded appearance was measured at 13.68 feet (a free product thickness of 0.12 feet). Again, on June 20, 2011, depth to the groundwater was measured at 14.05 feet and free product at 13.75 feet (a free product thickness of 0.30 feet). These findings were submitted to the DHEC Project Manager on June 20, 2011.

Based on the results of the Tier I Assessment, a Tier II directive was issued by DHEC so the horizontal and vertical extent of the contaminant plume could be fully delineated. This site is currently in the assessment section of the UST Program in order to continue to evaluate the horizontal and vertical extent of the contaminant plume.

The subject property is bounded by Broad River Road to the northeast, then by the South Carolina Law Enforcement Division (SLED). The adjacent property to the southeast is a nail and beauty salon. The adjacent property to the southwest is commercially utilized as a nursery school and day care (Play Pal Day Care). The Play Pal Day Care facility encompasses two properties fronting Dothan Road. The subject property is bounded to the northwest by Dothan Road and a commercially utilized property beyond (MDC Associates, an apparent mechanical engineering firm). The commercial usage of the subject property and adjacent properties is expected to remain the same in the future.

Site Geography

In general, the site is located on the west side of a topographically ridge extending southeast to northwest. Broad River Road lies at or near the crest of the apparent topographic ridge. Storm water runoff on the east side of the ridge ultimately flows into the Broad River located approximately 2 miles east of the site. On the west side of the ridge, storm water runoff flows toward Stoop Creek located approximately 1,650 feet to the southwest (near the southwest dead end of Dothan Road). From this point, Stoop Creek flows southward approximately 2.6 miles before emptying into the Saluda River.

In the general vicinity, numerous surface water features are evident on the USGS topographic map including several unnamed creeks (apparently spring fed) and several small to medium-sized surface water impoundments. In relative close proximity to the site, three surface water features are apparent on the west side of the topographic ridge and three on the east side of the topographic ridge. These surface water features are visibly apparent of Figure 1, a topographic site location map. On the west side of the topographic ridge, located approximately 1,430 feet to the northwest is a small pond with an estimated surface elevation of 265 feet MSL, approximately 1,680 feet to the southwest is the aforementioned Stoop Creek (estimated surface elevation of 233 feet MSL) and approximately 2,370 feet to the south-southeast is an apparent spring-fed creek (estimated surface elevation of 252 feet MSL at depicted point of emergence). On the east side of the topographic ridge, located approximately 1,240 feet to the northeast is an apparent spring-fed creek (estimated surface elevation of 248 feet MSL at the depicted point of emergence), approximately 1,820 feet to the east-northeast is an apparent spring-fed creek (estimated surface elevation of 230 feet MSL at the depicted point of emergence) and approximately 2,480 feet to the southeast is an apparent incised, spring-fed creek (estimated surface elevation of 235 feet MSL at the depicted point of emergence). Estimated surface elevations were obtained via the Richland County GIS utilizing a topographic option depicting contour intervals of two feet. For purposes of estimation, the depicted contours are deemed to be reasonably reliable.

According to the USGS Topographic Quadrangle Map of *Columbia North, South Carolina*, dated 1972 and revised in 1990, the elevation of the site is approximately 275 feet above mean sea level (MSL). The topography surrounding the site is relatively flat toward the north and east, but slopes downward toward the west/southwest. The topography in the general vicinity of the site slopes downward toward the west/southwest. A Topographic Site Location Map is included as Figure 1.

Regional Geology and Hydrogeology

The Broad River Amoco (BP) lies within the Lower Piedmont Physiographic Provence in close proximity and northwest of the contact zone, the "fall line", with the Upper Coastal Plain Physiographic Provence. The dominant rock types of the general area are related to the Carolina Slate Belt and specifically the Precambrian to Early Cambrian, Persimmon Fork Formation which is comprised primarily of green-gray to blue-gray, moderately metamorphosed, felsic volcanic (metavolcanic) tuffs and to a lesser extent mafic metavolcanic tuffs. These rocks occur as very weathered to moderately weathered outcrops in the site study area and are most often visible at areas of excavation related to road and building construction.

In the general vicinity, the uppermost aquifer generally occurs under unconfined conditions and receives water from precipitation, which infiltrates the unsaturated surface soils and migrates downward to the saturated zone. Underlying the uppermost aquifer is the fractured bedrock aquifer in which groundwater occurs in fractures, joints and faults. The fractured bedrock aquifer is often an important water resource for rural residences and commercial and light industrial properties at areas where municipal water supply is unavailable or unfeasible. Well yields are typically 1 to 350 gpm in the crystalline and metamorphic rocks with the larger yields located in areas of intensely fractured metamorphic rocks.

Site Geology and Hydrogeology

Based on the data collected during the Tier I Assessment and this assessment, it is apparent that groundwater can be found in several stratified layers or zones at the site. The most shallow water encountered at the site was generally found between 15' - 20' below ground level. This shallow water was very slow to accumulate in the boreholes. Typically it took at least several days to over a week for the water levels to come to equilibrium. It is likely that this most shallow water is present in small volume in the sandy clayey silt due to localized recharge, perching, and soil capillarity. The soils become more clayey (a silty clay) and mostly dry beginning at approximately 25' bgl. The second layer or zone of water encountered in the subsurface was typically found at an approximate depth of 35'-40'. The water in this second water-bearing zone was under significant hydraulic pressure and immediately entered the boreholes and rose upward many feet in the boreholes/wells.

The two layers of water are clearly connected as contamination has been identified at both depths during this Tier II investigation. There appears to be an aquitard comprised of mostly dry silty clay (with a small % of sand) between the two above-described zones of water across the area of study. Because the contaminants have been identified at both depths in and near the source area, there clearly is transmissivity between the two layers. Therefore, the silty clay is not considered a true aquiclude, but is acting at least as a partially confining unit.

Summary of Findings

Field Screening

In order to evaluate the horizontal and vertical extent of the contaminant plume, temporary monitoring wells (TMWs) were drilled to total depths in the most shallow water bearing zone as well as the secondary water bearing zone detailed above. The shallow TMWs were designated TMW-1 through TMW-49 and were generally completed to total depths of approximately 15' to 20' bgs. The TMWs installed in the deeper water bearing zone were, designated TMW-11D, TMW-12D, TMW-14D, TMW-16D, TMW-19D, TMW-23D, TMW-25D through TMW-33D, TMW-40D, TMW-43D through TMW-46D, and TMW-48D through TMW-55D, were generally completed to total depths of approximately 35' to 40' bgs. The TMWs were installed on the subject site and on several off-site properties with a rotary auger drill rig. Dedicated one-inch diameter schedule 40 PVC casing with 0.010 inch gauge PVC screen was placed in each TMW. Each TMW was developed in order to get representative samples. Groundwater samples were collected from each of the TMWs using disposable hand bailers and disposable colorless nylon bailer twine. Each of the groundwater samples was submitted to a laboratory and analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) analysis.

Each of the TMWs was abandoned in accordance with SC Well Standards and Regulations, R.61-71 upon completion.

The location of each temporary monitoring well is indicated on the Site Base Map included as Figure 2. The laboratory analytical results, including chain-of-custody documentation, for the TMW groundwater samples are included in Appendix B. A tabular summary of the TMW screening results, as well as boring logs detailing the temporary wells are included in Appendix D. The SCDHEC 1903 forms are included in Appendix E.

Free Product delineation

In order to evaluate the horizontal extent of the free phase product observed at the site, sixteen (16) free product delineation points (FPs) were installed at the site. The product delineation points, designated FP-1 through FP-16, were drilled to total depths of 20' bgs. The FPs were installed on the subject site with a rotary auger drill rig. Dedicated one-inch diameter schedule 40 PVC casing with 0.010 inch gauge PVC screen was placed in each FP. Each of the FPs was allowed to sit for approximately one week prior to gauging in order to allow water and product to enter the well. The FPs were gauged for the presence of free product on October 4, 2012 and again on October 12, 2012.

Each of the FPs was abandoned in accordance with SC Well Standards and Regulations, R.61-71.

The location of each free product delineation point is indicated on the Site Base Map included as Figure 2. A tabular summary of the FP gauging results, as well as boring logs detailing the temporary product delineation points are included in Appendix D. The SCDHEC 1903 forms are included in Appendix E.

Monitoring Well Installation

Based on the field screening results and pursuant to approval from the SCDHEC project manager, fifteen (15) additional shallow monitoring wells, designated MW-6A through MW-16A and MW-18A through MW-21A were installed in the most shallow water bearing zone. Sixteen (16) additional monitoring wells, designated MW-6B and MW-8B through MW-22B, were installed into the second water bearing zone in locations designated and/or approved by the project manager. The wells were installed in order to delineate the horizontal extent of the contaminant plume in the two most shallow water bearing zones originating from the Broad River Amoco site.

Three additional permanent telescoping monitoring wells, designated DMW-1 through DMW-3, were installed in order to further evaluate the vertical extent of the contaminant plume.

The monitoring wells were installed by certified Well Drillers in accordance with S.C. Well Standards and Regulations, R.61-71. The wells were developed with a decontaminated surge block and by bailing with disposable hand bailers and disposable colorless nylon bailer twine. The locations and top-of-casing elevations of the new permanent monitoring wells were surveyed after completion. The locations of the monitoring wells associated with the release are indicated on Figure 2 in this report.

The geological boring logs and monitoring well construction schematics and SCDHEC 1903 Well Completion forms are included in Appendix E.

Recovery Well Installation

Based on the presence of free-phase product and pursuant to approval from the DHEC project manager, five (5) four-inch diameter recovery wells, designated RW-1 through RW-5 were installed in and around the source area at the site.

The recovery wells were installed by certified Well Drillers in accordance with S.C. Well Standards and Regulations, R.61-71. The wells were developed with a decontaminated surge block and by bailing with disposable hand bailers and disposable colorless nylon bailer twine. The locations and top-of-casing elevations of the recovery wells were surveyed after completion. The locations of the recovery wells associated with the release are indicated on Figure 2 in this report. The geological boring logs and recovery well construction schematics and SCDHEC 1903 Well Completion forms are included in Appendix E.

Soil Sampling

Soil samples were collected and field screened during this assessment in order to further define the extent of soil contamination associated with the release. Soil samples were screened during temporary and permanent well installation with a calibrated Mini Rae 3000 photoionization detector (PID). Soil samples were typically colleted at approximately five-foot intervals. Saturated soil samples were not screened.

Soil samples were also collected for grainsize/hydrometer analysis during this assessment. A soil sample was collected from the screened interval of MW-17B at 38.0 feet bgs. A soil sample was also collected from the screened interval of DMW-2 at 62.0 feet bgs.

A Soil CoC Site Map, indicating the soil CoC concentrations at each sampling point from the 2011 Tier I and the estimated extent of elevated soil contamination, is included as Figure 3. The soil analytical results are tabulated in Table 1. CoC detected at concentrations above the RBSLs established by SCDHEC are indicated in bold type.

The complete laboratory analytical results, including chain-of-custody documentation, are included in Appendix B. Boring logs detailing the soil borings an soil screening results at each location are included in Appendix D, and Appendix E.

Gauging

On March 6, 2013, the sampling crew located and gauged all monitoring wells and recovery wells associated with the release. Prior to the initiation of any gauging, purging or sampling activities, clean plastic sheeting was placed on the ground surface around each well in order to provide a clean work area. Each well was opened and gauged with a decontaminated electronic water level indicator to the nearest 0.01-foot. Fluid levels and total depths of the monitoring wells were recorded on field data sheets in indelible ink. Monitoring wells MW-2, MW-4, and MW-5 contained 1.34 feet, 2.31 feet, and 2.83 feet of free-phase product respectively. Recovery wells RW-1, RW-3, and RW-5 contained 0.15 feet, 0.05 feet, and 0.06 feet of free-phase product, respectively.

MW-13A, MW-15A, and MW-16A were found to contain an insufficient volume of water to collect samples. Therefore, the three shallow wells were allowed to accumulate water for a longer period of time. On March 25, 2013, MW-13A, MW-15A, and MW-16A were again opened and gauged. The three wells did contain sufficient groundwater for sample collection on March 25.

Groundwater flow direction(s) of the water table / perched aquifer and second water bearing zone were determined to be generally toward the northwest. The general groundwater flow direction calculated from the three telescoping deep wells was determined to be toward the north / northeast. The current potentiometric data are summarized in Table 2. Generalized Potentiometric Surface Maps, displaying groundwater elevations at each well and groundwater flow directions for the water table aquifer, second water bearing zone, and telescoping well screened intervals are included as Figure 5A, 5B, and 5C, respectively.

Purging

All of the monitoring wells containing sufficient water were purged prior to sampling. Prior to purging, the well volumes were calculated using the diameter of the well, the static water level and the total depth of the well. The wells were purged with disposable hand bailers and disposable colorless nylon bailer twine. The bailers were lowered slowly into the water column, allowed to fill and carefully withdrawn from the wells.

Temperature, pH, specific conductivity, dissolved oxygen, and turbidity were measured and recorded throughout the purging process and purging continued until these parameters stabilized, typically in three to five well volumes. Stabilization occurs when pH measurements remain constant within 0.1 Standard Unit (SU), or reproducible to within 0.1 (SU), specific conductance varies no more that 10 percent, the temperature is constant for at least three consecutive readings and the turbidity has stabilized.

Wells purged to dryness were considered sufficiently purged. Samples were collected immediately after the purging process was complete.

Prior to commencement of purging, the purging meters were calibrated according to manufacturer's specifications. Also, the meters' calibration was checked mid-way through and after the purging activities. The calibration checks indicated that the meters remained calibrated within the acceptable ranges of the meters' standards throughout the purging activities. The purging data were recorded on field data sheets in indelible ink. The Purge Meter Calibration Data Sheets and Monitoring Well Purging Data Sheets are included in Appendix B.

Groundwater Sampling

No groundwater samples were collected from MW-2, MW-4, MW-5, RW-1, RW-3, or RW-5 due to the presence of free-phase product. Groundwater samples were collected from the other monitoring and recovery wells associated with the release and placed into pre-labeled, laboratory-prepared sample containers utilizing disposable polyethylene hand bailers with disposable colorless nylon bailer twine. The bailers were slowly lowered into the water column until just filled, and then slowly removed from the wells. The contents were then emptied into the appropriate sample containers.

Purging parameters were again measured and recorded immediately after sample collection at each well. In order to further ensure sample integrity, samples were immediately placed on ice in an insulated cooler upon collection and entered into chain of custody. Field blanks were collected at the completion of each day of sampling activities. Laboratory-prepared trip blanks were included with the insulated sample coolers to ensure cross-contamination did not occur between the collected groundwater samples.

Duplicate samples were collected from monitoring wells MW-20B (Duplicate 1) and DMW-2 (Duplicate 2).

The groundwater samples were submitted to Shealy Environmental Services, Inc., a South Carolina certified laboratory (certification #32010), for analysis of BTEX, naphthalene, MTBE and 1,2-dichloroethane (1,2-DCA) by EPA method 8260B, for EDB by EPA method 8011 and for total lead by EPA method 6010C.

Groundwater samples were also analyzed for the following eight oxygenates: di-isopropyl ether (DIPE), ethanol, ethyl tert-butyl alcohol (ETBA), ethyl tert-butyl either (ETBE), tert-amyl alcohol (TAA), tert-amyl methyl either (TAME), tert-butyl alcohol (TBA) and tert-butyl formate (TBF).

The laboratory analytical results from this assessment (current) are tabulated in Table 3. Results from previous groundwater sampling events are tabulated with the data from this assessment (current and historical) in Table 4. CoC detected at concentrations above the RBSLs established by SCDHEC are indicated in bold type. The complete laboratory analytical results, including chain-of-custody documentation, are included as Appendix B. A Groundwater CoC Site Map, indicating the March 2013 CoC concentrations in the groundwater at each monitoring well, is included as Figure 4.

Abandonment

At the request of the DHEC project manager, monitoring wells MW-16A and MW-16B were abandoned upon completion of sampling activities. The two wells were abandoned in accordance with SC Well Standards and Regulations, R.61-71 upon completion

Geological Cross Sections

As requested in the directive for this assessment, Geological Cross Sections showing the lithology of the site, and the known and estimated extent of the contamination, are included with this report. A Geologic Cross Section Base Map is included as Figure 6. Geological cross sections A – A' and B – B' are included as Figures 6A and 6B, respectively.

Aquifer Evaluation

The Bouwer-Rice method was utilized with the computer application AQTESOLV to evaluate the slug test data collected from monitoring wells MW-17B and DMW-2, using an electronic water level meter and a stopwatch. The slug test results indicate that the hydraulic conductivity of the aquifer section bracketed by MW-17B is approximately 2.72 E-7 feet per second and the hydraulic conductivity of the aquifer at a deeper depth (from DMW-2) is approximately 1.01 E-7 feet per second. The estimated seepage velocity of the second water bearing zone was calculated to be 1.07 feet per year. The estimated seepage velocity of the aquifer at a deeper depth was calculated to be 0.13 feet per year. The calculations, equations, data, and AQTESOLV slug test curve-matching graphs are included in Appendix F.

Free Product Recovery Test

A free product recovery test was also conducted on MW-5 in order to determine the true thickness of free product at the site. A disposable polyethylene hand bailer with disposable colorless nylon bailer twine was utilized to bail the product to a thickness of less than 1 inch and depths to product and water were measured and recorded during recharge. The measured product thickness when the groundwater table began to be suppressed is the estimated true product thickness. MW-5 initially contained 2.97 feet of free product. After the free product recovery test was complete, MW-5 contained 1.94 feet of free product. Approximately 2.0 gallons of free product were removed from MW-1 during the completion of the recovery test. The tabulated results and a graphical representation of the recovery test results are included in Appendix F.

Disposal

A total of 36.5 tons of contaminated soils and decontamination solids were collected during this assessment. The solids were disposed of at TK Tank Services in Sumter, South Carolina.

A total of 110 gallons of contaminated purge water, free product, well development fluids and decontamination fluids were collected during this assessment. The fluids were disposed of at U.S. Water Recovery in Mt. Holly, South Carolina.

Disposal manifests for all of the contaminated soils, purge water, well development fluids and decontamination fluids are included in Appendix G.

Tax Map

A tax map obtained from the Richland County GIS website, along with updated tabulated property owner information, is included as Appendix C.

Local Zoning Regulations

Documentation pertaining to off-site property access to various properties is included as Appendix H.

Property Access Documentation

Documentation pertaining to off-site property access to various properties is included as Appendix J. Access to all other private and public properties (SLED property) was granted verbally by their respective property owners to Terry Teate with EnviroTest Services, Inc.

Contractor Checklist

The SCDHEC QAPP Contractor Checklist is included in Appendix K.

Conclusions and Recommendations

Based on the data collected during this assessment, it appears that elevated concentrations of several Chemicals of Concern are present at the site and on adjacent property. Monitoring wells MW-1, MW-17B, DMW-1 and DMW-2, as well as recovery wells RW-2 and RW-4 contain various dissolved-phase CoC, including benzene, toluene, ethylbenzene, xylenes, naphthalene, MTBE, 1,2-DCA, and/or EDB at concentrations greater than their respective RBSLs. Additionally, free-phase product was present in MW-2, MW-4, MW-5, RW-1, RW-3, and RW-5 during this assessment.

Based on the results of this assessment, it appears that the contaminant plume has been defined horizontally in multiple stratigraphic layers. As detailed above, it is apparent that groundwater can be found in several stratified layers or zones at the site. The most shallow groundwater was generally intersected between 15' - 20' bgl and was very slow to accumulate in the boreholes. The soils became more clayey (a silty clay) and mostly dry beginning at approximately 25' bgs. The second layer or zone of water encountered was typically found at an approximate depth of 35'-40' bgl and was under significant hydraulic pressure. There appears to be an aquitard comprised of mostly dry silty clay between the two above-described zones of water across the area of study. Because the contaminants have been identified at both depths in and near the source area, there clearly is transmissivity between the two layers. Therefore, the silty clay is not considered a true aquiclude, but is acting at least as a partially confining unit.

Groundwater appears to be flowing generally to the northwest at the time of this assessment. However, based on the geography of the site and surrounding properties, the significant hydraulic pressure in the second water-bearing zone, and the contaminant distribution, it appears that groundwater and contaminants have migrated toward the west/southwest overall since the release.

If further definition is desired with respect to the vertical extent of contaminants in the source area, then additional and deeper telescoping well installation should be considered. It should be noted, however, that bedrock is likely not much deeper than the total depth of the telescoping wells installed during this assessment.

It is recommended that aggressive fluid vapor recovery (AFVR) events should be completed in order to remove the free-phase product present at the site. Additionally, a sampling program should be instituted at the site in order to monitor the groundwater for natural attenuation and migration of the CoC associated with the release.

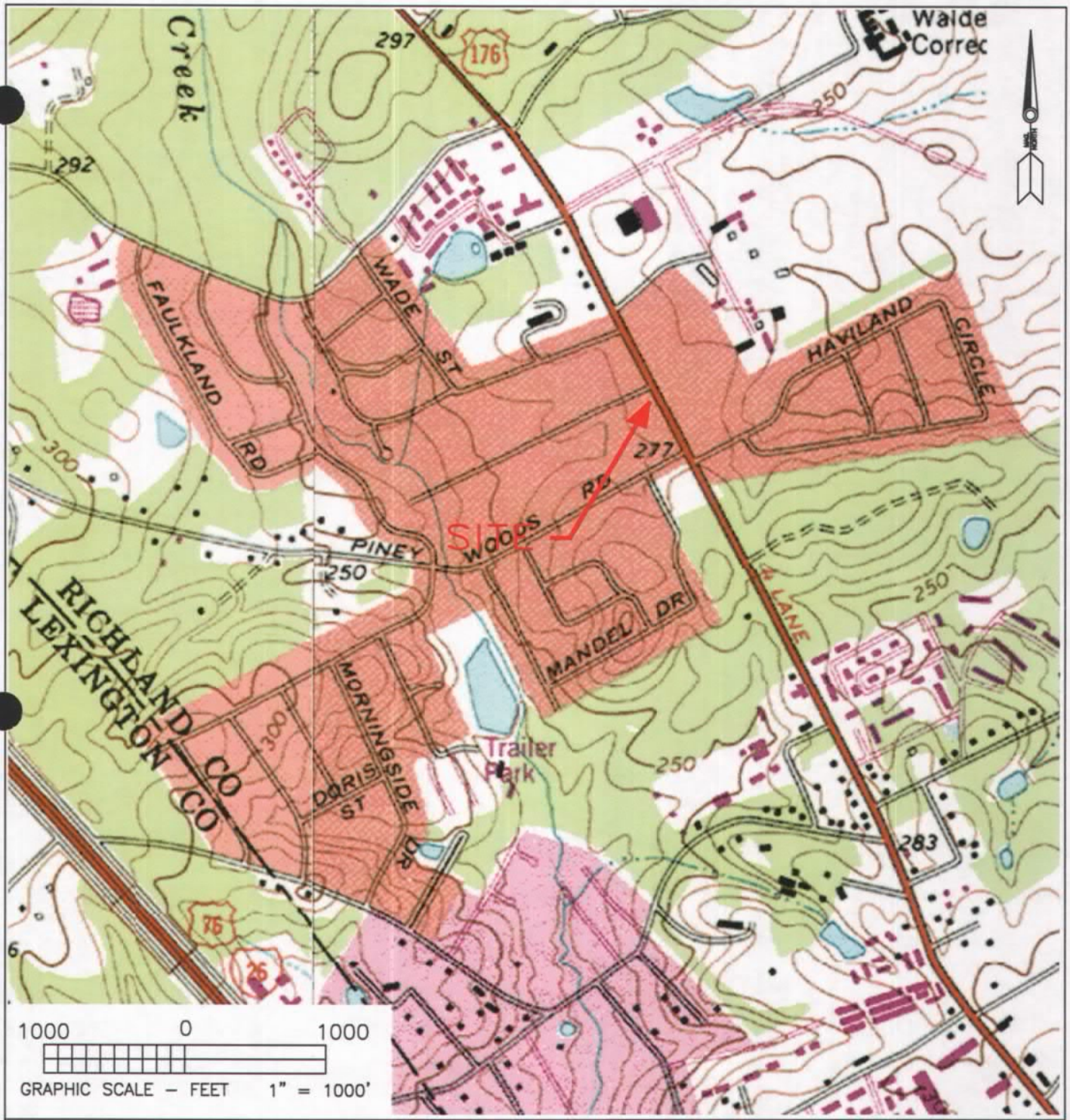
References

Maybin and Nystrom, 1997, revised by Willoughby, Howard and Nystrom, 2005. Generalized Geologic Map of South Carolina; South Carolina Department of Natural Resources Geological Survey.

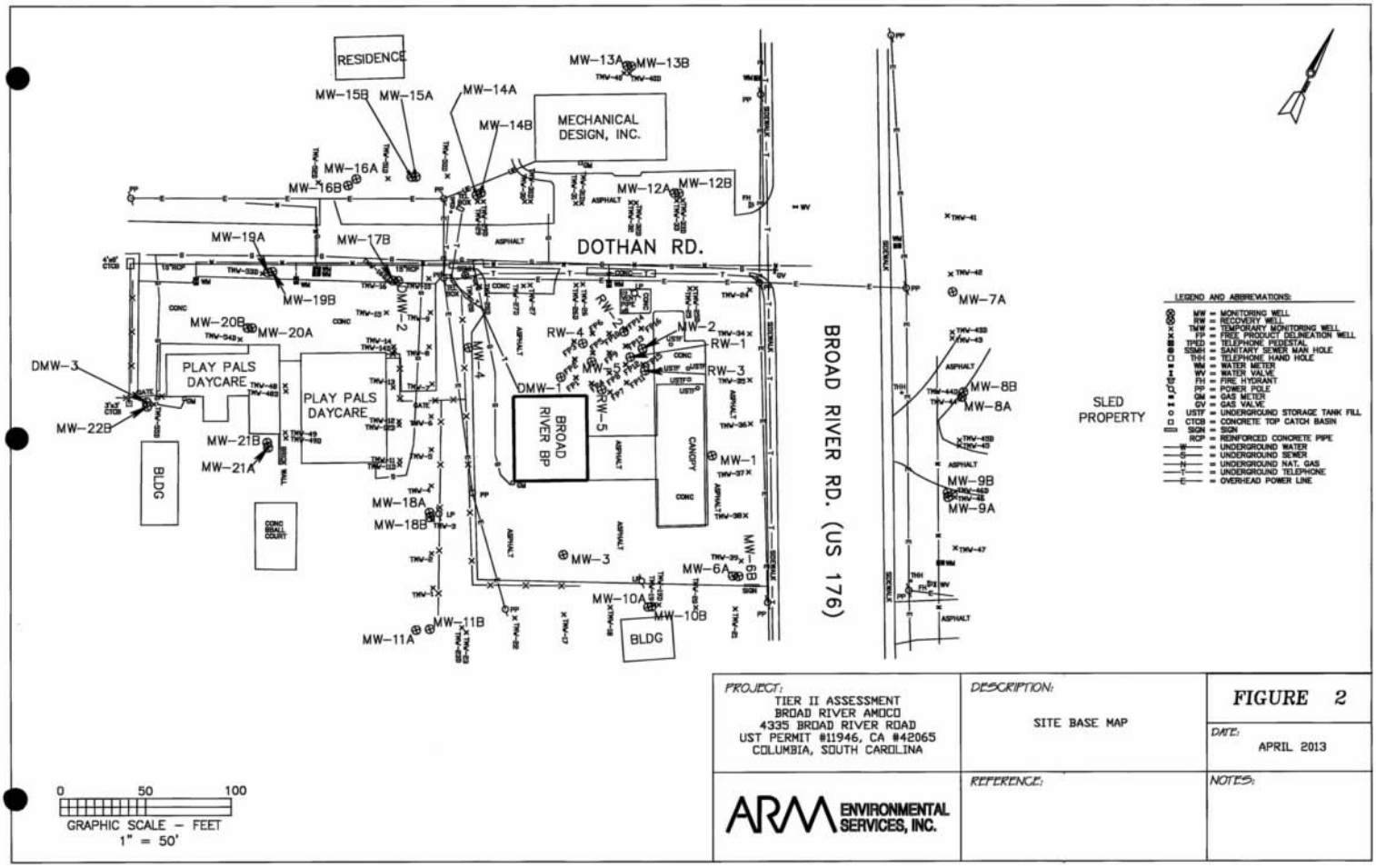
USGS Open-File Report 2005-1323, Preliminary integrated geologic map databases for the United States: Alabama, Florida, Georgia, Mississippi, North Carolina, and South Carolina, http://pubs.usgs.gov/of/2005/1323/

FIGURES

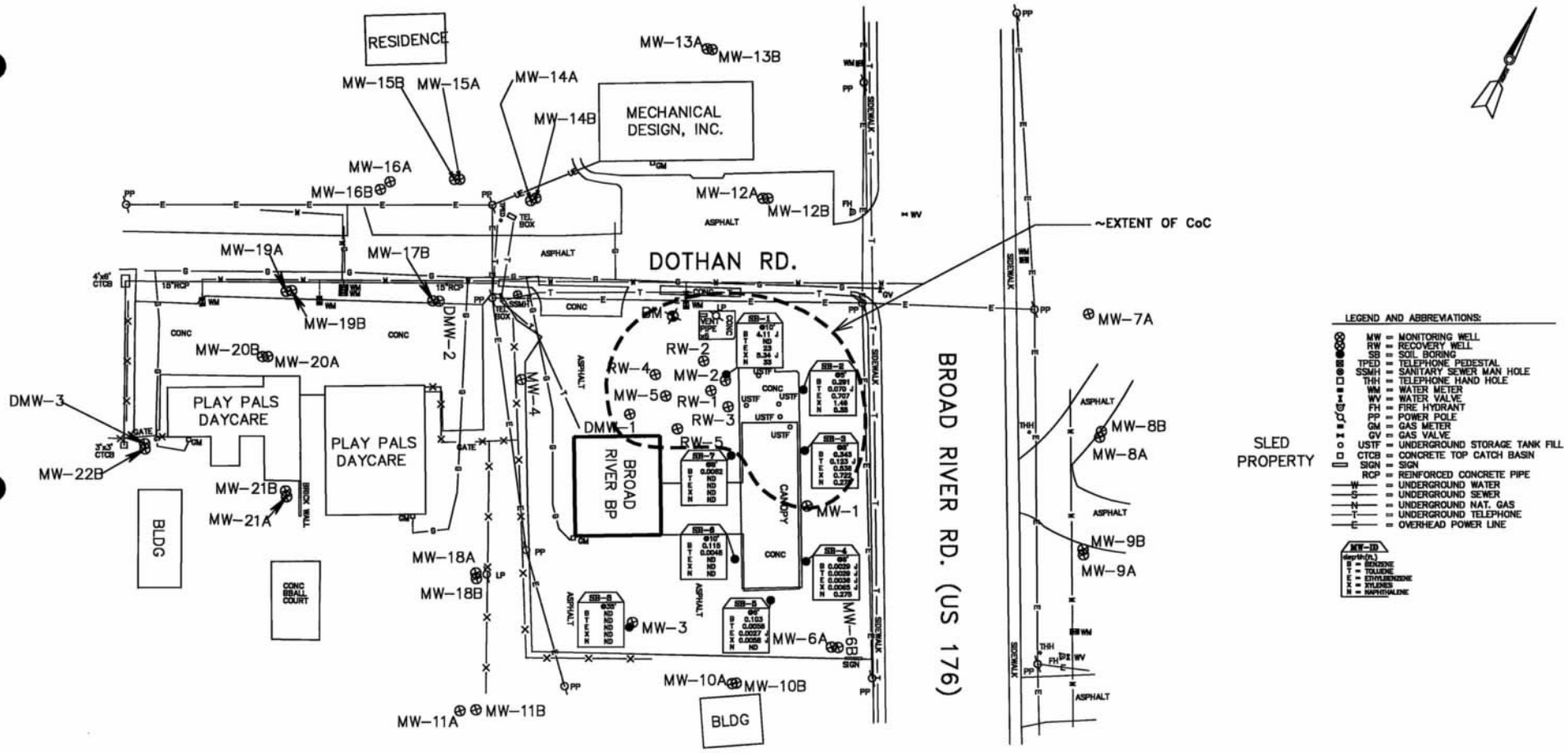
Figure 1 – Site Location Map (Topographic)
Figure 2 – Site Base Map
Figure 3 – Soil CoC Map
Figure 4 – Groundwater CoC Map
Figure 5A – Potentiometric Map (Shallow - Zone A)
Figure 5B – Potentiometric Map (Shallow - Zone B)
Figure 5C – Potentiometric Map (Deep)
Figure 6 – Geologic Cross Section Base Map
Figure 6A – Geologic Cross Section A-A'
Figure 6B – Geologic Cross Section B-B'



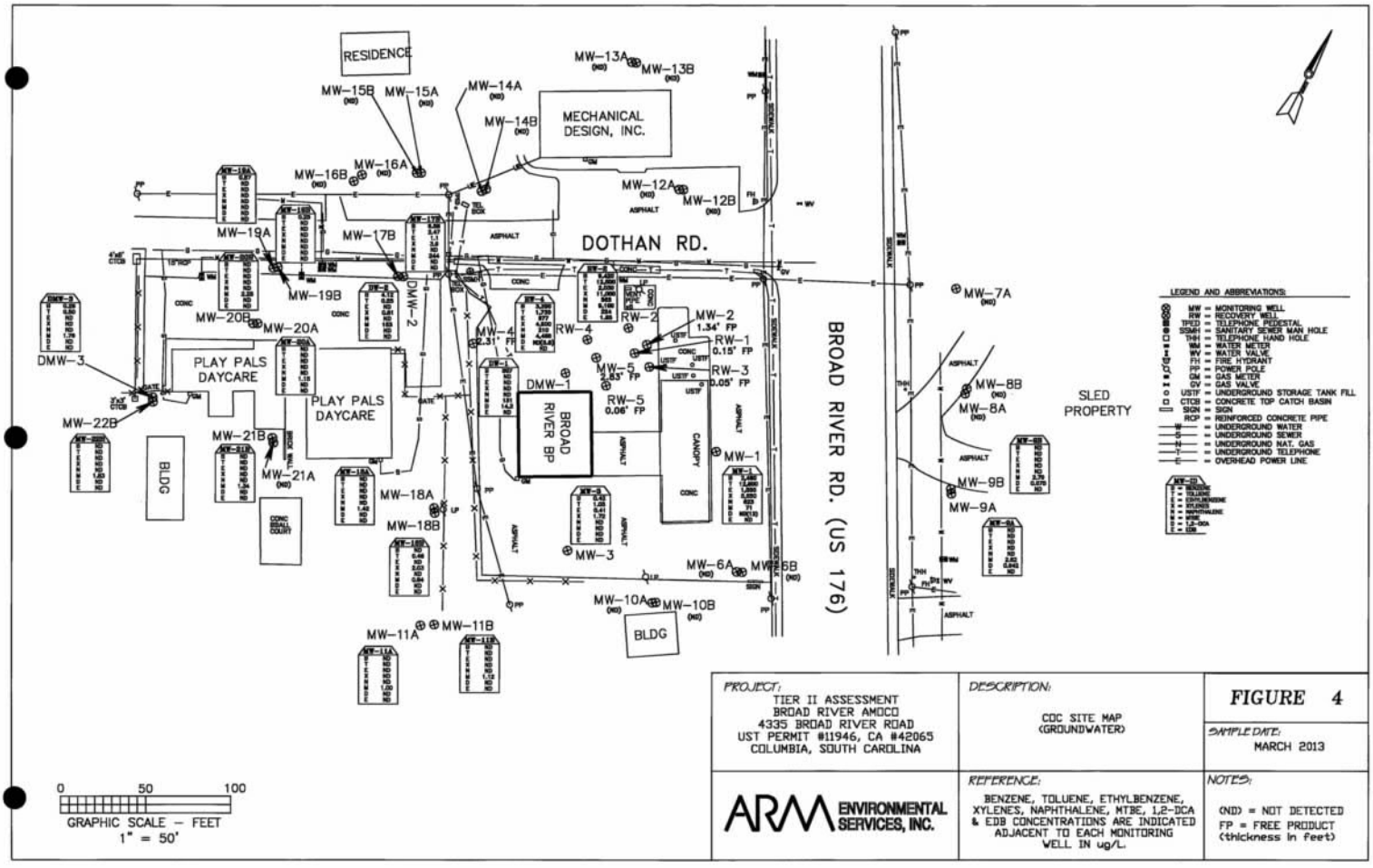
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: SITE LOCATION MAP	*FIGURE 1* DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: U.S.G.S. TOPOGRAPHIC MAP (7.5 MINUTE SERIES) COLUMBIA NORTH - 1972, REV. 1990 SOUTH CAROLINA QUADRANGLE	LEGEND:



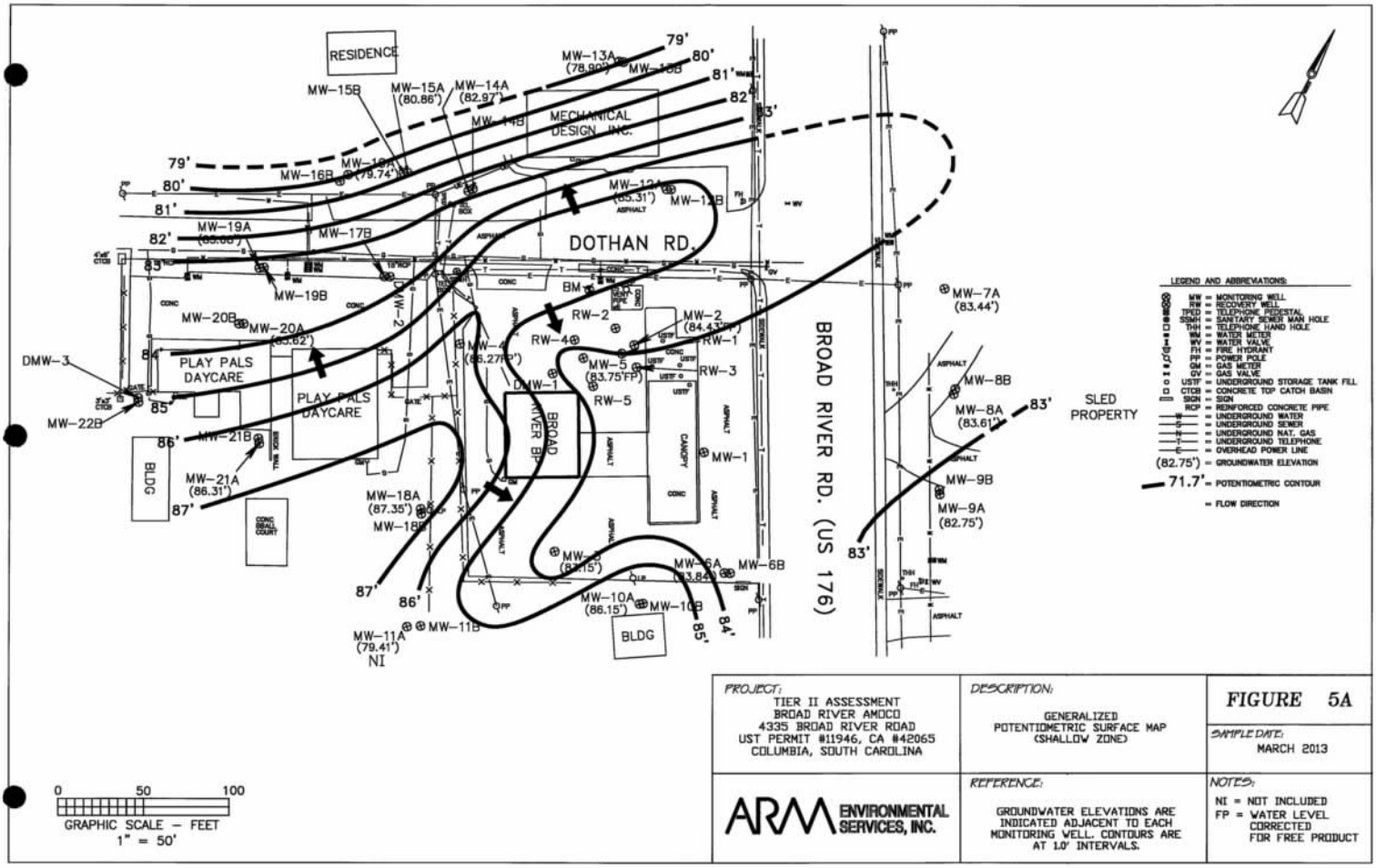
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: SITE BASE MAP	FIGURE 2
		DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE:	NOTES:



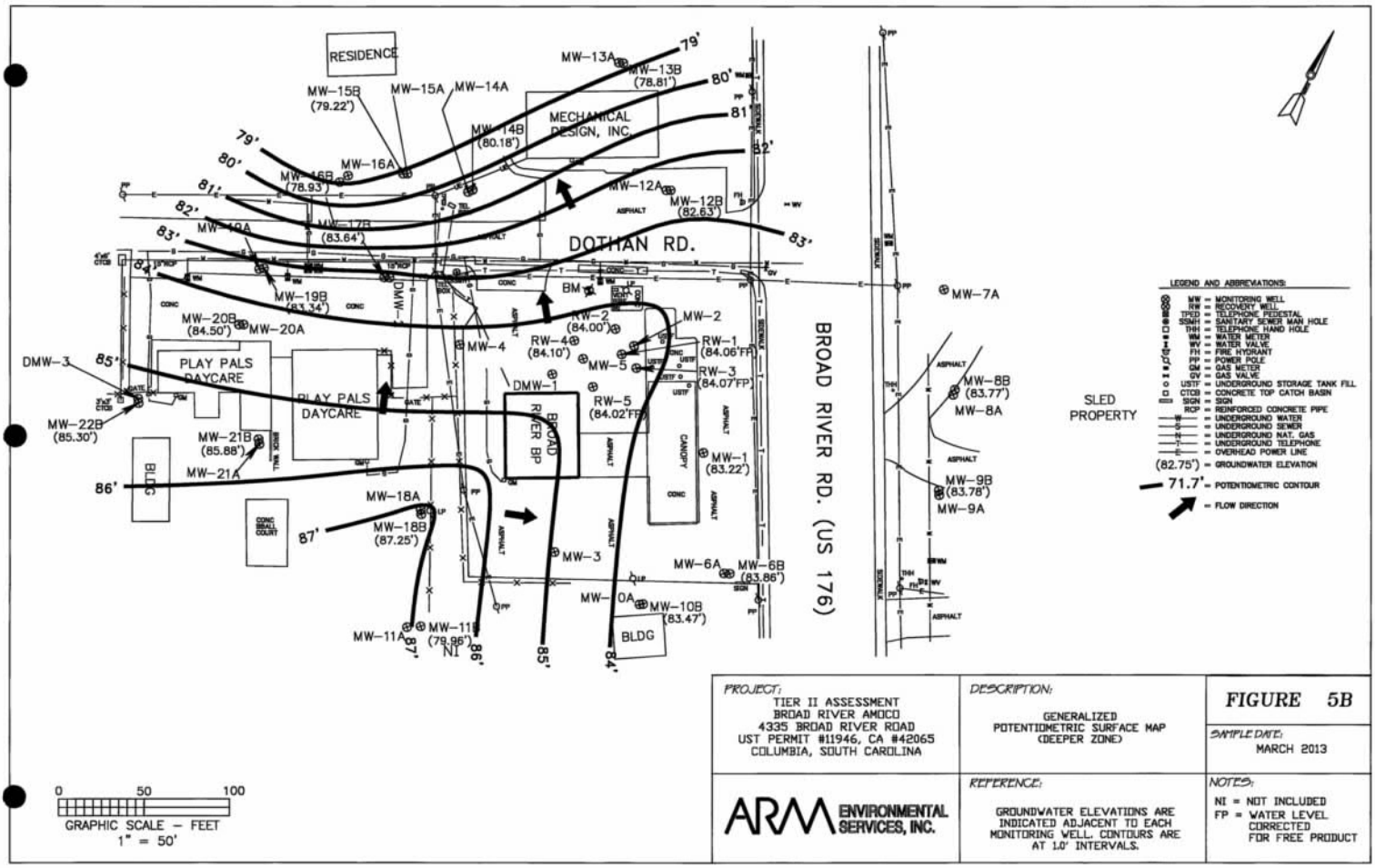
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: COC SITE MAP (SOIL)	**FIGURE 3**
		DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: BTEX & NAPHTHALENE FROM SB-1 THROUGH SB-8 ARE FROM SOIL BORINGS CONDUCTED DURING TIER I ASSESSMENT (ETS, 2011).	NOTES: (ND) = NOT DETECTED



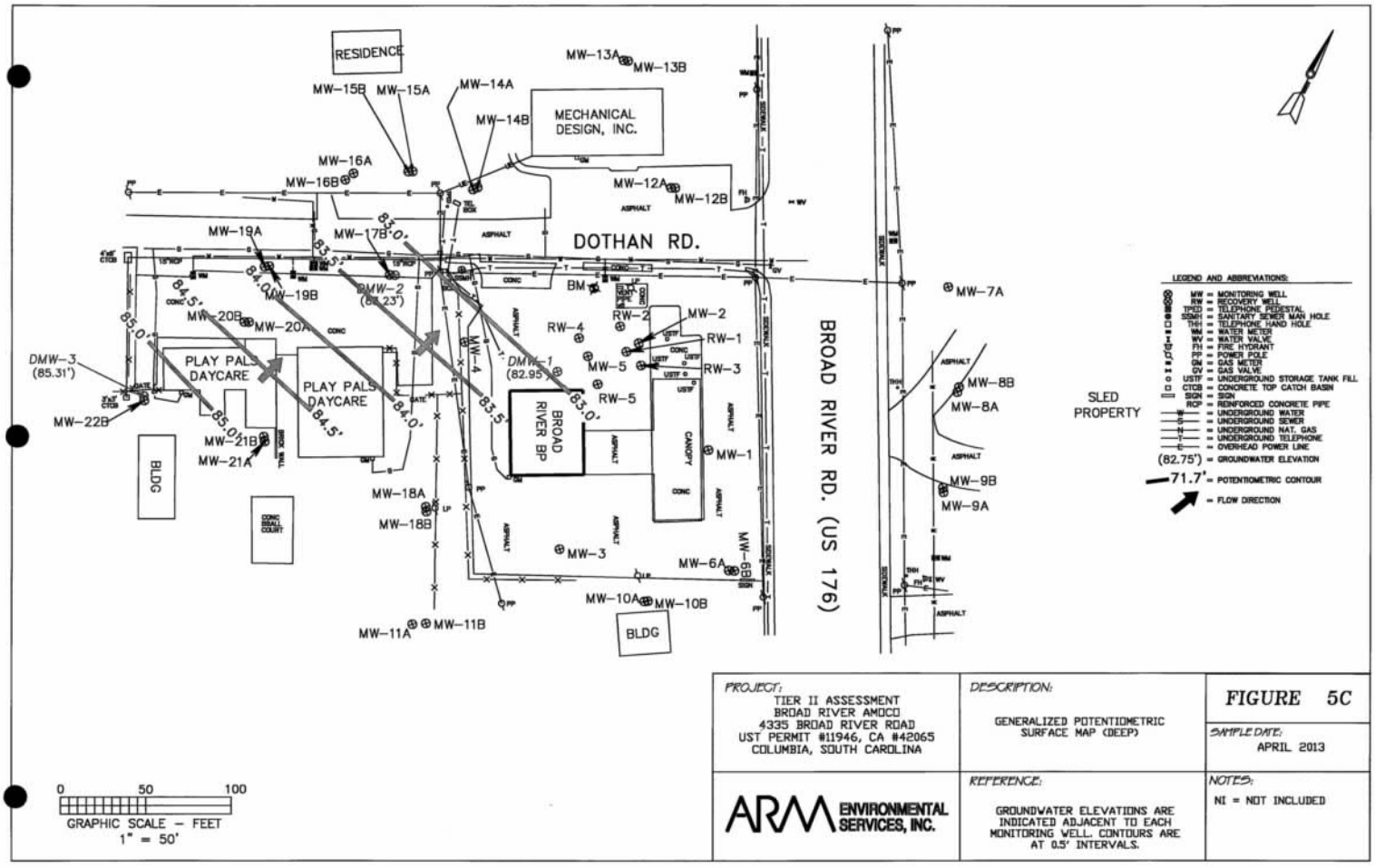
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: CDC SITE MAP (GROUNDWATER)	**FIGURE 4** SAMPLE DATE: MARCH 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, NAPHTHALENE, MTBE, 1,2-DCA & EDB CONCENTRATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL IN ug/L.	NOTES: (ND) = NOT DETECTED FP = FREE PRODUCT (thickness in feet)



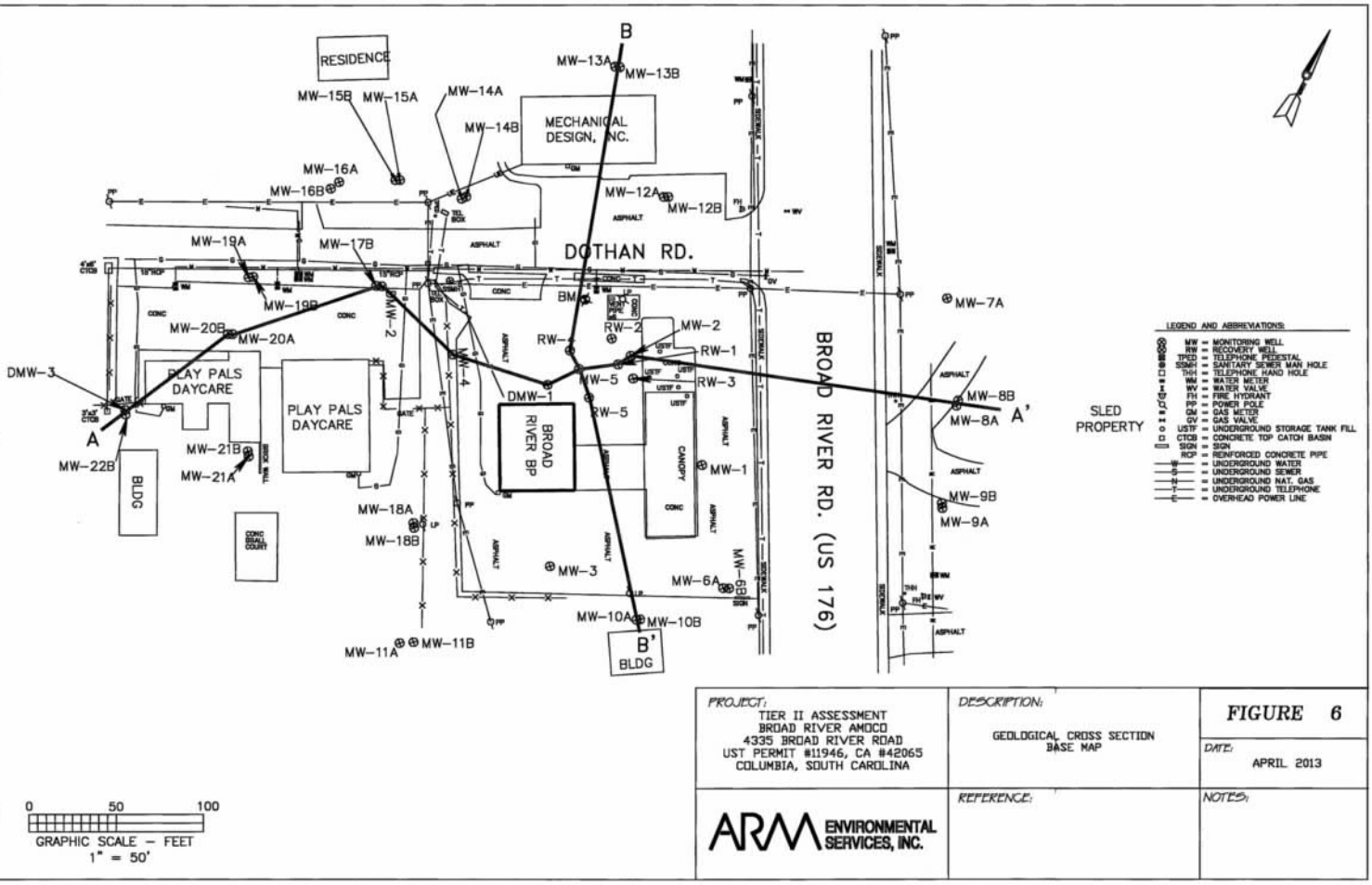
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GENERALIZED POTENTIOMETRIC SURFACE MAP (SHALLOW ZONE)	**FIGURE 5A** SAMPLE DATE: MARCH 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 1.0' INTERVALS.	NOTES: NI = NOT INCLUDED FP = WATER LEVEL CORRECTED FOR FREE PRODUCT



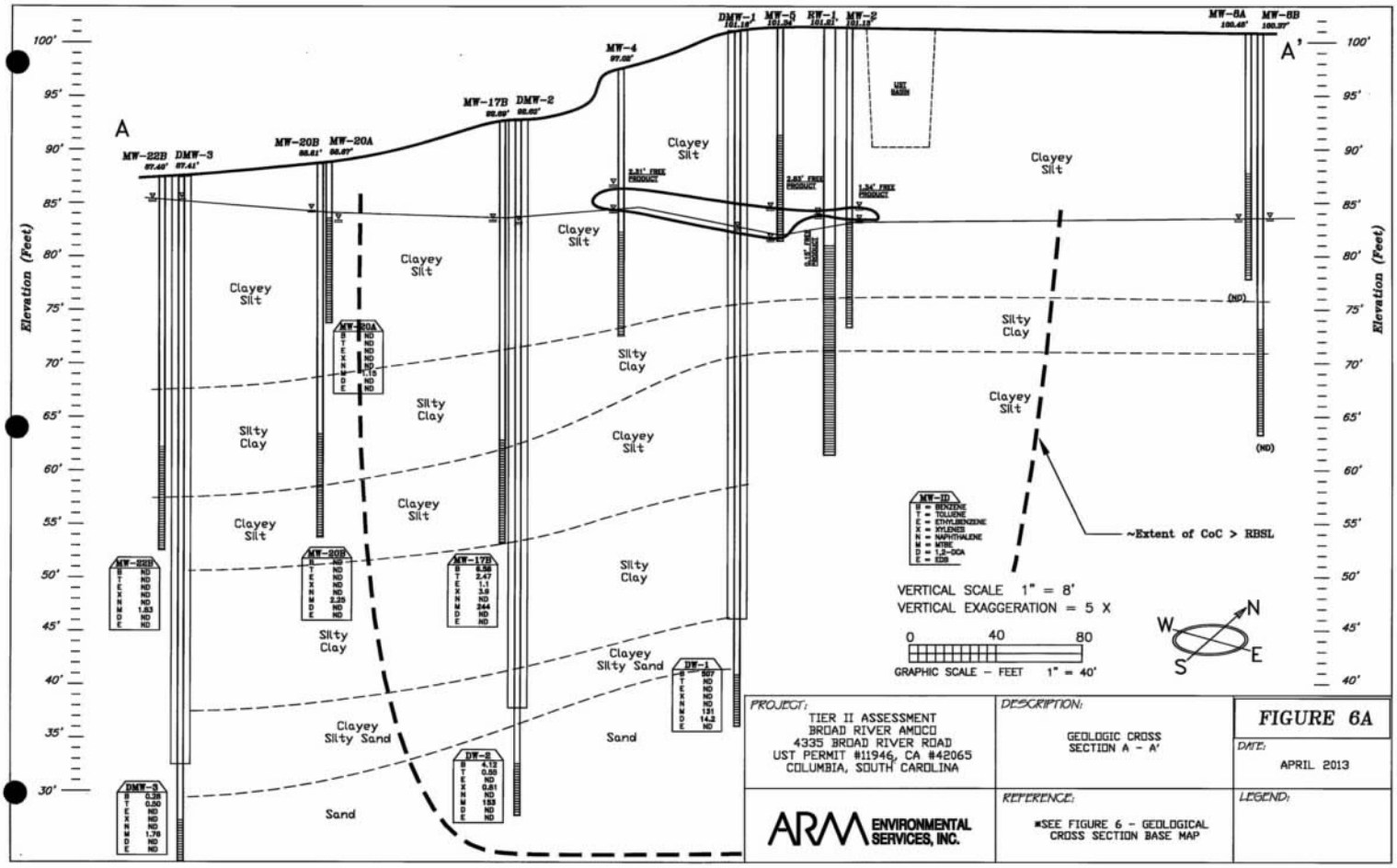
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GENERALIZED POTENTIOMETRIC SURFACE MAP (DEEPER ZONE)	**FIGURE 5B** SAMPLE DATE: MARCH 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 1.0' INTERVALS.	NOTES: NI = NOT INCLUDED FP = WATER LEVEL CORRECTED FOR FREE PRODUCT



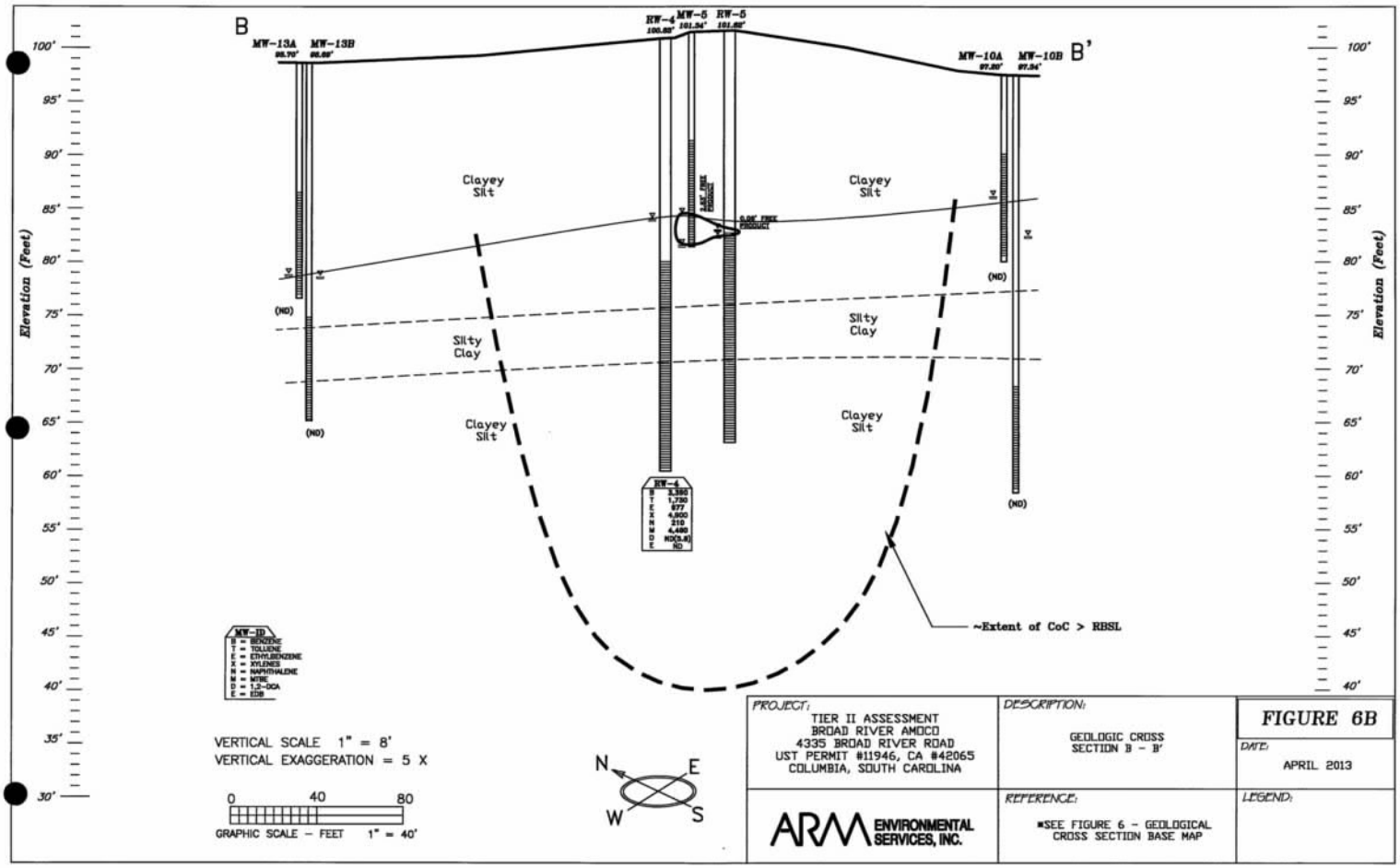
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GENERALIZED POTENTIOMETRIC SURFACE MAP (DEEP)	FIGURE 5C
		SAMPLE DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 0.5' INTERVALS.	NOTES: NI = NOT INCLUDED



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GEOLOGICAL CROSS SECTION BASE MAP	**FIGURE 6** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE:	NOTES:



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GEOLOGIC CROSS SECTION A - A'	**FIGURE 6A** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: *SEE FIGURE 6 - GEOLOGICAL CROSS SECTION BASE MAP	LEGEND:



VERTICAL SCALE 1" = 8'
VERTICAL EXAGGERATION = 5 X

0 40 80
GRAPHIC SCALE – FEET 1" = 40'

N E W S

PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GEOLOGIC CROSS SECTION B – B'	**FIGURE 6B** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: *SEE FIGURE 6 – GEOLOGICAL CROSS SECTION BASE MAP	LEGEND:

TABLES

Table 1 – Soil Analytical Data
Table 2 – Potentiometric Data
Table 3 – Current Analytical Data
Table 4 – Current & Historical Analytical Data

APPENDICES

A. Site Survey
B. Purging Data Sheets & Laboratory Analytical Data
C. Tax Map
D. Soil Boring / Field Screening Logs
E. Well Completion Logs & SCDHEC 1903 Forms
F. Aquifer Evaluation Results
G. Disposal Manifest(s)
H. Local Zoning Regulations
I. Not Included
J. Property Access Documentation
K. SCDHEC Contractor Checklist

Table 1 – Soil Analytical Data

Soil Boring ID	Sample Depth (ft.)	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene
RBSLs	N/A	N/A	0.187	12.085	1114.5	176.8	0.292
SB-1	10.0	2/24/2011	**4.11J**	<0.254	23	5.34J	**33**
SB-2	5.0	2/24/2011	**0.291**	0.0702J	0.707	1.46	**0.35**
SB-3	8.0	2/24/2011	**0.343**	0.123J	0.536	0.722	0.275
SB-4	6.0	2/24/2011	0.00294J	0.00294J	0.00363J	0.00651J	0.275
SB-5	6.0	2/24/2011	0.103	0.00581	0.00273J	0.00575J	<0.001
SB-6	10.0	2/24/2011	0.115	0.0048	<0.001	<0.001	<0.001
SB-7	8.0	2/24/2011	0.00617	<0.001	<0.001	<0.001	<0.001
SB-8	35.0	2/24/2011	<0.001	<0.001	<0.001	<0.001	<0.001

Note: All units expressed in mg/kg (PPM)
< = Not Detected Above Practical Quantitation Limit (limit in µg/kg)
NA - Not Analyzed

Table 2 – Potentiometric Data
March 6 and 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-1	3/5/2011	40.0	20.0 - 40.0	101.84	14.45	N/A	N/A	N/A	87.39
	3/6/2013	40.0	20.0 - 40.0	101.84	18.62	N/A	N/A	N/A	83.22
MW-2	3/5/2011	28.0	18.0 - 28.0	101.13	13.50	N/A	N/A	N/A	87.63
	3/6/2013	28.0	18.0 - 28.0	101.13	17.66	16.32	1.34	16.70	84.43
MW-3	3/5/2011	31.0	21.0 - 31.0	101.09	13.72	N/A	N/A	N/A	87.37
	3/6/2013	31.0	21.0 - 31.0	101.09	17.94	N/A	N/A	N/A	83.15
MW-4	3/5/2011	25.0	15.0 - 25.0	97.02	9.15	N/A	N/A	N/A	87.87
	3/6/2013	25.0	15.0 - 25.0	97.02	12.41	10.10	2.31	10.75	86.27
MW-5	6/20/2011	20.0	10.0 - 20.0	101.34	14.05	13.75	0.30	13.83	87.51
	3/6/2013	20.0	10.0 - 20.0	101.34	19.63	16.80	2.83	17.59	83.75
MW-5A	3/6/2013	25.5	15.5 - 25.5	101.84	18.00	N/A	N/A	N/A	83.84
MW-6B	3/6/2013	38.5	28.5 - 38.5	101.91	18.05	N/A	N/A	N/A	83.86
MW-7A	3/6/2013	24.0	14.0 - 24.0	100.04	16.60	N/A	N/A	N/A	83.44
MW-8A	3/6/2013	23.0	13.0 - 23.0	100.45	16.84	N/A	N/A	N/A	83.61
MW-8B	3/6/2013	37.5	27.5 - 37.5	100.37	16.60	N/A	N/A	N/A	83.77
MW-9A	3/6/2013	23.0	13.0 - 23.0	101.36	18.61	N/A	N/A	N/A	82.75
MW-9B	3/6/2013	31.5	21.5 - 31.5	101.38	17.60	N/A	N/A	N/A	83.78
MW-10A	3/6/2013	17.5	7.5 - 17.5	97.20	11.05	N/A	N/A	N/A	86.15
MW-10B	3/6/2013	39.0	29.0 - 39.0	97.34	13.87	N/A	N/A	N/A	83.47
MW-11A	3/6/2013	20.0	10.0 - 20.0	89.93	10.52	N/A	N/A	N/A	79.41
MW-11B	3/6/2013	35.0	29.0 - 39.0	90.26	10.30	N/A	N/A	N/A	79.96
MW-12A	3/6/2013	20.0	10.0 - 20.0	99.26	13.95	N/A	N/A	N/A	85.31
MW-12B	3/6/2013	36.5	26.5 - 36.5	99.35	16.72	N/A	N/A	N/A	82.63
MW-13A	3/25/2013	22.0	12.0 - 22.0	98.70	19.80	N/A	N/A	N/A	78.90
MW-13B	3/6/2013	33.5	23.5 - 33.5	98.69	19.88	N/A	N/A	N/A	78.81
MW-14A	3/6/2013	20.0	10.0 - 20.0	97.49	14.52	N/A	N/A	N/A	82.97
MW-14B	3/6/2013	38.5	28.5 - 38.5	97.45	17.27	N/A	N/A	N/A	80.18

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

Table 2 – Potentiometric Data
March 6 and 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-15A	3/25/2013	17.0	7.0 - 17.0	96.87	16.01	N/A	N/A	N/A	80.86
MW-15B	3/6/2013	40.0	30.0 - 40.0	96.82	17.60	N/A	N/A	N/A	79.22
MW-16A	3/25/2013	18.0	8.0 - 18.0	95.95	16.21	N/A	N/A	N/A	79.74
MW-16B	3/6/2013	37.0	27.0 - 37.0	95.68	16.75	N/A	N/A	N/A	78.93
MW-17B	3/6/2013	39.5	29.5 - 39.5	92.69	9.05	N/A	N/A	N/A	83.64
MW-18A	3/6/2013	13.0	3.0 - 13.0	88.20	0.85	N/A	N/A	N/A	87.35
MW-18B	3/6/2013	35.0	25.0 - 35.0	88.30	1.05	N/A	N/A	N/A	87.25
MW-19A	3/6/2013	15.0	5.0 - 15.0	91.63	7.95	N/A	N/A	N/A	83.68
MW-19B	3/6/2013	34.0	24.0 - 34.0	91.69	8.35	N/A	N/A	N/A	83.34
MW-20A	3/6/2013	15.0	5.0 - 15.0	88.67	5.05	N/A	N/A	N/A	83.62
MW-20B	3/6/2013	35.0	25.0 - 35.0	88.61	4.11	N/A	N/A	N/A	84.50
MW-21A	3/6/2013	12.0	2.0 - 12.0	87.16	0.85	N/A	N/A	N/A	86.31
MW-21B	3/6/2013	35.0	25.0 - 35.0	87.23	1.35	N/A	N/A	N/A	85.88
MW-22B	3/6/2013	35.0	25.0 - 35.0	87.40	2.10	N/A	N/A	N/A	85.30
RW-1	3/6/2013	40.0	20.0 - 40.0	101.21	17.26	17.11	0.15	17.15	84.06
RW-2	3/6/2013	40.0	20.0 - 40.0	100.96	16.96	N/A	N/A	N/A	84.00
RW-3	3/6/2013	41.0	21.0 - 41.0	101.44	17.41	17.36	0.05	17.37	84.07
RW-4	3/6/2013	40.5	20.5 - 40.5	100.83	16.73	N/A	N/A	N/A	84.10
RW-5	3/6/2013	38.5	18.5 - 38.5	101.62	17.64	17.58	0.06	17.6	84.02
DMW-1	3/6/2013	65.0	60.0 - 65.0	101.16	18.21	N/A	N/A	N/A	82.95
DMW-2	3/6/2013	65.0	60.0 - 65.0	92.63	9.40	N/A	N/A	N/A	83.23
DMW-3	3/6/2013	65.0	60.0 - 65.0	87.41	2.10	N/A	N/A	N/A	85.31

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

Table 3 – Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
MW-1	3/8/2013	**2,480**	**12,800**	**1,550**	5,650	**623**	**70.8 J**	**ND (11.6)**	ND (0.0039)	14 J
MW-2	3/6/2013	**1.34' Free Product**								
MW-3	3/8/2013	0.417 J	1.05	0.408 J	1.72 J	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-4	3/6/2013	**2.31' Free Product**								
MW-5	3/6/2013	**2.83' Free Product**								
MW-6A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	13 J
MW-6B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**19**
MW-7A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-8A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	6.8 J
MW-8B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-9A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.62	0.642 J	ND (0.0039)	ND (3.8)
MW-9B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.79	0.675 J	ND (0.0039)	ND (3.8)
MW-10A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-10B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-11A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.00	ND (0.116)	ND (0.0039)	11 J
MW-11B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.12	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-13A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	7.8 J
MW-13B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 3 – Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
MW-15A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	5.3 J
MW-15B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-16A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**35**
MW-16B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-17B	3/6/2013	**6.58**	2.47	1.1 J	3.87 J	ND (0.352	**244**	ND (0.232)	ND (0.0039)	ND (3.8)
MW-18A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.42	ND (0.116)	ND (0.0039)	**590**
MW-18B	3/6/2013	ND (0.111)	0.459 J	ND (0.109)	2.03 J	ND (0.176)	0.841 J	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19A	3/6/2013	0.566 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19B	3/6/2013	0.253 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.15	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.25	ND (0.116)	ND (0.0039)	8.7 J
MW-21A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	12 J
MW-21B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.34	ND (0.116)	ND (0.0039)	6.8 J
MW-22B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.83	ND (0.116)	ND (0.0039)	ND (3.8)
RW-1	3/6/2013	**0.15' Free Product**								
RW-2	3/8/2013	**9,420**	**12,800**	**2,030**	**11,000**	**565 J**	**9100**	**224 J**	**1.65**	ND (3.8)
RW-3	3/6/2013	**0.05' Free Product**								
RW-4	3/8/2013	**3,390**	**1,730**	**977**	4,900	**210 J**	**4,460**	**ND (5.81)**	ND (0.0039)	12 J
RW-5	3/6/2013	**0.06' Free Product**								
DMW-1	3/8/2013	**507**	ND (1.22)	ND (1.09	ND (0.179)	ND (1.76)	**131**	**14.2 J**	ND (0.0039)	ND (3.8)
DMW-2	3/6/2013	4.12	0.548 J	ND (0.109)	0.805 J	ND (0.176)	**153**	ND (0.116)	ND (0.0039)	ND (3.8)
DMW-3	3/6/2013	0.281 J	0.497 J	ND (0.109)	ND (0.179	ND (0.176)	1.76	ND (0.116)	ND (0.0039)	**120**

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 3 – Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
Duplicate 1 (MW-20B)	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.4	ND (0.116)	ND (0.0039)	4.5 J
Duplicate 2 (DMW-2)	3/6/2013	4.62	0.748 J	ND (0.218)	1.05 J	ND (0.352	**169**	ND (0.232)	ND (0.0039)	ND (3.8)
Field Blank 1	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 2	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 4	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 1	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 2	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 4	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 5	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 3 – Current Groundwater Analytical Data
--8 Oxygenates--
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	DIPE	Ethanol	ETBA	ETBE	TAA	TAME	TBA	TBF
RBSLs	—	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-1	3/8/2013	ND (23.6)	ND (12500)	ND (3760)	ND (23.4)	6340	ND (24)	ND (29)	ND (48.7)
MW-2	3/6/2013	**1.34' Free Product**							
MW-3	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	30.8	ND (0.24)	ND (0.29)	ND (0.487)
MW-4	3/6/2013	**2.31' Free Product**							
MW-5	3/6/2013	**2.83' Free Product**							
MW-6A	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-6B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-7A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-8A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-8B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-9A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-9B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-10A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-10B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-11A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-11B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-12A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-12B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-13A	3/25/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-13B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-14A	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-14B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 3 – Current Groundwater Analytical Data
--8 Oxygenates--
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	DIPE	Ethanol	ETBA	ETBE	TAA	TAME	TBA	TBF
RBSLs	---	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MW-15A	3/25/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-15B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-16A	3/25/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-16B	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-17B	3/6/2013	2.6 J	ND (250)	ND (75.2)	ND (0.468)	244	ND (0.48)	400	ND (0.974)
MW-18A	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-18B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-19A	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	5.8 J	ND (0.487
MW-19B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-20A	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-20B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-21A	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-21B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
MW-22B	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
RW-1	3/6/2013	**0.15' Free Product**							
RW-2	3/8/2013	72.7 J	ND (25000)	ND (7520)	ND (46.8)	32,100	ND (48)	5,970	ND (97.4)
RW-3	3/6/2013	**0.05' Free Product**							
RW-4	3/8/2013	ND (11.8)	ND (6250)	ND (1880)	ND (11.7)	5,690	ND (12)	2,180	ND (24.3)
RW-5	3/6/2013	**0.06' Free Product**							
DMW-1	3/8/2013	ND (2.36)	ND (1250)	ND (376)	ND (2.34)	2,550	ND (2.4)	75.5 J	ND (4.87)
DMW-2	3/6/2013	1.49 J	ND (125)	ND (37.6)	ND (0.234)	141	ND (0.24)	230	ND (0.487)
DMW-3	3/6/2013	ND (0.236)	239 J	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 3 – Current Groundwater Analytical Data
--8 Oxygenates--
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	DIPE	Ethanol	ETBA	ETBE	TAA	TAME	TBA	TBF
RBSLs	---	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Duplicate 1 (MW-20B)	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Duplicate 2 (DMW-2)	3/6/2013	1.77 J	ND (250)	ND (75.2)	ND (0.468)	163	ND (0.48)	271	ND (0.974)
Field Blank 1	3/6/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Field Blank 2	3/7/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Field Blank 3	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Field Blank 4	3/25/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Trip Blank 1	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Trip Blank 2	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Trip Blank 3	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Trip Blank 4	3/8/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)
Trip Blank 5	3/25/2013	ND (0.236)	ND (125)	ND (37.6)	ND (0.234)	ND (1.01)	ND (0.24)	ND (0.29)	ND (0.487)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 4 – Current & Historical Groundwater Analytical Data
March 5, 2011 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
MW-1	3/5/2011	**1,760**	**18,400**	**1,270**	5,140	**4,070J**	<83.9	<121	<0.0032	**18**
	3/8/2013	**2,480**	**12,800**	**1,550**	5,650	**623**	**70.8 J**	**ND (11.6)**	ND (0.0039)	14 J
MW-2	3/5/2011	**1,650**	**3,230**	422	2,190	**462J**	**3,420**	<12.1	**1.42**	<15
	3/6/2013	**1.34' Free Product**								
MW-3	3/5/2011	<15	10.4	9.52	30.6	4.74J	7.91	<0.121	<0.0032	<15
	3/8/2013	0.417 J	1.05	0.408 J	1.72 J	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-4	3/5/2011	**1,830**	198	**1,270**	3,160	**598**	**3,100**	<12.1	<0.0032	<15
	3/6/2013	**2.31' Free Product**								
MW-5	6/20/2011	**0.30' Free Product**								
	3/6/2013	**2.83' Free Product**								
MW-6A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	13 J
MW-6B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**19**
MW-7A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-8A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	6.8 J
MW-8B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-9A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.62	0.642 J	ND (0.0039)	ND (3.8)
MW-9B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.79	0.675 J	ND (0.0039)	ND (3.8)
MW-10A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-10B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-11A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.00	ND (0.116)	ND (0.0039)	11 J
MW-11B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.12	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-13A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	7.8 J
MW-13B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 4 – Current & Historical Groundwater Analytical Data
March 5, 2011 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
MW-15A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	5.3 J
MW-15B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-16A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**35**
MW-16B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-17B	3/6/2013	**6.58**	2.47	1.1 J	3.87 J	ND (0.352	**244**	ND (0.232)	ND (0.0039)	ND (3.8)
MW-18A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.42	ND (0.116)	ND (0.0039)	**590**
MW-18B	3/6/2013	ND (0.111)	0.459 J	ND (0.109)	2.03 J	ND (0.176)	0.841 J	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19A	3/6/2013	0.566 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19B	3/6/2013	0.253 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.15	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.25	ND (0.116)	ND (0.0039)	8.77 J
MW-21A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	12 J
MW-21B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.34	ND (0.116)	ND (0.0039)	6.8 J
MW-22B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.83	ND (0.116)	ND (0.0039)	ND (3.8)
RW-1	3/6/2013	**0.15' Free Product**								
RW-2	3/8/2013	**9,420**	**12,800**	**2,030**	**11,000**	**565 J**	**9100**	**224 J**	**1.65**	ND (3.8)
RW-3	3/6/2013	**0.05' Free Product**								
RW-4	3/8/2013	**3,390**	**1,730**	**977**	4,900	**210 J**	**4,460**	**ND (5.81)**	ND (0.0039)	12 J
RW-5	3/6/2013	**0.06' Free Product**								
DMW-1	3/8/2013	**507**	ND (1.22)	ND (1.09	ND (0.179)	ND (1.76)	**131**	**14.2 J**	ND (0.0039)	ND (3.8)
DMW-2	3/6/2013	4.12	0.548 J	ND (0.109)	0.805 J	ND (0.176)	**153**	ND (0.116)	ND (0.0039)	ND (3.8)
DMW-3	3/6/2013	0.281 J	0.497 J	ND (0.109)	ND (0.179	ND (0.176)	1.76	ND (0.116)	ND (0.0039)	**120**

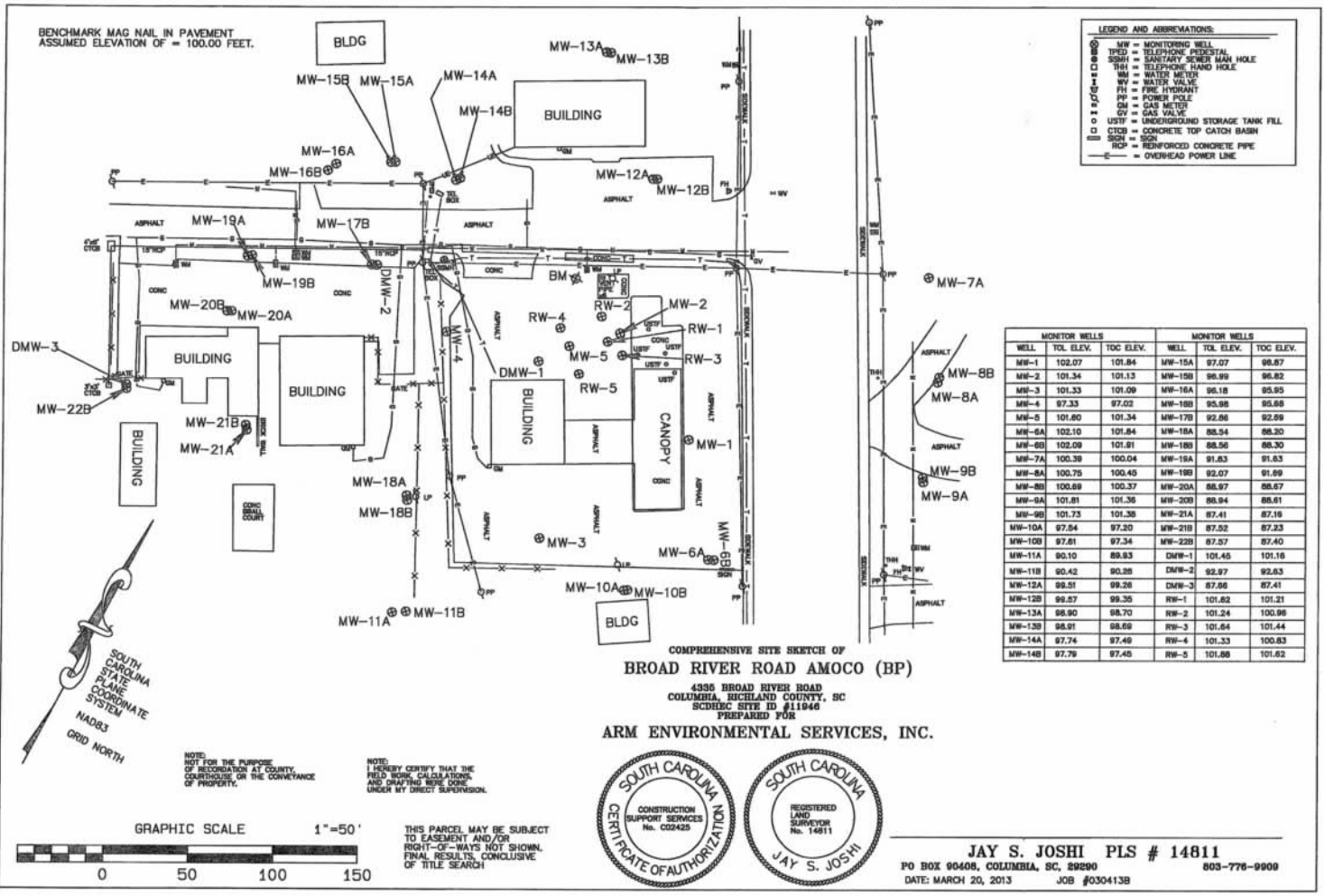
Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 4 – Current & Historical Groundwater Analytical Data
March 5, 2011 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	N/A	5	1,000	700	10,000	25	40	5 (MCL)	0.05	15 (Action Level)
Duplicate 1 (MW-20B)	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.4	ND (0.116)	ND (0.0039)	4.5 J
Duplicate 2 (DMW-2)	3/6/2013	4.62	0.748 J	ND (0.218)	1.05 J	ND (0.352	**169**	ND (0.232)	ND (0.0039)	ND (3.8)
Field Blank 1	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 2	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 4	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 1	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 2	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 4	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 5	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

APPENDIX A
SITE SURVEY



LEGEND AND ABBREVIATIONS:

- MW = MONITORING WELL
- TPED = TELEPHONE PEDESTAL
- SSMH = SANITARY SEWER MAN HOLE
- THH = TELEPHONE HAND HOLE
- WM = WATER METER
- WV = WATER VALVE
- FH = FIRE HYDRANT
- PP = POWER POLE
- GM = GAS METER
- GV = GAS VALVE
- USTF = UNDERGROUND STORAGE TANK FILL
- CTCB = CONCRETE TOP CATCH BASIN
- SIGN = SIGN
- RCP = REINFORCED CONCRETE PIPE
- —E— = OVERHEAD POWER LINE

MONITOR WELLS			MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.	WELL	TOL ELEV.	TOC ELEV.
MW-1	102.07	101.84	MW-15A	97.07	96.87
MW-2	101.34	101.13	MW-15B	96.99	96.82
MW-3	101.33	101.09	MW-16A	96.18	95.95
MW-4	97.33	97.02	MW-16B	95.98	95.68
MW-5	101.60	101.34	MW-17B	92.86	92.69
MW-6A	102.10	101.84	MW-18A	88.54	88.20
MW-6B	102.09	101.91	MW-18B	88.56	88.30
MW-7A	100.39	100.04	MW-19A	91.83	91.63
MW-8A	100.75	100.45	MW-19B	92.07	91.89
MW-8B	100.69	100.37	MW-20A	88.97	88.67
MW-9A	101.81	101.36	MW-20B	88.94	88.61
MW-9B	101.73	101.38	MW-21A	87.41	87.16
MW-10A	97.54	97.20	MW-21B	87.52	87.23
MW-10B	97.61	97.34	MW-22B	87.57	87.40
MW-11A	90.10	89.93	DMW-1	101.45	101.16
MW-11B	90.42	90.26	DMW-2	92.97	92.63
MW-12A	99.51	99.26	DMW-3	87.66	87.41
MW-12B	99.57	99.35	RW-1	101.62	101.21
MW-13A	98.90	98.70	RW-2	101.24	100.98
MW-13B	98.91	98.69	RW-3	101.64	101.44
MW-14A	97.74	97.49	RW-4	101.33	100.83
MW-14B	97.79	97.45	RW-5	101.68	101.62

COMPREHENSIVE SITE SKETCH OF

BROAD RIVER ROAD AMOCO (BP)

4335 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SC
SCDHEC SITE ID #11946
PREPARED FOR

ARM ENVIRONMENTAL SERVICES, INC.

NOTE:
NOT FOR THE PURPOSE OF RECORDATION AT COUNTY COURTHOUSE OR THE CONVEYANCE OF PROPERTY.

NOTE:
I HEREBY CERTIFY THAT THE FIELD WORK, CALCULATIONS, AND DRAFTING WERE DONE UNDER MY DIRECT SUPERVISION.

GRAPHIC SCALE 1"=50'

0 50 100 150

THIS PARCEL MAY BE SUBJECT TO EASEMENT AND/OR RIGHT-OF-WAYS NOT SHOWN. FINAL RESULTS, CONCLUSIVE OF TITLE SEARCH

SOUTH CAROLINA CONSTRUCTION SUPPORT SERVICES No. C02425 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 JAY S. JOSHI

JAY S. JOSHI PLS # 14811
PO BOX 90408, COLUMBIA, SC, 29290 803-776-9909

DATE: MARCH 20, 2013 JOB #030413B

APPENDIX B
PURGING DATA SHEETS & LABORATORY ANALYTICAL DATA

ARM ENVIRONMENTAL SERVICES, INC.

Purge Meter Calibration Data Sheet

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 40° AM - 53° PM SUNNY WINDY

pH / Specific Conductivity Meter

Model & Serial #: (check one)
- ____ ThermoScientific Orion 4 Star – A16729
- X ThermoScientific Orion 4 Star – A16730
- ____ Oakton Waterproof pH/Con 10 Series – 502789

Dissolved Oxygen Meter

Model & Serial #: (check one)
- ____ YSI 55 Dissolved Oxygen – 06H2811
- X YSI 55 Dissolved Oxygen – 09L 100775
- ____ YSI 55 Dissolved Oxygen – 08L 101069

Turbidity Meter

Model & Serial #: (check one)
- ____ Hanna Hi 98703 S/N 08511753
- X Hanna Hi 98703 S/N 08509656

Initial Calibration

pH Calibration:	4.01 / 6.99 / 10.01	Spec. Cond. Calibration:	1421	Turbidity Calibration:	0.26 / 15.0 / 100 / 750	Date: 03.06.13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 0730

Midday Calibration Check

pH Calibration:	4.03 / 7.01 / 10.02	Spec. Cond. Calibration:	1418	Turbidity Calibration:	0.26 / 14.9 / 99.9 / 751	Date: 03.06.13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 1210

End-of-Day Calibration Check

pH Calibration:	4.04 / 7.02 / 10.00	Spec. Cond. Calibration:	1414	Turbidity Calibration:	0.26 / 15.1 / 101 / 749	Date: 03.06.13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 1730

ARM ENVIRONMENTAL SERVICES, INC.

Purge Meter Calibration Data Sheet

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd., Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 50° SUNNY

pH / Specific Conductivity Meter

Model & Serial #: (check one)
- ____ ThermoScientific Orion 4 Star – A16729
- X ThermoScientific Orion 4 Star – A16730
- ____ Oakton Waterproof pH/Con 10 Series – 502789

Dissolved Oxygen Meter

Model & Serial #: (check one)
- ____ YSI 55 Dissolved Oxygen – 06H2811
- X YSI 55 Dissolved Oxygen – 09L 100775
- ____ YSI 55 Dissolved Oxygen – 08L 101069

Turbidity Meter

Model & Serial #: (check one)
- ____ Hanna Hi 98703 S/N 08511753
- X Hanna Hi 98703 S/N 08509656

Initial Calibration

pH Calibration:	4.01 / 7.00 / 10.01	Spec. Cond. Calibration:	1442	Turbidity Calibration:	0.26 / 15.0 / 100 / 750	Date: 03·07·13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 0730

Midday Calibration Check

pH Calibration:	4.03 / 7.01 / 10.02	Spec. Cond. Calibration:	1427	Turbidity Calibration:	0.27 / 14.9 / 99.9 / 751	Date: 03·07·13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 1215

End-of-Day Calibration Check

pH Calibration:	4.02 / 6.99 / 10.03	Spec. Cond. Calibration:	1418	Turbidity Calibration:	0.26 / 15.1 / 101 / 749	Date: 03·07·13
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750	Time: 1730

ARM ENVIRONMENTAL SERVICES, INC.

Purge Meter Calibration Data Sheet

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd., Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 53° Sunny

pH / Specific Conductivity Meter

Model & Serial # (check one):
- ____ ThermoScientific Orion 4 Star – A16729
- X ThermoScientific Orion 4 Star – A16730
- ____ Oakton Waterproof pH/Con 10 Series – 502789

Dissolved Oxygen Meter

Model & Serial # (check one):
- ____ YSI 55 Dissolved Oxygen – 06H2811
- X YSI 55 Dissolved Oxygen – 09L 100775
- ____ YSI 55 Dissolved Oxygen – 08L 101069

Turbidity Meter

Model & Serial # (check one): ____ Hanna Hi 98703 S/N 08511753 X Hanna Hi 98703 S/N 08509656

Initial Calibration

pH Calibration: 4.04 / 6.99 / 10.03
pH Standard: 4.01 / 7.00 / 10.01

Spec. Cond. Calibration: 1438
Spec. Cond. Standard: 1413

Turbidity Calibration: 0.27 / 15.0 / 100 / 750
Turbidity Standard: >0.1 / 15.0 / 100 / 750

Date: 03·08·13
Time: 0730

Midday Calibration Check

pH Calibration: 4.02 / 7.03 / 10.01
pH Standard: 4.01 / 7.00 / 10.01

Spec. Cond. Calibration: 1425
Spec. Cond. Standard: 1413

Turbidity Calibration: 0.26 / 15.1 / 99.8 / 749
Turbidity Standard: >0.1 / 15.0 / 100 / 750

Date: 03·08·13
Time: 1230

End-of-Day Calibration Check

pH Calibration: 3.99 / 7.01 / 10.00
pH Standard: 4.01 / 7.00 / 10.01

Spec. Cond. Calibration: 1421
Spec. Cond. Standard: 1413

Turbidity Calibration: 0.26 / 14.9 / 101 / 751
Turbidity Standard: >0.1 / 15.0 / 100 / 750

Date: 03·08·13
Time: 1400

ARM ENVIRONMENTAL SERVICES, INC.

Purge Meter Calibration Data Sheet

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd, Columbia, SC

UST Permit # 11946 Field Personnel: Todd Allred / Jake Roper (full names) Weather: 65°, partly sunny

pH / Specific Conductivity Meter

Model & Serial #: (check one)
- ____ ThermoScientific Orion 4 Star – A16729
- ✓ ThermoScientific Orion 4 Star – A16730
- ____ Oakton Waterproof pH/Con 10 Series – 502789

Dissolved Oxygen Meter

Model & Serial #: (check one)
- ____ YSI 55 Dissolved Oxygen – 06H2811
- ✓ YSI 55 Dissolved Oxygen – 09L 100775
- ____ YSI 55 Dissolved Oxygen – 08L 101069

Turbidity Meter

Model & Serial #: (check one)
- ____ Hanna Hi 98703 S/N 08511753
- ✓ Hanna Hi 98703 S/N 08509656

Initial Calibration

pH Calibration:	4.01 / 6.99 / 10.00	Spec. Cond. Calibration:	1420	Turbidity Calibration:	0.27 / 15.0 / 101 / 750
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750

Date: 3/25/13 Time: 1050

Midday Calibration Check

pH Calibration:		Spec. Cond. Calibration:		Turbidity Calibration:	
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:		Turbidity Standard:	>0.1 / 15.0 / 100 / 750

Date: Time:

End-of-Day Calibration Check

pH Calibration:	4.03 / 7.01 / 10.01	Spec. Cond. Calibration:	1419	Turbidity Calibration:	0.28 / 14.9 / 100 / 749
pH Standard:	4.01 / 7.00 / 10.01	Spec. Cond. Standard:	1413	Turbidity Standard:	>0.1 / 15.0 / 100 / 750

Date: 3/25/13 Time: 1340

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-8-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 57° sunny

Well Data

Well Number: MW-1 Diameter (in): 2" Well Volume (gal): 3.15

Total Depth: 38.0 Static Water Level: 18.62 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.15	6.30	9.47					
Time (military)									
pH (standard units)	5.01	4.79	4.57	4.69					4.73
Specific Cond. (µS/cm)	64.7	63.4	58.5	58.8					61.2
Water Temp (°C)	21.3	22.0	21.9	21.9					22.0
Turbidity (mild, moderate, strong)	13.1	1000+	600	308					
Dissolved Oxygen	2.56	2.79	1.68	1.48					1.56

Sample Collection Time: 1130

Remarks:

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 8 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 51° Sunny

Well Data

Well Number: MW-3 Diameter (in): 2" Well Volume (gal): 1.96

Total Depth: 30.0 Static Water Level: 17.94 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.96	3.92	5.89					
Time (military)									
pH (standard units)	5.67	5.80							
Specific Cond. (µS/cm)	286.5	285.3							
Water Temp (°C)	20.1	19.8							
Turbidity (mild, moderate, strong)	19.5	169							
Dissolved Oxygen	.78	2.15							

Sample Collection Time: 1145

Remarks: Dry @ 2.5 gallons, slow recovery, enough H_2O for samples

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather:

Well Data

Well Number: MW-6A Diameter (in): 2" Well Volume (gal): 1.22

Total Depth: 25.5 Static Water Level: 18.0 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.22	2.44	3.66					
Time (military)									
pH (standard units)	5.25	5.13	5.07						
Specific Cond. (µS/cm)	57.8	54.0	52.7						
Water Temp (°C)	19.1	20.3	19.6						
Turbidity (mild, moderate, strong)	8.03	1000+	1000+						
Dissolved Oxygen	4.13	3.80	3.46						

Sample Collection Time: 0930

Remarks: slow recovery, dry @ 2.44 gals. enough H20 for sample viles.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 40° sunny & windy

Well Data

Well Number: MW-6B Diameter (in): 2" Well Volume (gal): 3.33

Total Depth: 38.5 Static Water Level: 18.05 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.33	6.66	10.0					
Time (military)									
pH (standard units)	5.53	5.11							
Specific Cond. (µS/cm)	284.0	68.1							
Water Temp (°C)	17.6	18.4							
Turbidity (mild, moderate, strong)	1000	1000							
Dissolved Oxygen	6.08	4.19							

Sample Collection Time: 0800

Remarks: Dry @ 3.33 gal., slow recovery, purged with Pump

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 54° Sunny

Well Data

Well Number: MW-7A Diameter (in): 2" Well Volume (gal): 1.20

Total Depth: 24.0 Static Water Level: 16.60 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.20	2.40	3.61					
Time (military)									
pH (standard units)	5.35	5.22	5.71						
Specific Cond. (µS/cm)	30.5	27.82	46.1						
Water Temp (°C)	19.9	~~1520~~ 20.3	19.9						
Turbidity (mild, moderate, strong)	3.79	65.3	452						
Dissolved Oxygen	3.89	4.00	3.96						

Sample Collection Time: 1500

Remarks: Dry @ 2.40 gals., slow recovery, enough H²O for sample vials.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 53° Sunny

Well Data

Well Number: MW-8A Diameter (in): 2" Well Volume (gal): 1.0

Total Depth: 23.0 Static Water Level: 16.84 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.0	2.0	3.0					
Time (military)									
pH (standard units)	4.98	5.07							
Specific Cond. (µS/cm)	42.7	43.2							
Water Temp (°C)	20.5	20.7							
Turbidity (mild, moderate, strong)	4.51	84.3							
Dissolved Oxygen	3.71	4.44							

Sample Collection Time: 1415

Remarks: Dry @ 1.0, slow recovery, enough H_2O for sample vials.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 52° sunny

Well Data

Well Number: MW-8B Diameter (in): 2" Well Volume (gal): 3.40

Total Depth: 37.5 Static Water Level: 16.60 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.40	6.80	10.22					
Time (military)									
pH (standard units)	4.75	4.65							
Specific Cond. (µS/cm)	35.0	36.0							
Water Temp (°C)	20.4	20.9							
Turbidity (mild, moderate, strong)	6.60	990							
Dissolved Oxygen	3.85	3.94							

Sample Collection Time: 1345

Remarks: Dry @ 4.0 gals., slow recovery, enough H^2O for samples

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 7 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 52° Sunny

Well Data

Well Number: MW-9A Diameter (in): 2" Well Volume (gal): 0.71

Total Depth: 23.0 Static Water Level: 18.61 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		0.71	1.42	2.14					
Time (military)									
pH (standard units)	4.90	4.77	4.73	4.81					
Specific Cond. (µS/cm)	5.44	53.9	54.2	50.5					
Water Temp (°C)	20.0	20.1	20.1	20.5					
Turbidity (mild, moderate, strong)	10.5	101	724	1000+					
Dissolved Oxygen	3.80	4.48	4.81	4.68					

Sample Collection Time: 1330

Remarks: Dry @ 2.0 gals., s

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 51° sunny

Well Data

Well Number: MW-9B Diameter (in): 2" Well Volume (gal): 2.26

Total Depth: 31.5 Static Water Level: 17.60 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		2.26	4.52	6.79					
Time (military)									
pH (standard units)	5.44	5.19							
Specific Cond. (µS/cm)	58.9	54.8							
Water Temp (°C)	19.5	20.3							
Turbidity (mild, moderate, strong)	5.35	1000+							
Dissolved Oxygen	2.44	2.97							

Sample Collection Time: 1300

Remarks: Dry @ 2.26 gals, slow recovery, enough H_2O for sample viles

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03·7·13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 54° Sunny

Well Data

Well Number: MW-10A Diameter (in): 2" Well Volume (gal): 1.05

Total Depth: 17.50 Static Water Level: 11.05 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.05	2.10	3.15					
Time (military)									
pH (standard units)	5.60	5.56							
Specific Cond. (µS/cm)	139.2	140.9							
Water Temp (°C)	17.9	17.2							
Turbidity (mild, moderate, strong)	13.3	71.6							
Dissolved Oxygen	4.44	4.46							

Sample Collection Time: 1700

Remarks: Dry @ 1.50 gals., slow recovery, enough H2O for Sample Vile

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03·7·13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 54° Sunny

Well Data

Well Number: MW-10B Diameter (in): 2" Well Volume (gal): 4.09

Total Depth: 39.0 Static Water Level: 13.87 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		4.09	8.18	12.28					
Time (military)									
pH (standard units)	6.20	6.03							
Specific Cond. (µS/cm)	150.0	147.7							
Water Temp (°C)	18.2	19.1							
Turbidity (mild, moderate, strong)	181	1000+							
Dissolved Oxygen	2.33	1.83							

Sample Collection Time: 1630

Remarks: Dry @ 5.0 gals., slow recovering, enough H_2O for sample vials.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03·7·13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 53° Sunny

Well Data

Well Number: MW-11A Diameter (in): 2" Well Volume (gal): ~~2.39~~ 10.52

Total Depth: 20.0 Static Water Level: 5.29 Static Product Level: _____

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		2.39	4.78	7.19					
Time (military)									
pH (standard units)	5.85	5.90							
Specific Cond. (µS/cm)	318.0	286.0							
Water Temp (°C)	14.8	16.7							
Turbidity (mild, moderate, strong)	29.1	358							
Dissolved Oxygen	2.96	3.87							

Sample Collection Time: 1600

Remarks: Dry @ 2.39 gals., enough H2O for samples. Slow recovery

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 53° sunny

Well Data

Well Number: MW-11B Diameter (in): 2" Well Volume (gal): 4.02

Total Depth: 35.0 Static Water Level: 10.30 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		4.02	8.04	12.07					
Time (military)									
pH (standard units)	5.48	5.47							
Specific Cond. (µS/cm)	120.9	119.6							
Water Temp (°C)	15.3	17.6							
Turbidity (mild, moderate, strong)	452	29.1							
Dissolved Oxygen	2.81	2.52							

Sample Collection Time: 1530

Remarks: Dry @ 4.02, slow recovery, enough H^2O for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03·7·13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 47° Sunny

Well Data

Well Number: MW-12A Diameter (in): 2" Well Volume (gal): 0.98

Total Depth: 20.0 Static Water Level: 13.95 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		0.98	1.96	2.95					
Time (military)									
pH (standard units)	5.15	5.10	5.21						
Specific Cond. (µS/cm)	57.0	57.3	60.4						
Water Temp (°C)	21.7	21.9	21.4						
Turbidity (mild, moderate, strong)	62.9	183	1000+						
Dissolved Oxygen	4.56	4.66	5.18						

Sample Collection Time: 1130

Remarks: Dry @ 2.5 gals., slow recovery, enough H²O for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 46° sunny

Well Data

Well Number: MW-12B Diameter (in): 2" Well Volume (gal): 3.22

Total Depth: 36.5 Static Water Level: 16.72 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.22	6.44	9.67					
Time (military)									
pH (standard units)	5.52	5.41							
Specific Cond. (µS/cm)	59.2	56.8							
Water Temp (°C)	21.6	22.1							
Turbidity (mild, moderate, strong)	40.7	1000+							
Dissolved Oxygen	2.67	2.53							

Sample Collection Time: 1100

Remarks: Dry @ 6.44 gals., slow recovery, enough H^2O for sample vi'les.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-~~27~~-25-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings Weather: 57° sunny

(full names) Todd Allred / Jalee Roper 3/25/13

Well Data

Well Number: MW-13A Diameter (in): 2" Well Volume (gal): 0.35

Total Depth: 22.0 Static Water Level: 19.80 Static Product Level:

19.80 3/25

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		0.35	0.70	1.07					
Time (military)									
pH (standard units)									
Specific Cond. (µS/cm)									
Water Temp (°C)									
Turbidity (mild, moderate, strong)									
Dissolved Oxygen									

Sample Collection Time: ~~1230~~ 1255

Remarks: ~~Not enough H2O for all sample vials~~ TB 3/25 grab samples only

DRY

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 50° Sunny

Well Data

Well Number: MW-13B Diameter (in): 2" Well Volume (gal): 2.22

Total Depth: 33.50 Static Water Level: 19.88 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		2.22	4.44	6.66					
Time (military)									
pH (standard units)	6.73	6.96							
Specific Cond. (µS/cm)	114.0	115.3							
Water Temp (°C)	19.4	19.1							
Turbidity (mild, moderate, strong)	50.8	990							
Dissolved Oxygen	3.39	3.04							

Sample Collection Time: 1200

Remarks: Dry @ 2.22 gals., slow recovery, enough H^2O for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 45° sunny

Well Data

Well Number: MW-14A Diameter (in): 2" Well Volume (gal): 0.89

Total Depth: 20.0 Static Water Level: 14.52 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		0.89	1.78	2.67					
Time (military)									
pH (standard units)	6.41	6.04							
Specific Cond. (µS/cm)	133.2	106.4							
Water Temp (°C)	19.8	20.1							
Turbidity (mild, moderate, strong)	16.0	33.7							
Dissolved Oxygen	4.90	4.90							

Sample Collection Time: 10 30

Remarks: Dry @ 1.78 gals., slow recovery, enough water for sample viles.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 43° Sunny

Well Data

Well Number: MW-14B Diameter (in): 2" Well Volume (gal): 3.46

Total Depth: 38.50 Static Water Level: 17.27 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.46	6.92	10.38					
Time (military)									
pH (standard units)	5.88	5.67							
Specific Cond. (µS/cm)	180.9	175.1							
Water Temp (°C)	18.5	18.7							
Turbidity (mild, moderate, strong)	10.4	432							
Dissolved Oxygen	2.47	1.72							

Sample Collection Time: 0945

Remarks: Dry @ 6.92 gals., slow recovery, enough $H^{2}O$ for Samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-~~26~~ 25 -13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings Weather: 38° Sunny
(full names)
Todd Allred / Jake Roper 3/25

Well Data

Well Number: MW-15A Diameter (in): 2" Well Volume (gal): ~~16.01~~ 3/25

Total Depth: 17.0 Static Water Level: ← Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)									
Time (military)									
pH (standard units)									
Specific Cond. (µS/cm)									
Water Temp (°C)									
Turbidity (mild, moderate, strong)									
Dissolved Oxygen									

Sample Collection Time: [redacted] 1304

Remarks: grab sample only

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-7-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 39° Sunny

Well Data

Well Number: MW-15B Diameter (in): 2" Well Volume (gal): 3.65

Total Depth: 40.0 Static Water Level: 17.60 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.65	7.30	10.95					
Time (military)									
pH (standard units)	5.58	5.40	5.18	5.12					5.26
Specific Cond. (µS/cm)	129.2	131.3	122.5	118.2					119.3
Water Temp (°C)	15.1	19.0	19.2	19.5					19.3
Turbidity (mild, moderate, strong)	3.83	34.6	69.9	67.3					68.7
Dissolved Oxygen	1.87	2.16	2.38	2.44					2.26

Sample Collection Time: 0800

Remarks:

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 25 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Todd Allred / Jabee Roper 7/25 Weather:

Well Data

Well Number: MW-16A Diameter (in): 2" Well Volume (gal): 0.29

Total Depth: 18.0 Static Water Level: 16.21 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)	~~13~~	0.29							
Time (military)	1309	1316							
pH (standard units)	5.98	6.01							
Specific Cond. (µS/cm)	142.0	138.3							
Water Temp (°C)	19.8	20.0							
Turbidity (mild, moderate, strong)	18.7	49.2							
Dissolved Oxygen	2.31	2.48							

Sample Collection Time: 1329

Remarks: insufficient water for purging; collect sample

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 7 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 40° Sunny

Well Data

Well Number: MW-16B Diameter (in): 2" Well Volume (gal): 3.30

Total Depth: 37.0 Static Water Level: 16.75 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		3.30	6.60	9.90					
Time (military)									
pH (standard units)	5.95	6.05							
Specific Cond. (µS/cm)	188.3	193.7							
Water Temp (°C)	19.3	19.8							
Turbidity (mild, moderate, strong)	5.11	250							
Dissolved Oxygen	2.66	3.64							

Sample Collection Time: 0845

Remarks: Dry @ 5.0 gals, slow recovery, enough H^2O for sample vials.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 - 6 - 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 52° sunny & breezy

Well Data

Well Number: MW-17B Diameter (in): 2" Well Volume (gal): 4.96

Total Depth: 39.5 Static Water Level: 9.05 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		4.96	9.92	14.89					
Time (military)									
pH (standard units)	5.81	5.70	5.79	5.63					5.69
Specific Cond. (µS/cm)	200.2	201.1	~~21.6~~ 212.9	204.9					206.5
Water Temp (°C)	19.6	21.2	21.6	21.4					20.4
Turbidity (mild, moderate, strong)	2.86	45.4	666	1000+					1000+
Dissolved Oxygen	5.08	4.73	5.18	4.60					5.02

Sample Collection Time: 1635

Remarks:

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 49° Sunny & Windy

Well Data

Well Number: MW-18A Diameter (in): 2" Well Volume (gal): 1.98

Total Depth: 13.0 Static Water Level: 0.85 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.98	3.96	5.94					
Time (military)									
pH (standard units)	5.99	5.97							
Specific Cond. (µS/cm)	376	~~364~~ 367							
Water Temp (°C)	14.2	15.0							
Turbidity (mild, moderate, strong)	4.58	1000+							
Dissolved Oxygen	1.47	2.06							

Sample Collection Time: 1300

Remarks: slow recovery, dry @ 1.98 gals. enough H^2O for Sample viles.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 47° Sunny & windy

Well Data

Well Number: MW-18B Diameter (in): 2" Well Volume (gal): 5.53

Total Depth: 35.0 Static Water Level: 1.05 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		5.53	11.06	16.60					
Time (military)									
pH (standard units)	6.33	6.46	6.44						
Specific Cond. (µS/cm)	427	429	431						
Water Temp (°C)	14.8	17.3	17.7						
Turbidity (mild, moderate, strong)	51.1	11.8	38.7						
Dissolved Oxygen	1.37	2.38	2.02						

Sample Collection Time: 1235

Remarks: Slow recovery, Dry @ 11.06 gals. enough H^2O for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 - 6 - 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 51° sunny

Well Data

Well Number: MW-19A Diameter (in): 2" Well Volume (gal): 1.14

Total Depth: 15.0 Static Water Level: 7.95 Static Product Level: _____

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.14	2.28	3.44					
Time (military)									
pH (standard units)	5.71	5.70	5.54						
Specific Cond. (µS/cm)	101.6	95.1	80.8						
Water Temp (°C)	18.9	19.2	19.3						
Turbidity (mild, moderate, strong)	16.2	50.3	126						
Dissolved Oxygen	4.25	4.93	4.66						

Sample Collection Time: 1505

Remarks: Dry @ 2.28 gals.; enough H^2O for Sample vials.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 6 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 57° Sunny

Well Data

Well Number: MW-19B Diameter (in): 2" Well Volume (gal): 4.18

Total Depth: 34.0 Static Water Level: 8.35 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		4.18	8.36	12.54					
Time (military)									
pH (standard units)	6.19	6.16							
Specific Cond. (µS/cm)	361	367							
Water Temp (°C)	20.6	21.0							
Turbidity (mild, moderate, strong)	23.8	114							
Dissolved Oxygen	2.02	1.64							

Sample Collection Time: 1435

Remarks: slow recovery dry @ 5 gals. enough H^{2O} for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 50° Sunny

Well Data

Well Number: MW-20A Diameter (in): 2" Well Volume (gal): 1.98

Total Depth: 15.0 Static Water Level: 2.80 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.98	3.96	5.96					
Time (military)									
pH (standard units)	5.67	5.74							
Specific Cond. (µS/cm)	151.9	160.9							
Water Temp (°C)	17.3	16.6							
Turbidity (mild, moderate, strong)	4.52	1000+							
Dissolved Oxygen	3.96	5.75							

Sample Collection Time: 1400

Remarks: slow recovery, dry @ 2.5 gals. enough water for samples

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 50° sunny

Well Data

Well Number: MW-20B Diameter (in): 2" Well Volume (gal): 5.03

Total Depth: 35.0 Static Water Level: 4.11 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		5.03	10.06	15.10					
Time (military)									
pH (standard units)	6.09	5.99	5.63	5.48					5.51
Specific Cond. (µS/cm)	109.0	106.0	103.0	101.7					100.9
Water Temp (°C)	15.6	18.9	19.4	19.7					20.1
Turbidity (mild, moderate, strong)	4.58	66.9	264	221					218
Dissolved Oxygen	1.32	2.01	1.51	1.58					1.56

Sample Collection Time: 13:25 / Dup @ 13:30

Remarks: excellent recovery

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: _____

Well Data

Well Number: MW-21A Diameter (in): 2" Well Volume (gal): 1.81

Total Depth: 12.0 Static Water Level: 0.85 Static Product Level: _____

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		1.81	3.62	5.45					
Time (military)									
pH (standard units)	5.56	5.53	5.30	5.33					5.32
Specific Cond. (µS/cm)	107.0	110.8	88.3	88.5					87.1
Water Temp (°C)	12.8	13.9	~~17.8~~ 14.9	15.3					15.2
Turbidity (mild, moderate, strong)	3.89	325	94.3	570					564
Dissolved Oxygen	4.81	2.25	4.58	5.28					5.42

Sample Collection Time: 1200

Remarks: _____

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit #: 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 47° sunny; windy

Well Data

Well Number: MW-21B Diameter (in): 2" Well Volume (gal): 5.48

Total Depth: 35.0 Static Water Level: 1.35 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampli
Volume Purged (gal)		5.48	10.96	16.45					
Time (military)									
pH (standard units)	6.41	6.01	5.95	5.98					6.03
Specific Cond. (µS/cm)	111.3	103.9	99.6	95.4					96.8
Water Temp (°C)	13.5	16.6	18.4	18.5					18.1
Turbidity (mild, moderate, strong)	19.6	21.7	574	257					236
Dissolved Oxygen	3.81	2.60	3.35	3.44					3.48

Sample Collection Time: 1130

Remarks:

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-6-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 45° sunny & windy

Well Data

Well Number: MW-22B Diameter (in): 2" Well Volume (gal): 5.36

Total Depth: 35.0 Static Water Level: 2.10 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		5.36	10.72	16.08					
Time (military)									
pH (standard units)	5.69	5.95	5.94	5.90					5.93
Specific Cond. (µS/cm)	199.3	203.1	199.5	193.4					196.9
Water Temp (°C)	12.4	14.6	16.4	17.7					18.1
Turbidity (mild, moderate, strong)	140	170	196	241					253
Dissolved Oxygen	2.16	1.38	1.05	1.22					1.17

Sample Collection Time: 1030

Remarks:

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03-8-13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 34° SUNNY

Well Data

Well Number: DMW-1 Diameter (in): 2" Well Volume (gal): 7.62

Total Depth: 65.0 Static Water Level: 18.21 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		7.62	15.24	22.88					
Time (military)									
pH (standard units)	7.65	7.17							
Specific Cond. (µS/cm)	428	584							
Water Temp (°C)	17.0	18.2							
Turbidity (mild, moderate, strong)	3.33	17.5							
Dissolved Oxygen	2.81	1.33							

Sample Collection Time: 0830

Remarks: Purged with bailer
Dry @ 10.0 gals, slow recovery, enough H2O for samples.

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 6 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 51° Sunny

Well Data

Well Number: DMW-2 Diameter (in): 2" Well Volume (gal): 9.06

Total Depth: 65.0 Static Water Level: 9.40 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		9.06	18.12	27.18					
Time (military)									
pH (standard units)	10.32	10.56	~~10.56~~ TB						
Specific Cond. (µS/cm)	255.8	257.1	~~256.1~~ TB						
Water Temp (°C)	20.1	20.9	~~20.7~~ TB						
Turbidity (mild, moderate, strong)	1.06	106	~~217~~ TB						
Dissolved Oxygen	2.47	2.11	~~1.46~~ TB						

Sample Collection Time: 1545 / DUP2 @ 1555

Remarks: Dry @ 10.0 gals. slow recovery enough H2O for Samples purged with bailer

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 6 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 45° sunny & windy

Well Data

Well Number: DMW-3 Diameter (in): 2" Well Volume (gal): 10.25

Total Depth: 65.0 Static Water Level: 2.10 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		10.25	20.5	30.75					
Time (military)									
pH (standard units)	11.80	11.81	11.86						
Specific Cond. (µS/cm)	718	708	704						
Water Temp (°C)	14.8	17.8	16.6						
Turbidity (mild, moderate, strong)	123	1000+	1000+						
Dissolved Oxygen	4.46	2.13	1.59						

Sample Collection Time: 1100

Remarks: Purged with pump. Dry slow recovery @ 25 gals. enough H_2O for sample vials

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03·18·13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 45° sunny

Well Data

Well Number: RW-2 Diameter (in): 4" Well Volume (gal): 15.04

Total Depth: 40.0 Static Water Level: 16.96 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		15.04	30.08	45.13					
Time (military)									
pH (standard units)	5.53	5.46							
Specific Cond. (µS/cm)	175.6	175.2							
Water Temp (°C)	21.2	23.0							
Turbidity (mild, moderate, strong)	38.1	51.2							
Dissolved Oxygen	2.28	1.68							

Sample Collection Time: 1000

Remarks: Purged with pump - Dry @ 26.0 gallons, enough H2O for Sample Vials. slow Recovery

ARM ENVIRONMENTAL SERVICES, INC.

Monitoring Well Purging Data Sheet

Date: 03 · 8 · 13

Site Data

Facility Name: Broad River Amoco Facility Location: 4335 Broad River Rd.; Columbia, SC

UST Permit # 11946 Field Personnel: Tyler Felder / Travis Billings (full names) Weather: 40° Sunny

Well Data

Well Number: RW-4 Diameter (in): 2" Well Volume (gal): 15.52

Total Depth: 40.5 Static Water Level: 16.73 Static Product Level:

1" well: 1 well volume = (TD - SWL) x 0.047
2" well: 1 well volume = (TD - SWL) x 0.163
4" well: 1 well volume = (TD - SWL) x 0.653
(TD = Total Depth SWL = Static Water Level)

Purging Data

	Initial	1st vol.	2nd vol.	3rd vol.	4th vol.	5th vol.	6th vol.	7th vol.	Post Sampling
Volume Purged (gal)		15.52	31.04	46.56					
Time (military)									
pH (standard units)	5.54	5.38	5.29						
Specific Cond. (µS/cm)	231.8	184.6	183.9						
Water Temp (°C)	18.7	21.2	22.5						
Turbidity (mild, moderate, strong)	72.4	80.4	152						
Dissolved Oxygen	2.51	2.44	2.47						

Sample Collection Time: 0900

Remarks: Purged with Pump - Dry @ 35 gals., slow recovery, enough H2O for Sample vials.

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT
ARM
1210 1st Street
Columbia, SC 29209

ATTENTION
Michael Faris

PROJECT ID
06-414.1-12

LABORATORY REPORT NUMBER
213031121

DATE
03/20/2013

Primary Data Review By

Curtis Ekker
Data Validation Manager, GCAL

Secondary Data Review By

Ashley B. Amick
Project Manager, Access Analytical, Inc.
aamick@accessanalyticalinc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Gulf Coast Analytical Labs (GCAL), 7979 GSRI Avenue, Baton Rouge, LA 70820.**
- **GCAL is SCDHEC certified laboratory # 73006, NCDENR certified lab # 618, GA certified lab # LA-01955, NELAP certified laboratory # 01955**
- Local support services for this project are provided by Access Analytical, Inc.. Access Analytical is a representative of GCAL serving clients in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll free at 888.315.4243.

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER ADE - 1482

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.
7979 GSRI Avenue
Baton Rouge, LA 70820

Report Date 03/20/2013

GCAL Report 213031121

Deliver To	ARM 1210 1st Street Columbia, SC 29209 803-783-3314
Attn	Michael Faris

Project 06-414.1-12

CASE NARRATIVE

Client: Access Analytical **Report:** 213031121

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the SW-846 8260B analysis, sample 21303112137 (ID 11946-DUP-2) had to be diluted due to the presence of non-target background. This dilution is reflected in the elevated reporting limits.

In the SW-846 8260B - Gas Additives analysis, samples 21303112131 (ID 11946-DMW-1), 21303112134 (ID 11946-RW-2) and 21303112101 (ID 11946-MW-1) had to be diluted due to the presence of non-target background. This dilution is reflected in the elevated reporting limits.

In the SW-846 8260B - Gas Additives analysis, samples 21303112121 (ID 11946-MW-17B) and 21303112137 (ID 11946-DUP-2) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilution is reflected in elevated detection limits.

In the SW-846 8260B analysis, samples 21303112121 (ID 11946-MW-17B), 21303112131 (ID 11946-DMW-1), 21303112135 (ID 11946-RW-4), 21303112134 (ID 11946-RW-2) and 21303112101 (ID 11946-MW-1) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilution is reflected in elevated detection limits.

METALS

In the SW-846 6010C analysis, a chemical or physical interference necessitated a dilution for sample 21303112122 (ID 11946-MW-18A). This is reflected in the elevated reporting limits.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Robyn Migues
Technical Director
GCAL REPORT 213031121

THIS REPORT CONTAINS 110 PAGES.

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112101	ID 11946-MW-1	Water	03/08/2013 11:30	03/09/2013 09:45
21303112102	ID 11946-MW-3	Water	03/08/2013 11:45	03/09/2013 09:45
21303112103	ID 11946-MW-6A	Water	03/06/2013 09:30	03/09/2013 09:45
21303112104	ID 11946-MW-6B	Water	03/06/2013 08:00	03/09/2013 09:45
21303112105	ID 11946-MW-7A	Water	03/07/2013 15:00	03/09/2013 09:45
21303112106	ID 11946-MW-8A	Water	03/07/2013 14:15	03/09/2013 09:45
21303112107	ID 11946-MW-8B	Water	03/07/2013 13:45	03/09/2013 09:45
21303112108	ID 11946-MW-9A	Water	03/07/2013 13:30	03/09/2013 09:45
21303112109	ID 11946-MW-9B	Water	03/07/2013 13:00	03/09/2013 09:45
21303112110	ID 11946-MW-10A	Water	03/07/2013 17:00	03/09/2013 09:45
21303112111	ID 11946-MW-10B	Water	03/07/2013 16:30	03/09/2013 09:45
21303112112	ID 11946-MW-11A	Water	03/07/2013 16:00	03/09/2013 09:45
21303112113	ID 11946-MW-11B	Water	03/07/2013 15:30	03/09/2013 09:45
21303112114	ID 11946-MW-12A	Water	03/07/2013 11:30	03/09/2013 09:45
21303112115	ID 11946-MW-12B	Water	03/07/2013 11:00	03/09/2013 09:45
21303112116	ID 11946-MW-13B	Water	03/07/2013 12:00	03/09/2013 09:45
21303112117	ID 11946-MW-14A	Water	03/07/2013 10:30	03/09/2013 09:45
21303112118	ID 11946-MW-14B	Water	03/07/2013 09:45	03/09/2013 09:45
21303112119	ID 11946-MW-15B	Water	03/07/2013 08:00	03/09/2013 09:45
21303112120	ID 11946-MW-16B	Water	03/07/2013 08:45	03/09/2013 09:45
21303112121	ID 11946-MW-17B	Water	03/06/2013 16:35	03/09/2013 09:45
21303112122	ID 11946-MW-18A	Water	03/06/2013 13:00	03/09/2013 09:45
21303112123	ID 11946-MW-18B	Water	03/06/2013 12:35	03/09/2013 09:45
21303112124	ID 11946-MW-19A	Water	03/06/2013 15:05	03/09/2013 09:45
21303112125	ID 11946-MW-19B	Water	03/06/2013 14:35	03/09/2013 09:45
21303112126	ID 11946-MW-20A	Water	03/06/2013 14:00	03/09/2013 09:45
21303112127	ID 11946-MW-20B	Water	03/06/2013 13:25	03/09/2013 09:45
21303112128	ID 11946-MW-21A	Water	03/06/2013 12:00	03/09/2013 09:45
21303112129	ID 11946-MW-21B	Water	03/06/2013 11:30	03/09/2013 09:45
21303112130	ID 11946-MW-22B	Water	03/06/2013 10:30	03/09/2013 09:45
21303112131	ID 11946-DMW-1	Water	03/08/2013 08:30	03/09/2013 09:45
21303112132	ID 11946-DMW-2	Water	03/06/2013 15:45	03/09/2013 09:45
21303112133	ID 11946-DMW-3	Water	03/06/2013 11:00	03/09/2013 09:45
21303112134	ID 11946-RW-2	Water	03/08/2013 10:00	03/09/2013 09:45
21303112135	ID 11946-RW-4	Water	03/08/2013 09:00	03/09/2013 09:45
21303112136	ID 11946-DUP-1	Water	03/06/2013 13:30	03/09/2013 09:45
21303112137	ID 11946-DUP-2	Water	03/06/2013 15:50	03/09/2013 09:45
21303112138	ID 11946-FB-1	Water	03/06/2013 12:05	03/09/2013 09:45
21303112139	ID 11946-FB-2	Water	03/07/2013 12:10	03/09/2013 09:45
21303112140	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45
21303112141	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45
21303112142	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45
21303112143	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45
21303112144	ID 11946-FB-3	Water	03/08/2013 12:30	03/09/2013 09:45

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112101	ID 11946-MW-1	Water	03/08/2013 11:30	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.014J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)	6340	2000	101	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	2480	100	11.1	ug/L
108-88-3	Toluene	12800	100	12.2	ug/L
100-41-4	Ethylbenzene	1550	100	10.9	ug/L
1330-20-7	Xylene (total)	5650	300	17.9	ug/L
91-20-3	Naphthalene	623	500	17.6	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	70.8J	100	7.77	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112102	ID 11946-MW-3	Water	03/08/2013 11:45	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)	30.8	20.0	1.01	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.417J	1.00	0.111	ug/L
108-88-3	Toluene	1.05	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.408J	1.00	0.109	ug/L
1330-20-7	Xylene (total)	1.72J	3.00	0.179	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112103	ID 11946-MW-5A	Water	03/06/2013 09:30	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.013J	0.015	0.0038	mg/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-04	ID 11946-MW-6B	Water	03/06/2013 08:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.019	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-06	ID 11946-MW-8A	Water	03/07/2013 14:15	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0068J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-08	ID 11946-MW-9A	Water	03/07/2013 13:30	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	2.62	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.642J	5.00	0.116	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-09	ID 11946-MW-9B	Water	03/07/2013 13:00	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	2.79	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.675J	5.00	0.116	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-12	ID 11946-MW-11A	Water	03/07/2013 16:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.011J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.00	1.00	0.078	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112113	ID 11946-MW-11B	Water	03/07/2013 15:30	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.12	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112121	ID 11946-MW-17B	Water	03/06/2013 16:35	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	400	20.0	0.580	ug/L
108-20-3	diisopropyl Ether (DIPE)	2.60J	10.0	0.472	ug/L
75-85-4	tert-amyl alcohol (TAA)	244	40.0	2.03	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	6.58	2.00	0.222	ug/L
108-88-3	Toluene	2.47	2.00	0.244	ug/L
100-41-4	Ethylbenzene	1.10J	2.00	0.218	ug/L
1330-20-7	Xylene (total)	3.87J	6.00	0.358	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	244	2.00	0.155	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112122	ID 11946-MW-18A	Water	03/06/2013 13:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.59	0.030	0.0075	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.42	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112123	ID 11946-MW-18B	Water	03/06/2013 12:35	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
108-88-3	Toluene	0.459J	1.00	0.122	ug/L
1330-20-7	Xylene (total)	2.03J	3.00	0.179	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.841J	1.00	0.078	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112124	ID 11946-MW-19A	Water	03/06/2013 15:05	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	5.80J	10.0	0.290	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.566J	1.00	0.111	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112125	ID 11946-MW-19B	Water	03/06/2013 14:35	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.253J	1.00	0.111	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112126	ID 11946-MW-20A	Water	03/06/2013 14:00	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.15	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112127	ID 11946-MW-20B	Water	03/06/2013 13:25	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0087J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	2.25	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112128	ID 11946-MW-21A	Water	03/06/2013 12:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.012J	0.015	0.0038	mg/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-29	ID 11946-MW-21B	Water	03/06/2013 11:30	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0068J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.34	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-30	ID 11946-MW-22B	Water	03/06/2013 10:30	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	1.83	1.00	0.078	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-31	ID 11946-DMW-1	Water	03/08/2013 08:30	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	507	10.0	1.11	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	131	10.0	0.777	ug/L
107-06-2	1,2-Dichloroethane	14.2J	50.0	1.16	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	75.5J	100	2.90	ug/L
75-85-4	tert-amyl alcohol (TAA)	2550	200	10.1	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-32	ID 11946-DMW-2	Water	03/06/2013 15:45	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	4.12	1.00	0.111	ug/L
108-88-3	Toluene	0.548J	1.00	0.122	ug/L
1330-20-7	Xylene (total)	0.805J	3.00	0.179	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	153	1.00	0.078	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-32	ID 11946-DMW-2	Water	03/06/2013 15:45	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	230	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	1.49J	5.00	0.236	ug/L
75-85-4	tert-amyl alcohol (TAA)	141	20.0	1.01	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-33	ID 11946-DMW-3	Water	03/06/2013 11:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.12	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.281J	1.00	0.111	ug/L
108-88-3	Toluene	0.497J	1.00	0.122	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	1.76	1.00	0.078	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
64-17-5	Ethanol	239J	1000	125	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-34	ID 11946-RW-2	Water	03/08/2013 10:00	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	9420	200	22.2	ug/L
108-88-3	Toluene	12800	200	24.4	ug/L
100-41-4	Ethylbenzene	2030	200	21.8	ug/L
1330-20-7	Xylene (total)	11000	600	35.8	ug/L
91-20-3	Naphthalene	565J	1000	35.2	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	9100	200	15.5	ug/L
107-06-2	1,2-Dichloroethane	224J	1000	23.2	ug/L

SW-846 8011

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	1.65	0.010	0.00390	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112134	ID 11946-RW-2	Water	03/08/2013 10:00	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	5970	2000	58.0	ug/L
108-20-3	diisopropyl Ether (DIPE)	72.7J	1000	47.2	ug/L
75-85-4	tert-amyl alcohol (TAA)	32100	4000	203	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112135	ID 11946-RW-4	Water	03/08/2013 09:00	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.012J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	3390	50.0	5.55	ug/L
108-88-3	Toluene	1730	50.0	6.09	ug/L
100-41-4	Ethylbenzene	977	50.0	5.45	ug/L
1330-20-7	Xylene (total)	4900	150	8.94	ug/L
91-20-3	Naphthalene	210J	250	8.81	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	4460	50.0	3.89	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	2180	500	14.5	ug/L
75-85-4	tert-amyl alcohol (TAA)	5690	1000	50.7	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112136	ID 11946-DUP-1	Water	03/06/2013 13:30	03/09/2013 09:45

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0045J	0.015	0.0038	mg/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	2.40	1.00	0.078	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112137	ID 11946-DUP-2	Water	03/06/2013 15:50	03/09/2013 09:45

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	4.62	2.00	0.222	ug/L
108-88-3	Toluene	0.748J	2.00	0.244	ug/L
1330-20-7	Xylene (total)	1.05J	6.00	0.358	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	169	2.00	0.155	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)	271	20.0	0.580	ug/L
108-20-3	diisopropyl Ether (DIPE)	1.77J	10.0	0.472	ug/L
75-85-4	tert-amyl alcohol (TAA)	163	40.0	2.03	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112101	ID 11946-MW-1	Water	03/08/2013 11:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	03/17/2013 00:31	CEK	503263

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**2480**	**100**	**11.1**	**ug/L**
108-88-3	**Toluene**	**12800**	**100**	**12.2**	**ug/L**
100-41-4	**Ethylbenzene**	**1550**	**100**	**10.9**	**ug/L**
1330-20-7	**Xylene (total)**	**5650**	**300**	**17.9**	**ug/L**
91-20-3	**Naphthalene**	**623**	**500**	**17.6**	**ug/L**
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**70.8J**	**100**	**7.77**	**ug/L**
107-06-2	1,2-Dichloroethane	11.6U	500	11.6	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	5000	5040	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	5000	4800	ug/L	96	77 - 127
2037-26-5	Toluene d8	5000	4840	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	5000	4950	ug/L	99	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	03/17/2013 00:31	CEK	503262

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	24.0U	500	24.0	ug/L
75-65-0	t-Butanol (TBA)	29.0U	1000	29.0	ug/L
108-20-3	diisopropyl Ether (DIPE)	23.6U	500	23.6	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	23.4U	500	23.4	ug/L
624-95-3	ethyl tert-butanol (ETBA)	3760U	10000	3760	ug/L
64-17-5	Ethanol	12500U	100000	12500	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**6340**	**2000**	**101**	**ug/L**
762-75-4	tert-butyl formate (TBF)	48.7U	5000	48.7	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	5000	5040	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	5000	4800	ug/L	96	77 - 127
2037-26-5	Toluene d8	5000	4840	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	5000	4950	ug/L	99	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 17:54	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-01	ID 11946-MW-1	Water	03/08/2013 11:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/15/2013 23:45	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.014J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112102	ID 11946-MW-3	Water	03/08/2013 11:45	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2013 00:53	CEK	503263

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**0.417J**	**1.00**	**0.111**	**ug/L**
108-88-3	**Toluene**	**1.05**	**1.00**	**0.122**	**ug/L**
100-41-4	**Ethylbenzene**	**0.408J**	**1.00**	**0.109**	**ug/L**
1330-20-7	**Xylene (total)**	**1.72J**	**3.00**	**0.179**	**ug/L**
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.6	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/17/2013 00:53	CEK	503262

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**30.8**	**20.0**	**1.01**	**ug/L**
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.6	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 18:15	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112102	ID 11946-MW-3	Water	03/08/2013 11:45	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/15/2013 23:53	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112103	ID 11946-MW-6A	Water	03/06/2013 09:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:05	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.7	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:05	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.7	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 18:37	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 03	ID 11946-MW-6A	Water	03/06/2013 09:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:15	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.013J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112104	ID 11946-MW-6B	Water	03/06/2013 08:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:27	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.8	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	49.2	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	47.9	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.1	ug/L	92	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:27	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.8	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	49.2	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	47.9	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.1	ug/L	92	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 18:58	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112104	ID 11946-MW-6B	Water	03/06/2013 08:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:22	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.019	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-05	ID 11946-MW-7A	Water	03/07/2013 15:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:49	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.9	ug/L	104	78 - 130
1868-53-7	Dibromofluoromethane	50	51.1	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.8	ug/L	98	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 02:49	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.9	ug/L	104	78 - 130
1868-53-7	Dibromofluoromethane	50	51.1	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.8	ug/L	98	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 19:20	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-05	ID 11946-MW-7A	Water	03/07/2013 15:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:29	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-06	ID 11946-MW-8A	Water	03/07/2013 14:15	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:12	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.7	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:12	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.7	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 19:41	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-06	ID 11946-MW-8A	Water	03/07/2013 14:15	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:37	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0068J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-07	ID 11946-MW-8B	Water	03/07/2013 13:45	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:35	JCK	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.1	ug/L	102	78 - 130
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	49	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.1	ug/L	98	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:35	JCK	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.1	ug/L	102	78 - 130
1868-53-7	Dibromofluoromethane	50	49.8	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	49	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.1	ug/L	98	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 20:02	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-07	ID 11946-MW-8B	Water	03/07/2013 13:45	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:44	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112108	ID 11946-MW-9A	Water	03/07/2013 13:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:58	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**2.62**	**1.00**	**0.078**	**ug/L**
107-06-2	**1,2-Dichloroethane**	**0.642J**	**5.00**	**0.116**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.3	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	50.2	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	48.5	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50	ug/L	100	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 03:58	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.3	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	50.2	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	48.5	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50	ug/L	100	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 20:45	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-08	ID 11946-MW-9A	Water	03/07/2013 13:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/18/2013 17:00	BAM	503366

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112109	ID 11946-MW-9B	Water	03/07/2013 13:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 04:21	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**2.79**	**1.00**	**0.078**	**ug/L**
107-06-2	**1,2-Dichloroethane**	**0.675J**	**5.00**	**0.116**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	48.9	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	47.5	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 04:21	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	48.9	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	47.5	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 21:06	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112109	ID 11946-MW-9B	Water	03/07/2013 13:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:51	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121110	ID 11946-MW-10A	Water	03/07/2013 17:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 04:43	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.2	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	49.5	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	47.2	ug/L	94	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 04:43	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.2	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	49.5	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	47.2	ug/L	94	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 21:27	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-10	ID 11946-MW-10A	Water	03/07/2013 17:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 00:58	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-11	ID 11946-MW-10B	Water	03/07/2013 16:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:07	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	47.9	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.8	ug/L	98	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:07	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	47.9	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.8	ug/L	98	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 21:48	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 11	ID 11946-MW-10B	Water	03/07/2013 16:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:05	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-12	ID 11946-MW-11A	Water	03/07/2013 16:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:29	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.00**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.6	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	51.5	ug/L	103	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:29	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.6	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	51.5	ug/L	103	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 22:09	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112112	ID 11946-MW-11A	Water	03/07/2013 16:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:13	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.011J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112113	ID 11946-MW-11B	Water	03/07/2013 15:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:52	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.12**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.6	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	49.1	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.4	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 05:52	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.6	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	49.1	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.4	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 22:30	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112113	ID 11946-MW-11B	Water	03/07/2013 15:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:19	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-14	ID 11946-MW-12A	Water	03/07/2013 11:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 06:16	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.6	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	50.1	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	47.6	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.4	ug/L	93	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 06:16	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.6	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	50.1	ug/L	100	77 - 127
2037-26-5	Toluene d8	50	47.6	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.4	ug/L	93	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 22:52	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112114	ID 11946-MW-12A	Water	03/07/2013 11:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:41	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112115	ID 11946-MW-12B	Water	03/07/2013 11:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 06:39	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.8	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	52.3	ug/L	105	77 - 127
2037-26-5	Toluene d8	50	48.1	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.1	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 06:39	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.8	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	52.3	ug/L	105	77 - 127
2037-26-5	Toluene d8	50	48.1	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.1	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 23:13	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112115	ID 11946-MW-12B	Water	03/07/2013 11:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:49	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-16	ID:11946-MW-13B	Water	03/07/2013 12:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 07:01	LBH	502928

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.9	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 07:01	LBH	502927

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.9	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 23:34	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112116	ID 11946-MW-13B	Water	03/07/2013 12:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 01:56	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112117	ID 11946-MW-14A	Water	03/07/2013 10:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:10	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	48.1	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.9	ug/L	94	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:10	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	48.1	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.9	ug/L	94	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/18/2013 23:55	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112117	ID 11946-MW-14A	Water	03/07/2013 10:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 02:03	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112118	ID 11946-MW-14B	Water	03/07/2013 09:45	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:33	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	53.6	ug/L	107	78 - 130
1868-53-7	Dibromofluoromethane	50	49.1	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:33	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	53.6	ug/L	107	78 - 130
1868-53-7	Dibromofluoromethane	50	49.1	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/19/2013 00:38	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112118	ID 11946-MW-14B	Water	03/07/2013 09:45	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 02:10	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112119	ID 11946-MW-15B	Water	03/07/2013 08:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:55	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	51.2	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 13:55	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	51.3	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	50	51.2	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	47.7	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/19/2013 00:59	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-19	ID 11946-MW-15B	Water	03/07/2013 08:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 02:18	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-20	ID 11946-MW-16B	Water	03/07/2013 08:45	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 14:17	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	52.4	ug/L	105	78 - 130
1868-53-7	Dibromofluoromethane	50	51.9	ug/L	104	77 - 127
2037-26-5	Toluene d8	50	50	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 14:17	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	52.4	ug/L	105	78 - 130
1868-53-7	Dibromofluoromethane	50	51.9	ug/L	104	77 - 127
2037-26-5	Toluene d8	50	50	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 12:00	503007	SW-846 8011	1	03/19/2013 01:21	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-20	ID 11946-MW-16B	Water	03/07/2013 08:45	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 15:00	502858	SW-846 3010A	1	03/16/2013 02:25	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-1	ID 11946-MW-17B	Water	03/06/2013 16:35	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	03/13/2013 16:12	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**6.58**	**2.00**	**0.222**	**ug/L**
108-88-3	**Toluene**	**2.47**	**2.00**	**0.244**	**ug/L**
100-41-4	**Ethylbenzene**	**1.10J**	**2.00**	**0.218**	**ug/L**
1330-20-7	**Xylene (total)**	**3.87J**	**6.00**	**0.358**	**ug/L**
91-20-3	Naphthalene	0.352U	10.0	0.352	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**244**	**2.00**	**0.155**	**ug/L**
107-06-2	1,2-Dichloroethane	0.232U	10.0	0.232	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	103	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	100	105	ug/L	105	77 - 127
2037-26-5	Toluene d8	100	94.1	ug/L	94	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	97	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	03/13/2013 16:12	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.480U	10.0	0.480	ug/L
75-65-0	**t-Butanol (TBA)**	**400**	**20.0**	**0.580**	**ug/L**
108-20-3	**diisopropyl Ether (DIPE)**	**2.60J**	**10.0**	**0.472**	**ug/L**
637-92-3	Ethyl tert-butyl ether (ETBE)	0.468U	10.0	0.468	ug/L
624-95-3	ethyl tert-butanol (ETBA)	75.2U	200	75.2	ug/L
64-17-5	Ethanol	250U	2000	250	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**244**	**40.0**	**2.03**	**ug/L**
762-75-4	tert-butyl formate (TBF)	0.974U	100	0.974	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	103	ug/L	103	78 - 130
1868-53-7	Dibromofluoromethane	100	105	ug/L	105	77 - 127
2037-26-5	Toluene d8	100	94.1	ug/L	94	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	97	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 02:46	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-21	ID 11946-MW-17B	Water	03/06/2013 16:35	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 03:38	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112122	ID 11946-MW-18A	Water	03/06/2013 13:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 16:35	LBH	502965

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.42**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.3	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	51.8	ug/L	104	77 - 127
2037-26-5	Toluene d8	50	46.3	ug/L	93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L	97	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/13/2013 16:35	LBH	502964

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.3	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	51.8	ug/L	104	77 - 127
2037-26-5	Toluene d8	50	46.3	ug/L	93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L	97	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 03:07	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-22	ID 11946-MW-18A	Water	03/06/2013 13:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	2	03/18/2013 17:33	BAM	503366

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.59	0.030	0.0075	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 23	ID 11946-MW-18B	Water	03/06/2013 12:35	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:47	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	**Toluene**	**0.459J**	**1.00**	**0.122**	**ug/L**
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	**Xylene (total)**	**2.03J**	**3.00**	**0.179**	**ug/L**
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**0.841J**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.1	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	50	44.9	ug/L	90	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:47	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.1	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	50	44.9	ug/L	90	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 03:29	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-23	ID 11946-MW-18B	Water	03/06/2013 12:35	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 03:51	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112124	ID 11946-MW-19A	Water	03/06/2013 15:05	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 11:51	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**0.566J**	**1.00**	**0.111**	**ug/L**
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.7	ug/L	89	78 - 130
1868-53-7	Dibromofluoromethane	50	48.4	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	52.9	ug/L	106	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 11:51	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	**t-Butanol (TBA)**	**5.80J**	**10.0**	**0.290**	**ug/L**
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.7	ug/L	89	78 - 130
1868-53-7	Dibromofluoromethane	50	48.4	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	52.9	ug/L	106	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.6	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 03:50	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-24	ID 11946-MW-19A	Water	03/06/2013 15:05	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 03:58	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-25	ID 11946-MW-19B	Water	03/06/2013 14:35	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:13	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**0.253J**	**1.00**	**0.111**	**ug/L**
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.6	ug/L	93	78 - 130
1868-53-7	Dibromofluoromethane	50	47.2	ug/L	94	77 - 127
2037-26-5	Toluene d8	50	54.4	ug/L	109	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.7	ug/L	91	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:13	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.6	ug/L	93	78 - 130
1868-53-7	Dibromofluoromethane	50	47.2	ug/L	94	77 - 127
2037-26-5	Toluene d8	50	54.4	ug/L	109	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.7	ug/L	91	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 04:33	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112125	ID 11946-MW-19B	Water	03/06/2013 14:35	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:06	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 26	ID 11946-MW-20A	Water	03/06/2013 14:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:36	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.15**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	45.5	ug/L	91	77 - 127
2037-26-5	Toluene d8	50	59.1	ug/L	118	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45	ug/L	90	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:36	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	45.5	ug/L	91	77 - 127
2037-26-5	Toluene d8	50	59.1	ug/L	118	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45	ug/L	90	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 04:55	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112126	ID 11946-MW-20A	Water	03/06/2013 14:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 02:46	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-27	ID 11946-MW-20B	Water	03/06/2013 13:25	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:59	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**2.25**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.1	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	47.2	ug/L	94	77 - 127
2037-26-5	Toluene d8	50	57.2	ug/L	114	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 12:59	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.1	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	47.2	ug/L	94	77 - 127
2037-26-5	Toluene d8	50	57.2	ug/L	114	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.8	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 05:16	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112127	ID 11946-MW-20B	Water	03/06/2013 13:25	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:13	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0087J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-28	ID 11946-MW-21A	Water	03/06/2013 12:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 13:22	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.7	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	45.9	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	56.5	ug/L	113	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.5	ug/L	91	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 13:22	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.7	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	45.9	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	56.5	ug/L	113	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.5	ug/L	91	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 05:37	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-28	ID 11946-MW-21A	Water	03/06/2013 12:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:35	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.012J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112129	ID 11946-MW-21B	Water	03/06/2013 11:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 13:45	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.34**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.3	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	44.3	ug/L	89	77 - 127
2037-26-5	Toluene d8	50	56.1	ug/L	112	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.2	ug/L	94	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 13:45	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.3	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	44.3	ug/L	89	77 - 127
2037-26-5	Toluene d8	50	56.1	ug/L	112	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.2	ug/L	94	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 05:59	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-29	ID 11946-MW-21B	Water	03/06/2013 11:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:42	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0068J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-30	ID 11946-MW-22B	Water	03/06/2013 10:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:08	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.83**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.9	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	47.9	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	54.9	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.7	ug/L	93	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:08	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.9	ug/L	98	78 - 130
1868-53-7	Dibromofluoromethane	50	47.9	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	54.9	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.7	ug/L	93	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 06:20	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-30	ID 11946-MW-22B	Water	03/06/2013 10:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:49	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 31	ID 11946-DMW-1	Water	03/08/2013 08:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	03/15/2013 17:34	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**507**	**10.0**	**1.11**	**ug/L**
108-88-3	Toluene	1.22U	10.0	1.22	ug/L
100-41-4	Ethylbenzene	1.09U	10.0	1.09	ug/L
1330-20-7	Xylene (total)	1.79U	30.0	1.79	ug/L
91-20-3	Naphthalene	1.76U	50.0	1.76	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**131**	**10.0**	**0.777**	**ug/L**
107-06-2	**1,2-Dichloroethane**	**14.2J**	**50.0**	**1.16**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	500	457	ug/L	91	78 - 130
1868-53-7	Dibromofluoromethane	500	468	ug/L	94	77 - 127
2037-26-5	Toluene d8	500	540	ug/L	108	76 - 134
17060-07-0	1,2-Dichloroethane-d4	500	481	ug/L	96	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			10	03/15/2013 17:34	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	2.40U	50.0	2.40	ug/L
75-65-0	**t-Butanol (TBA)**	**75.5J**	**100**	**2.90**	**ug/L**
108-20-3	diisopropyl Ether (DIPE)	2.36U	50.0	2.36	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	2.34U	50.0	2.34	ug/L
624-95-3	ethyl tert-butanol (ETBA)	376U	1000	376	ug/L
64-17-5	Ethanol	1250U	10000	1250	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**2550**	**200**	**10.1**	**ug/L**
762-75-4	tert-butyl formate (TBF)	4.87U	500	4.87	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	500	457	ug/L	91	78 - 130
1868-53-7	Dibromofluoromethane	500	468	ug/L	94	77 - 127
2037-26-5	Toluene d8	500	540	ug/L	108	76 - 134
17060-07-0	1,2-Dichloroethane-d4	500	481	ug/L	96	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 06:42	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-31	ID 11946-DMW-1	Water	03/08/2013 08:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 04:57	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 32	ID 11946-DMW-2	Water	03/06/2013 15:45	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:30	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**4.12**	**1.00**	**0.111**	**ug/L**
108-88-3	**Toluene**	**0.548J**	**1.00**	**0.122**	**ug/L**
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	**Xylene (total)**	**0.805J**	**3.00**	**0.179**	**ug/L**
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**153**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.3	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	45.7	ug/L	91	77 - 127
2037-26-5	Toluene d8	50	57.8	ug/L	116	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.8	ug/L	92	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:30	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	**t-Butanol (TBA)**	**230**	**10.0**	**0.290**	**ug/L**
108-20-3	**diisopropyl Ether (DIPE)**	**1.49J**	**5.00**	**0.236**	**ug/L**
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**141**	**20.0**	**1.01**	**ug/L**
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.3	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	45.7	ug/L	91	77 - 127
2037-26-5	Toluene d8	50	57.8	ug/L	116	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.8	ug/L	92	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 07:03	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-32	ID 11946-DMW-2	Water	03/06/2013 15:45	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:04	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112133	ID 11946-DMW-3	Water	03/06/2013 11:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:53	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**0.281J**	**1.00**	**0.111**	**ug/L**
108-88-3	**Toluene**	**0.497J**	**1.00**	**0.122**	**ug/L**
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**1.76**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.5	ug/L	89	78 - 130
1868-53-7	Dibromofluoromethane	50	46.4	ug/L	93	77 - 127
2037-26-5	Toluene d8	50	52.3	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.7	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 14:53	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	**Ethanol**	**239J**	**1000**	**125**	**ug/L**
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.5	ug/L	89	78 - 130
1868-53-7	Dibromofluoromethane	50	46.4	ug/L	93	77 - 127
2037-26-5	Toluene d8	50	52.3	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.7	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 07:24	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112133	ID 11946-DMW-3	Water	03/06/2013 11:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:11	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.12	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-34	ID 11946-RW-2	Water	03/08/2013 10:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	03/15/2013 17:57	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**9420**	**200**	**22.2**	**ug/L**
108-88-3	**Toluene**	**12800**	**200**	**24.4**	**ug/L**
100-41-4	**Ethylbenzene**	**2030**	**200**	**21.8**	**ug/L**
1330-20-7	**Xylene (total)**	**11000**	**600**	**35.8**	**ug/L**
91-20-3	**Naphthalene**	**565J**	**1000**	**35.2**	**ug/L**
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**9100**	**200**	**15.5**	**ug/L**
107-06-2	**1,2-Dichloroethane**	**224J**	**1000**	**23.2**	**ug/L**

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	9630	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	10000	9540	ug/L	95	77 - 127
2037-26-5	Toluene d8	10000	10900	ug/L	109	76 - 134
17060-07-0	1,2-Dichloroethane-d4	10000	9490	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			200	03/15/2013 17:57	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	48.0U	1000	48.0	ug/L
75-65-0	**t-Butanol (TBA)**	**5970**	**2000**	**58.0**	**ug/L**
108-20-3	**diisopropyl Ether (DIPE)**	**72.7J**	**1000**	**47.2**	**ug/L**
637-92-3	Ethyl tert-butyl ether (ETBE)	46.8U	1000	46.8	ug/L
624-95-3	ethyl tert-butanol (ETBA)	7520U	20000	7520	ug/L
64-17-5	Ethanol	25000U	200000	25000	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**32100**	**4000**	**203**	**ug/L**
762-75-4	tert-butyl formate (TBF)	97.4U	10000	97.4	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	9630	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	10000	9540	ug/L	95	77 - 127
2037-26-5	Toluene d8	10000	10900	ug/L	109	76 - 134
17060-07-0	1,2-Dichloroethane-d4	10000	9490	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 07:46	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	**1,2-Dibromoethane**	**1.65**	**0.010**	**0.00390**	**ug/L**

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-34	ID 11946-RW-2	Water	03/08/2013 10:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:17	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 35	ID 11946-RW-4	Water	03/08/2013 09:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	03/15/2013 18:20	CEK	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**3390**	**50.0**	**5.55**	**ug/L**
108-88-3	**Toluene**	**1730**	**50.0**	**6.09**	**ug/L**
100-41-4	**Ethylbenzene**	**977**	**50.0**	**5.45**	**ug/L**
1330-20-7	**Xylene (total)**	**4900**	**150**	**8.94**	**ug/L**
91-20-3	**Naphthalene**	**210J**	**250**	**8.81**	**ug/L**
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**4460**	**50.0**	**3.89**	**ug/L**
107-06-2	1,2-Dichloroethane	5.81U	250	5.81	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2500	2480	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	2500	2390	ug/L	96	77 - 127
2037-26-5	Toluene d8	2500	2760	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	2500	2380	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	03/15/2013 18:20	CEK	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	12.0U	250	12.0	ug/L
75-65-0	**t-Butanol (TBA)**	**2180**	**500**	**14.5**	**ug/L**
108-20-3	diisopropyl Ether (DIPE)	11.8U	250	11.8	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	11.7U	250	11.7	ug/L
624-95-3	ethyl tert-butanol (ETBA)	1880U	5000	1880	ug/L
64-17-5	Ethanol	6250U	50000	6250	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**5690**	**1000**	**50.7**	**ug/L**
762-75-4	tert-butyl formate (TBF)	24.3U	2500	24.3	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2500	2480	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	2500	2390	ug/L	96	77 - 127
2037-26-5	Toluene d8	2500	2760	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	2500	2380	ug/L	95	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 08:28	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-35	ID 11946-RW-4	Water	03/08/2013 09:00	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:25	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.012J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-36	ID11946-DUP-1	Water	03/06/2013 13:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 15:15	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**2.40**	**1.00**	**0.078**	**ug/L**
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.5	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	48.3	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	56.3	ug/L	113	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.9	ug/L	92	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 15:15	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.5	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	48.3	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	56.3	ug/L	113	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.9	ug/L	92	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 08:50	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-36	ID 11946-DUP-1	Water	03/06/2013 13:30	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:32	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0045J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121 37	ID 11946-DUP-2	Water	03/06/2013 15:50	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	03/15/2013 17:10	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	**Benzene**	**4.62**	**2.00**	**0.222**	**ug/L**
108-88-3	**Toluene**	**0.748J**	**2.00**	**0.244**	**ug/L**
100-41-4	Ethylbenzene	0.218U	2.00	0.218	ug/L
1330-20-7	**Xylene (total)**	**1.05J**	**6.00**	**0.358**	**ug/L**
91-20-3	Naphthalene	0.352U	10.0	0.352	ug/L
1634-04-4	**tert-Butyl methyl ether (MTBE)**	**169**	**2.00**	**0.155**	**ug/L**
107-06-2	1,2-Dichloroethane	0.232U	10.0	0.232	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	96.5	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	100	90.5	ug/L	91	77 - 127
2037-26-5	Toluene d8	100	110	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	91.7	ug/L	92	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			2	03/15/2013 17:10	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.480U	10.0	0.480	ug/L
75-65-0	**t-Butanol (TBA)**	**271**	**20.0**	**0.580**	**ug/L**
108-20-3	**diisopropyl Ether (DIPE)**	**1.77J**	**10.0**	**0.472**	**ug/L**
637-92-3	Ethyl tert-butyl ether (ETBE)	0.468U	10.0	0.468	ug/L
624-95-3	ethyl tert-butanol (ETBA)	75.2U	200	75.2	ug/L
64-17-5	Ethanol	250U	2000	250	ug/L
75-85-4	**tert-amyl alcohol (TAA)**	**163**	**40.0**	**2.03**	**ug/L**
762-75-4	tert-butyl formate (TBF)	0.974U	100	0.974	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	96.5	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	100	90.5	ug/L	91	77 - 127
2037-26-5	Toluene d8	100	110	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	91.7	ug/L	92	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/18/2013 09:00	503008	SW-846 8011	1	03/19/2013 09:11	TLS	503444

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-37	ID 11946-DUP-2	Water	03/06/2013 15:50	03/09/2013 09:45

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/12/2013 16:00	502859	SW-846 3010A	1	03/16/2013 05:39	BAM	503212

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0038U	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-38	ID 11946-FB-1	Water	03/06/2013 12:05	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 15:38	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.6	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	47.8	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	55.3	ug/L	111	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.2	ug/L	94	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 15:38	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.6	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	47.8	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	55.3	ug/L	111	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.2	ug/L	94	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-39	ID 11946-FB-2	Water	03/07/2013 12:10	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:01	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.7	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	46.2	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.7	ug/L	95	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:01	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.7	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	46.2	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47.7	ug/L	95	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
213031121-40	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 15:18	LBH	502892

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.7	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49.3	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	50.5	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 15:18	LBH	502890

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.7	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49.3	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	50.5	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.3	ug/L	99	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112141	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 15:41	LBH	502892

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.5	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49.4	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	51	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49	ug/L	98	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 15:41	LBH	502890

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.5	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	49.4	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	51	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49	ug/L	98	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112142	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 16:03	LBH	502892

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.5	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	51	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	48.3	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49	ug/L	98	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 16:03	LBH	502890

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.5	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	50	51	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	48.3	ug/L	97	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49	ug/L	98	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112143	ID 11946-TB	Water	02/27/2013 00:00	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 16:27	LBH	502892

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	47.6	ug/L	95	77 - 127
2037-26-5	Toluene d8	50	49.8	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.4	ug/L	91	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/12/2013 16:27	LBH	502890

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	47.6	ug/L	95	77 - 127
2037-26-5	Toluene d8	50	49.8	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.4	ug/L	91	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303112144	ID 11946-FB-3	Water	03/08/2013 12:30	03/09/2013 09:45

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:24	LBH	503068

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.3	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	46.4	ug/L	93	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.2	ug/L	90	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/15/2013 16:24	LBH	503069

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.3	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	46.4	ug/L	93	77 - 127
2037-26-5	Toluene d8	50	55.1	ug/L	110	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.2	ug/L	90	71 - 127

GC/MS Volatiles Quality Control Summary

Analytical Batch	502892	Client ID	MB502892			LCS502892			LCSD502892			
Prep Batch	N/A	GCAL ID	1170351			1170352			1170353			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/12/2013 14:55			03/12/2013 13:23			03/12/2013 13:46			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane	0.116U	0.116	50.0	52.8	106	71 - 129	53.4	107	1	30
100-41-4	Ethylbenzene	0.109U	0.109	50.0	52.1	104	74 - 126	48.3	97	8	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	51.4	103	71 - 125	51.6	103	0.4	30
1330-20-7	Xylene (total)	0.179U	0.179	150	158	105	74 - 127	144	96	9	30
91-20-3	Naphthalene	0.176U	0.176	50.0	59.5	119	57 - 138	56.7	113	5	35
71-43-2	Benzene	0.111U	0.111	50.0	49.4	99	70 - 129	46.9	94	5	20
108-88-3	Toluene	0.122U	0.122	50.0	50.9	102	72 - 120	51.3	103	0.8	20
Surrogate											
460-00-4	4-Bromofluorobenzene	47.7	95	50	50.5	101	78 - 130	49.5	99		
1868-53-7	Dibromofluoromethane	51.7	103	50	50.1	100	77 - 127	49.8	100		
2037-26-5	Toluene d8	48.9	98	50	49.6	99	76 - 134	51.2	102		
17060-07-0	1,2-Dichloroethane-d4	50.4	101	50	50.7	101	71 - 127	49.6	99		

Analytical Batch	502928	Client ID	MB502928			LCS502928			LCSD502928			
Prep Batch	N/A	GCAL ID	1170523			1170524			1170525			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/12/2013 23:21			03/12/2013 22:12			03/12/2013 22:36			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane	0.116U	0.116	50.0	45.4	91	71 - 129	43.6	87	4	30
100-41-4	Ethylbenzene	0.109U	0.109	50.0	54.7	109	74 - 126	51.0	102	7	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	49.3	99	71 - 125	47.2	94	4	30
1330-20-7	Xylene (total)	0.179U	0.179	150	160	107	74 - 127	144	96	11	30
91-20-3	Naphthalene	0.176U	0.176	50.0	49.5	99	57 - 138	52.4	105	6	35
71-43-2	Benzene	0.111U	0.111	50.0	52.0	104	70 - 129	47.9	96	8	20
108-88-3	Toluene	0.122U	0.122	50.0	54.7	109	72 - 120	48.8	98	11	20
Surrogate											
460-00-4	4-Bromofluorobenzene	51.2	102	50	53.3	107	78 - 130	51.1	102		
1868-53-7	Dibromofluoromethane	45.6	91	50	48.4	97	77 - 127	49.3	99		
2037-26-5	Toluene d8	48.6	97	50	51.3	103	76 - 134	50.8	102		
17060-07-0	1,2-Dichloroethane-d4	43.7	87	50	45.1	90	71 - 127	46.3	93		

GC/MS Volatiles Quality Control Summary

Analytical Batch	502965	Client ID	MB502965			LCS502965			LCSD502965			
Prep Batch	N/A	GCAL ID	1170636			1170637			1170638			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/13/2013 12:03			03/13/2013 09:40			03/13/2013 10:04			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane	0.116U	0.116	50.0	57.7	115	71 - 129	58.5	117	1	30
100-41-4	Ethylbenzene	0.109U	0.109	50.0	51.0	102	74 - 126	50.3	101	1	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	55.3	111	71 - 125	57.4	115	4	30
1330-20-7	Xylene (total)	0.179U	0.179	150	153	102	74 - 127	149	99	3	30
91-20-3	Naphthalene	0.176U	0.176	50.0	53.0	106	57 - 138	54.3	109	2	35
71-43-2	Benzene	0.111U	0.111	50.0	53.9	108	70 - 129	52.1	104	3	20
108-88-3	Toluene	0.122U	0.122	50.0	48.7	97	72 - 120	48.5	97	0.4	20
Surrogate											
460-00-4	4-Bromofluorobenzene	52.6	105	50	51.1	102	78 - 130	52.1	104		
1868-53-7	Dibromofluoromethane	48.7	97	50	50.6	101	77 - 127	50.9	102		
2037-26-5	Toluene d8	48.2	96	50	46.6	93	76 - 134	47.1	94		
17060-07-0	1,2-Dichloroethane-d4	48.7	97	50	51	102	71 - 127	53	106		

Analytical Batch	503068	Client ID	MB503068			LCS503068			LCSD503068			
Prep Batch	N/A	GCAL ID	1171063			1171064			1171065			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/15/2013 11:28			03/15/2013 09:55			03/15/2013 10:19			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane	0.116U	0.116	50.0	41.6	83	71 - 129	41.4	83	0.5	30
100-41-4	Ethylbenzene	0.109U	0.109	50.0	50.8	102	74 - 126	49.5	99	3	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	41.7	83	71 - 125	40.9	82	2	30
1330-20-7	Xylene (total)	0.179U	0.179	150	153	102	74 - 127	152	101	0.7	30
91-20-3	Naphthalene	0.176U	0.176	50.0	59.8	120	57 - 138	59.6	119	0.3	35
71-43-2	Benzene	0.111U	0.111	50.0	40.1	80	70 - 129	38.5	77	4	20
108-88-3	Toluene	0.122U	0.122	50.0	49.9	100	72 - 120	50.0	100	0.2	20
Surrogate											
460-00-4	4-Bromofluorobenzene	46	92	50	47.4	95	78 - 130	48	96		
1868-53-7	Dibromofluoromethane	45	90	50	46.8	94	77 - 127	45.9	92		
2037-26-5	Toluene d8	57.6	115	50	54.4	109	76 - 134	56.3	113		
17060-07-0	1,2-Dichloroethane-d4	46.5	93	50	48.1	96	71 - 127	48.2	96		

GC/MS Volatiles Quality Control Summary

Analytical Batch	503263	Client ID	MB503263			LCS503263			LCSD503263			
Prep Batch	N/A	GCAL ID	1171915			1171916			1171917			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/16/2013 22:58			03/16/2013 21:26			03/16/2013 21:50			
		Matrix	Water			Water			Water			
SW-846 8260B		**Units Result**	**ug/L RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
107-06-2	1,2-Dichloroethane	0.116U	0.116	50.0	56.1	112	71 - 129	54.6	109	3	30
100-41-4	Ethylbenzene	0.109U	0.109	50.0	51.9	104	74 - 126	54.7	109	5	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	54.8	110	71 - 125	54.1	108	1	30
1330-20-7	Xylene (total)	0.179U	0.179	150	159	106	74 - 127	172	115	8	30
91-20-3	Naphthalene	0.176U	0.176	50.0	54.5	109	57 - 138	51.4	103	6	35
71-43-2	Benzene	0.111U	0.111	50.0	56.8	114	70 - 129	57.1	114	0.5	20
108-88-3	Toluene	0.122U	0.122	50.0	53.1	106	72 - 120	53.9	108	1	20
Surrogate											
460-00-4	4-Bromofluorobenzene	48.5	97	50	48.3	97	78 - 130	49.2	98		
1868-53-7	Dibromofluoromethane	50.6	101	50	52.3	105	77 - 127	51.2	102		
2037-26-5	Toluene d8	47.9	96	50	47.3	95	76 - 134	48.6	97		
17060-07-0	1,2-Dichloroethane-d4	51.6	103	50	53.7	107	71 - 127	51.3	103		

GC/MS Volatiles Quality Control Summary

Analytical Batch	502890	Client ID	MB502890			LCS502890			LCSD502890			
Prep Batch	N/A	GCAL ID	1170347			1170348			1170349			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/12/2013 14:55			03/12/2013 13:23			03/12/2013 13:46			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit	
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	53.0	106	50 - 150	50.9	102	4	50	
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	49.6	99	50 - 150	52.8	106	6	50	
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	53.3	107	50 - 150	48.7	97	9	50	
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	51.4	103	50 - 150	52.8	106	3	50	
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2310	91	50 - 150	2480	97	7	50	
64-17-5	Ethanol	125U	125	25200	22600	90	50 - 150	24500	97	8	50	
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	187	94	50 - 150	190	95	2	50	
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	54.3	109	50 - 150	53.0	106	2	50	
Surrogate												
460-00-4	4-Bromofluorobenzene	47.7	95	50	50.5	101	78 - 130	49.5	99			
1868-53-7	Dibromofluoromethane	51.7	103	50	50.1	100	77 - 127	49.8	100			
2037-26-5	Toluene d8	48.9	98	50	49.6	99	76 - 134	51.2	102			
17060-07-0	1,2-Dichloroethane-d4	50.4	101	50	50.7	101	71 - 127	49.6	99			

Analytical Batch	502927	Client ID	MB502927			LCS502927			LCSD502927			
Prep Batch	N/A	GCAL ID	1170520			1170521			1170522			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/12/2013 23:21			03/12/2013 22:12			03/12/2013 22:36			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit	
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	52.4	105	50 - 150	48.1	96	9	50	
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	49.6	99	50 - 150	43.6	87	13	50	
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	48.5	97	50 - 150	44.1	88	10	50	
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	49.7	99	50 - 150	45.1	90	10	50	
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2300	90	50 - 150	2210	87	4	50	
64-17-5	Ethanol	125U	125	25200	22200	88	50 - 150	23200	92	4	50	
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	198	99	50 - 150	184	92	7	50	
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	47.2	94	50 - 150	41.8	84	12	50	
Surrogate												
460-00-4	4-Bromofluorobenzene	51.2	102	50	53.3	107	78 - 130	51.1	102			
1868-53-7	Dibromofluoromethane	45.6	91	50	48.4	97	77 - 127	49.3	99			

GC/MS Volatiles Quality Control Summary

Analytical Batch	502927	Client ID	MB502927			LCS502927			LCSD502927			
Prep Batch	N/A	GCAL ID	1170520			1170521			1170522			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/12/2013 23:21			03/12/2013 22:12			03/12/2013 22:36			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit	
2037-26-5	Toluene d8	48.6	97	50	51.3	103	76 - 134	50.8	102			
17060-07-0	1,2-Dichloroethane-d4	43.7	87	50	45.1	90	71 - 127	46.3	93			

Analytical Batch	502964	Client ID	MB502964			LCS502964			LCSD502964			
Prep Batch	N/A	GCAL ID	1170633			1170634			1170635			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/13/2013 12:03			03/13/2013 09:40			03/13/2013 10:04			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit	
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	54.9	110	50 - 150	55.5	111	1	50	
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	54.6	109	50 - 150	60.2	120	10	50	
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	55.5	111	50 - 150	56.6	113	2	50	
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	55.1	110	50 - 150	55.0	110	0.2	50	
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2640	104	50 - 150	2650	104	0.4	50	
64-17-5	Ethanol	125U	125	25200	29800	118	50 - 150	29500	117	1	50	
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	217	109	50 - 150	235	118	8	50	
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	57.1	114	50 - 150	56.2	112	2	50	
Surrogate												
460-00-4	4-Bromofluorobenzene	52.6	105	50	51.1	102	78 - 130	52.1	104			
1868-53-7	Dibromofluoromethane	48.7	97	50	50.6	101	77 - 127	50.9	102			
2037-26-5	Toluene d8	48.2	96	50	46.6	93	76 - 134	47.1	94			
17060-07-0	1,2-Dichloroethane-d4	48.7	97	50	51	102	71 - 127	53	106			

GC/MS Volatiles Quality Control Summary

Analytical Batch	503069	Client ID	MB503069			LCS503069			LCSD503069			
Prep Batch	N/A	GCAL ID	1171068			1171069			1171070			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/15/2013 11:28			03/15/2013 09:55			03/15/2013 10:19			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	41.8	84	50 - 150	42.1	84	0.7	50
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	44.2	88	50 - 150	48.5	97	9	50
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	43.0	86	50 - 150	39.1	78	10	50
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	41.3	83	50 - 150	40.3	81	2	50
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2510	98	50 - 150	2660	104	6	50
64-17-5	Ethanol	125U	125	25200	20100	80	50 - 150	20300	81	1	50
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	173	87	50 - 150	162	81	7	50
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	41.9	84	50 - 150	38.8	78	8	50
Surrogate											
460-00-4	4-Bromofluorobenzene	46	92	50	47.4	95	78 - 130	48	96		
1868-53-7	Dibromofluoromethane	45	90	50	46.8	94	77 - 127	45.9	92		
2037-26-5	Toluene d8	57.6	115	50	54.4	109	76 - 134	56.3	113		
17060-07-0	1,2-Dichloroethane-d4	46.5	93	50	48.1	96	71 - 127	48.2	96		

Analytical Batch	503262	Client ID	MB503262			LCS503262			LCSD503262			
Prep Batch	N/A	GCAL ID	1171912			1171913			1171914			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/16/2013 22:58			03/16/2013 21:26			03/16/2013 21:50			
		Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	55.3	111	50 - 150	53.5	107	3	50
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	51.5	103	50 - 150	51.0	102	1	50
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	54.3	109	50 - 150	54.2	108	0.2	50
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	54.0	108	50 - 150	54.2	108	0.4	50
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2220	87	50 - 150	2310	91	4	50
64-17-5	Ethanol	125U	125	25200	21800	87	50 - 150	23000	91	5	50
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	217	109	50 - 150	214	107	1	50
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	55.8	112	50 - 150	52.7	105	6	50
Surrogate											
460-00-4	4-Bromofluorobenzene	48.5	97	50	48.3	97	78 - 130	49.2	98		
1868-53-7	Dibromofluoromethane	50.6	101	50	52.3	105	77 - 127	51.2	102		

GC/MS Volatiles Quality Control Summary

Analytical Batch	503262	Client ID	MB503262	LCS503262	LCSD503262
Prep Batch	N/A	GCAL ID	1171912	1171913	1171914
		Sample Type	Method Blank	LCS	LCSD
		Analytical Date	03/16/2013 22:58	03/16/2013 21:26	03/16/2013 21:50
		Matrix	Water	Water	Water

SW-846 8260B		Units	ug/L	Spike							
		Result	RDL	Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
2037-26-5	Toluene d8	47.9	96	50	47.3	95	76 - 134	48.6	97		
17060-07-0	1,2-Dichloroethane-d4	51.6	103	50	53.7	107	71 - 127	51.3	103		

General Chromatography Quality Control Summary

Analytical Batch	503444	**Client ID**	MB503007			LCS503007			LCSD503007			
Prep Batch	503007	**GCAL ID**	1170818			1170819			1170820			
Prep Method	SW-846 8011	**Sample Type**	Method Blank			LCS			LCSD			
		Prep Date	03/18/2013 12:00			03/18/2013 12:00			03/18/2013 12:00			
		Analytical Date	03/18/2013 16:50			03/18/2013 17:11			03/18/2013 17:32			
		Matrix	Water			Water			Water			
SW-846 8011		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**	
96-12-8	1,2-Dibromo-3-chloropropane	0.00260U	0.00260	1.08	1.23	114	45 - 150	1.15	105	7	40	
106-93-4	1,2-Dibromoethane	0.00390U	0.00390	1.08	1.24	115	55 - 141	1.15	105	8	40	

Analytical Batch	503444	**Client ID**	MB503008			LCS503008			LCSD503008			
Prep Batch	503008	**GCAL ID**	1170821			1170822			1170823			
Prep Method	SW-846 8011	**Sample Type**	Method Blank			LCS			LCSD			
		Prep Date	03/18/2013 09:00			03/18/2013 09:00			03/18/2013 09:00			
		Analytical Date	03/19/2013 01:42			03/19/2013 02:03			03/19/2013 02:24			
		Matrix	Water			Water			Water			
SW-846 8011		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**	
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**	
96-12-8	1,2-Dibromo-3-chloropropane	0.00260U	0.00260	1.10	1.18	108	45 - 150	1.23	116	4	40	
106-93-4	1,2-Dibromoethane	0.00390U	0.00390	1.10	1.28	117	55 - 141	1.33	125	4	40	

Inorganics Quality Control Summary

Analytical Batch	503212	**Client ID**	MB502858			LCS502858		
Prep Batch	502858	**GCAL ID**	1170203			1170204		
Prep Method	SW-846 3010A	**Sample Type**	Method Blank			LCS		
		Prep Date	03/12/2013 15:00			03/12/2013 15:00		
		Analytical Date	03/15/2013 22:54			03/15/2013 23:02		
		Matrix	Water			Water		
SW-846 6010C		**Units** / **Result**	mg/L / **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	
7439-92-1	Lead	0.0038U	0.0038	0.50	0.44	88	80 - 120	

Analytical Batch	503212	**Client ID**	MB502859			LCS502859		
Prep Batch	502859	**GCAL ID**	1170207			1170208		
Prep Method	SW-846 3010A	**Sample Type**	Method Blank			LCS		
		Prep Date	03/12/2013 16:00			03/12/2013 16:00		
		Analytical Date	03/16/2013 02:31			03/16/2013 02:39		
		Matrix	Water			Water		
SW-846 6010C		**Units** / **Result**	mg/L / **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	
7439-92-1	Lead	0.0038U	0.0038	0.50	0.50	99	80 - 120	

Analytical Batch	503212	**Client ID**	ID 11946-MW-20A			1170032MS			1170032MSD			
Prep Batch	502859	**GCAL ID**	21303112126			1170209			1170210			
Prep Method	SW-846 3010A	**Sample Type**	SAMPLE			MS			MSD			
		Prep Date	03/12/2013 16:00			03/12/2013 16:00			03/12/2013 16:00			
		Analytical Date	03/16/2013 02:46			03/16/2013 03:08			03/16/2013 03:16			
		Matrix	Water			Water			Water			
SW-846 6010C		**Units** / **Result**	mg/L / **RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
7439-92-1	Lead	0.0	0.0038	0.50	0.45	90	80 - 120	0.49	97	9	20

Inorganics Quality Control Summary

Analytical Batch	503366	**Client ID**	ID 11946-MW-9A			1170014MS			1170014MSD		
Prep Batch	502858	**GCAL ID**	21303112108			1170205			1170206		
Prep Method	SW-846 3010A	**Sample Type**	SAMPLE			MS			MSD		
		Prep Date	03/12/2013 15:00			03/12/2013 15:00			03/12/2013 15:00		
		Analytical Date	03/18/2013 17:00			03/18/2013 17:07			03/18/2013 17:13		
		Matrix	Water			Water			Water		
SW-846 6010C		**Units**	mg/L	**Spike**	**Result**	**%R**	**Control**	**Result**	**%R**	**RPD**	**RPD**
		Result	**RDL**	**Added**			**Limits %R**				**Limit**
7439-92-1	Lead	0.0	0.0038	0.50	0.54	109	80 - 120	0.52	105	4	20

Access/4565/213031121/3/15/13

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

CHAIN OF CUSTODY RECORD

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Preservative: 1. Unpreserved 2. NaOH / ZnA 3. H2SO4 4. HNO3 5. HCl 6. Na Thio. 7. NaOH

Project #	Laboratory Utilized	Sampler Name (print)	Sampler Signature
06-414.1-12	Access	TYLER FELDER	Tyler Felder

Project Name: Broad River Amoco

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	Analysis: BTEX, Naph., MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	# of Containers	Preservative	Remarks
					5	5	5	5		4			
ID# 11946 - MW-1	03.08.13	1130	G	GW	X	X	X	X		X			1
ID# 11946 - MW-3	03.08.13	1145	G	GW	X	X	X	X		X			2
ID# 11946 - MW-6A	03.06.13	0930	G	GW	X	X	X	X		X			3
ID# 11946 - MW-6B	03.06.13	0800	G	GW	X	X	X	X		X			4
ID# 11946 - MW-7A	03.07.13	1500	G	GW	X	X	X	X		X			5
ID# 11946 - MW-8A	03.07.13	1415	G	GW	X	X	X	X		X			6
ID# 11946 - MW-8B	03.07.13	1345	G	GW	X	X	X	X		X			7
ID# 11946 - MW-9A	03.07.13	1330	G	GW	X	X	X	X		X			8
ID# 11946 - MW-9B	03.07.13	1300	G	GW	X	X	X	X		X			9
ID# 11946 - MW-10A	03.07.13	1700	G	GW	X	X	X	X		X			10

Relinquished By / Sampler	Date	Time	Received By
Tyler Felder	03.08.13	1610	M Robertson
M Robertson	3-8-13	1700	FedEx
Fedex 5035 7703 2651	3/8/13	0945	

Project Manager: Michael Faris

P.O. Number:

1.2 1.3 1.2 1.1

105 of 110

Access/45565/213031121/3/15/13

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

CHAIN OF CUSTODY RECORD

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Preservative: 1. Unpreserved 2. NaOH / ZnA 3. H_2SO_4 4. HNO_3 5. HCl 6. Na Thio. 7. NaOH

Project #	Project Name	Laboratory Utilized	Sampler Name (print)	Sampler Signature
06-414.1-12	Broad River Amoco	Access	TYLER FELDER	Tyler Felder

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	Analysis	BTEX, Naph, MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	# of Containers	Preservative	Remarks
						5	5	5	5		4			
ID # 11946 - MW-10B	03·07·13	1630	G	GW		X	X	X	X		X			11
ID # 11946 - MW-11A	03·07·13	1600	G	GW		X	X	X	X		X			12
ID # 11946 - MW-11B	03·07·13	1530	G	GW		X	X	X	X		X			13
ID# 11946 - MW-12A	03·07·13	1130	G	GW		X	X	X	X		X			14
ID# 11946 - MW-12B	03·07·13	1100	G	GW		X	X	X	X		X			15
~~ID# 11946 - MW-13A~~	03·													
ID# 11946 - MW-13B	03·07·13	1200	G	GW		X	X	X	X		X			16
ID# 11946 - MW-14A	03·07·13	1030	G	GW		X	X	X	X		X			17
ID# 11946 - MW-14B	03·07·13	0945	G	GW		X	X	X	X		X			18
ID# 11946 - MW-15B	03·07·13	0800	G	GW		X	X	X	X		X			19

Relinquished By / Sampler	Date	Time	Received By	Project Manager
Tyler Felder	03·08·13	1410	M Roberts	Michael Faris
Relinquished By	Date	Time	Received By	P.O. Number
M Roberts	3-8-13	1700	FedEx	
Relinquished By	Date	Time	Received By	
Fed Ex 5035 7503 2651	3/9/13	0945		

1.2, 1.3, 1.2, 1.1

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

Access/45565/21303112/3/15/13

CHAIN OF CUSTODY RECORD

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Project # 06-414.1-12

Preservative: 1. Unpreserved 2. NaOH / ZnA 3. H2SO4 4. HNO3 5. HCl 6. Na Thio. 7. NaOH

Project Name: Broad River Amoco

Laboratory Utilized: Access

Sampler Name (print): TYLER FELDER

Sampler Signature:

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	Analysis: BTEX, Naph, MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	# of Containers	Preservative	Remarks
					—	2	—	2		1			
					5	5	5	5		4			
ID# 11946-MW-16B	03·07·13	0845	G	GW	X	X	X	X		X			20
ID# 11946-MW-17B	03·06·13	1635	G	GW	X	X	X	X		X			21
ID# 11946-MW-18A	03·06·13	1300	G	GW	X	X	X	X		X			22
ID# 11946-MW-18B	03·06·13	1235	G	GW	X	X	X	X		X			23
ID# 11946-MW-19A	03·06·13	1505	G	GW	X	X	X	X		X			24
ID# 11946-MW-19B	03·06·13	1435	G	GW	X	X	X	X		X			25
ID# 11946-MW-20A	03·06·13	1400	G	GW	X	X	X	X		X			26
ID# 11946-MW-20B	03·06·13	1325	G	GW	X	X	X	X		X			27
ID# 11946-MW-21A	03·06·13	1200	G	GW	X	X	X	X		X			28
ID# 11946-MW-21B	03·06·13	1130	G	GW	X	X	X	X		X			29

Relinquished By / Sampler	Date	Time	Received By
	03·08·13	1610	M. Robertson
M. Robertson	3-8-13	1700	FedEx
Fedex 5-35 7503 2651	3/9/13	0945	

Project Manager: Michael Faris

P.O. Number:

1.2.1.1.1.2.1.1

Access/4565/213031121/3/15/13

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

CHAIN OF CUSTODY RECORD

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Project #: 06-414,1-12

Preservative: 1. Unpreserved 2. NaOH / ZnA 3. H2SO4 4. HNO3 5. HCl 6. Na Thio. 7. NaOH

Project Name: Broad River Amoco

Laboratory Utilized: Access

Sampler Name (print): TYLER FELDER

Sampler Signature:

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	Analysis: BTEX, Naph., MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	# of Containers	Preservative	Remarks
					5	5	5	5		4			
ID# 11946-MW-22B	03-06-13	1030	G	GW	X	X	X	X		X			30
ID# 11946-DMW-1	03-08-13	0830	G	GW	X	X	X	X		X			31
ID# 11946-DMW-2	03-06-13	1545	G	GW	X	X	X	X		X			32
ID# 11946-DMW-3	03-06-13	1100	G	GW	X	X	X	X		X			33
ID# 11946-RW-2	03-08-13	1000	G	GW	X	X	X	X		X			34
ID# 11946-RW-4	03-08-13	0900	G	GW	X	X	X	X		X			35
ID# 11946-DUP-1	03-06-13	1330	G	GW	X	X	X	X		X			36
ID# 11946-DUP-2	03-06-13	1550	G	GW	X	X	X	X		X			37
ID# 11946-FB-1	03-06-13	1205	G	OTHER	X	X	X						38
ID# 11946-FB-2	03-07-13	1210	G	OTHER	X	X	X						39

Relinquished By / Sampler	Date	Time	Received By	Project Manager
	03-08-13	1610	M Roberts	Michael Faris
Relinquished By: M Roberts	Date: 3-8-13	Time: 1700	Received By: FedEx	P.O. Number
Relinquished By: FedEx 5035 7503 2651	Date: 3/9/13	Time: 0945	Received By:	

1.2, 1.3, 1.2, 1.1

108 of 110

Access/4565/213031121/3/15/13

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

CHAIN OF CUSTODY RECORD

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Project #	Preservative	1. Unpreserved 2. NaOH / ZnA 3. H_2SO_4 4. HNO_3 5. HCl 6. Na Thio. 7. NaOH												# of Containers
06-414.1-12														Preservative
Project Name	Laboratory Utilized					5	5	5	5		4			
Broad River Amoco	Access													
Sampler Name (print)	Sampler Signature													
TYLER FELDER														

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	Analysis	BTEX, Naph, MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	Remarks
ID # 11946-TB	2/27/13			W		X	X	X				40
ID# 11946-TB	Pool 3: 1,2,3					X	X	X				41
ID# 11946-TB						X	X	X				42
ID# 11946-TB						X	X	X				43
ID# 11946-FB-3	03.08.13	1230	G	OTHER		X	X	X	X			44
								*used dates of containers				

Relinquished By / Sampler	Date	Time	Received By	Project Manager
Tyler Felder	03.08.13	1610	M Robertson	Michael Faris
Relinquished By	Date	Time	Received By	P.O. Number
M Robertson	3-8-13	1700	FedEx	
Relinquished By	Date	Time	Received By	
Fedex 5035 4503 1661	3/9/13	0945		

1.2, 1.3, 1.2, 1.1

GCAL
ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

213031121

SAMPLE DELIVERY GROUP	213031121
Client 4565 - Access Analytical	**Transport Method** FEDEX
Profile Number 78619	**Received By** Saucier, Charlotte
Line Item(s) 4 - Water BTEX/N/MTBE/1,2-DCA/PAH/EDB	**Receive Date(s)** 03/09/13

CHECKLIST			
Were all samples received using proper thermal preservation?	☑ Yes	☐ No	☐ NA
When used, were all custody seals intact?	☑ Yes	☐ No	☐ NA
Were all samples received in proper containers?	☑ Yes	☐ No	☐ NA
Were all samples received using proper chemical preservation?	☑ Yes	☐ No	☐ NA
Was preservative added to any container at the lab?	☐ Yes	☑ No	☐ NA
Were all containers received in good condition?	☑ Yes	☐ No	☐ NA
Were all VOA vials received with no head space?	☑ Yes	☐ No	☐ NA
Do all sample labels match the Chain of Custody?	☑ Yes	☐ No	☐ NA
Did the Chain of Custody list the sampling technician?	☑ Yes	☐ No	☐ NA
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑ Yes	☐ No	☐ NA

COOLERS

Airbill	Temp(oC)
5035 7503 2651	1.2
	1.3
	1.2
	1.1

DISCREPANCIES

None

LABORATORY PRESERVATIONS

None

NOTES

Revision 1.4

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT
ARM
1210 1st Street
Columbia, SC 29209

ATTENTION
Michael Faris

PROJECT ID
06-414.1-12

LABORATORY REPORT NUMBER
213032650

DATE
04/02/2013

Primary Data Review By

Curtis Ekker
Data Validation Manager, GCAL

Secondary Data Review By

Ashley B. Amick
Project Manager, Access Analytical, Inc.
aamick@accessanalyticalinc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Gulf Coast Analytical Labs (GCAL), 7979 GSRI Avenue, Baton Rouge, LA 70820.**
- **GCAL is SCDHEC certified laboratory # 73006, NCDENR certified lab # 618, GA certified lab # LA-01955, NELAP certified laboratory # 01955**
- Local support services for this project are provided by Access Analytical, Inc.. Access Analytical is a representative of GCAL serving clients in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll free at 888.315.4243.

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.
7979 GSRI Avenue
Baton Rouge, LA 70820

Report Date 04/02/2013

GCAL Report 213032650

Deliver To ARM
1210 1st Street
Columbia, SC 29209
803-783-3314

Attn Michael Faris

Project 06-414.1-12

CASE NARRATIVE

Client: Access Analytical **Report:** 213032650

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

No anomalies were found for the analyzed sample(s).

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates the result is between the MDL and RDL
U	Indicates the compound was analyzed for but not detected
B	Indicates the analyte was detected in the associated Method Blank

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Karen Molenaar

Robyn Migues
Technical Director
GCAL REPORT 213032650

THIS REPORT CONTAINS 20 PAGES.

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265001	MW-13A	Water	03/25/2013 12:55	03/26/2013 10:00
21303265002	MW-15A	Water	03/25/2013 13:04	03/26/2013 10:00
21303265003	MW-16A	Water	03/25/2013 13:29	03/26/2013 10:00
21303265004	FIELD BLANK 4	Water	03/25/2013 13:40	03/26/2013 10:00
21303265005	TRIP BLANK 5	Water	03/25/2013 00:00	03/26/2013 10:00

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265001	MW-13A	Water	03/25/2013 12:55	03/26/2013 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0078J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265002	MW-15A	Water	03/25/2013 13:04	03/26/2013 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0053J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265003	MW-16A	Water	03/25/2013 13:29	03/26/2013 10:00

SW-846 6010C

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.035	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265001	MW-13A	Water	03/25/2013 12:55	03/26/2013 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:10	CGC	503995

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	50	50.3	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.2	ug/L	102	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:10	CGC	503996

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48	ug/L	96	78 - 130
1868-53-7	Dibromofluoromethane	50	50.3	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.2	ug/L	102	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 07:57	503956	SW-846 8011	1	03/27/2013 13:51	TLS	504064

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265001	MW-13A	Water	03/25/2013 12:55	03/26/2013 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 10:50	503971	SW-846 3010A	1	03/28/2013 00:24	BAM	503994

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0078J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265002	MW-15A	Water	03/25/2013 13:04	03/26/2013 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:35	CGC	503995

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.5	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	50.9	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	50	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.5	ug/L	103	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:35	CGC	503996

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.5	ug/L	95	78 - 130
1868-53-7	Dibromofluoromethane	50	50.9	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	50	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.5	ug/L	103	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 07:57	503956	SW-846 8011	1	03/27/2013 14:12	TLS	504064

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265002	MW-15A	Water	03/25/2013 13:04	03/26/2013 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 10:50	503971	SW-846 3010A	1	03/28/2013 00:31	BAM	503994

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0053J	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265003	MW-16A	Water	03/25/2013 13:29	03/26/2013 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:58	CGC	503995

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.9	ug/L	92	78 - 130
1868-53-7	Dibromofluoromethane	50	51	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	47.3	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	53.4	ug/L	107	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 15:58	JCK	503996

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.9	ug/L	92	78 - 130
1868-53-7	Dibromofluoromethane	50	51	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	47.3	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	53.4	ug/L	107	71 - 127

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 07:57	503956	SW-846 8011	1	03/27/2013 14:34	TLS	504064

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00390U	0.010	0.00390	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265003	MW-16A	Water	03/25/2013 13:29	03/26/2013 10:00

SW-846 6010C

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
03/27/2013 10:50	503971	SW-846 3010A	1	03/28/2013 00:39	BAM	503994

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.035	0.015	0.0038	mg/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265004	FIELD BLANK 4	Water	03/25/2013 13:40	03/26/2013 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 16:22	CGC	503995

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.4	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	51.3	ug/L	103	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.1	ug/L	102	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 16:22	CGC	503996

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.4	ug/L	97	78 - 130
1868-53-7	Dibromofluoromethane	50	51.3	ug/L	103	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.1	ug/L	102	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21303265005	TRIP BLANK 5	Water	03/25/2013 00:00	03/26/2013 10:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 16:44	CGC	503995

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	0.111U	1.00	0.111	ug/L
108-88-3	Toluene	0.122U	1.00	0.122	ug/L
100-41-4	Ethylbenzene	0.109U	1.00	0.109	ug/L
1330-20-7	Xylene (total)	0.179U	3.00	0.179	ug/L
91-20-3	Naphthalene	0.176U	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane	0.116U	5.00	0.116	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.6	ug/L	93	78 - 130
1868-53-7	Dibromofluoromethane	50	52.4	ug/L	105	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	53.7	ug/L	107	71 - 127

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			1	03/27/2013 16:44	CGC	503996

CAS#	Parameter	Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)	0.240U	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)	0.290U	10.0	0.290	ug/L
108-20-3	diisopropyl Ether (DIPE)	0.236U	5.00	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	5.00	0.234	ug/L
624-95-3	ethyl tert-butanol (ETBA)	37.6U	100	37.6	ug/L
64-17-5	Ethanol	125U	1000	125	ug/L
75-85-4	tert-amyl alcohol (TAA)	1.01U	20.0	1.01	ug/L
762-75-4	tert-butyl formate (TBF)	0.487U	50.0	0.487	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.6	ug/L	93	78 - 130
1868-53-7	Dibromofluoromethane	50	52.4	ug/L	105	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	53.7	ug/L	107	71 - 127

GC/MS Volatiles Quality Control Summary

Analytical Batch	503995	Client ID	MB503995			LCS503995			LCSD503995			
Prep Batch	N/A	GCAL ID	1175264			1175265			1175266			
		Sample Type	Method Blank			LCS			LCSD			
		Analytical Date	03/27/2013 14:10			03/27/2013 12:18			03/27/2013 13:00			
		Matrix	Water			Water			Water			
SW-846 8260B			**Units** Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane		0.116U	0.116	50.0	48.4	97	71 - 129	45.6	91	6	30
100-41-4	Ethylbenzene		0.109U	0.109	50.0	44.9	90	74 - 126	39.8	80	12	30
1634-04-4	tert-Butyl methyl ether (MTBE)		0.078U	0.078	50.0	45.8	92	71 - 125	44.0	88	4	30
1330-20-7	Xylene (total)		0.179U	0.179	150	141	94	74 - 127	120	80	16	30
91-20-3	Naphthalene		0.176U	0.176	50.0	45.8	92	57 - 138	41.7	83	9	35
71-43-2	Benzene		0.111U	0.111	50.0	43.7	87	70 - 129	40.6	81	7	20
108-88-3	Toluene		0.122U	0.122	50.0	43.7	87	72 - 120	36.6	73	18	20
Surrogate												
460-00-4	4-Bromofluorobenzene		48.9	98	50	51	102	78 - 130	48.7	97		
1868-53-7	Dibromofluoromethane		49.4	99	50	54	108	77 - 127	51.9	104		
2037-26-5	Toluene d8		49.4	99	50	50.5	101	76 - 134	47.9	96		
17060-07-0	1,2-Dichloroethane-d4		49.9	100	50	54.3	109	71 - 127	53.7	107		

GC/MS Volatiles Quality Control Summary

Analytical Batch 503996	Client ID	MB503996			LCS503996			LCSD503996			
Prep Batch N/A	GCAL ID	1175267			1175268			1175269			
	Sample Type	Method Blank			LCS			LCSD			
	Analytical Date	03/27/2013 14:10			03/27/2013 12:18			03/27/2013 13:00			
	Matrix	Water			Water			Water			
SW-846 8260B		Units Result	ug/L RDL	Spike Added	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
994-05-8	t-amyl methyl ether (TAME)	0.240U	0.240	50.0	52.0	104	50 - 150	51.4	103	1	50
75-65-0	t-Butanol (TBA)	0.290U	0.290	50.0	51.2	102	50 - 150	43.6	87	16	50
108-20-3	diisopropyl Ether (DIPE)	0.236U	0.236	50.0	56.1	112	50 - 150	51.2	102	9	50
637-92-3	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	50.0	54.3	109	50 - 150	52.2	104	4	50
624-95-3	ethyl tert-butanol (ETBA)	37.6U	37.6	2550	2170	85	50 - 150	1930	76	12	50
64-17-5	Ethanol	125U	125	25200	23100	92	50 - 150	19300	77	18	50
75-85-4	tert-amyl alcohol (TAA)	1.01U	1.01	200	194	97	50 - 150	180	90	7	50
762-75-4	tert-butyl formate (TBF)	0.487U	0.487	50.0	54.9	110	50 - 150	47.6	95	14	50
Surrogate											
460-00-4	4-Bromofluorobenzene	48.9	98	50	51	102	78 - 130	48.7	97		
1868-53-7	Dibromofluoromethane	49.4	99	50	54	108	77 - 127	51.9	104		
2037-26-5	Toluene d8	49.4	99	50	50.5	101	76 - 134	47.9	96		
17060-07-0	1,2-Dichloroethane-d4	49.9	100	50	54.3	109	71 - 127	53.7	107		

General Chromatography Quality Control Summary

Analytical Batch	504064	**Client ID**	MB503956			LCS503956			LCSD503956		
Prep Batch	503956	**GCAL ID**	1175090			1175091			1175092		
Prep Method	SW-846 8011	**Sample Type**	Method Blank			LCS			LCSD		
		Prep Date	03/27/2013 07:57			03/27/2013 07:57			03/27/2013 07:57		
		Analytical Date	03/27/2013 12:19			03/27/2013 12:45			03/27/2013 13:07		
		Matrix	Water			Water			Water		
SW-846 8011		**Units**	ug/L	**Spike**	**Result**		**Control**	**Result**			**RPD**
		Result	**RDL**	**Added**		**% R**	**Limits % R**		**% R**	**RPD**	**Limit**
96-12-8	1,2-Dibromo-3-chloropropane	0.00260U	0.00260	1.12	1.19	106	45 - 150	1.21	113	2	40
106-93-4	1,2-Dibromoethane	0.00390U	0.00390	1.12	1.16	104	55 - 141	1.21	113	4	40

Inorganics Quality Control Summary

Analytical Batch	503994	Client ID	MB503971			LCS503971		
Prep Batch	503971	GCAL ID	1175126			1175127		
Prep Method	SW-846 3010A	Sample Type	Method Blank			LCS		
		Prep Date	03/27/2013 10:50			03/27/2013 10:50		
		Analytical Date	03/27/2013 21:36			03/27/2013 21:44		
		Matrix	Water			Water		
SW-846 6010C		Units / Result	mg/L / RDL	Spike Added	Result	% R	Control Limits % R	
7439-92-1	Lead	0.0038U	0.0038	0.50	0.53	106	80 - 120	

Analytical Batch	503994	Client ID	DSE-01			1172133MS			1172133MSD			
Prep Batch	503971	GCAL ID	21303182002			1175128			1175129			
Prep Method	SW-846 3010A	Sample Type	SAMPLE			MS			MSD			
		Prep Date	03/27/2013 10:50			03/27/2013 10:50			03/27/2013 10:50			
		Analytical Date	03/27/2013 23:16			03/27/2013 23:24			03/27/2013 23:31			
		Matrix	Solid			Solid			Solid			
SW-846 6010C		Units / Result	mg/L / RDL	Spike Added	Result	% R	Control Limits % R		Result	% R	RPD	RPD Limit
7439-92-1	Lead	0.0	0.0038	0.50	0.54	107	80 - 120		0.51	103	6	20

Analytical Batch	503994	Client ID	FINISHING EXCAVATION PLANT			1174955MS			1174955MSD			
Prep Batch	503971	GCAL ID	21303263601			1175141			1175142			
Prep Method	SW-846 3010A	Sample Type	SAMPLE			MS			MSD			
		Prep Date	03/27/2013 10:50			03/27/2013 10:50			03/27/2013 10:50			
		Analytical Date	03/27/2013 21:51			03/27/2013 21:59			03/27/2013 22:07			
		Matrix	Solid			Solid			Solid			
SW-846 6010C		Units / Result	mg/L / RDL	Spike Added	Result	% R	Control Limits % R		Result	% R	RPD	RPD Limit
7439-92-1	Lead	0.0061	0.019	0.50	0.53	105	80 - 120		0.51	100	4	20

access/4515/213032650/4/2/13

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

1210 1st STREET SOUTH EXTENSION COLUMBIA, SOUTH CAROLINA 29209 PHONE 803-783-3314 FAX 803-783-2587

Project # 06-414.1-12

Preservative: 1. Unpreserved 2. NaOH / ZnA 3. H2SO4 4. HNO3 5. HCl 6. Na Thio. 7. NaOH

Project Name: Broad River Amoco

Laboratory Utilized: Access

Sampler Name (print): Todd Allred

Sampler Signature: Todd Allred

Sample ID / Description	Date	Time	G=Grab C=Composite	Matrix S, GW, DW, WW, Other	BTEX, Naph, MTBE by 8260B	1,2-DCA by 8260B	8 Oxygenates by 8260B	EDB by 8011	PAHs by 8270C	Total Lead by 6010B	Remarks
MW-13A	3/25/13	1255	G	GW	X	X	X	X		X	1
MW-15A		1304			X	X	X	X		X	2
MW-16A		1329			X	X	X	X		X	3
Field Blank 4		1340		OTHER	X	X	X				4
Trip Blank 5		—	—	OTHER	X	X	X				5

# of Containers: 2 | 5 | 2 | | 1 | | | | | |

Preservative: | 5 | 5 | | 4 | | | | | |

Relinquished By / Sampler	Date	Time	Received By
Michael Davis	3/25/13	1705	M. Robertson
M Robertson	3/25/13	1710	FedEx
FedEx 5035 7503 3040	3/26/13	1000	C Jaworski 2.1

Project Manager: Michael Faris

P.O. Number:

GCAL ANALYTICAL LABORATORIES, LLC

SAMPLE RECEIVING CHECKLIST

213032650

SAMPLE DELIVERY GROUP	213032650
Client 4565 - Access Analytical	**Transport Method** FEDEX
Profile Number 78619	**Received By** Pfeifer, Ben J.
Line Item(s) 4 - Water BTEX/N/MTBE/1,2-DCA/PAH/EDB	**Receive Date(s)** 03/26/13

CHECKLIST

Were all samples received using proper thermal preservation?	☑ Yes	☐ No	☐ NA
When used, were all custody seals intact?	☑ Yes	☐ No	☐ NA
Were all samples received in proper containers?	☑ Yes	☐ No	☐ NA
Were all samples received using proper chemical preservation?	☑ Yes	☐ No	☐ NA
Was preservative added to any container at the lab?	☐ Yes	☑ No	☐ NA
Were all containers received in good condition?	☑ Yes	☐ No	☐ NA
Were all VOA vials received with no head space?	☑ Yes	☐ No	☐ NA
Do all sample labels match the Chain of Custody?	☑ Yes	☐ No	☐ NA
Did the Chain of Custody list the sampling technician?	☑ Yes	☐ No	☐ NA
Was the COC maintained i.e. all signatures, dates and time of receipt included?	☑ Yes	☐ No	☐ NA

COOLERS

Airbill	Temp(oC)
5035 7503 3040	2.1

DISCREPANCIES

None

LABORATORY PRESERVATIONS

None

NOTES

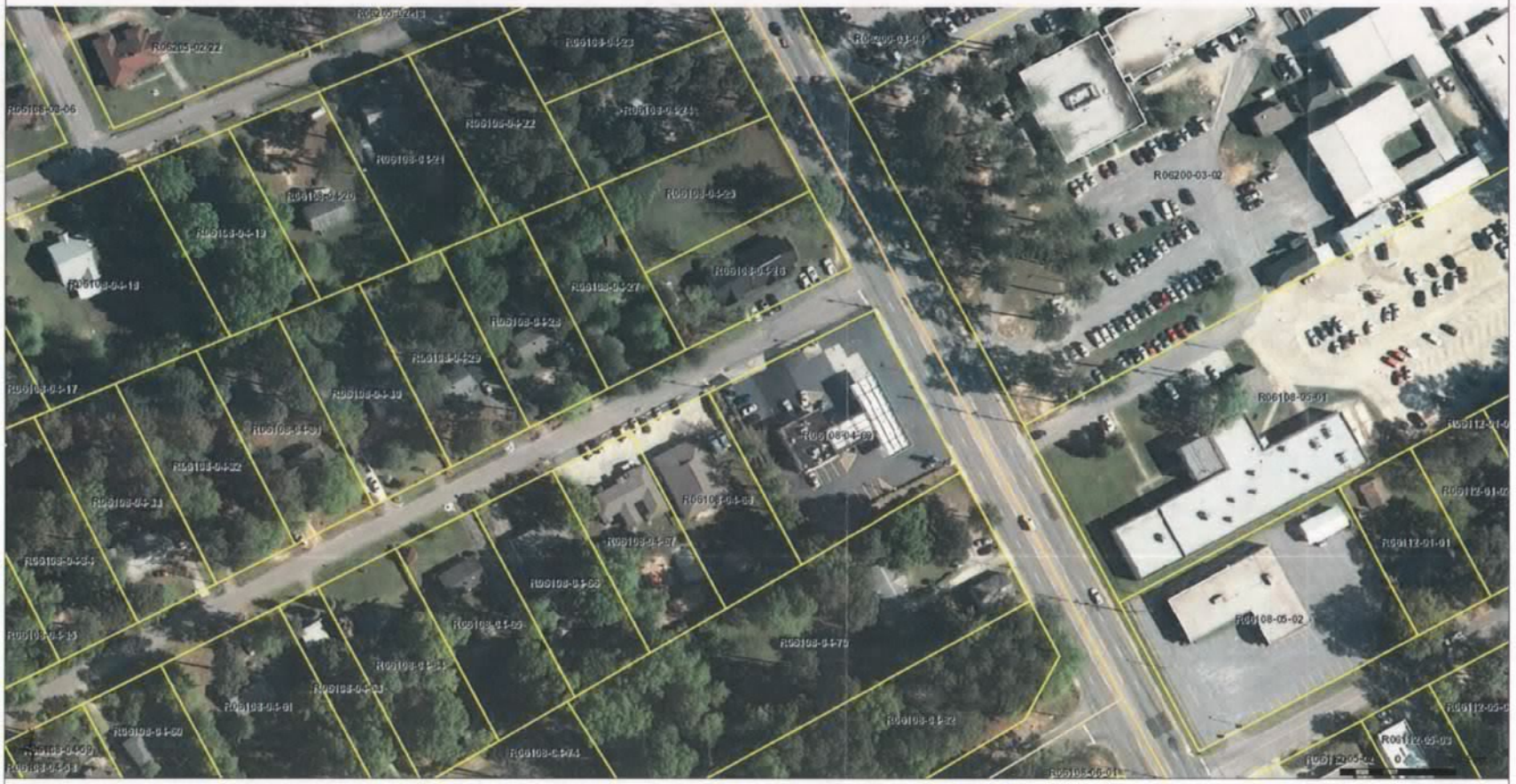
Revision 1.4

APPENDIX C
TAX MAP

Appendix C - Tax Map Information
April 2013

Tax Map Number	Property Address	Property Owner	Owner Address	Owner City, State Zip
R06108-04-69	4335 Broad River Rd.	Frederick Cecchini	4335 Broad River Rd.	Columbia, SC 29210
R06108-04-68	1252 Dothan Rd.	William Ronnie & Bonnie Saville	4509 Wade St.	Columbia, SC 29210
R06108-04-67	1246 Dothan Rd.	William Ronnie & Bonnie Saville	4509 Wade St.	Columbia, SC 29210
R06108-04-26	1257 Dothan Rd.	Rice James R Jr. & Wendy S	22 Caddis Creek Ct.	Irmo, SC 29063
R06108-04-26	4403 Broad River Rd.	MDC Associates	4403 Broad River Rd.	Columbia, SC 29210
R06108-04-25	4409 Broad River Rd.	MDC Associates	4403 Broad River Rd.	Columbia, SC 29210
R06200-03-02	4430 Broad River Rd.	State of SC General Services	300 Gervais St.	Columbia, SC 29201
R06108-04-70	4313 Broad River Rd.	Herteline Lowman	4315 Broad River Rd.	Columbia, SC 29210

Richland County Map



APPENDIX D
SOIL BORING / FIELD SCREENING LOGS

Appendix D - Tabulated Field Screening Results
Broad River Amoco (BP); UST Permit #11946

Temp. Well ID	Date	Total Depth (feet)	Encountered Water Depth (feet)	Benzene	MTBE	BTEXM
RBSLs				5.0	40	N/A
TMW-1	5/17/12	15.0	13.0	>1	>1	>1
TMW-2	5/17/12	15.0	13.0	>1	>1	>1
TMW-3	5/17/12	15.0	13.0	>1	>1	>1
TMW-4	5/17/12	15.0	13.0	>1	>1	1.51
TMW-5	5/17/12	15.0	12.5	**59.3**	1.75	139.9
TMW-6	5/18/12	15.0	12.5	3.65	2.50	84.2
TMW-7	5/18/12	15.0	12.5	**80.3**	**322.4**	973
TMW-8	5/18/12	15.0	12.5	>1	1.04	38.2
TMW-9	5/18/12	15.0	12.5	**73.5**	**142.8**	249.8
TMW-10	5/18/12	15.0	12.5	**7.3**	9.69	24.8
TMW-11	5/24/12	15.0	12.5	>1	>1	19.7
TMW-11D	7/24/12	34.5	33.0	2	1	3
TMW-12	5/24/12	15.0	12.5	>1	1.68	3.12
TMW-12D	7/25/12	34.0	33.0	1	8	9
TMW-13	5/24/12	15.0	12.5	**12**	14.9	32.9
TMW-14	5/24/12	15.0	12.5	1	4.06	5.1
TMW-14D	7/20/12	39.0	37.5	0	2	3
TMW-15	5/25/12	15.0	13.0	>1	0.80	3.34
TMW-16	5/25/12	15.0	13.0	0.57	>1	2.24
TMW-16D	7/24/12	39.5	38.0	4	**113**	118
TMW-17	5/25/12	15.0	13.0	>1	>1	>1
TMW-18	6/13/12	19.0	16.0	0	0	5.0
TMW-19	6/13/12	19.0	16.5	0	0	0
TMW-19D	7/17/12	40.0	38.0	1	0	9
TMW-20	6/13/12	19.0	18.0	>1	>1	9
TMW-21	6/13/12	19.0	18.0	>1	>1	4
TMW-22	6/13/12	19.0	18.0	>1	7	0
TMW-23	6/19/12	20.0	19.0	>1	>1	7
TMW-23D	6/19/12	42.0	40.0	>1	>1	2
TMW-24	6/21/12	19.0	18.5	3	23	63
TMW-25	7/5/12	19.0	18.5	**266**	**234**	1212
TMW-25D	7/19/12	40.0	38.0	**138**	**440**	1239
TMW-26	refusal due to rubble at ~ 4-5 feet					
TMW-26D	refusal due to rubble at ~ 4-5 feet					
TMW-27	6/20/12	20.0	19.0	**81**	**127**	938
TMW-27D	7/5/12	39.0	38.0	**130**	**147**	446
TMW-28	6/20/12	20.0	19.0	**102**	**270**	888
TMW-28D	6/20/12	40.0	38.0	**132**	**196**	751
TMW-29	7/5/12	20.0	19.0	>1	>1	25
TMW-29D	7/16/12	40.0	38.5	0	0	19

Note: Results expressed in ug/L (PPB)

Appendix D - Tabulated Field Screening Results
Broad River Amoco (BP); UST Permit #11946

Temp. Well ID	Date	Total Depth (feet)	Encountered Water Depth (feet)	Benzene	MTBE	BTEXM
RBSLs				5.0	40	N/A
TMW-30	7/05/12	20.0	19.0	1	>1	7
TMW-30D	7/17/12	40.0	38.5	0	0	28
TMW-31	7/05/12	20.0	19.0	>1	>1	2
TMW-31D	7/05/12	37.0	36.0	>1	>1	23
TMW-32	7/05/12	19.0	18.0	>1	>1	7
TMW-32D	7/19/12	40.0	38.5	**70**	2.2	170.0
TMW-33	7/05/12	20.0	19.0	>1	>1	2
TMW-33D	7/25/12	39.0	37.0	>1	>1	>1
TMW-34	7/12/12	20.0	19.0	**226**	**378**	1275
TMW-35	7/12/12	20.0	19.0	**125**	**355**	1100
TMW-36	7/12/12	20.0	19.0	**130**	**220**	1026
TMW-37	7/17/12	23.0	22.0	**62**	1.0	108
TMW-38	7/13/12	25.0	23.5	**28**	1.0	140
TMW-39	7/17/12	25.0	22.5	0	0	3
TMW-40	7/23/12	25.0	23.0	>1	>1	62
TMW-40D	7/23/12	39.5	38.0	>1	>1	2
TMW-41	7/26/12	24.0	22.0	>1	>1	>1
TMW-42	7/26/12	20.0	18.5	>1	>1	>1
TMW-43	7/26/12	26.0	24.0	>1	>1	>1
TMW-43D	8/6/12	39.0	37.5	>1	>1	>1
TMW-44	8/6/12	24.0	22.0	>1	>1	>1
TMW-44D	8/6/12	39.0	37.5	>1	>1	>1
TMW-45	8/7/12	24.0	22.0	>1	>1	>1
TMW-45D	8/7/12	39.0	37.5	>1	>1	>1
TMW-46	8/7/12	24.0	22.0	>1	>1	>1
TMW-46D	8/7/12	35.0	33.5	>1	>1	>1
TMW-47	7/27/12	23.0	21.0	>1	>1	>1
TMW-48	7/25/12	20.0	18.5	>1	19	32
TMW-48D	7/25/12	34.0	32.0	>1	35	42
TMW-49	7/26/12	19.0	18.0	>1	15	15
TMW-49D	7/26/12	34.0	32.0	>1	1	1
TMW-50D	9/13/12	40.0	37.5	>1	>1	>1
TMW-51D	9/13/12	39.0	37.0	>1	>1	2
TMW-52D	9/13/12	38.0	36.0	>1	>1	>1
TMW-53D	9/14/12	38.0	36.0	>1	>1	>1
TMW-54D	9/14/12	38.0	36.0	>1	1	4
TMW-55D	9/14/12	38.0	36.0	>1	>1	>1

Note: Results expressed in ug/L (PPB)

Appendix D - Free Product Delineation Results
Broad River Amoco (BP); UST Permit #11946

Temp. Well ID	Date	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickness
FP-1	10/4/12	14.65	N/A	N/A
	10/12/12	15.88	N/A	N/A
FP-2	10/4/12	13.82	N/A	N/A
	10/12/12	14.30	N/A	N/A
FP-3	10/4/12	14.64	N/A	N/A
	10/12/12	14.32	N/A	N/A
FP-4	10/4/12	14.28	N/A	N/A
	10/12/12	14.30	N/A	N/A
FP-5	10/4/12	14.29	N/A	N/A
	10/12/12	15.08	N/A	N/A
FP-6	10/4/12	15.15	N/A	N/A
	10/12/12	15.30	N/A	N/A
FP-7	10/4/12	14.70	N/A	N/A
	10/12/12	15.58	N/A	N/A
FP-8	10/4/12	15.13	N/A	N/A
	10/12/12	16.38	N/A	N/A
FP-9	10/4/12	14.65	N/A	N/A
	10/12/12	15.98	N/A	N/A
FP-10	10/4/12	15.88	N/A	N/A
	10/12/12	16.35	N/A	N/A
FP-11	10/4/12	15.20	N/A	N/A
	10/12/12	16.30	N/A	N/A
FP-12	10/4/12	14.17	14.15	0.02
	10/12/12	14.43	14.40	0.03
FP-13	10/4/12	12.72	N/A	N/A
	10/12/12	15.98	N/A	N/A
FP-14	10/4/12	16.70	N/A	N/A
	10/12/12	17.07	N/A	N/A
FP-15	10/4/12	13.37	N/A	N/A
	10/12/12	15.17	N/A	N/A
FP-16	10/4/12	15.96	N/A	N/A
	10/12/12	16.21	N/A	N/A

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

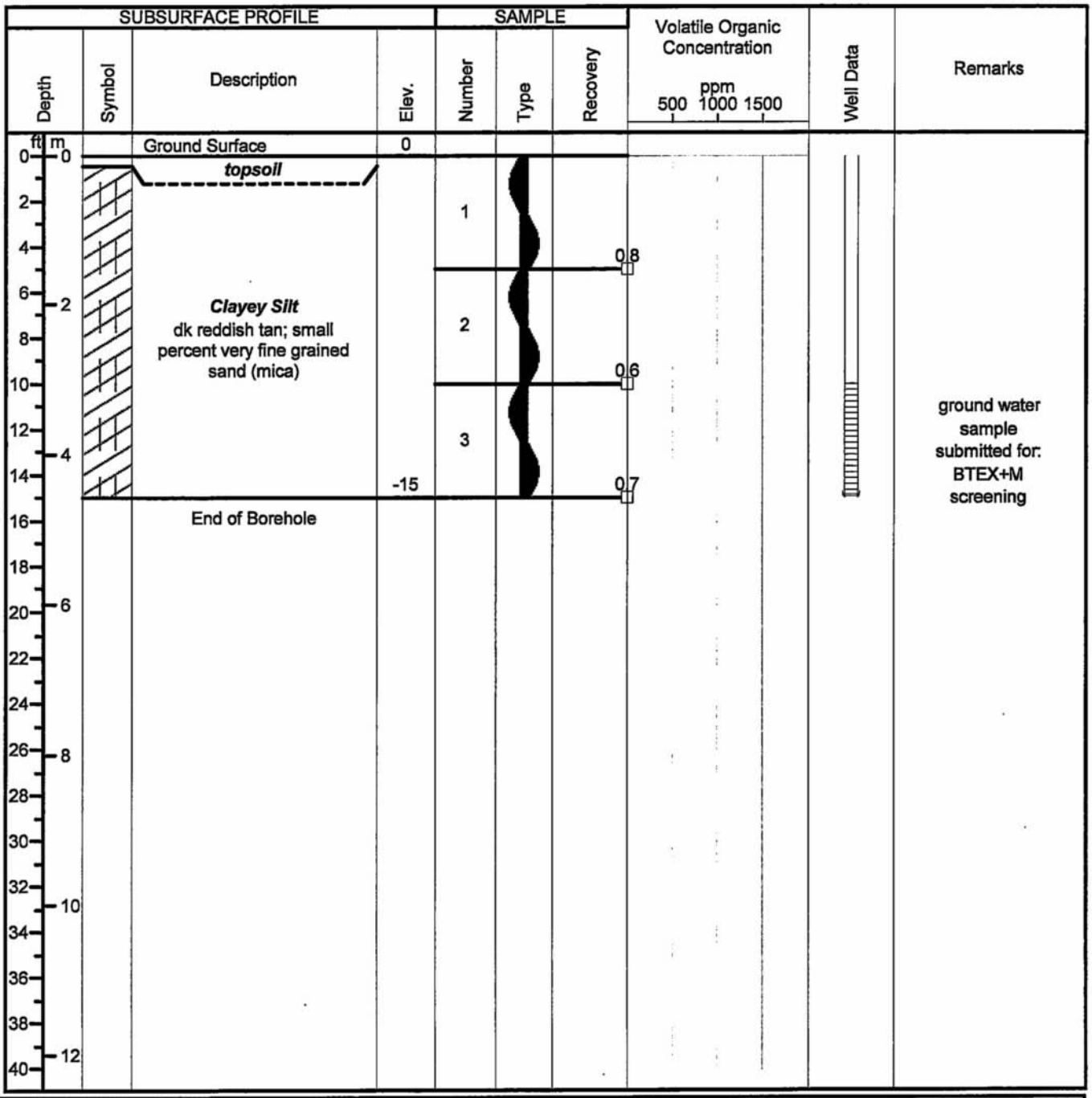
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-1

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/17/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

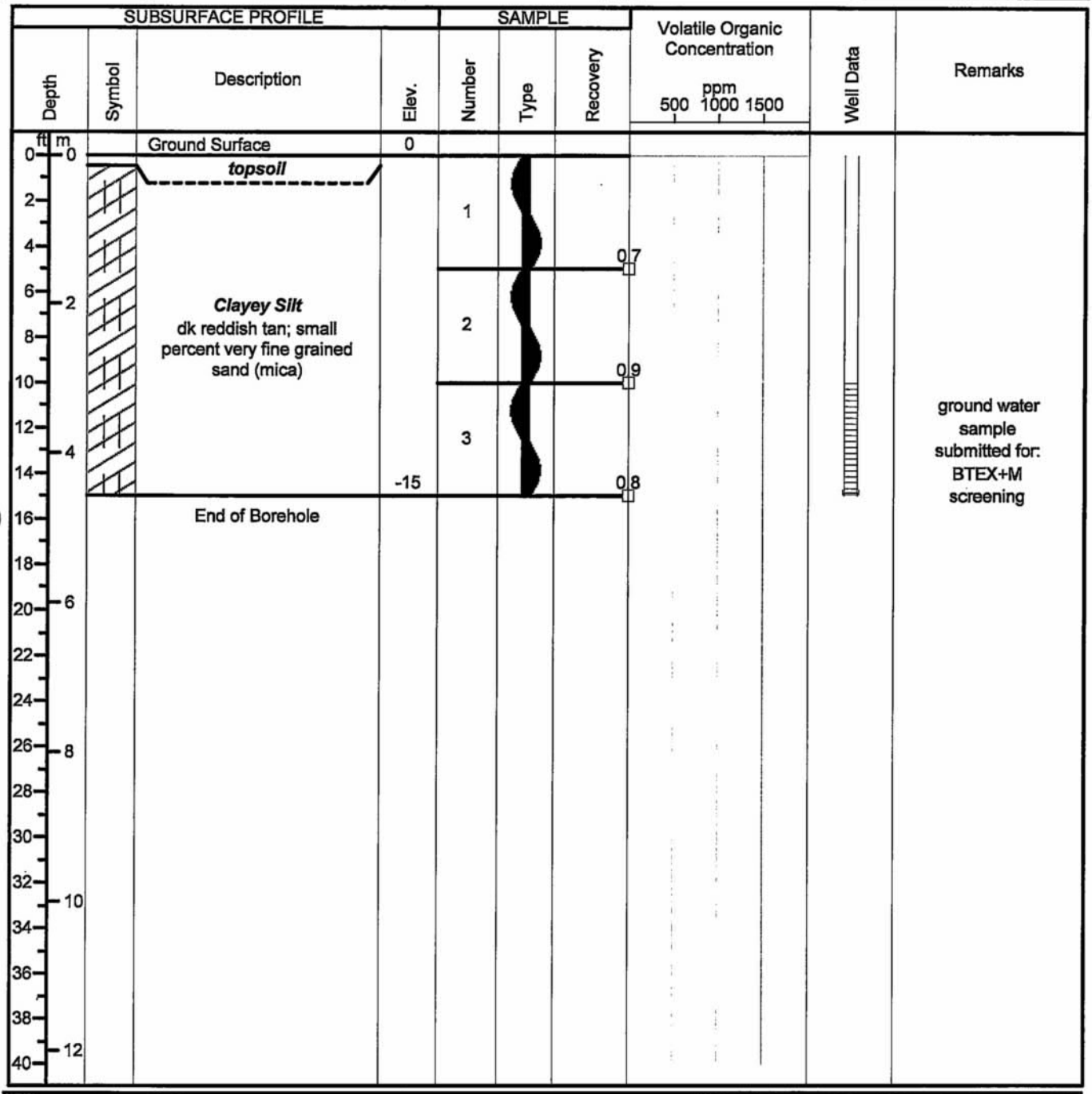
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-2

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/17/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

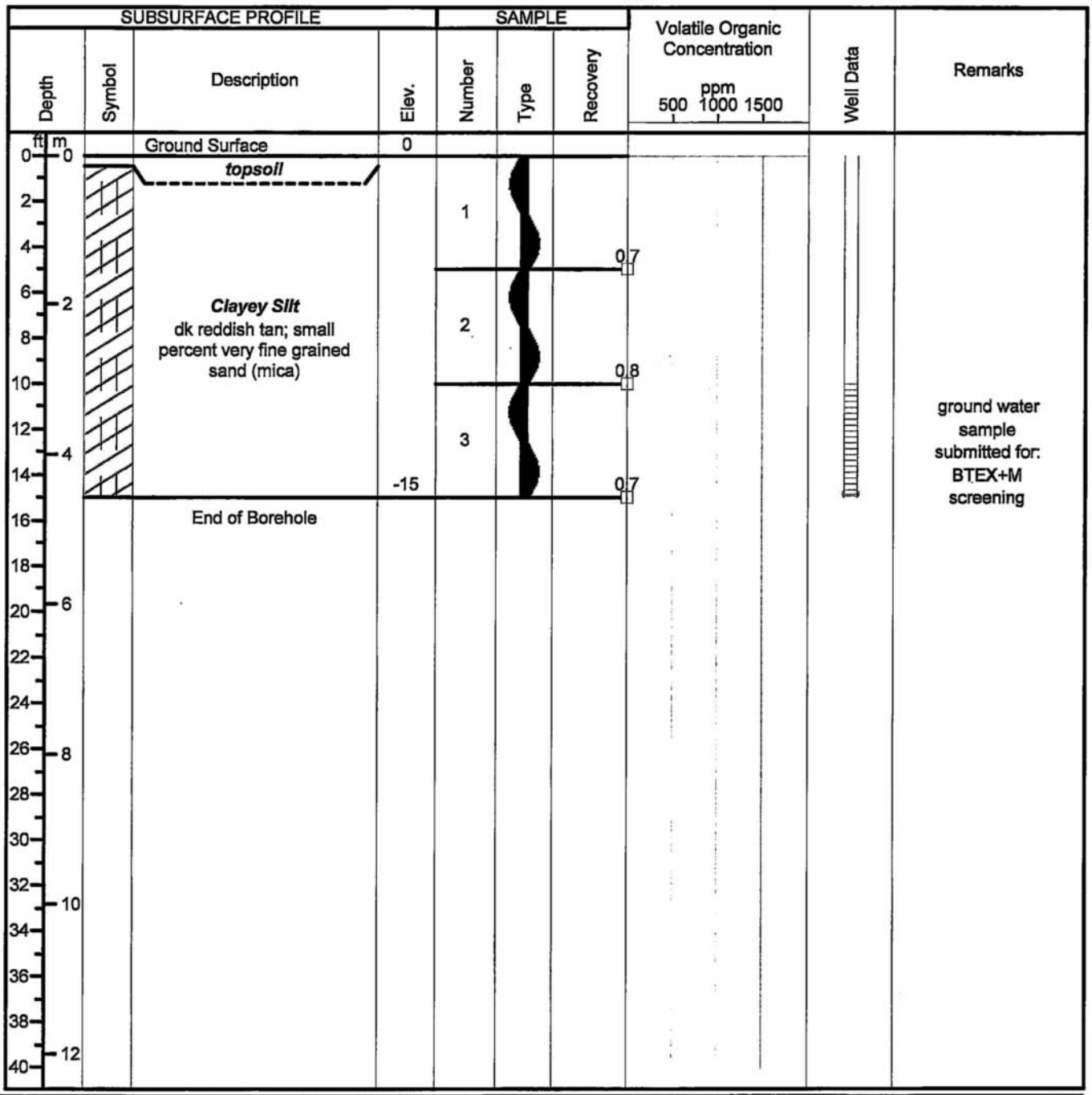
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-3

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/17/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

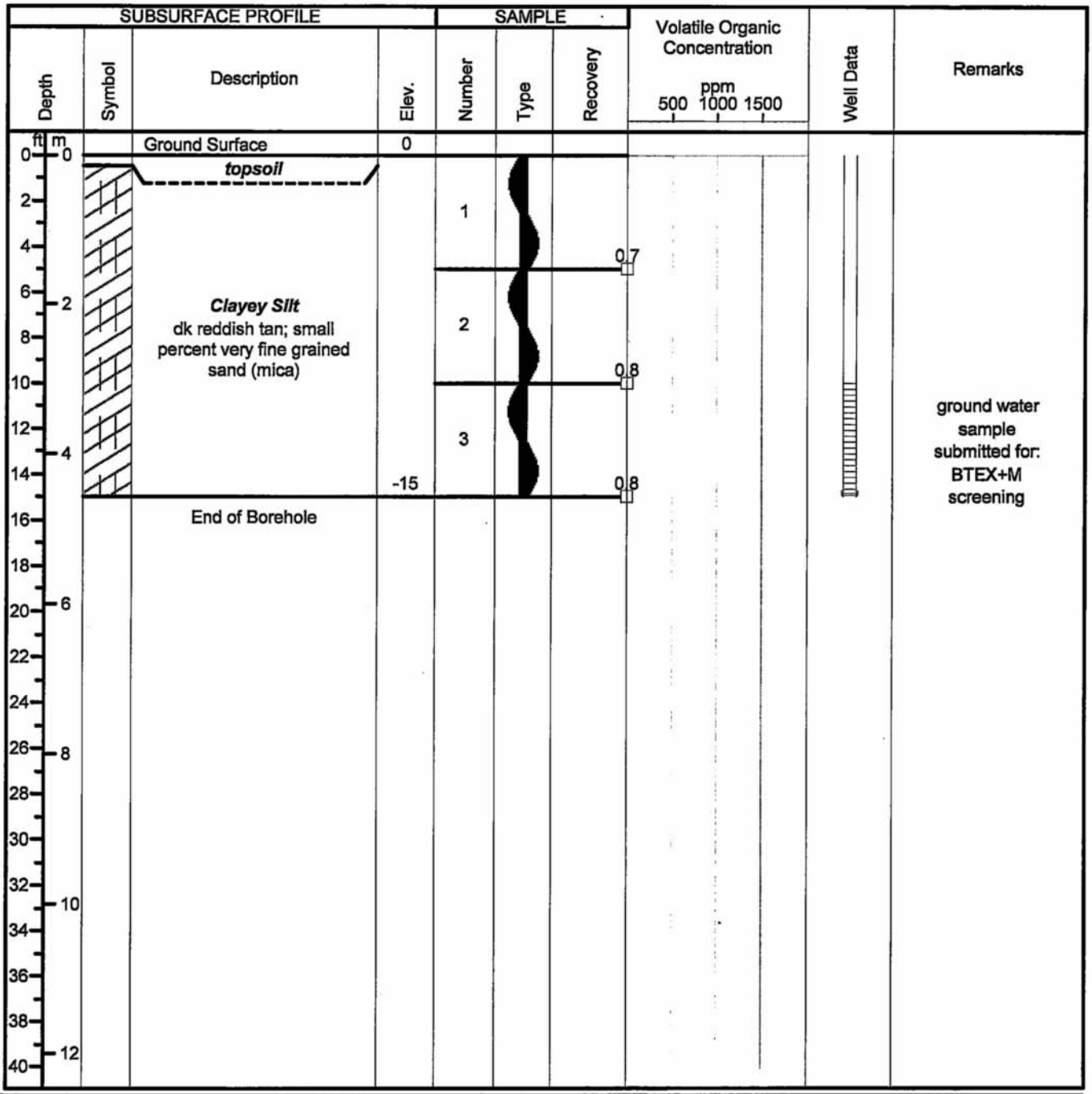
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-4

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/17/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

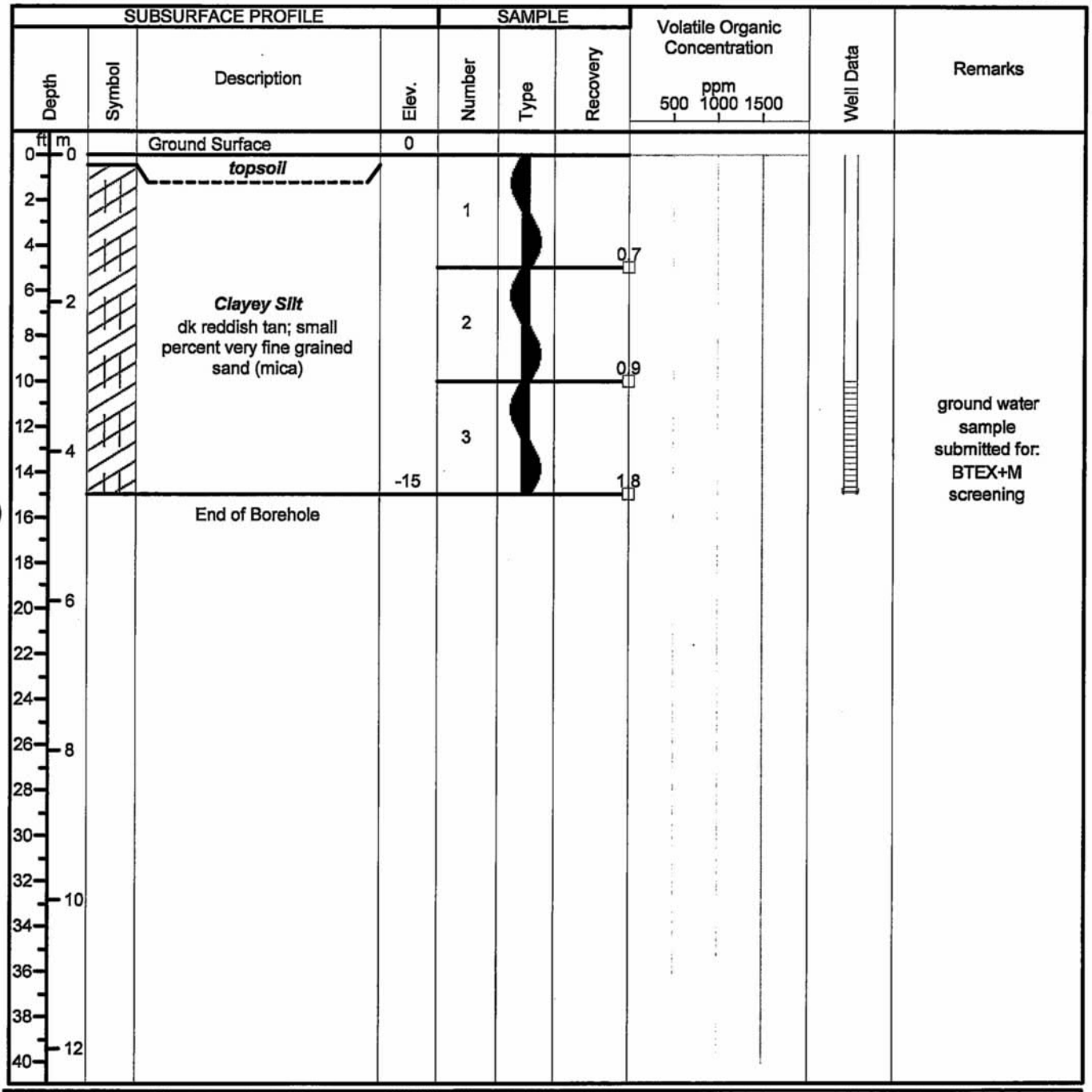
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-5

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/17/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

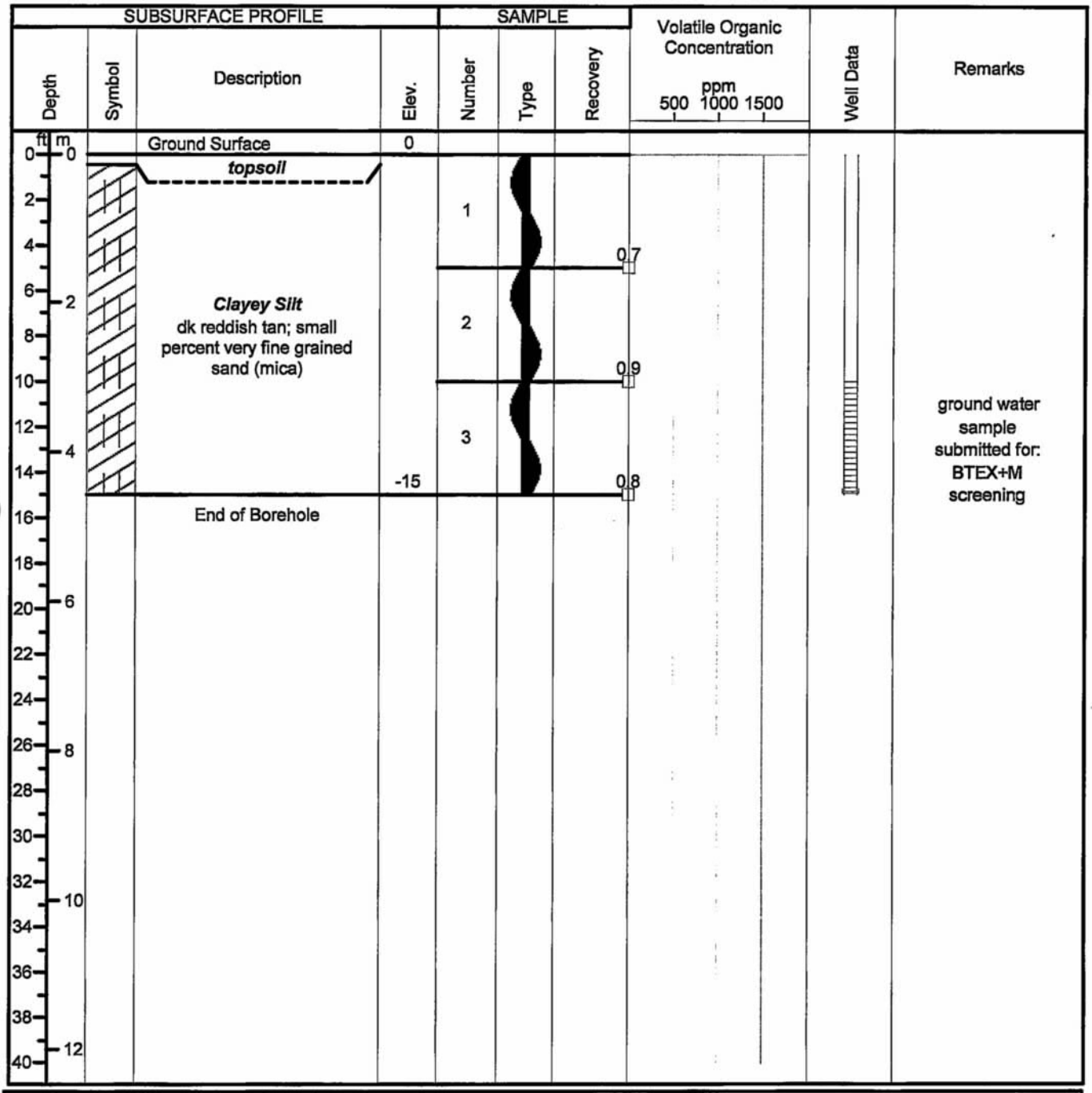
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-6

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/18/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

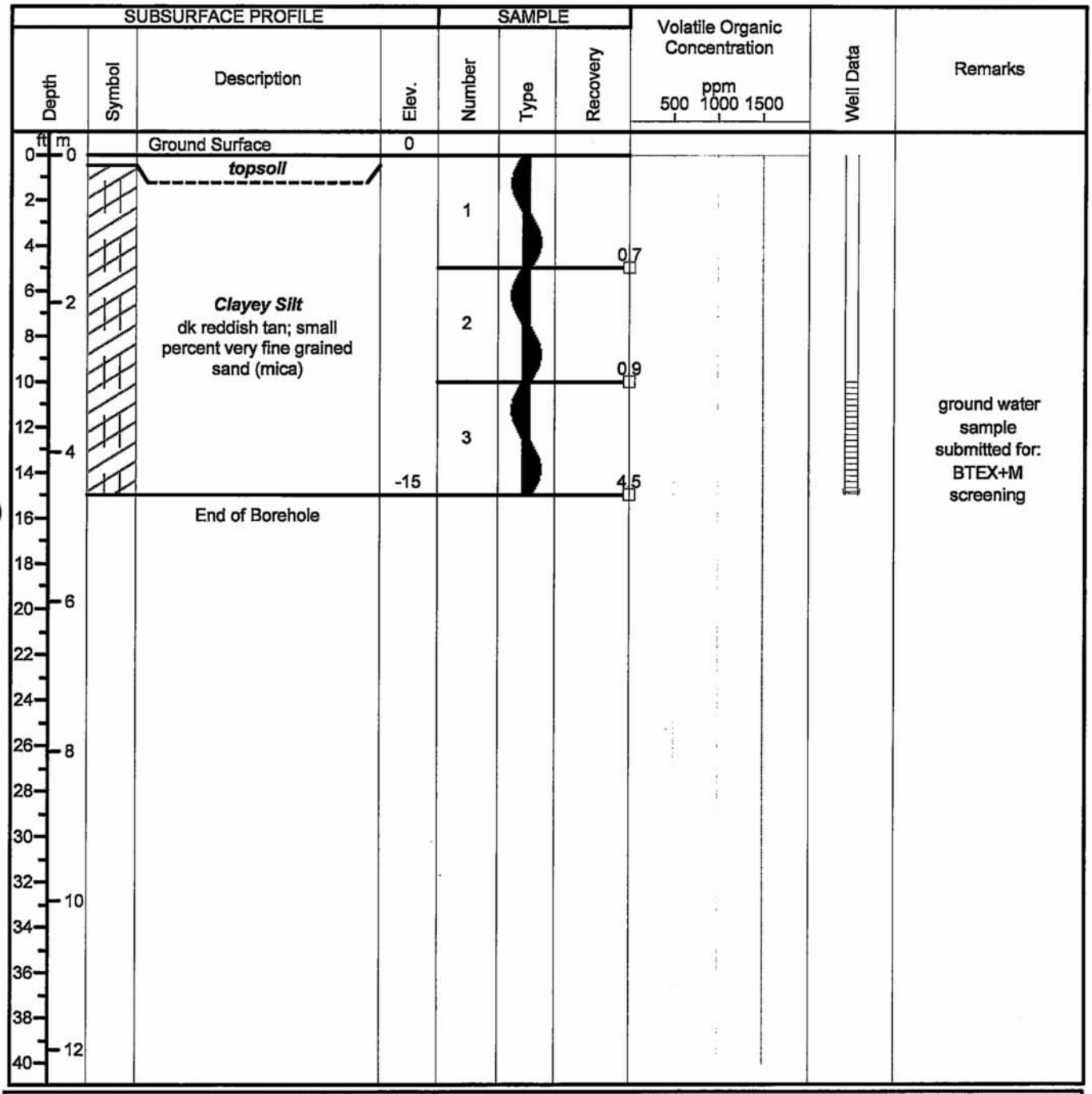
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-7

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/18/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

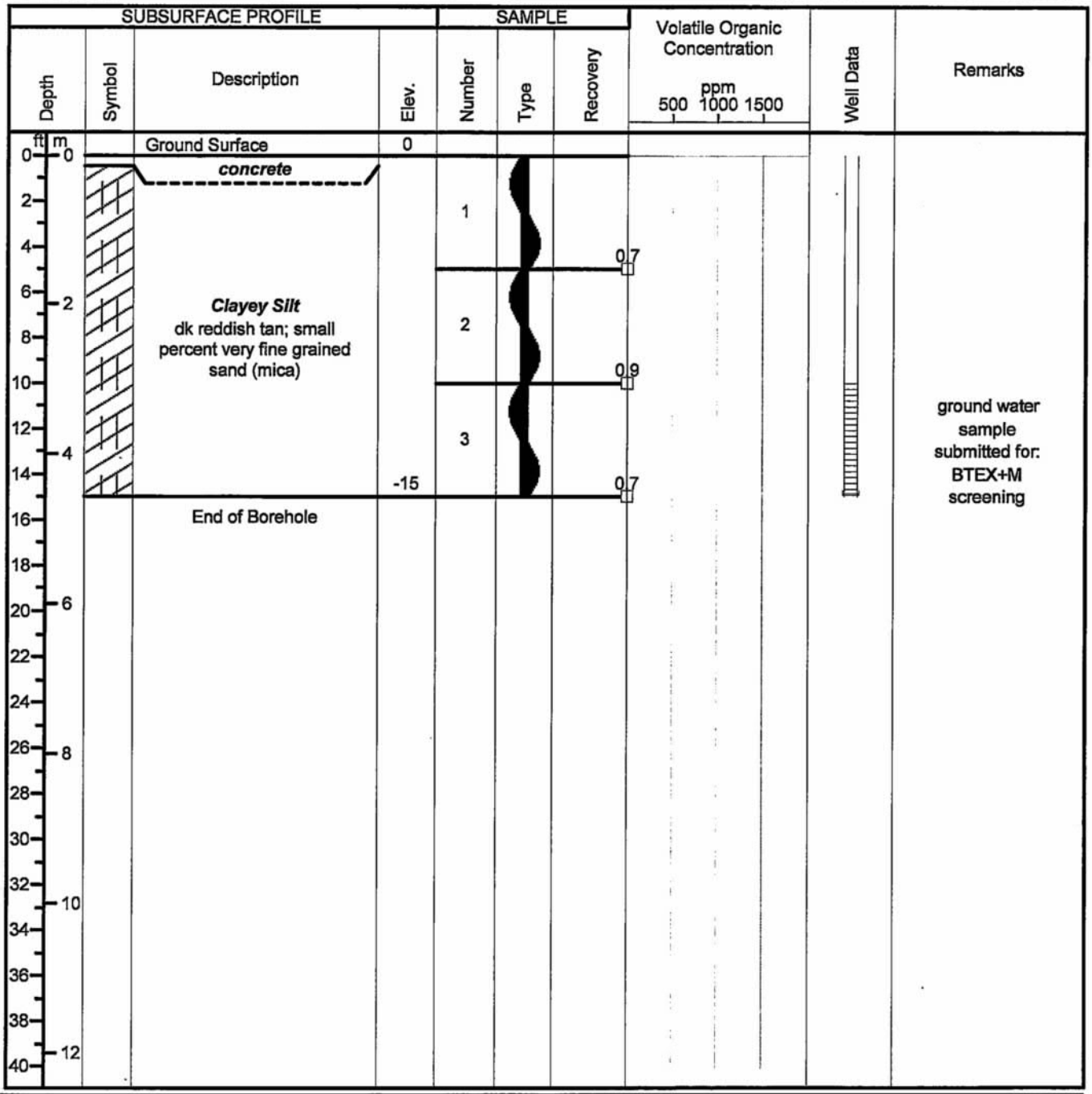
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-8

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/18/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

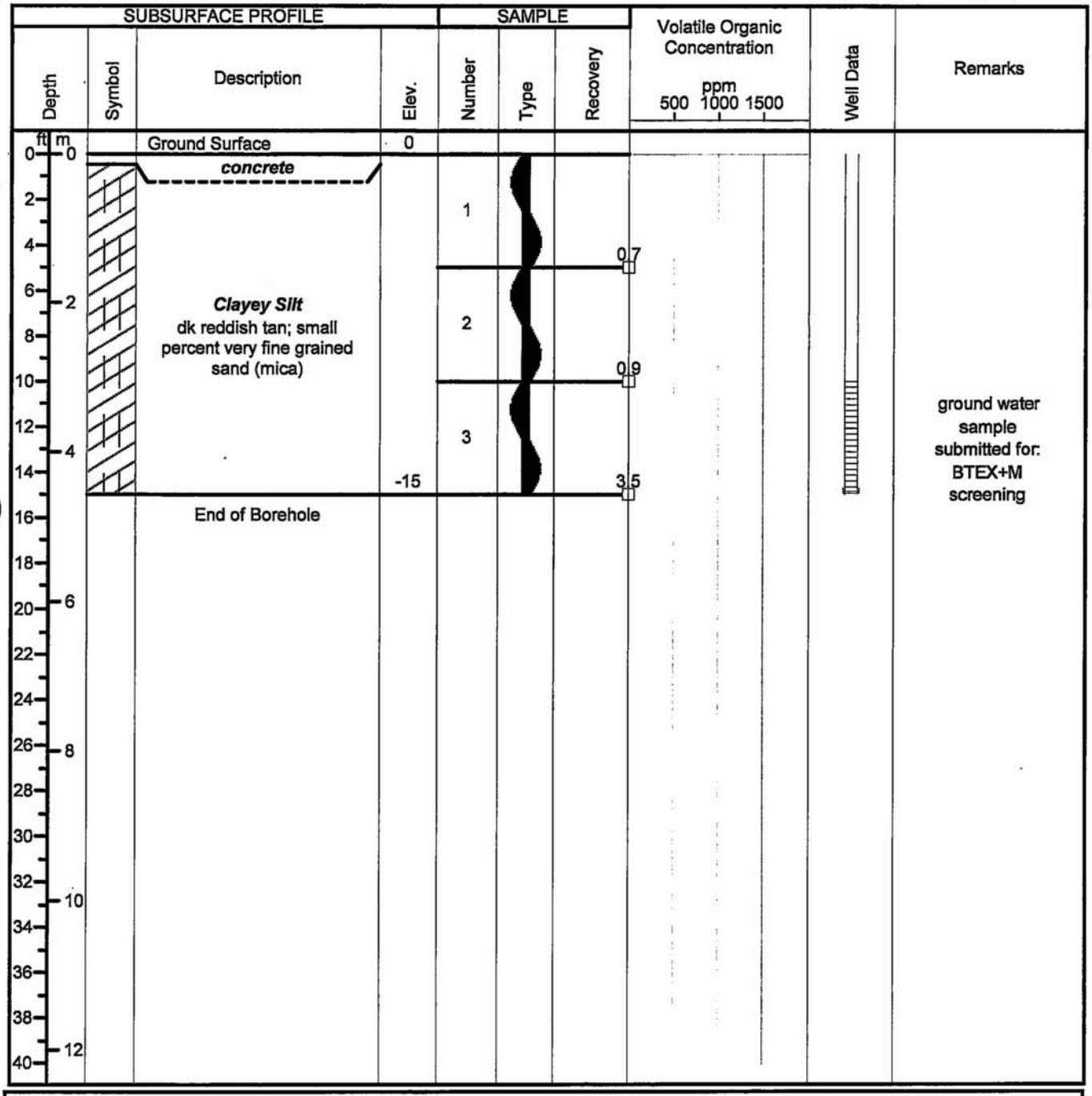
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-9

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/18/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

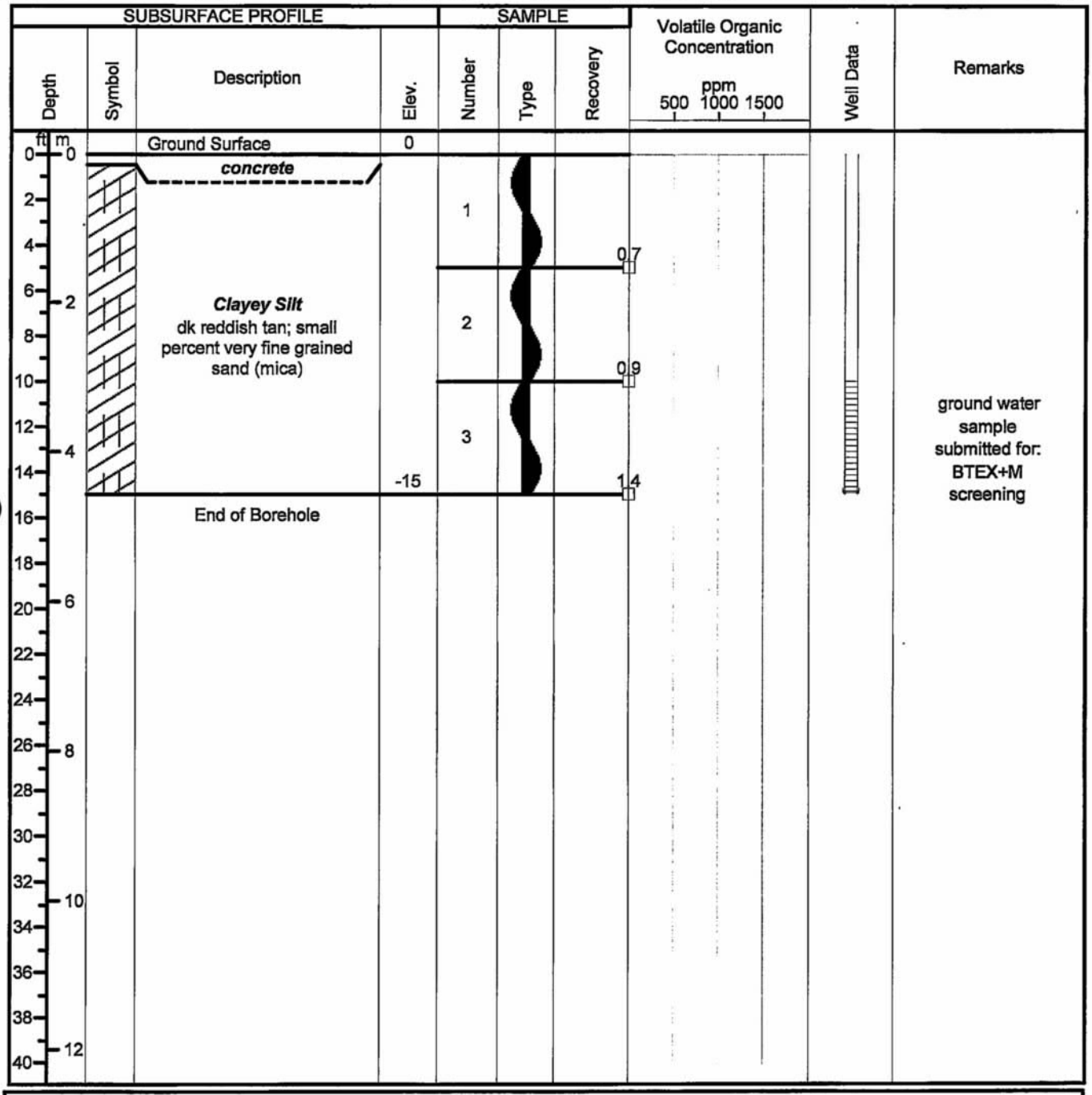
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-10

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/18/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

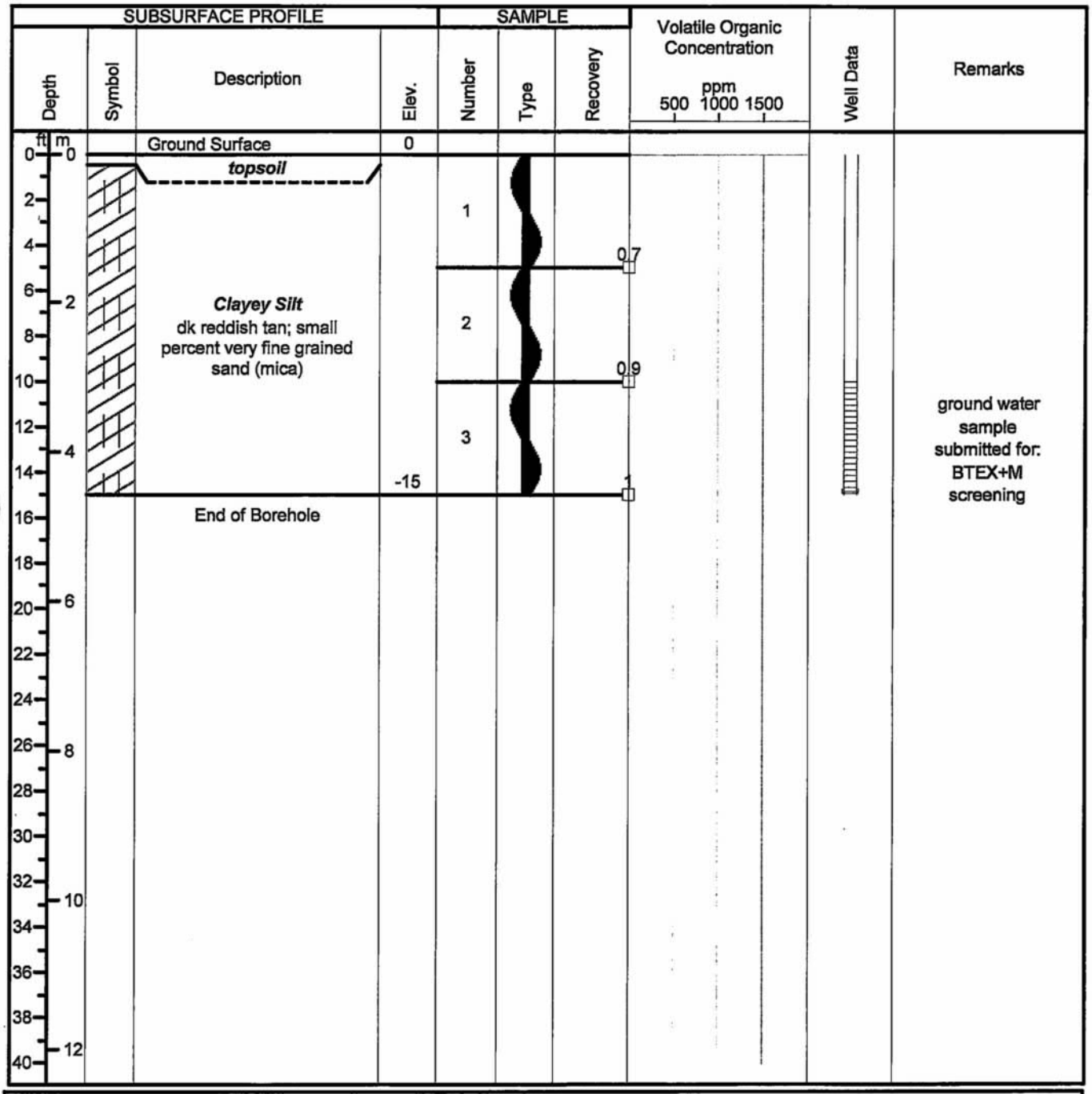
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-11

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/24/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

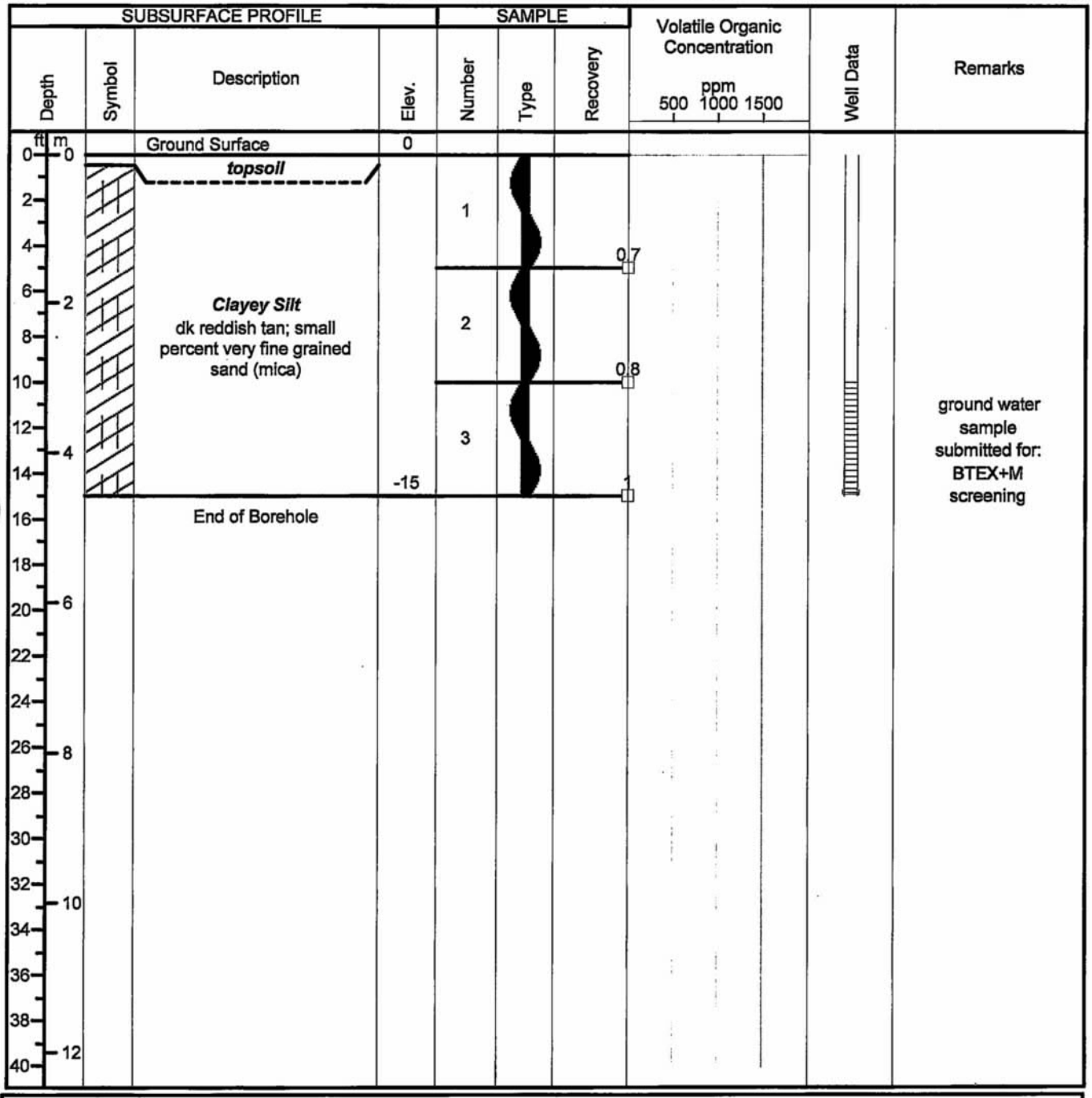
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-12

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/24/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

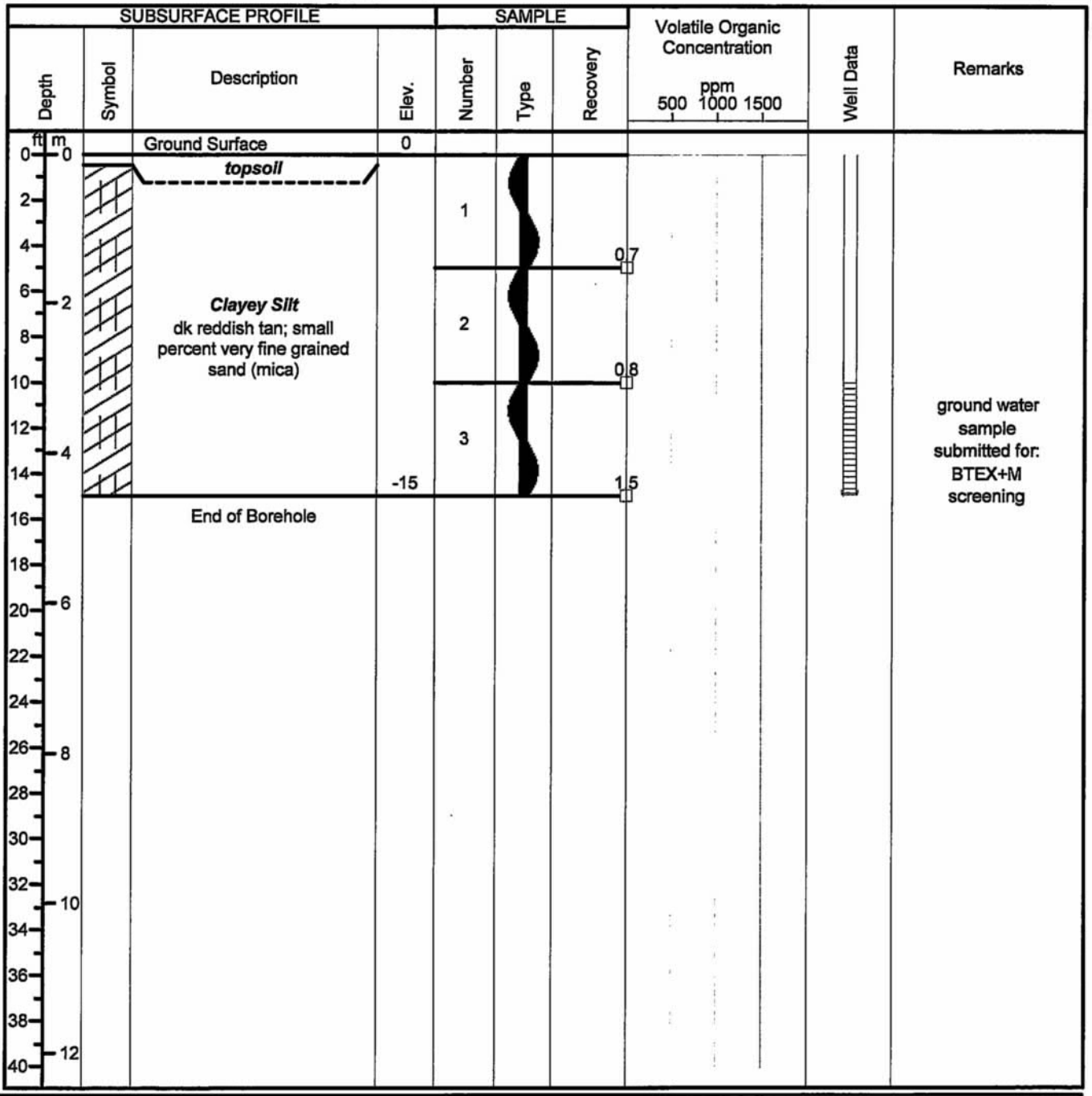
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-13

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/24/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

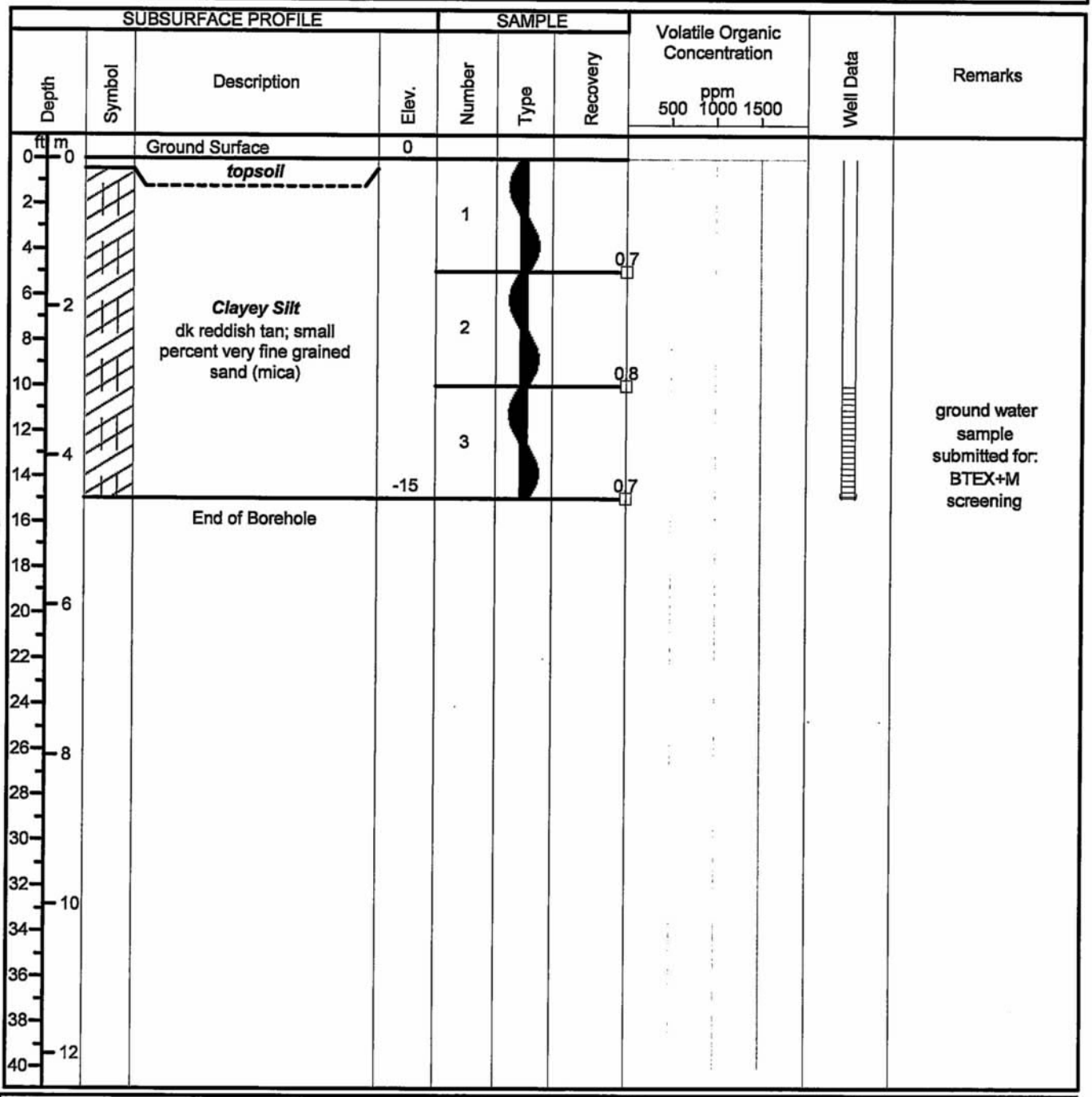
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-14

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/24/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 12.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

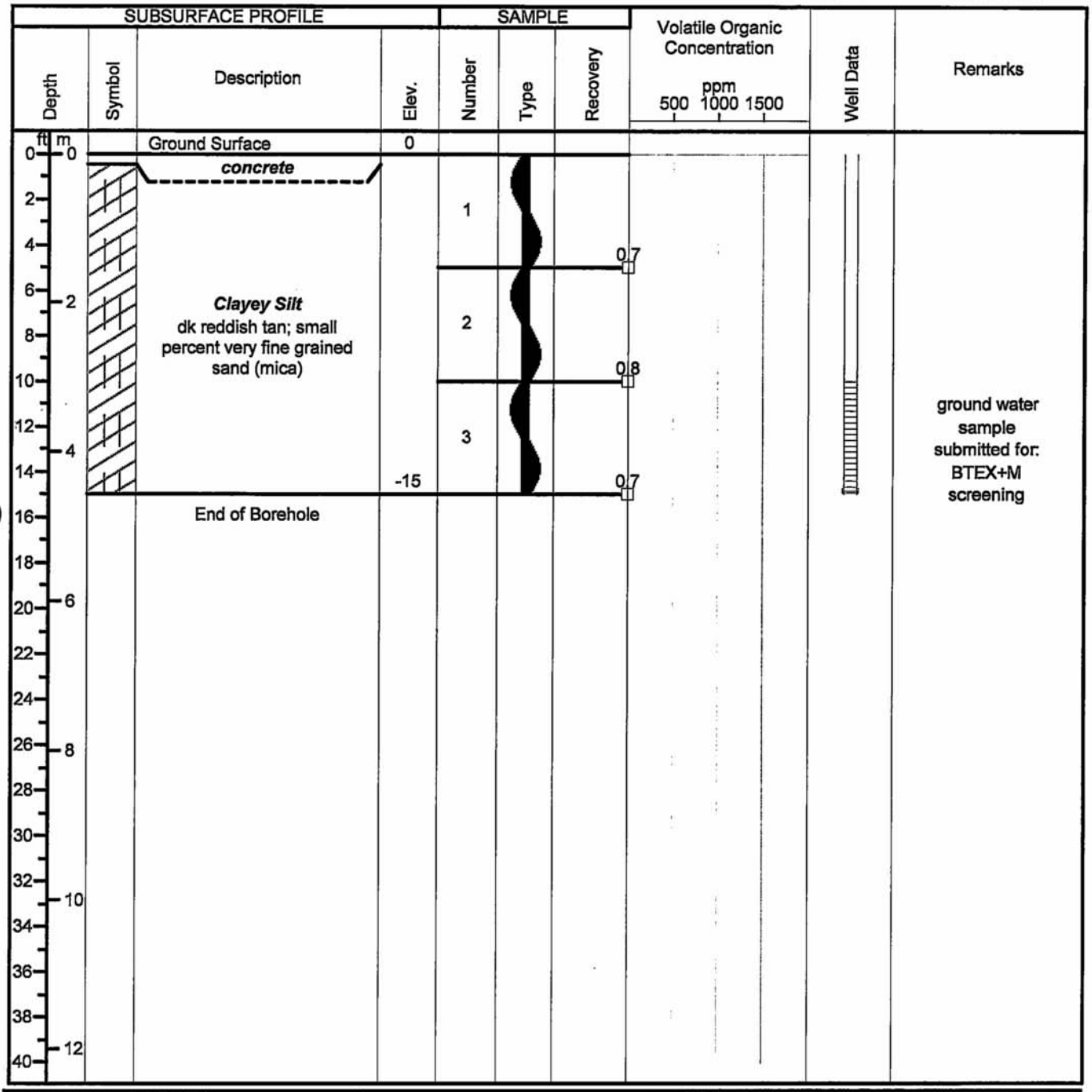
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-15

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/25/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

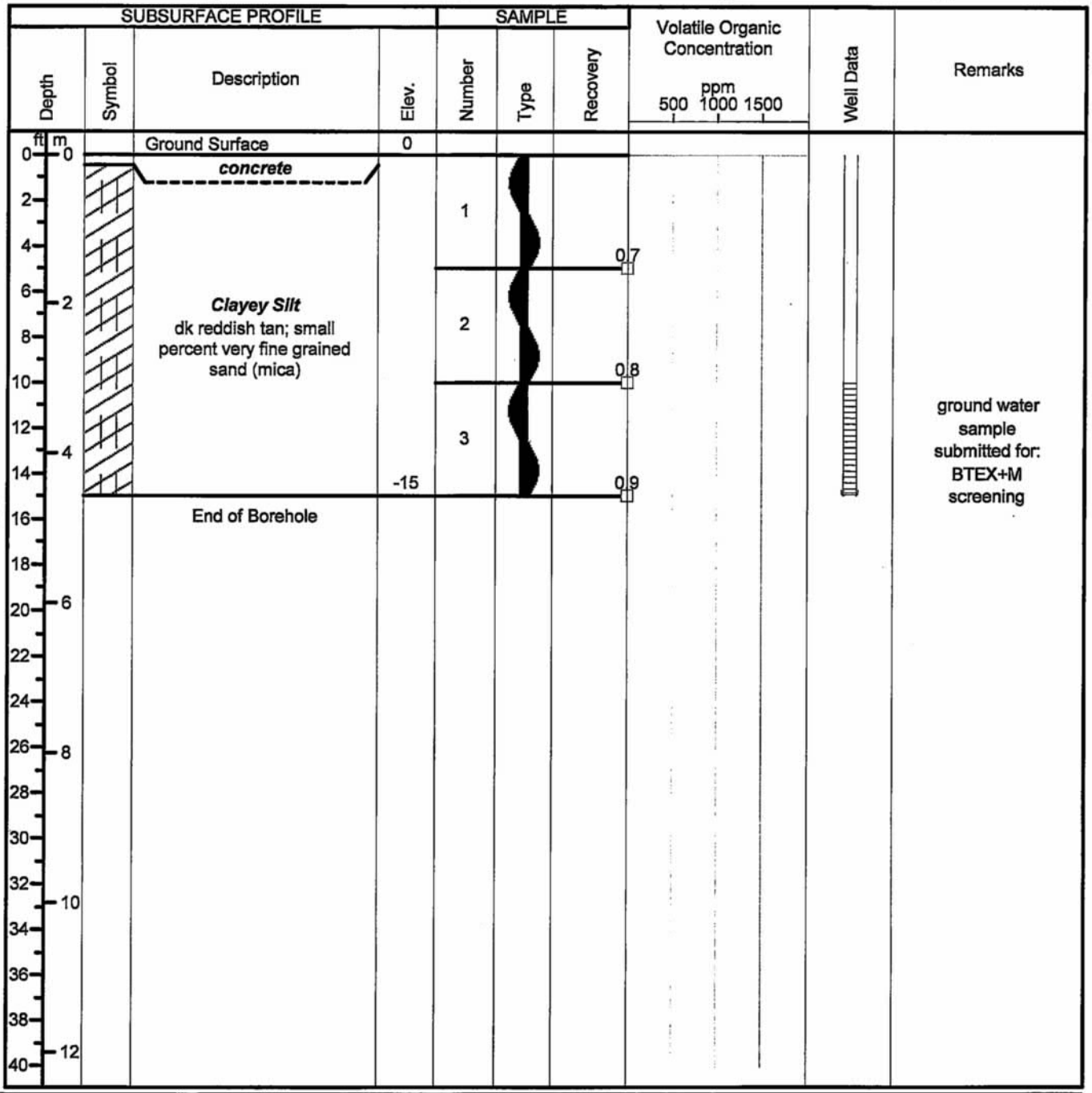
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-16

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/25/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

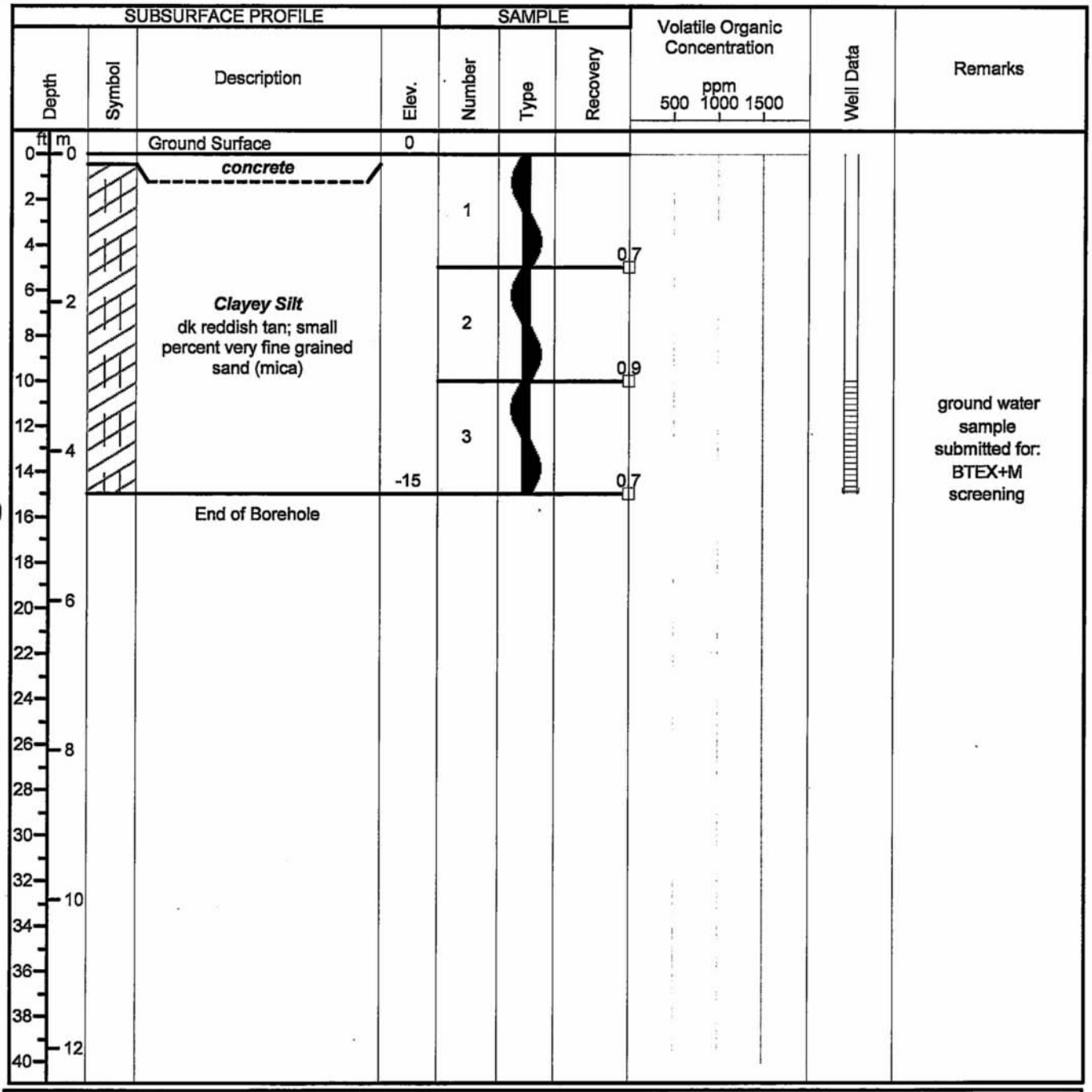
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-17

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 5/25/12

Casing Diameter: 1.0"

Total Depth of Well: 15.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

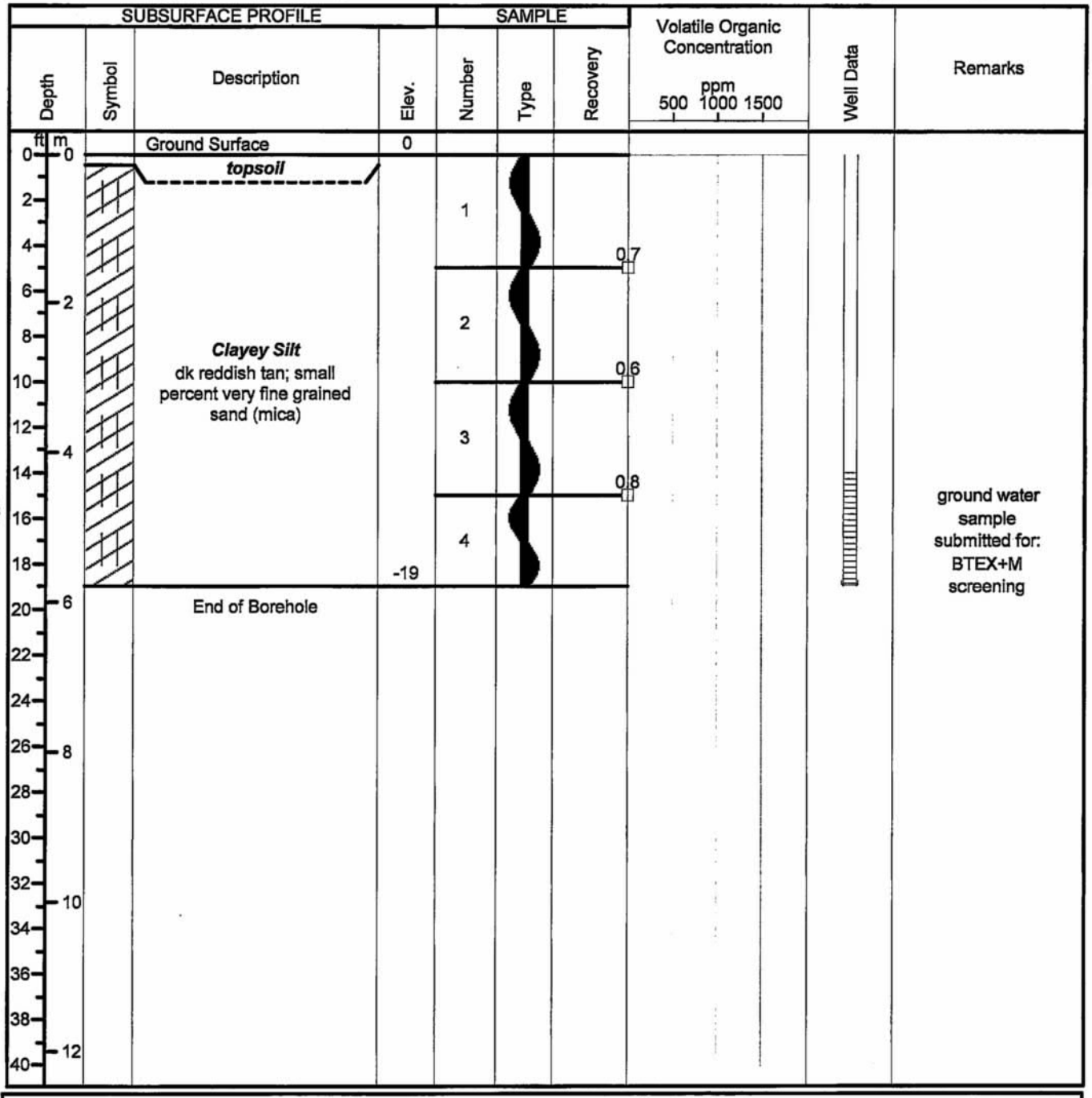
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-18

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/13/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

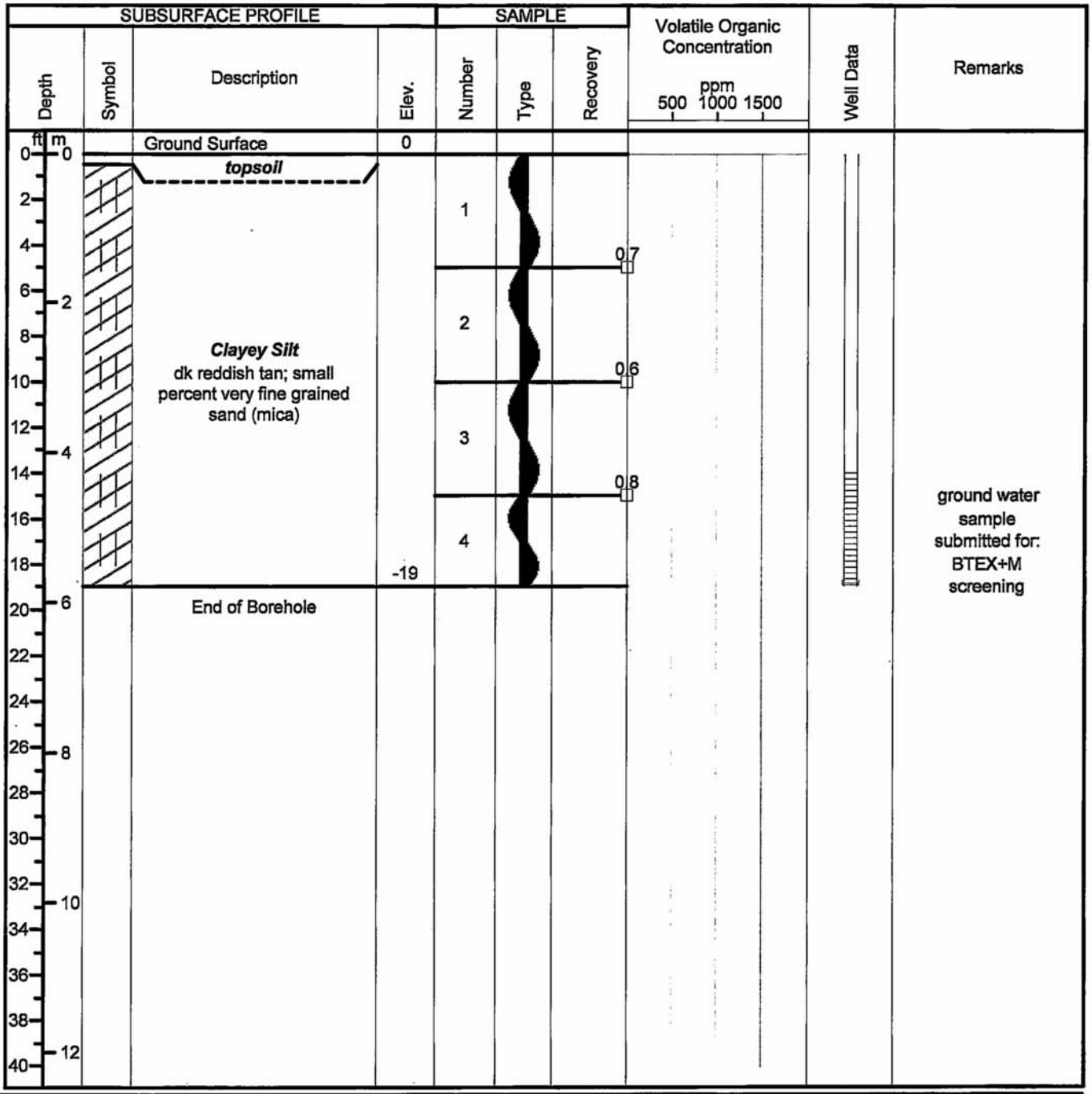
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-19

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/13/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

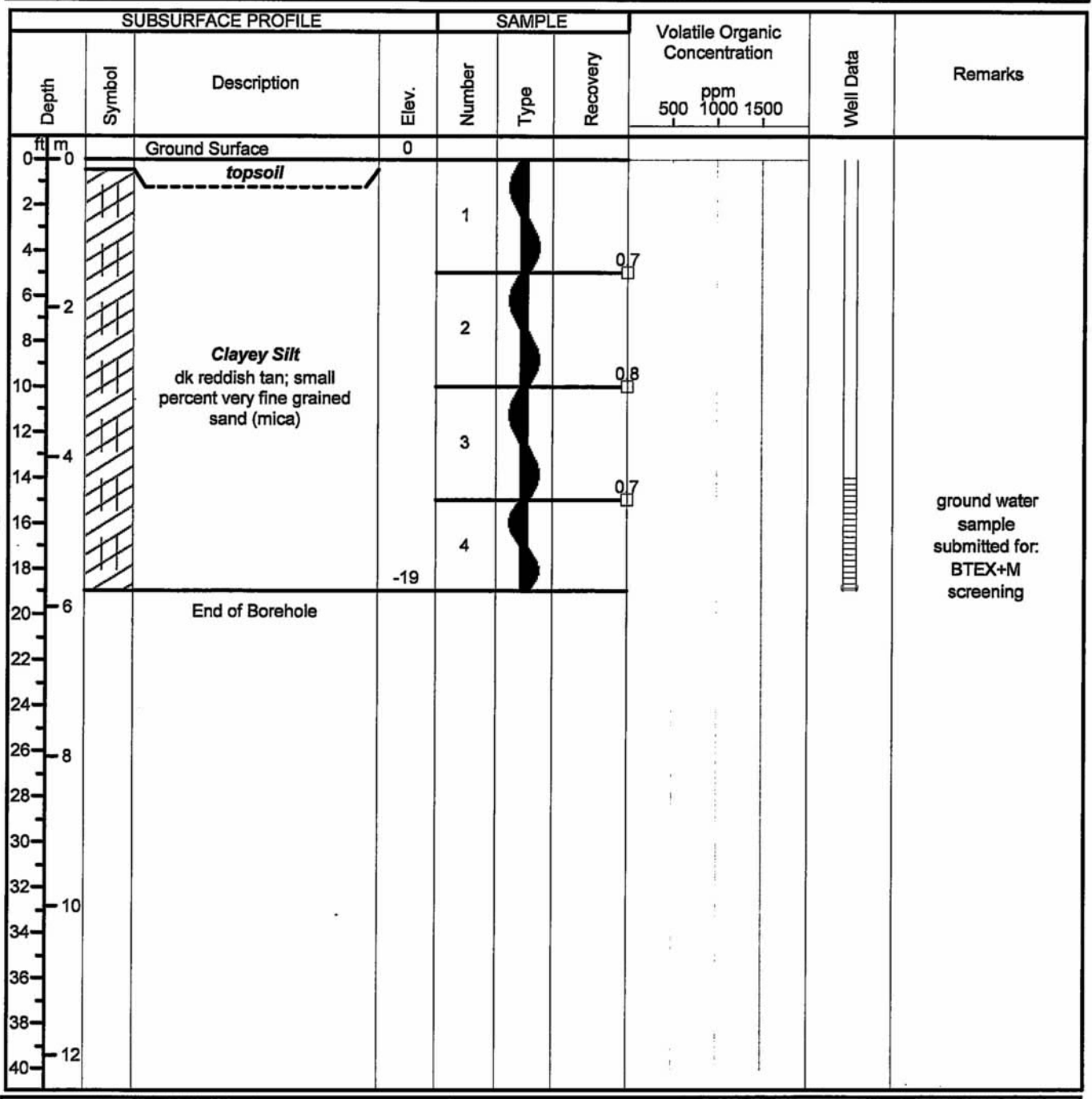
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-20

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/13/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

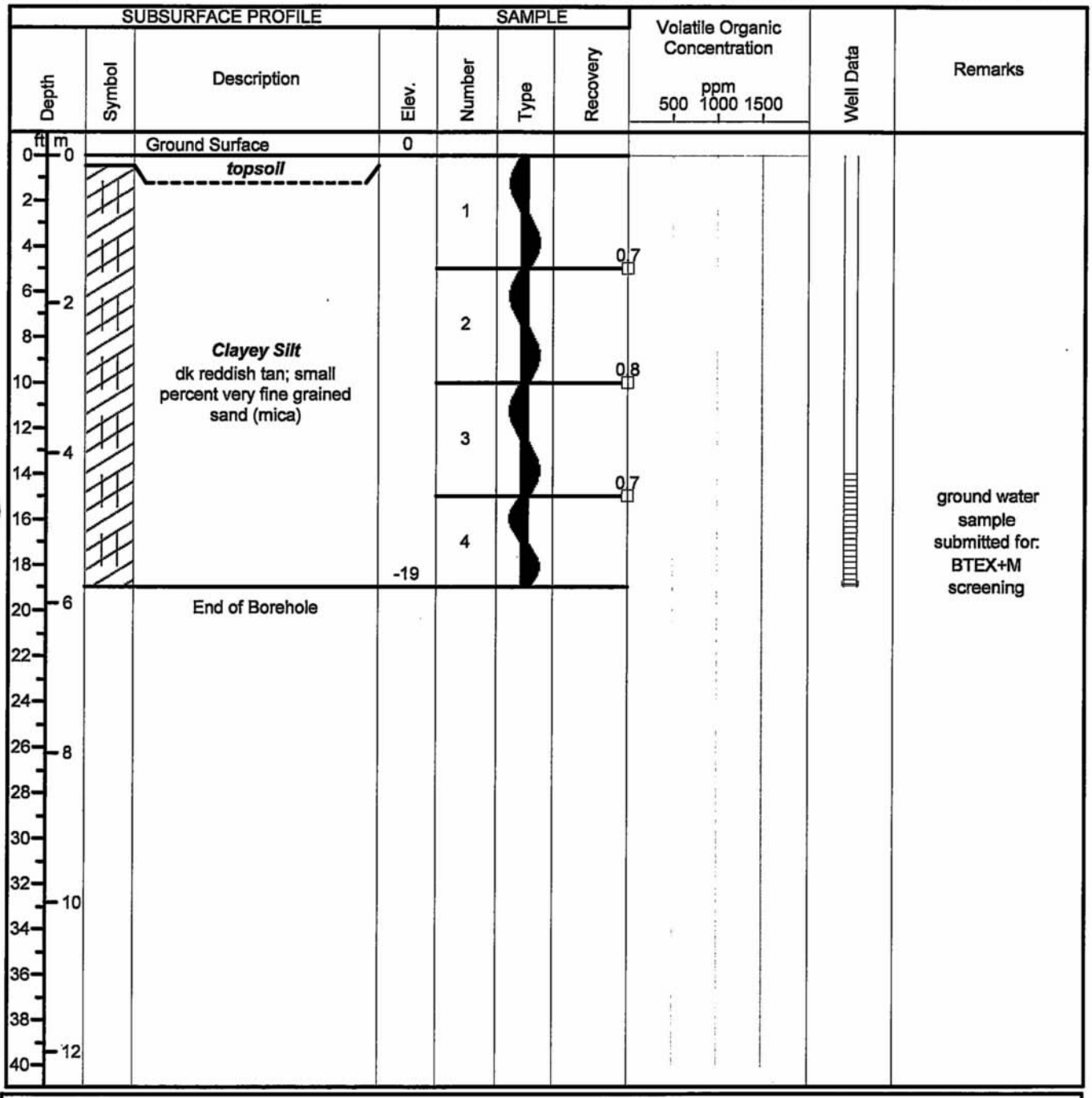
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-21

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/13/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

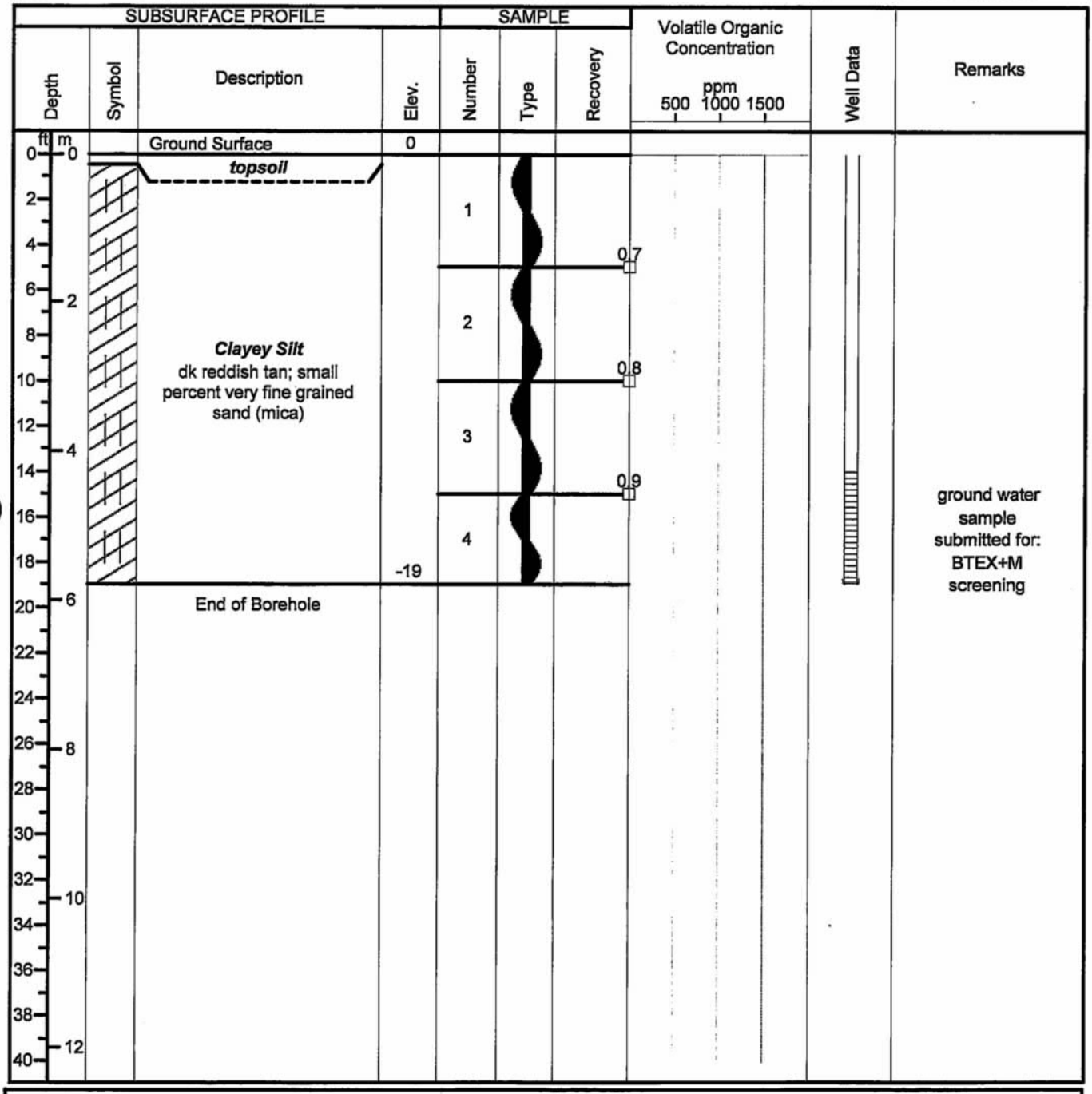
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-22

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/13/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

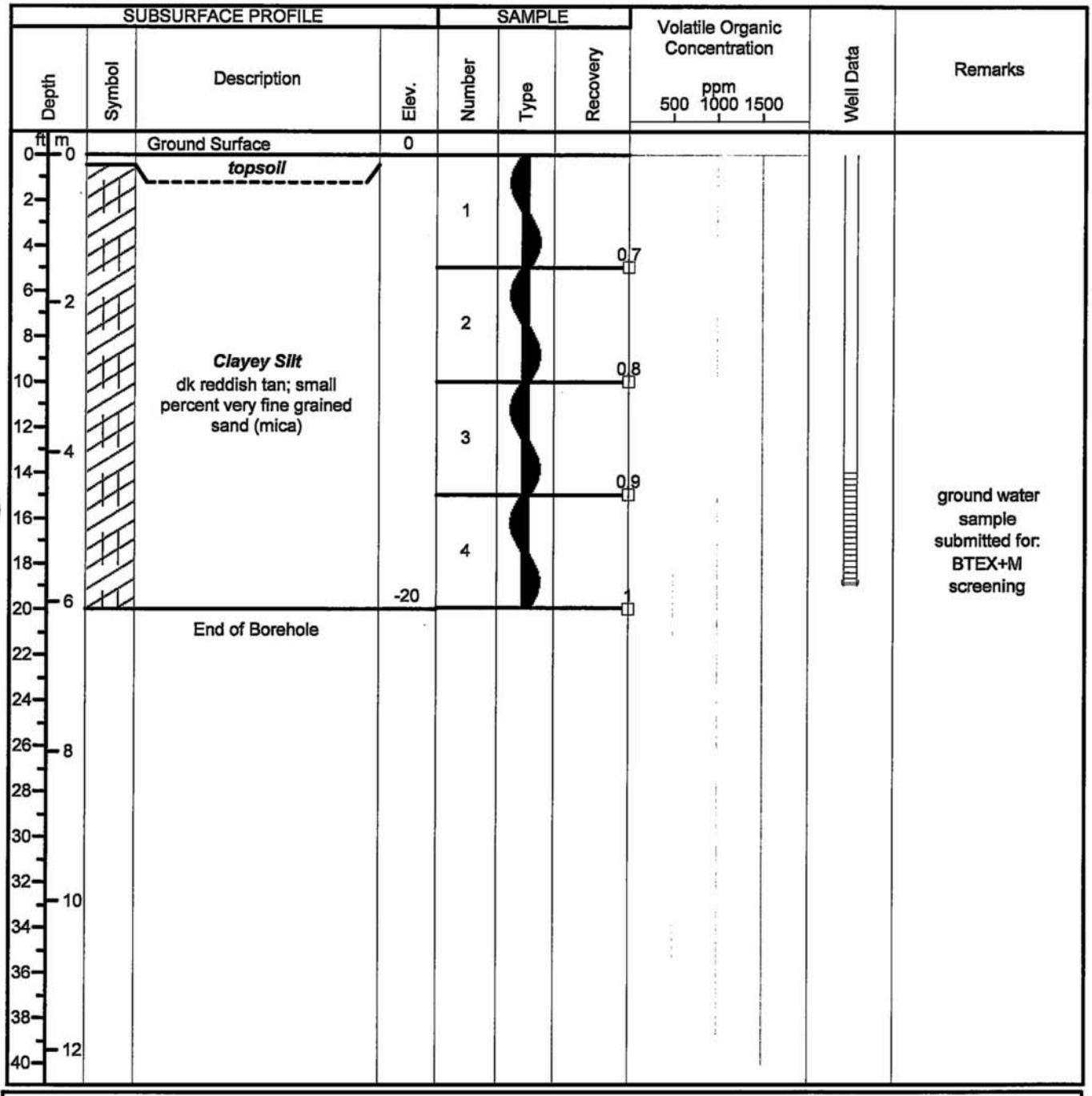
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-23

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/19/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

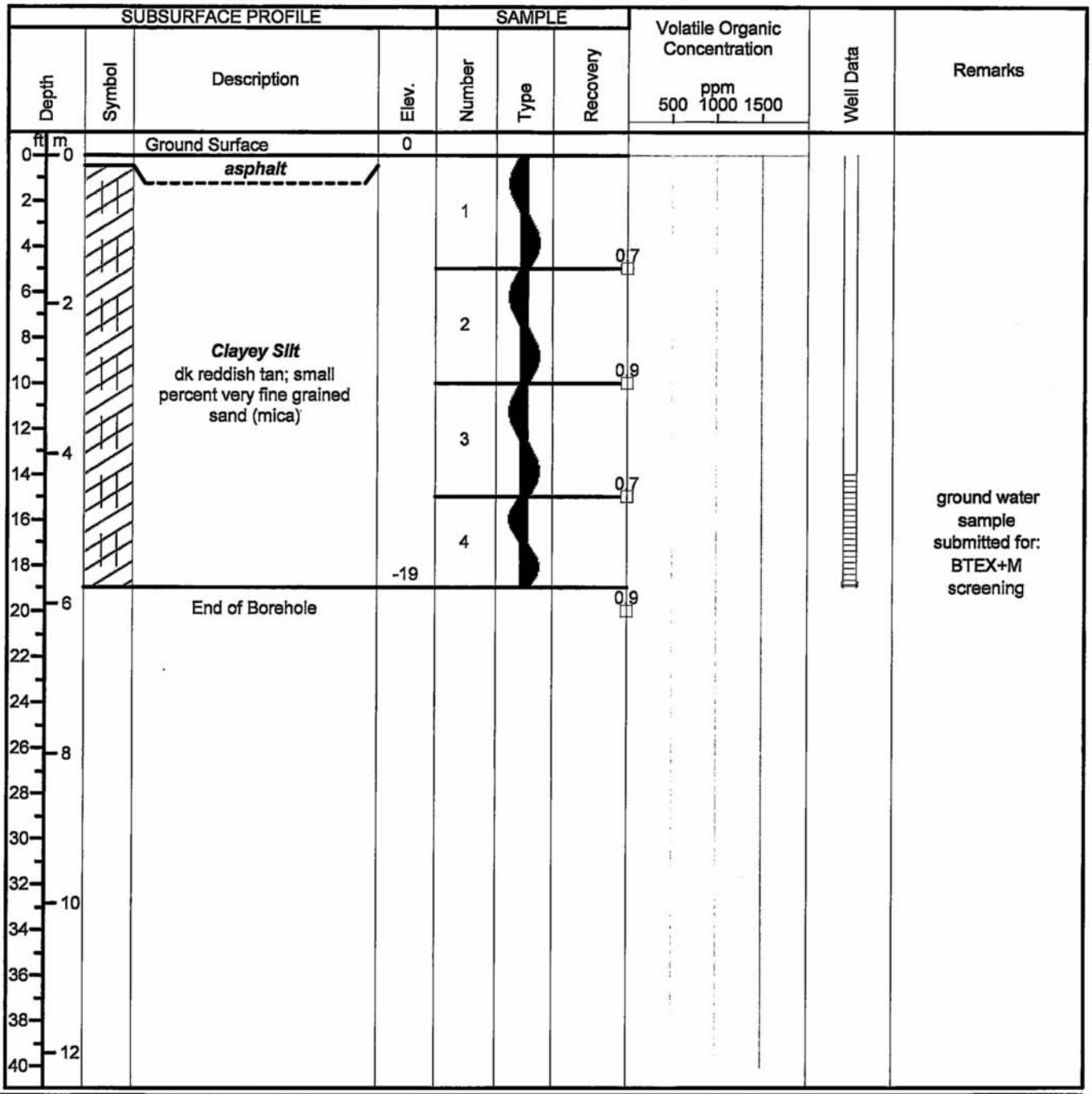
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-24

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/19/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

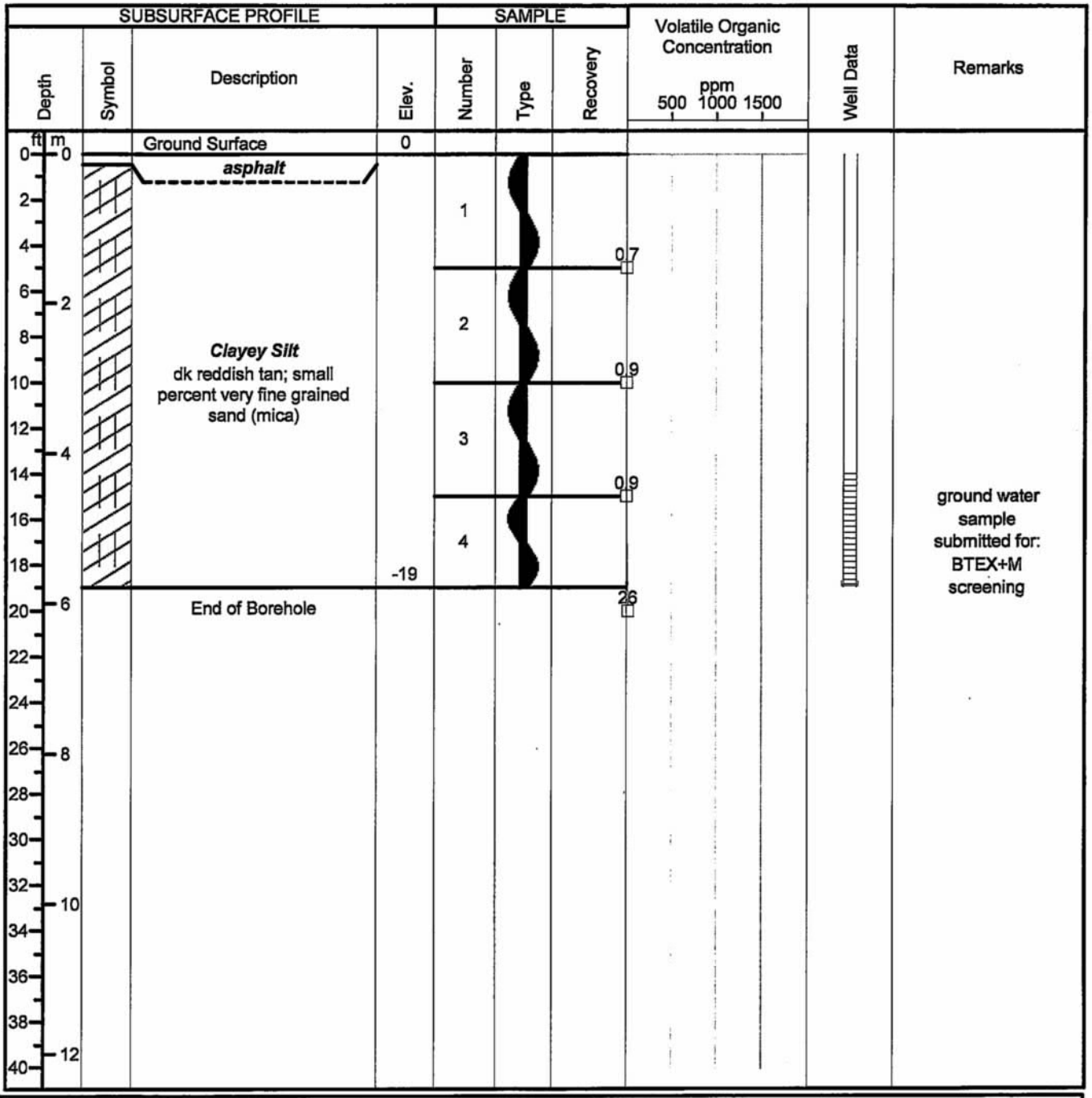
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-25

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

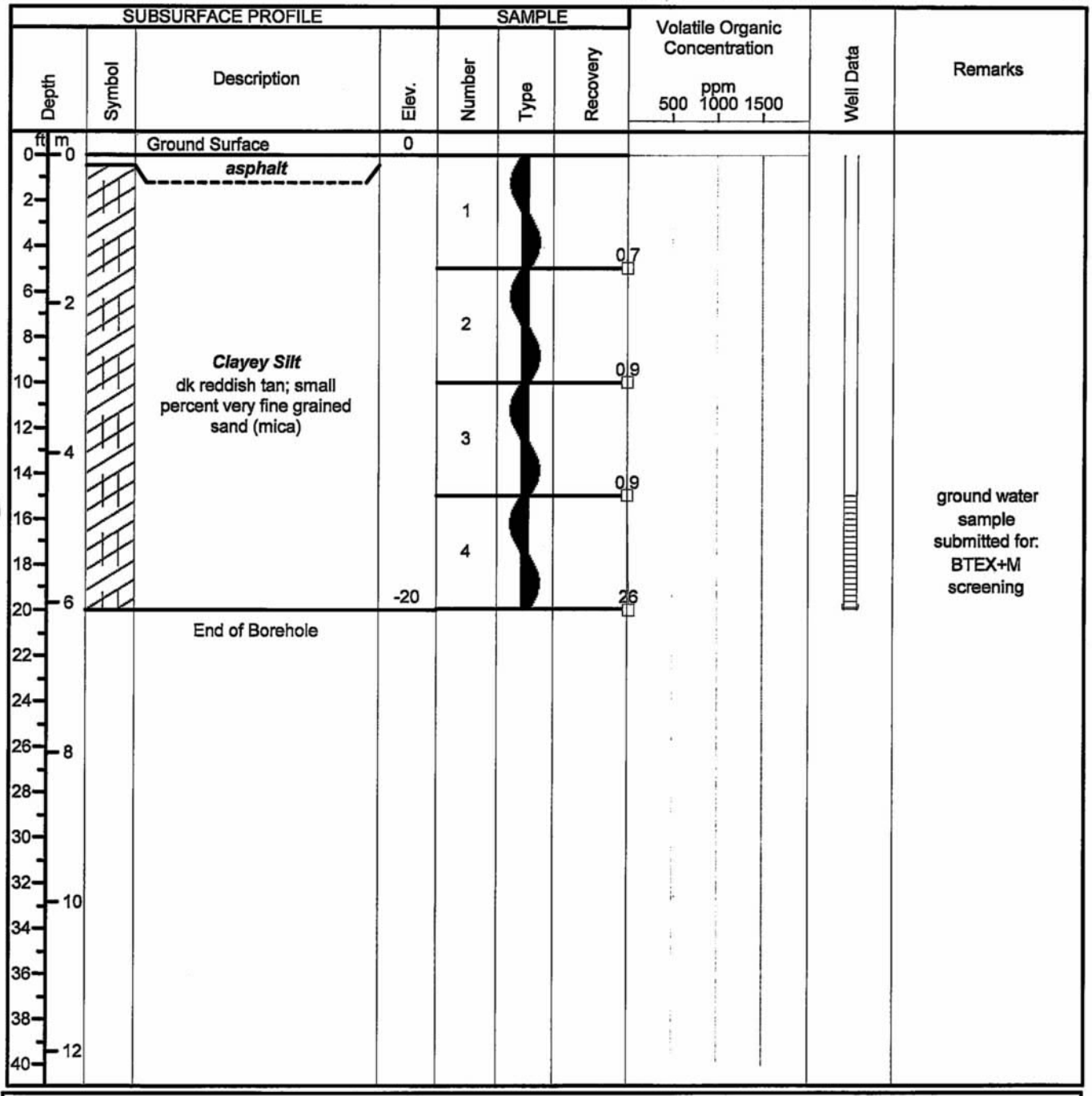
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-27

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/20/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

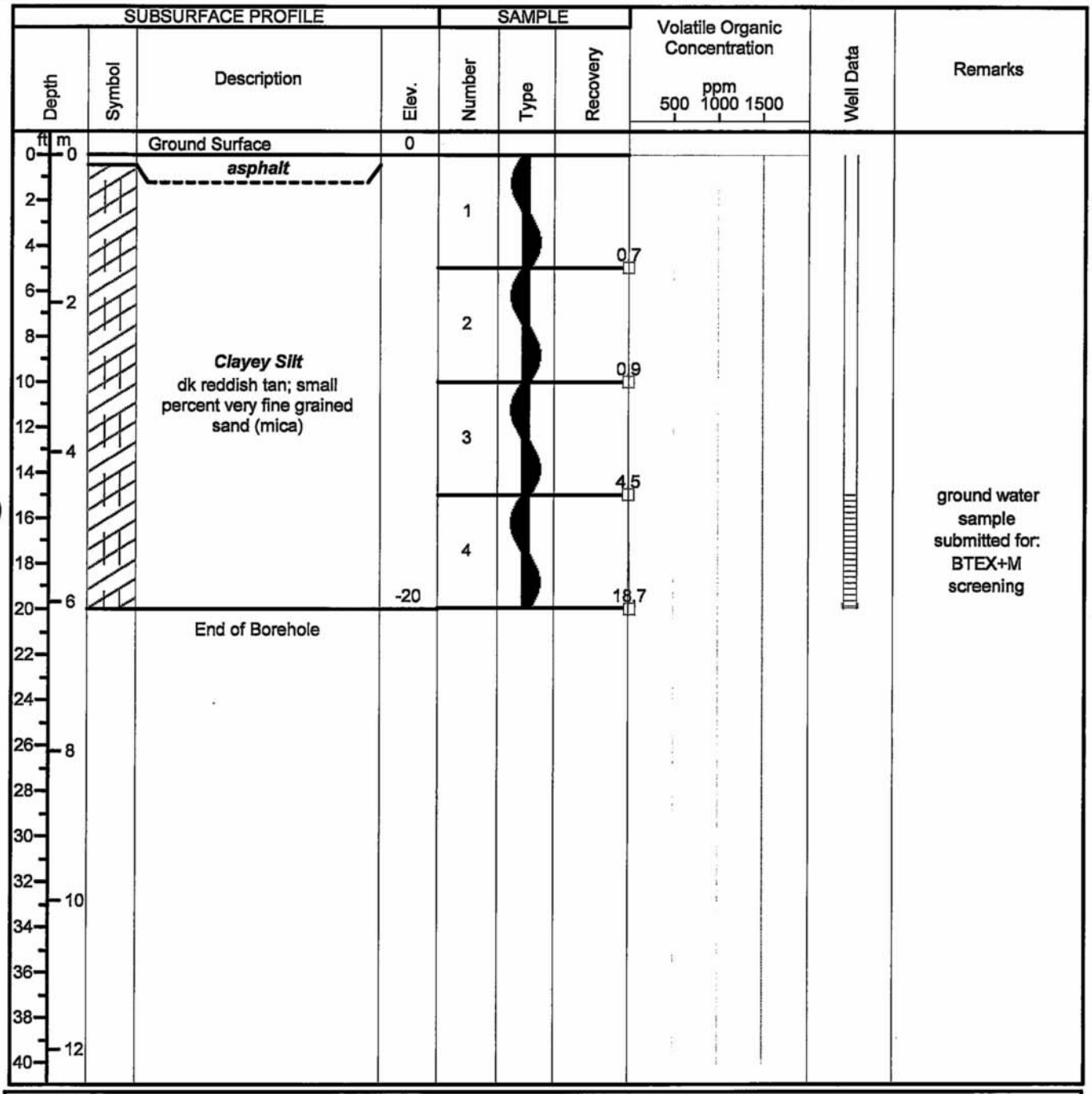
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-28

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/20/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

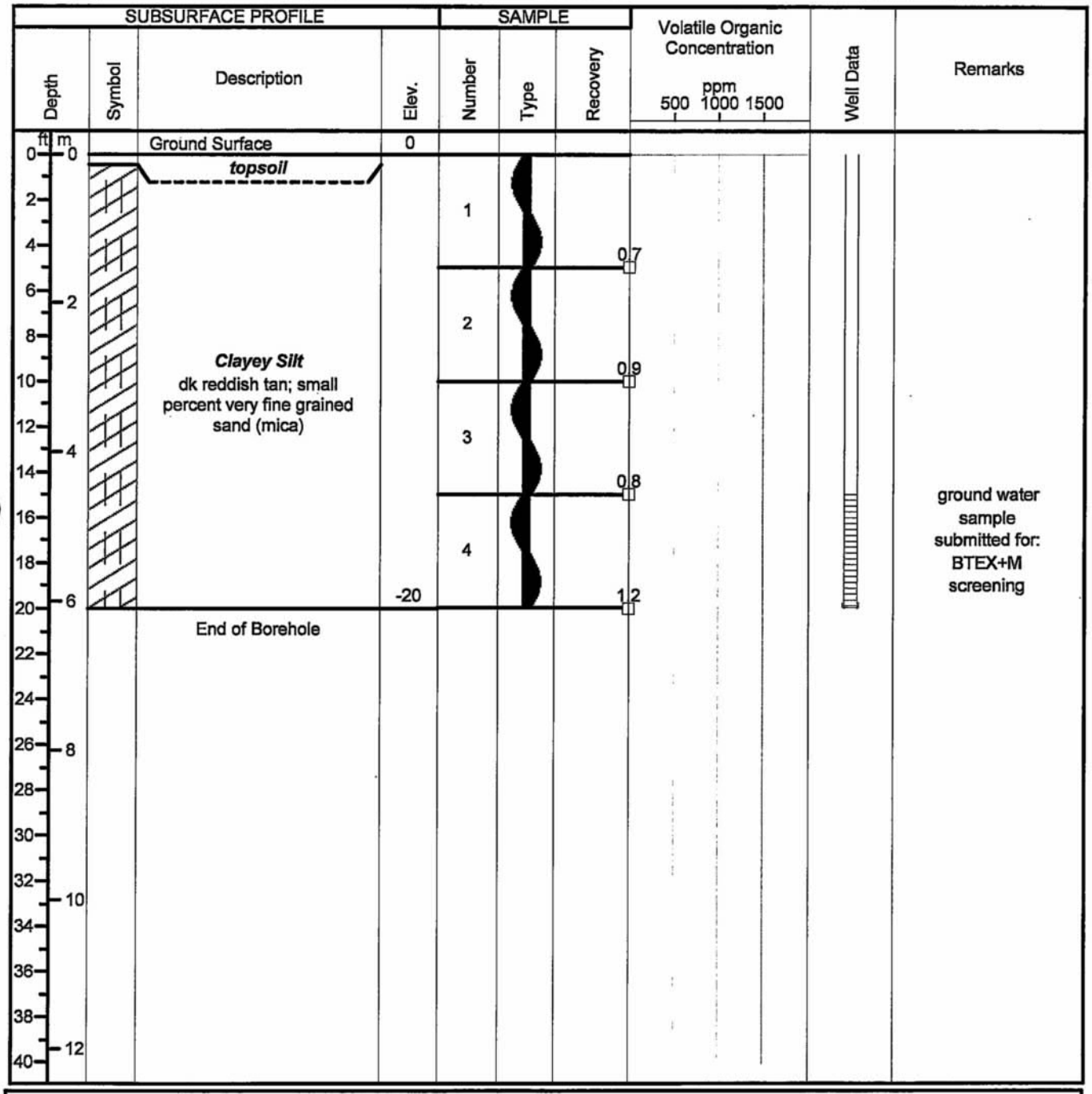
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-29

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

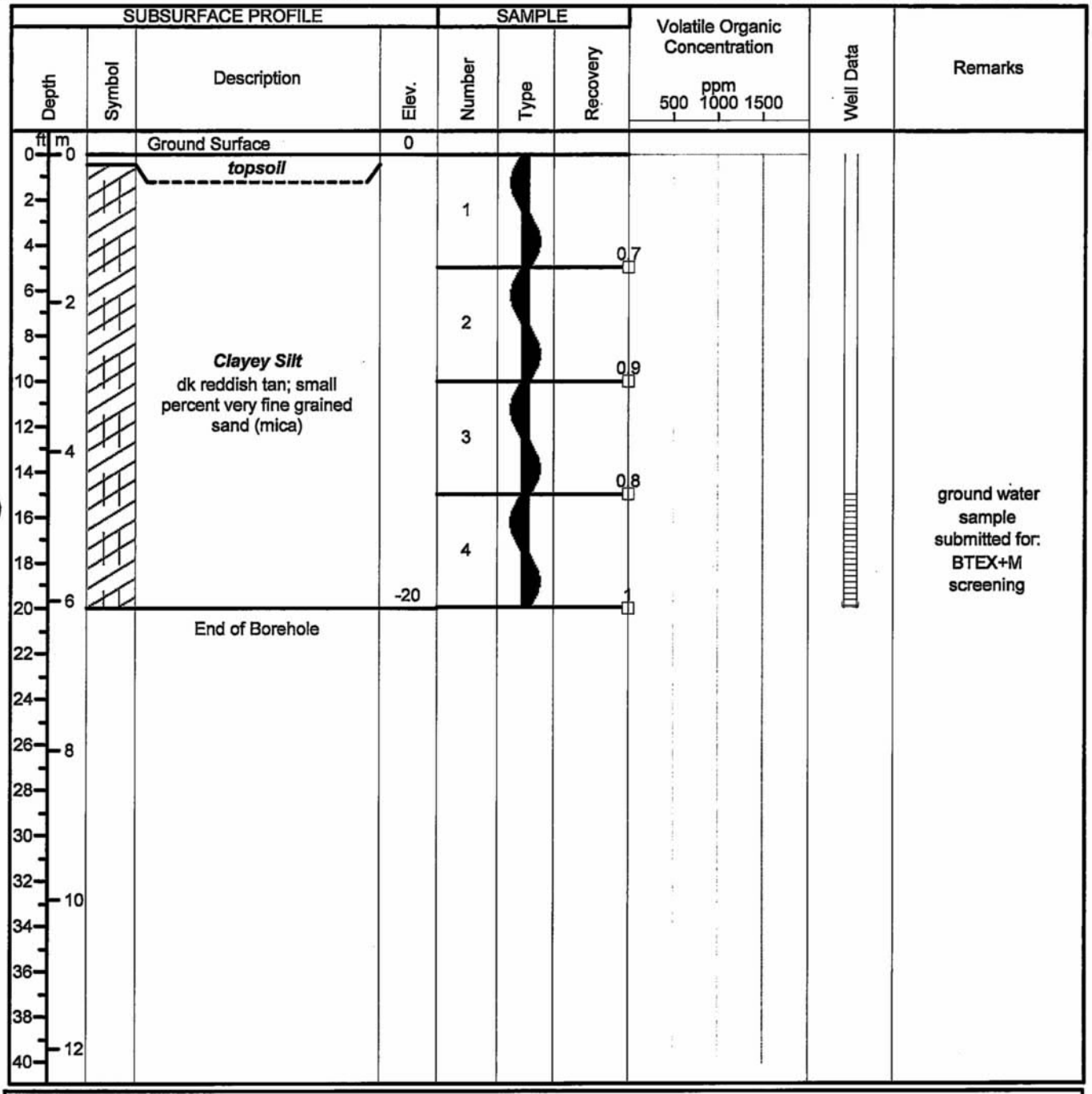
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-30

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

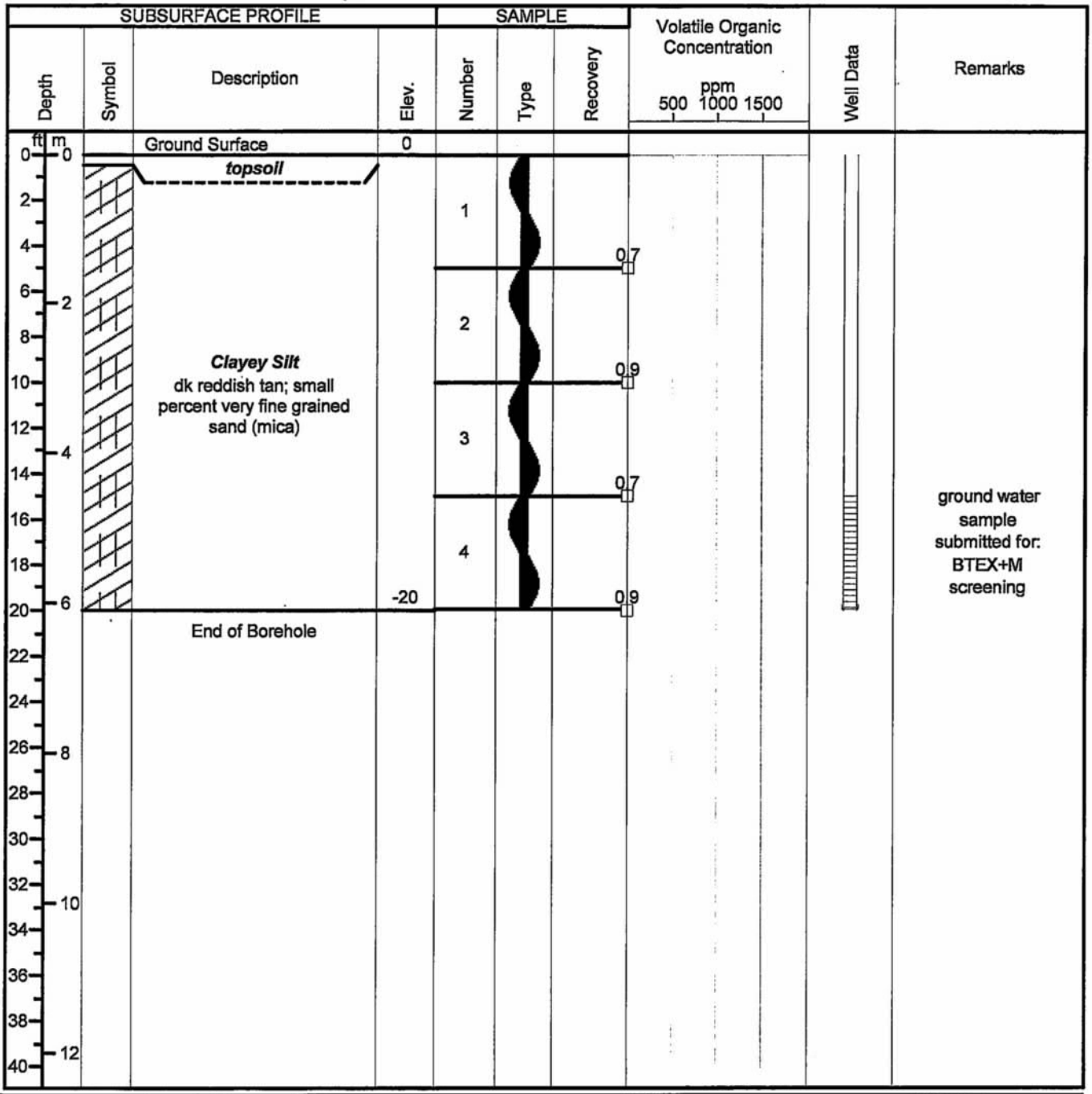
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-31

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

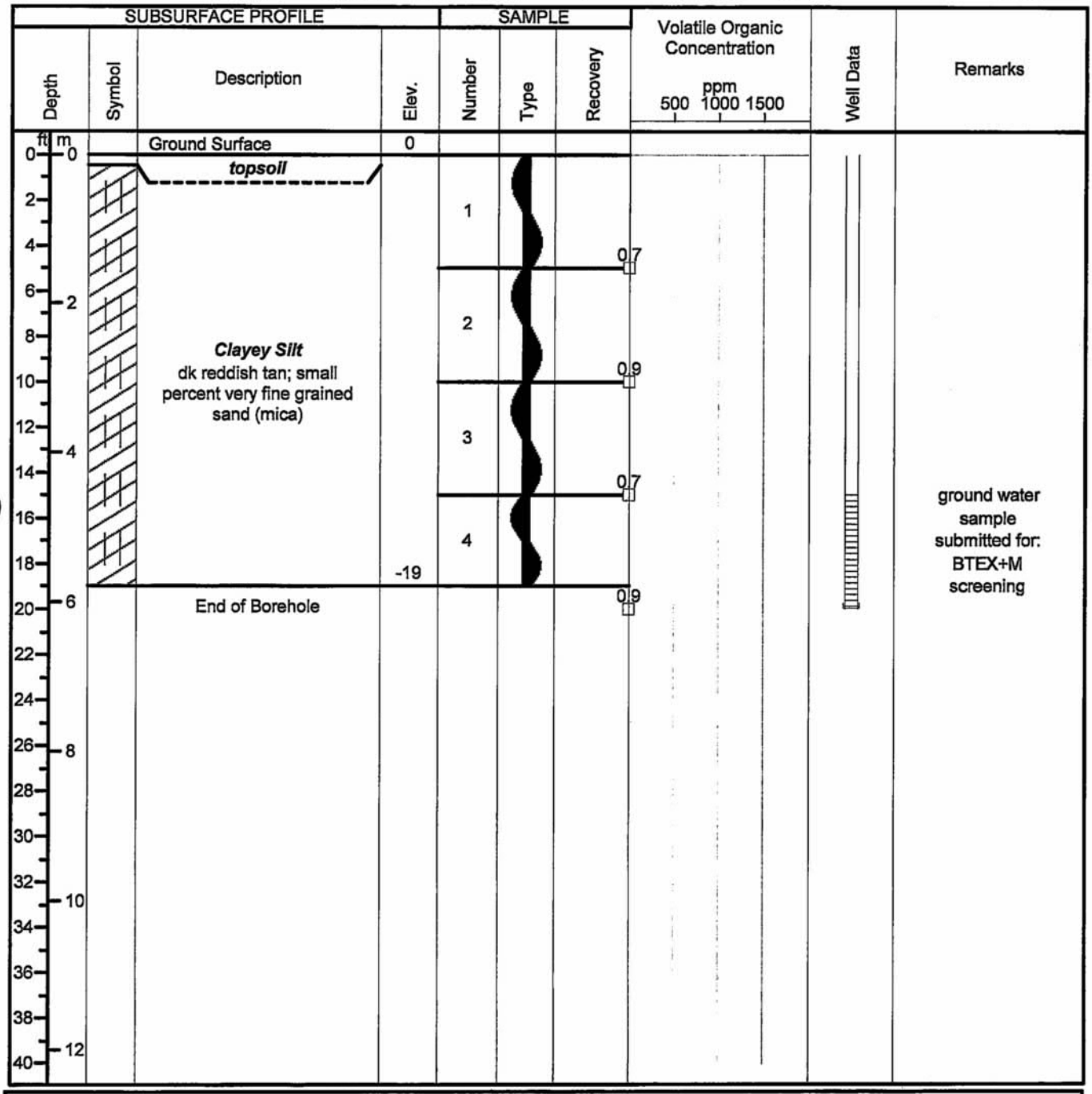
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-32

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

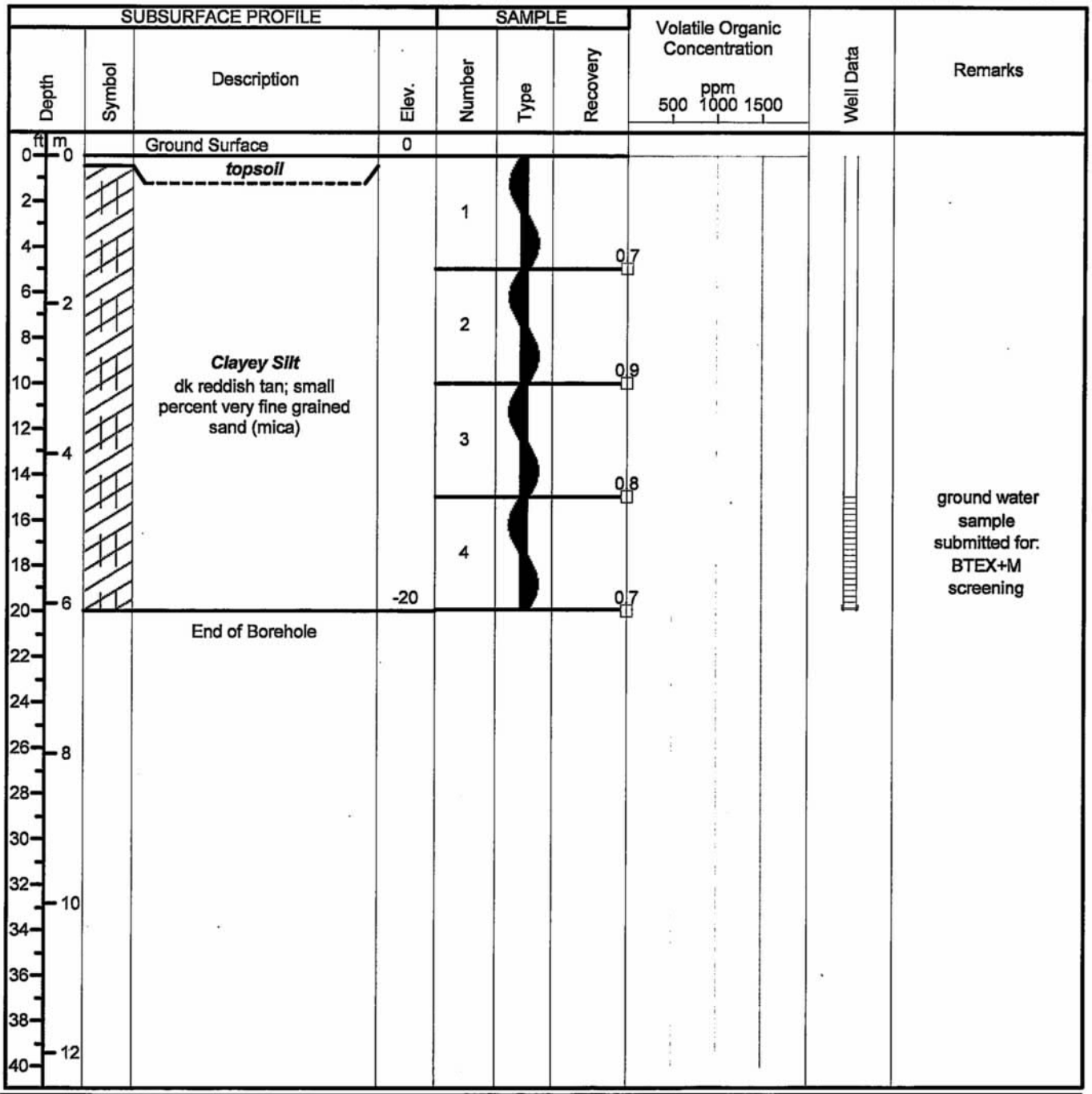
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-33

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

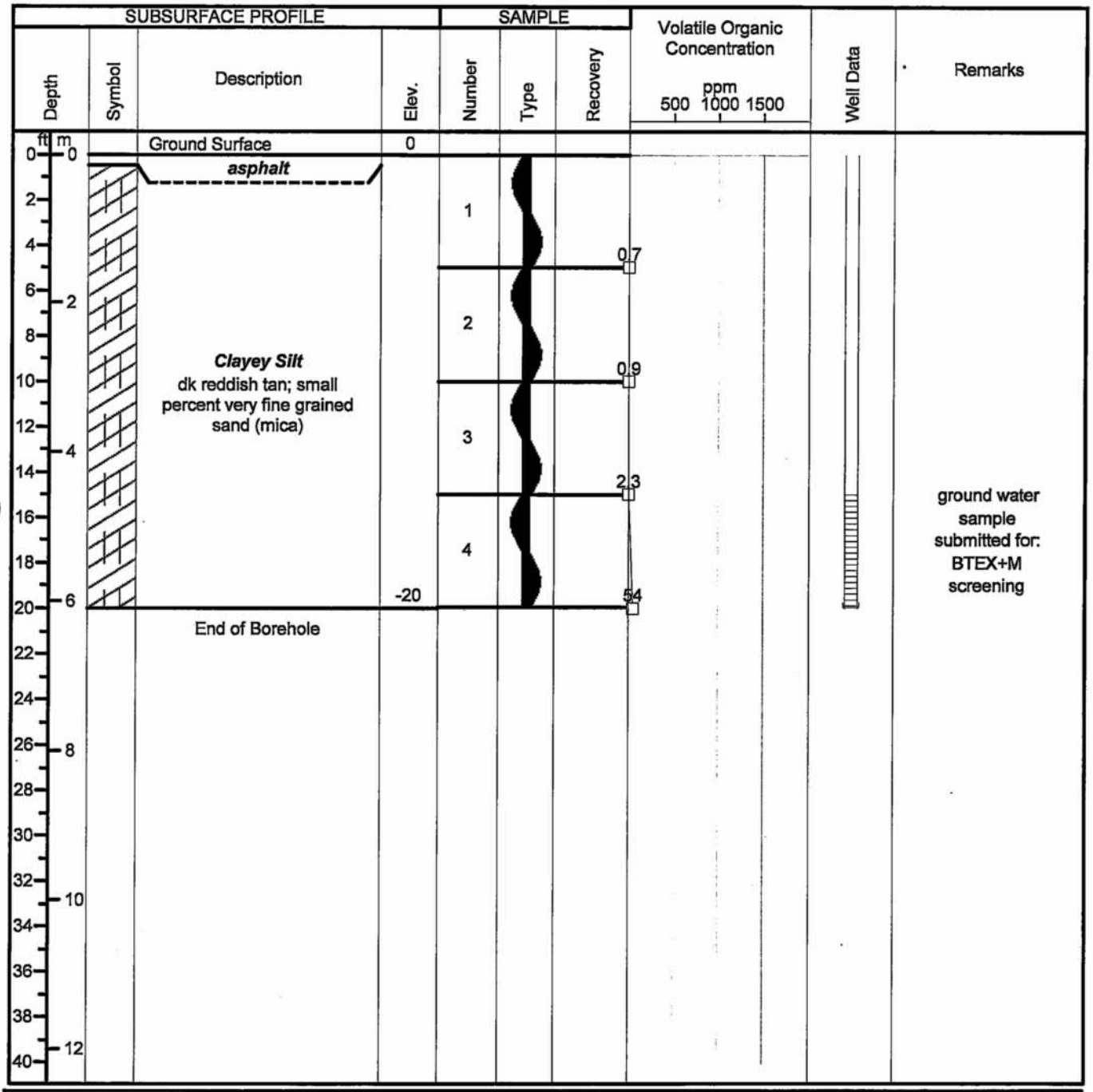
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-34

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/12/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

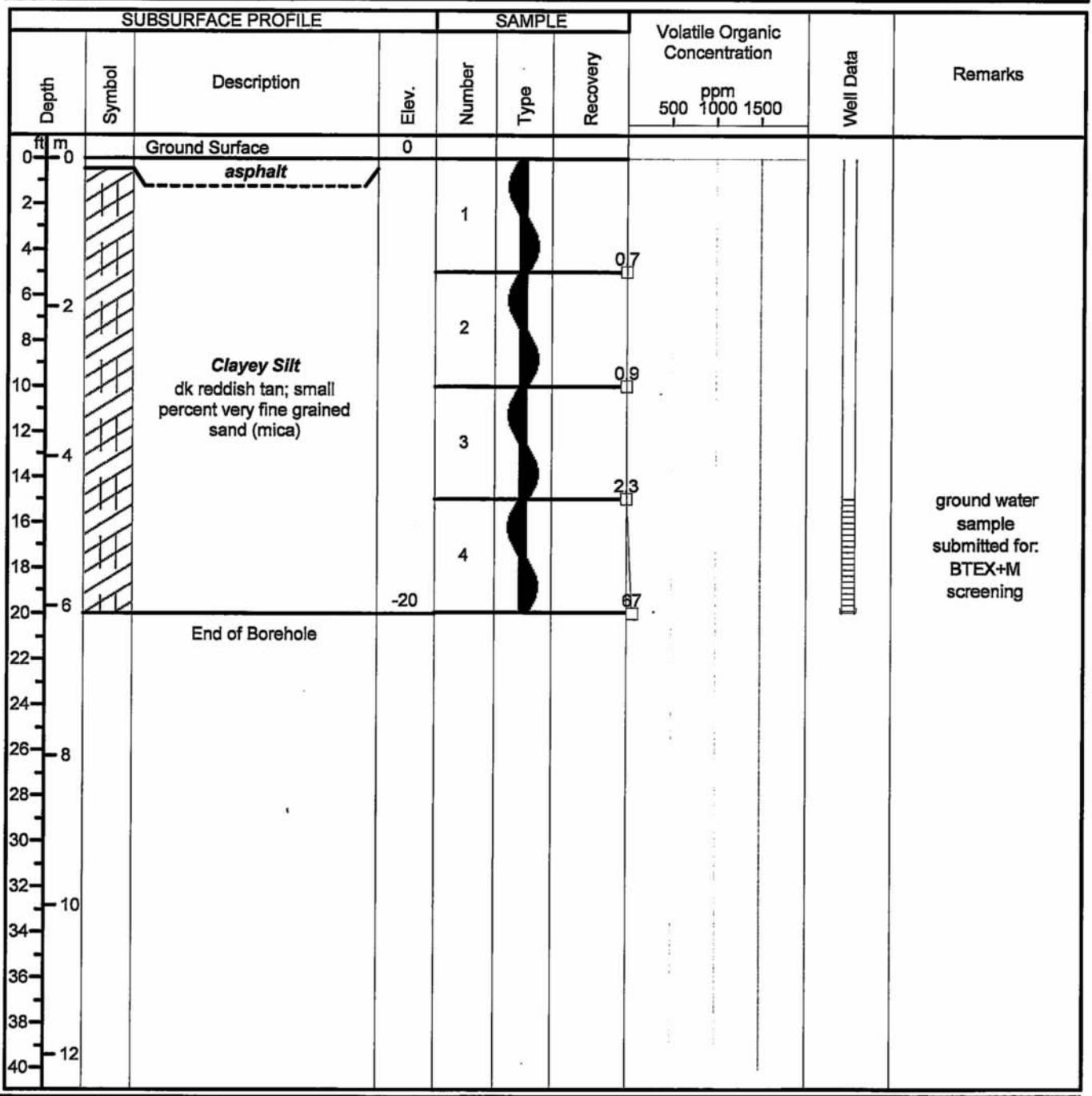
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-35

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/12/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

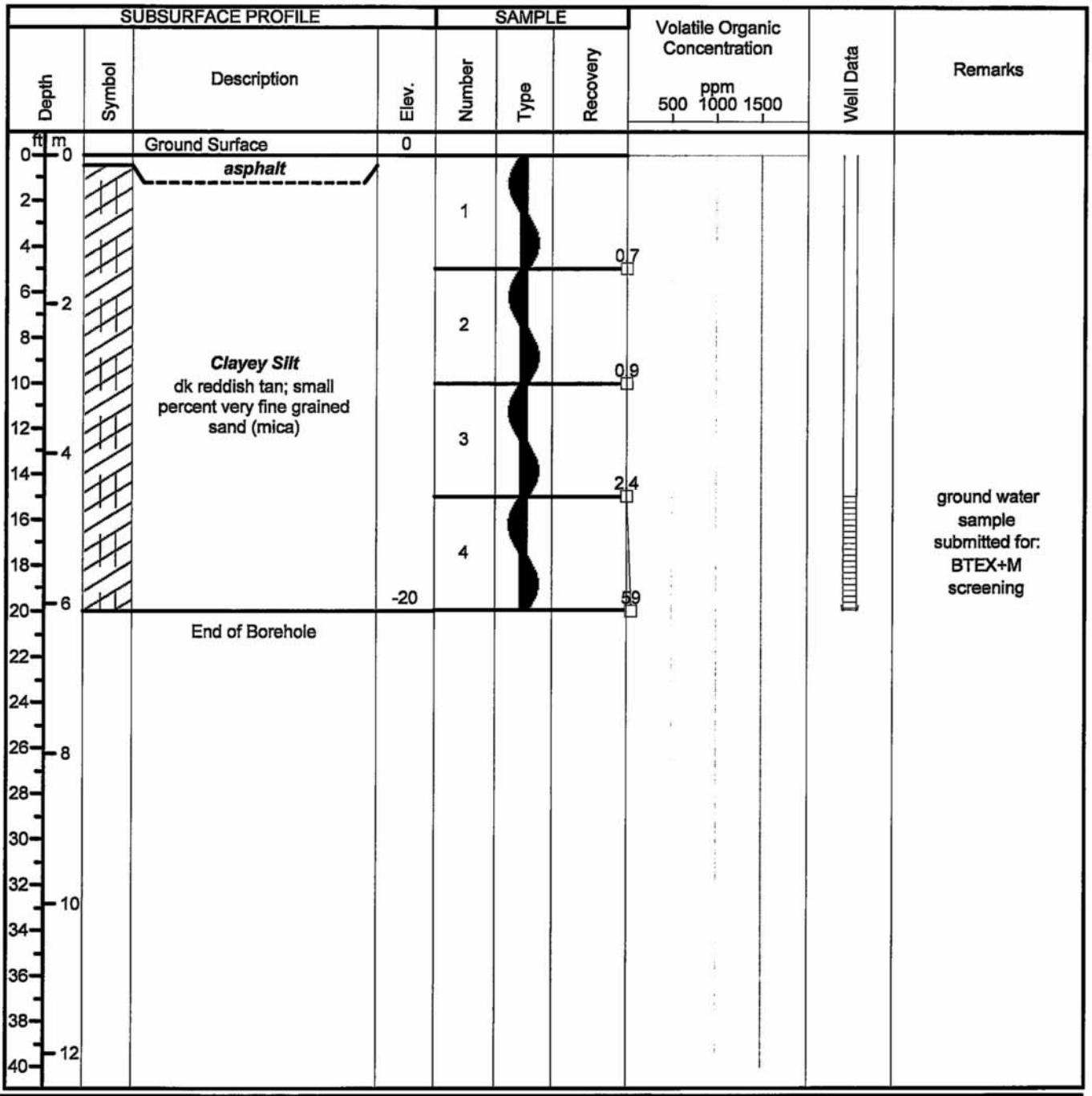
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-36

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/12/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

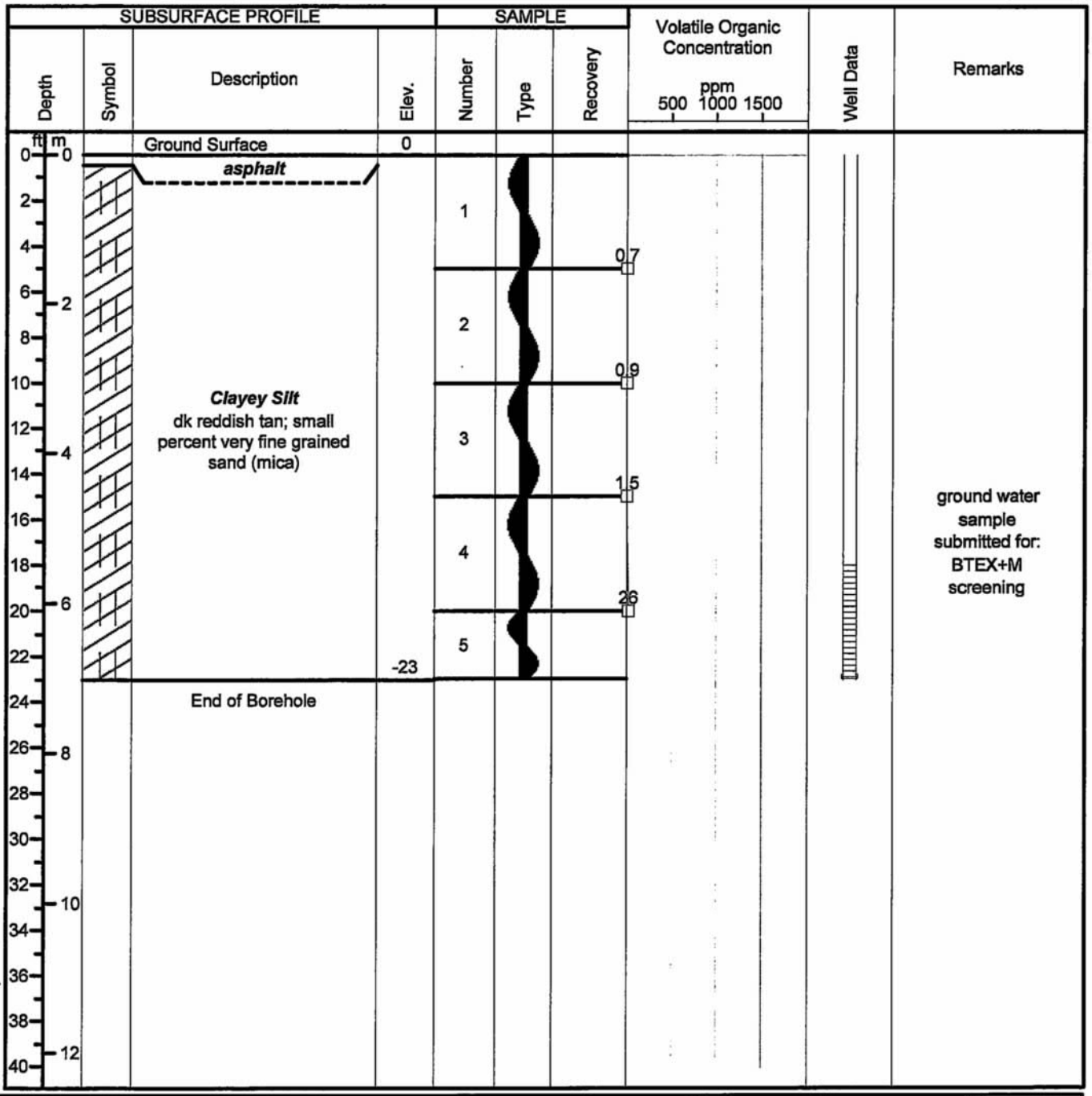
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-37

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/17/12

Casing Diameter: 1.0"

Total Depth of Well: 23.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

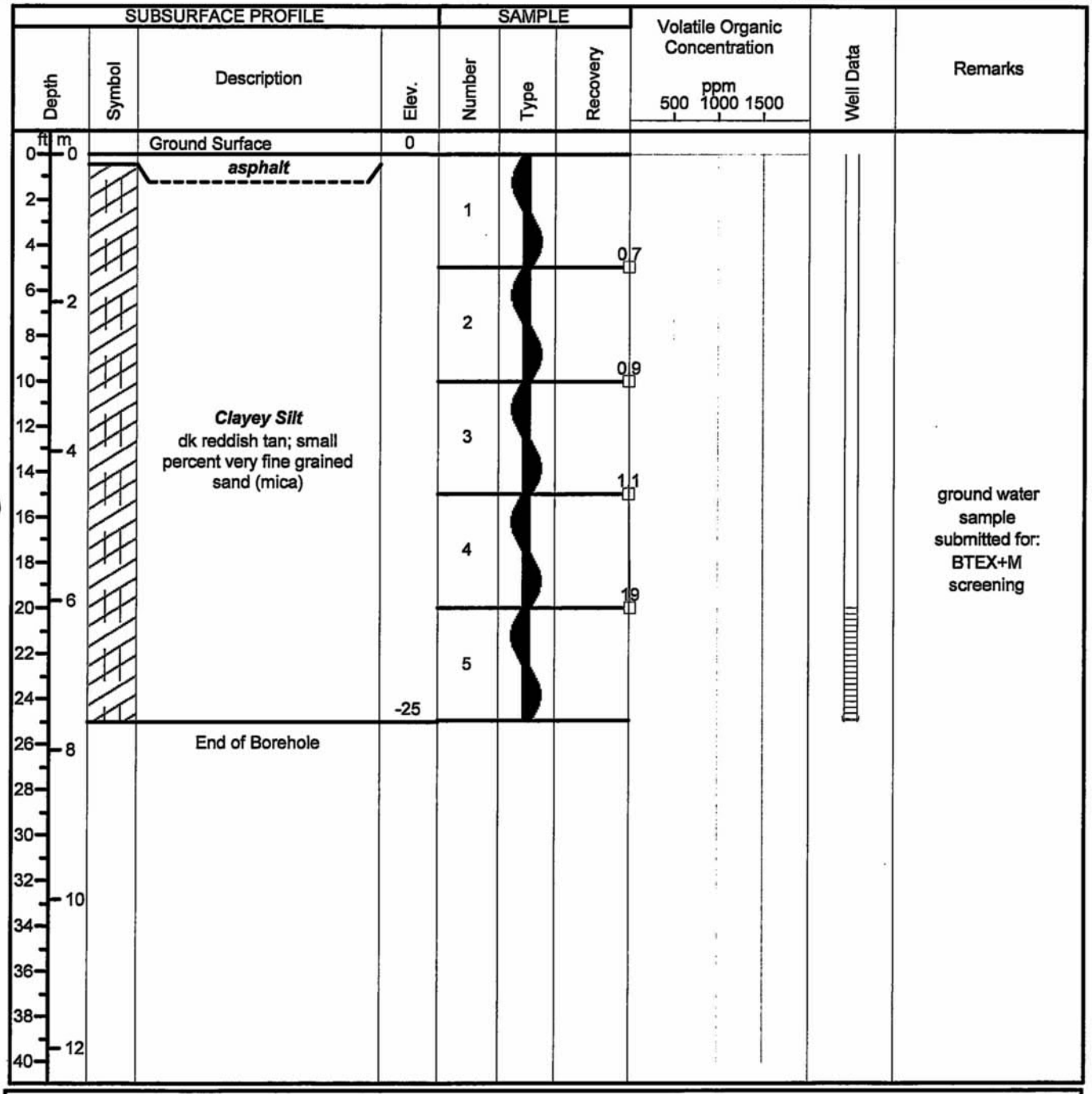
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-38

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/13/12

Casing Diameter: 1.0"

Total Depth of Well: 25.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 23.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

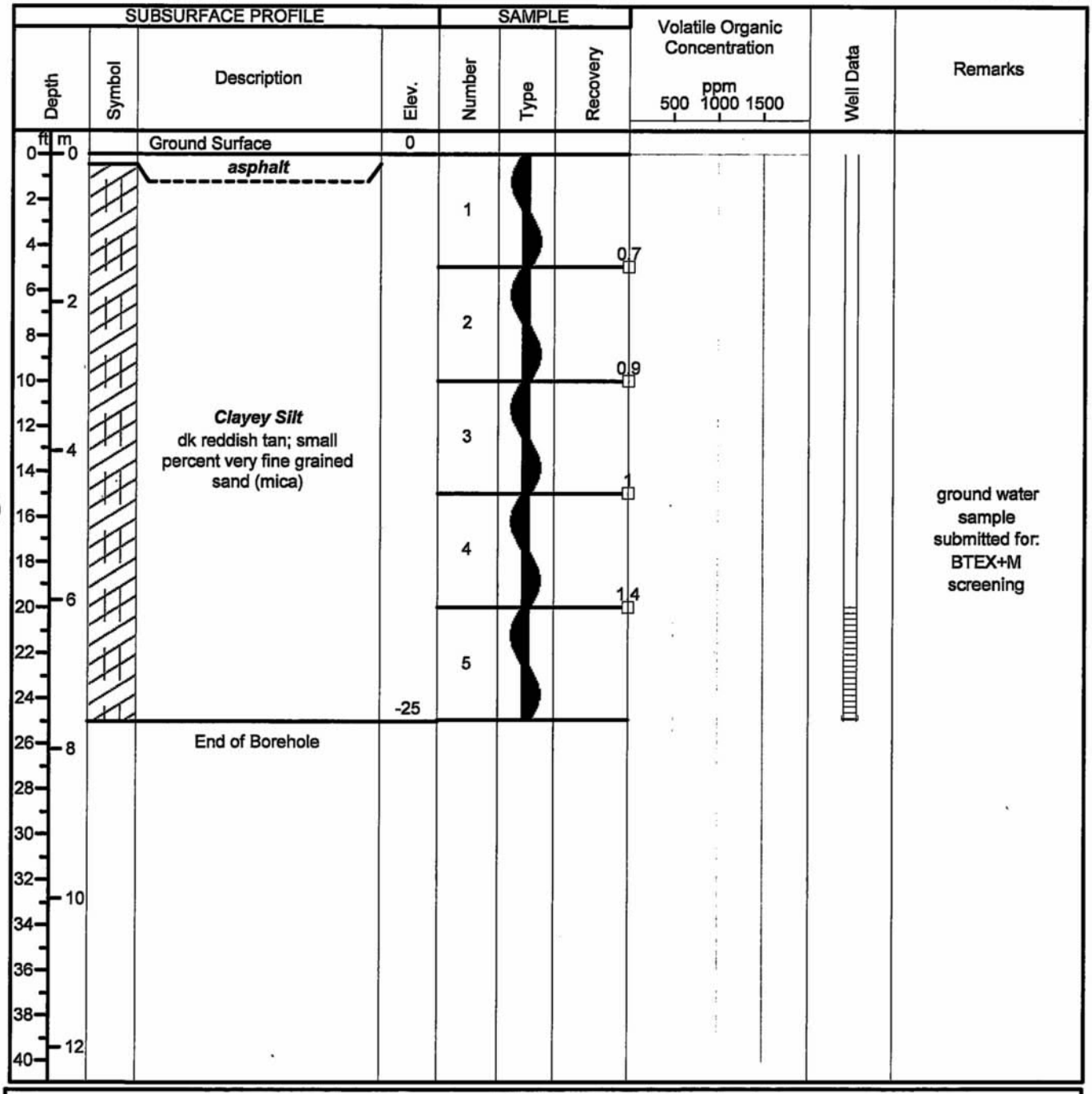
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-39

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/17/12

Casing Diameter: 1.0"

Total Depth of Well: 25.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

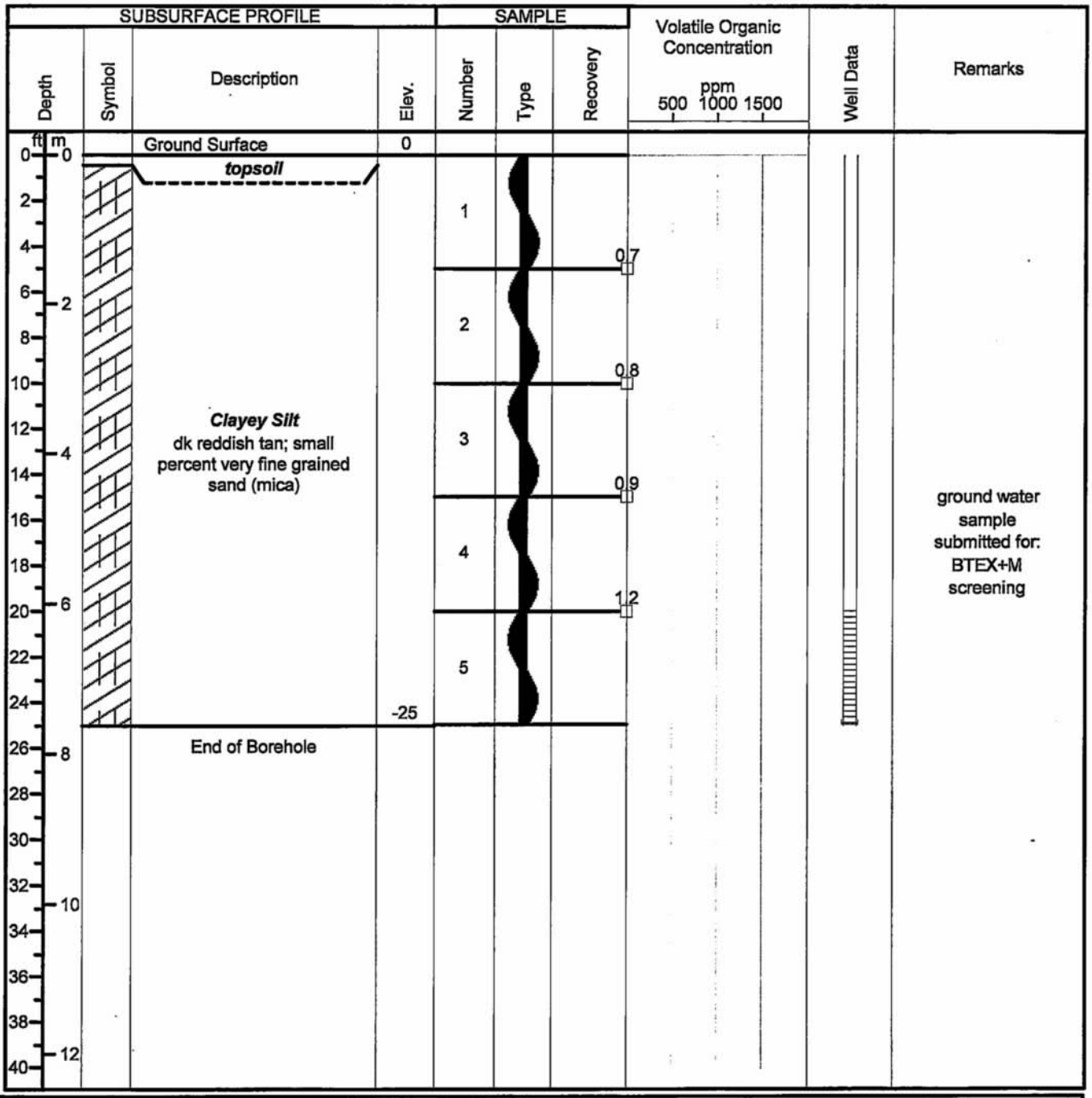
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-40

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/23/12

Casing Diameter: 1.0"

Total Depth of Well: 25.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 23.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

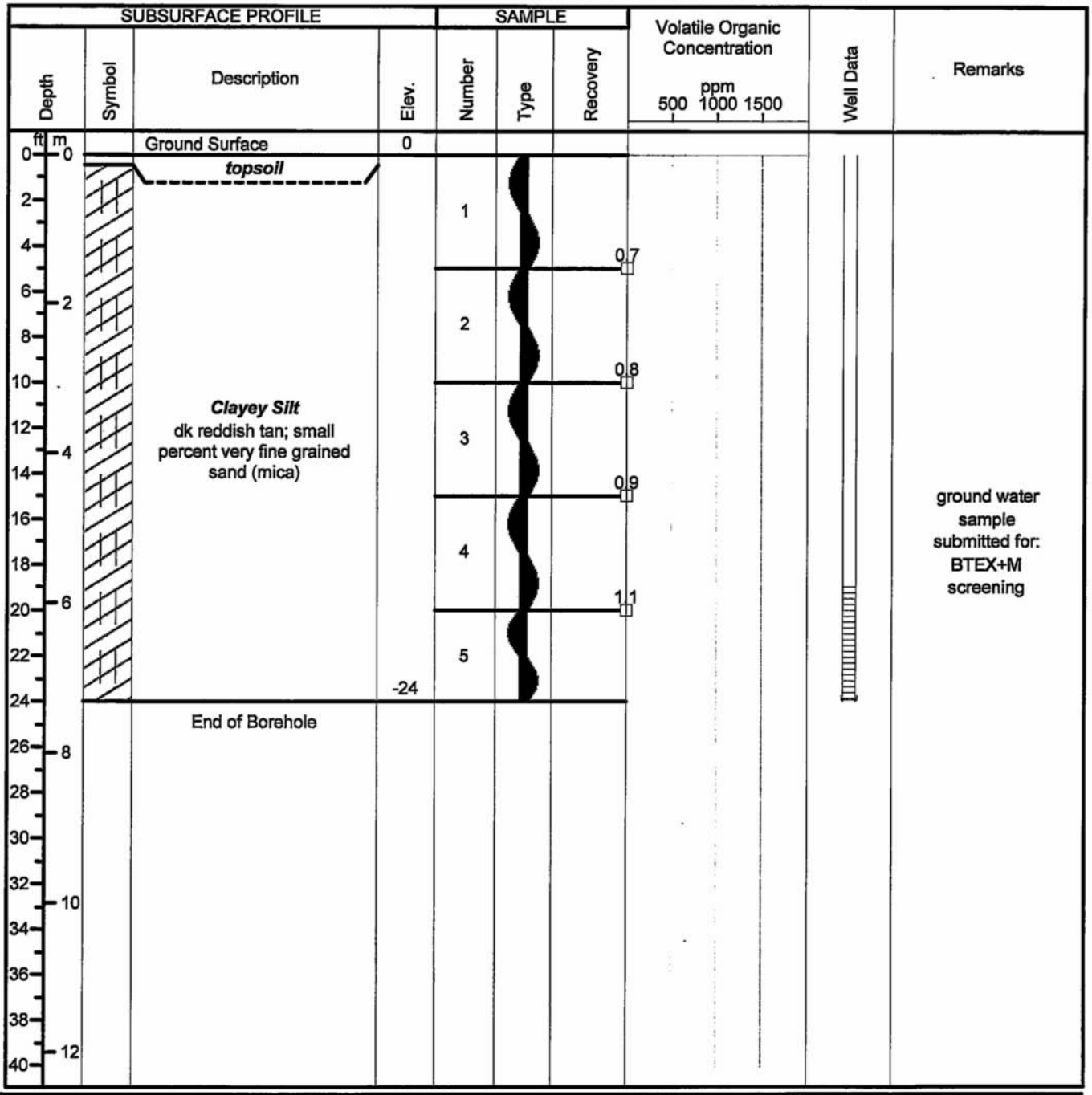
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-41

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/26/12

Casing Diameter: 1.0"

Total Depth of Well: 24.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

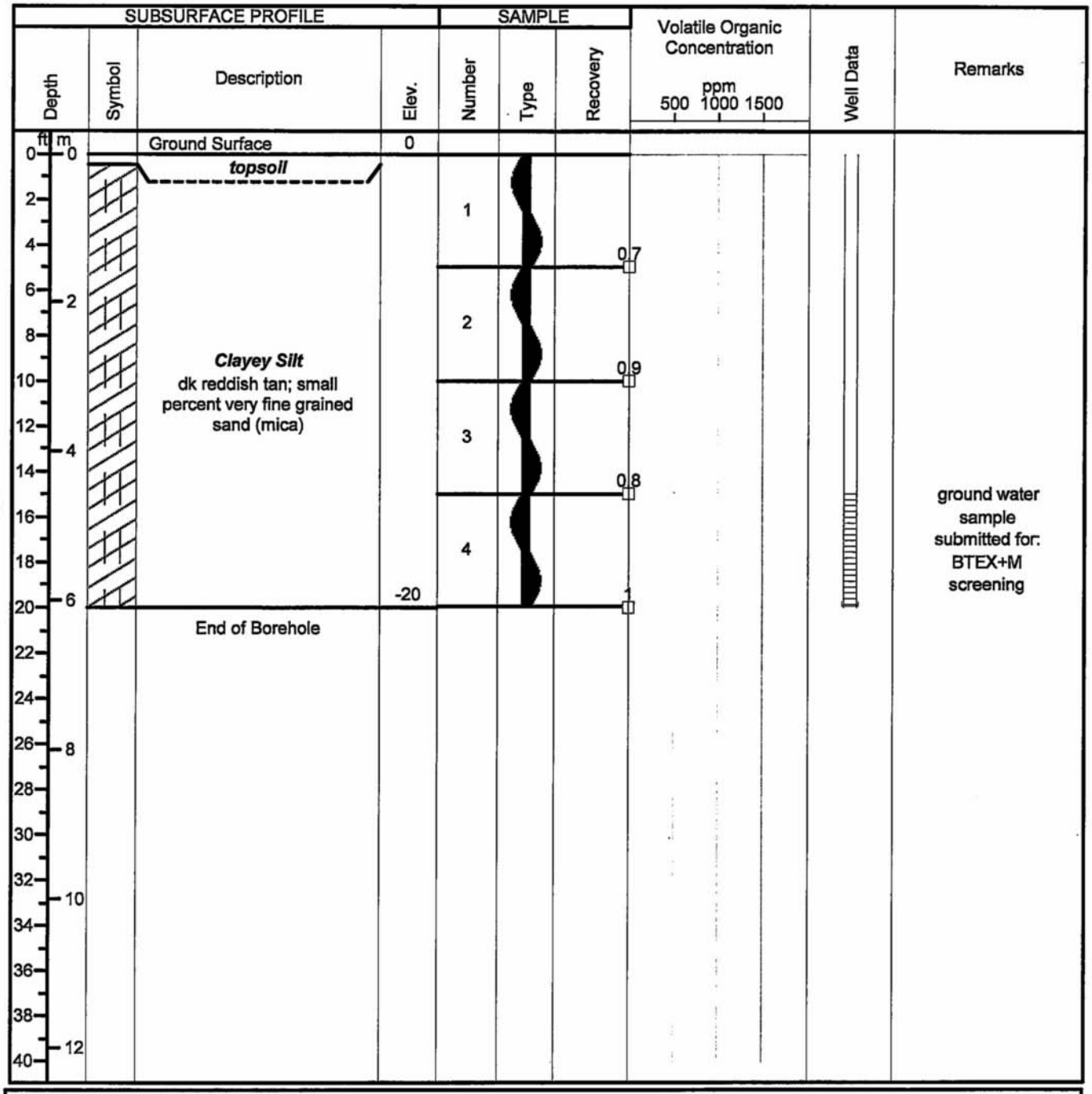
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-42

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

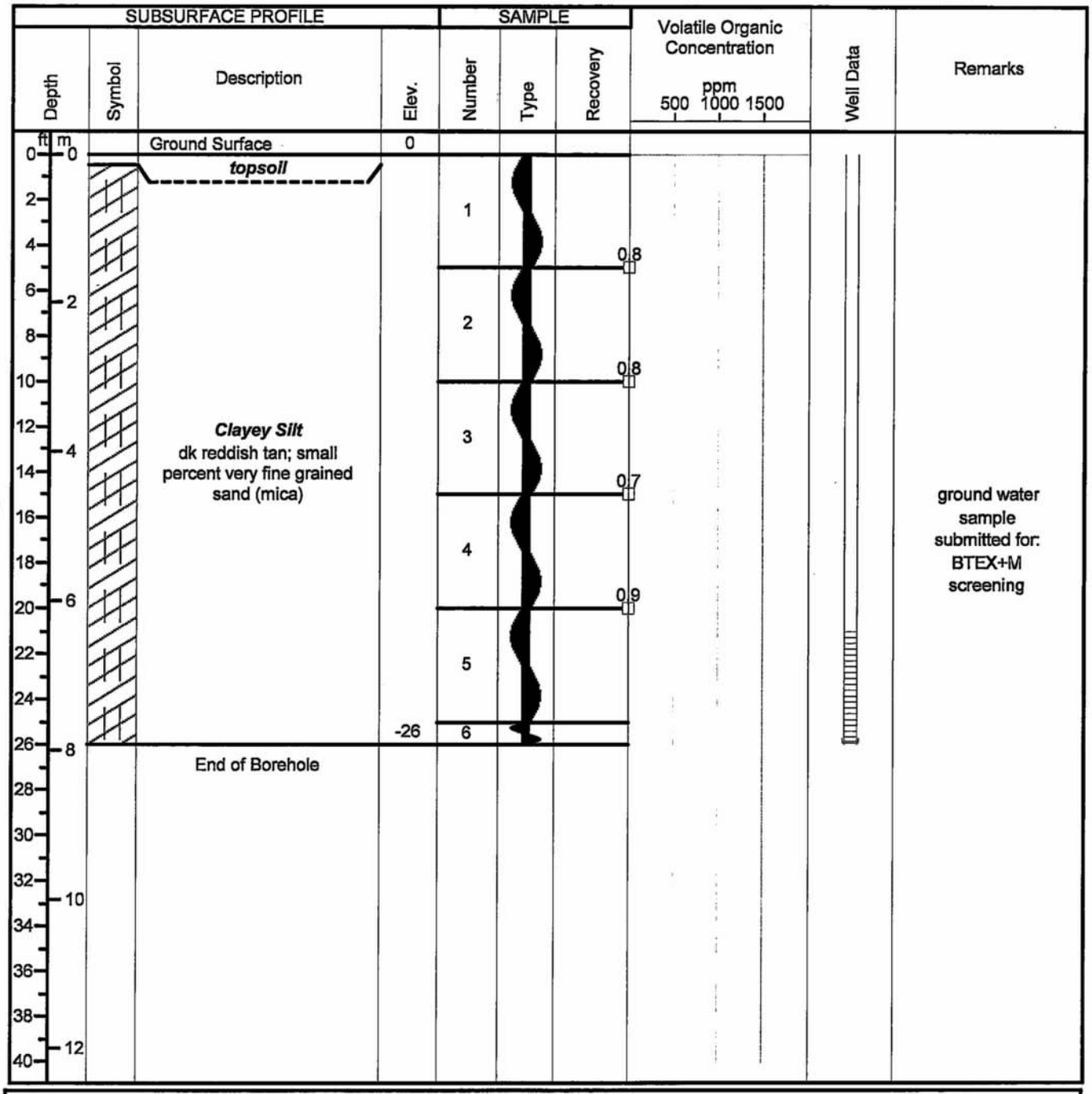
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-43

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/26/12

Casing Diameter: 1.0"

Total Depth of Well: 26.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 24.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

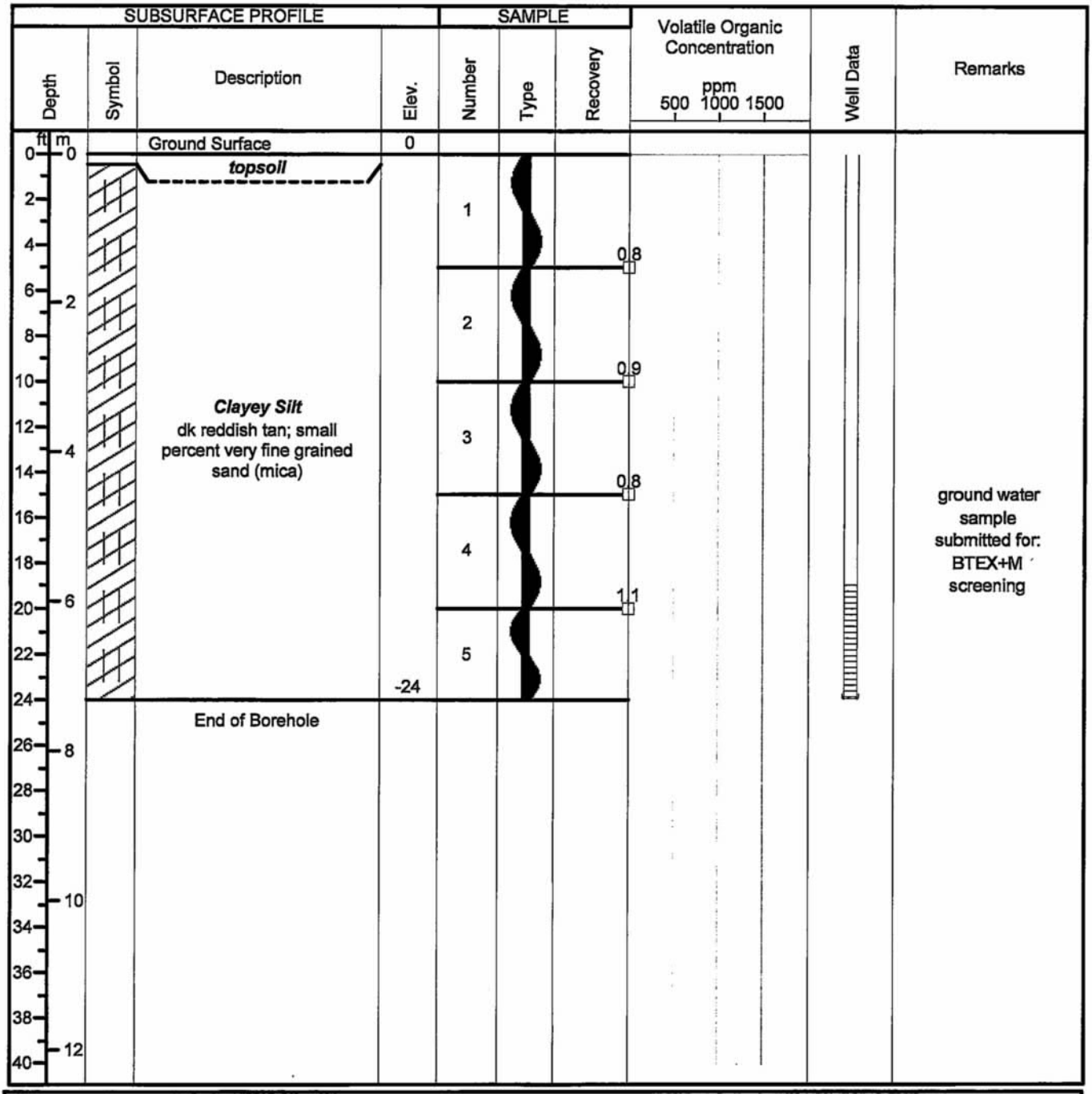
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-44

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/6/12

Casing Diameter: 1.0"

Total Depth of Well: 24.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

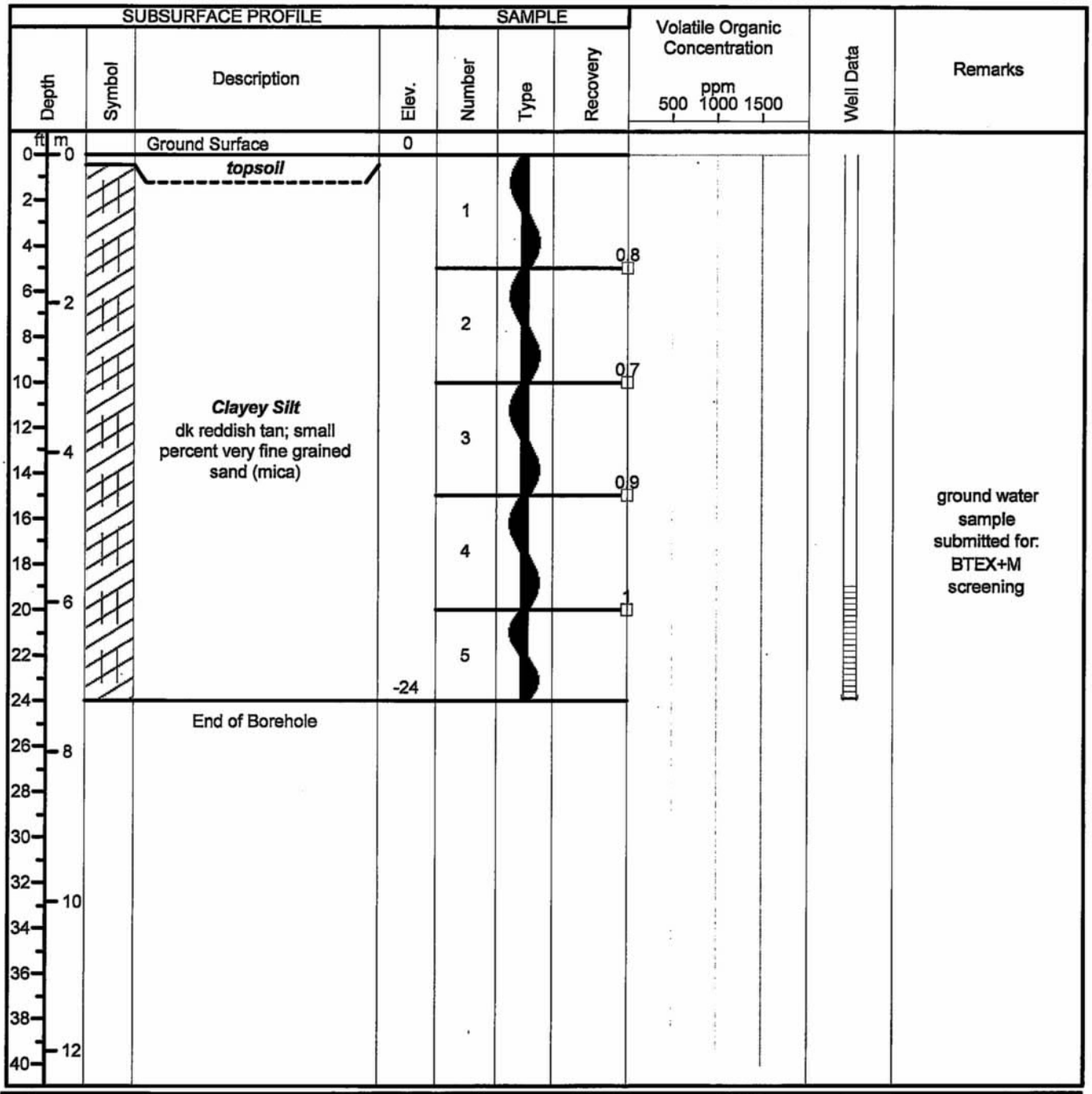
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-45

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/7/12

Casing Diameter: 1.0"

Total Depth of Well: 24.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

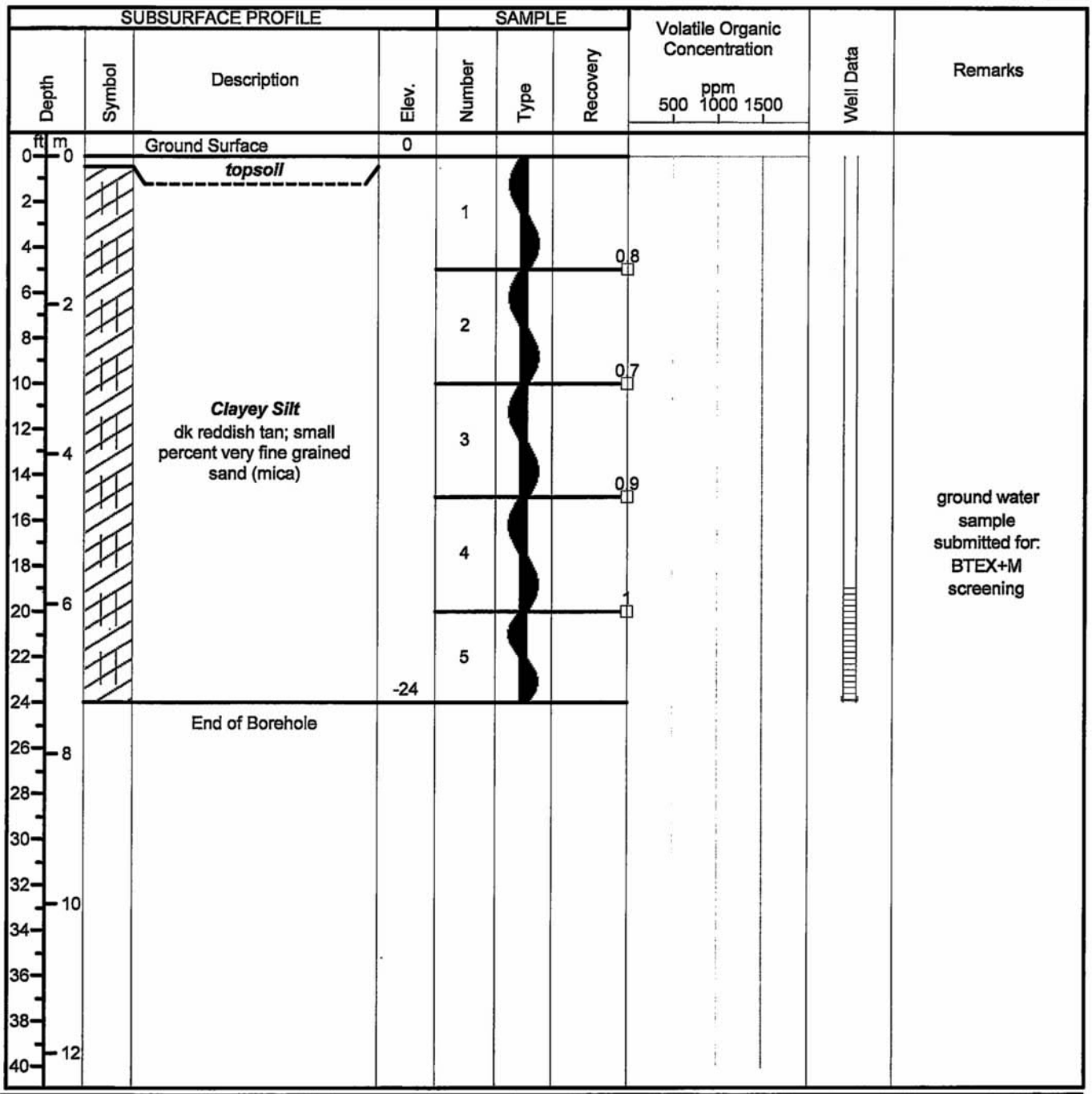
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-46

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/7/12

Casing Diameter: 1.0"

Total Depth of Well: 24.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 22.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

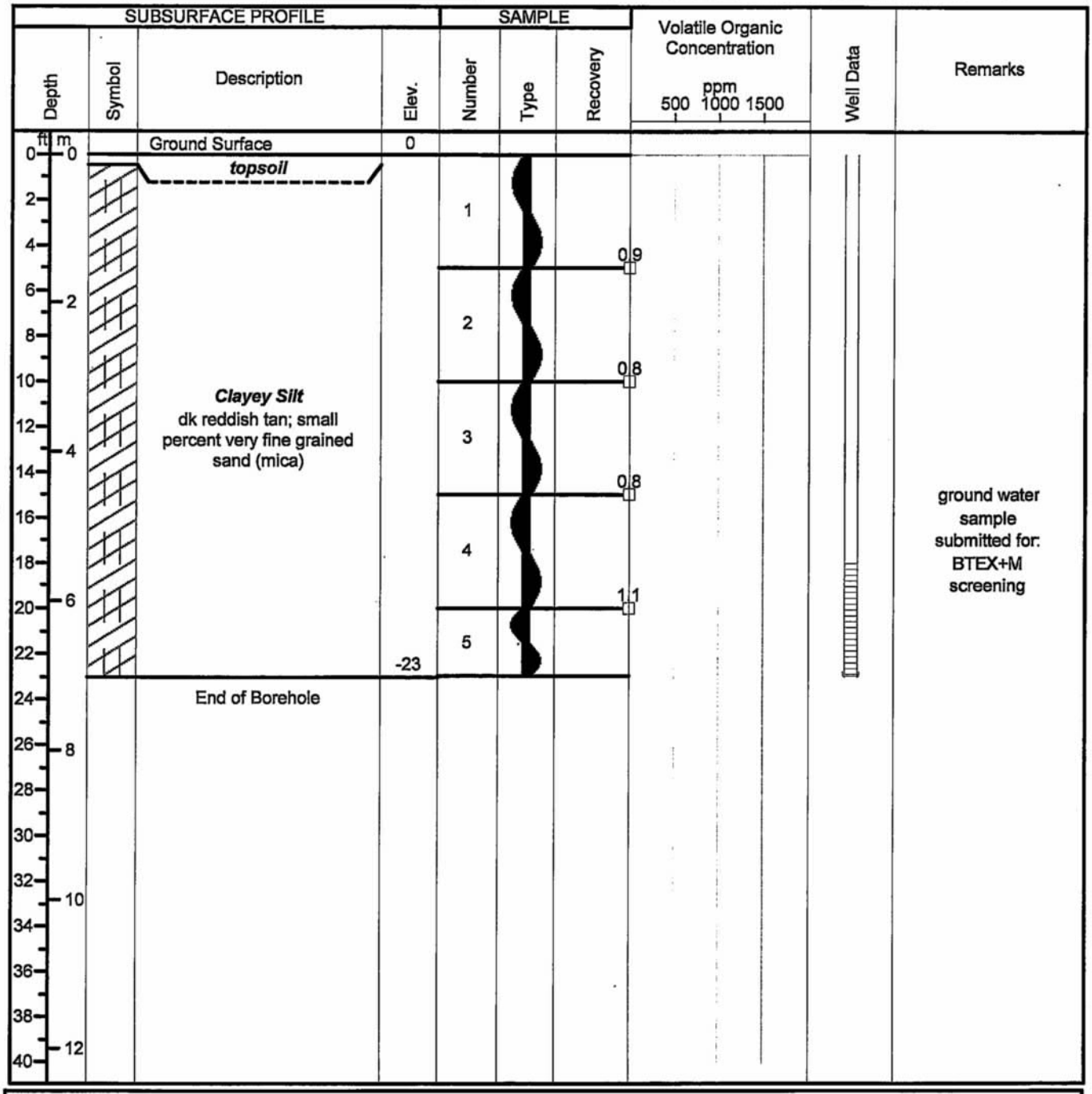
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-47

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/27/12

Casing Diameter: 1.0"

Total Depth of Well: 23.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 21.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

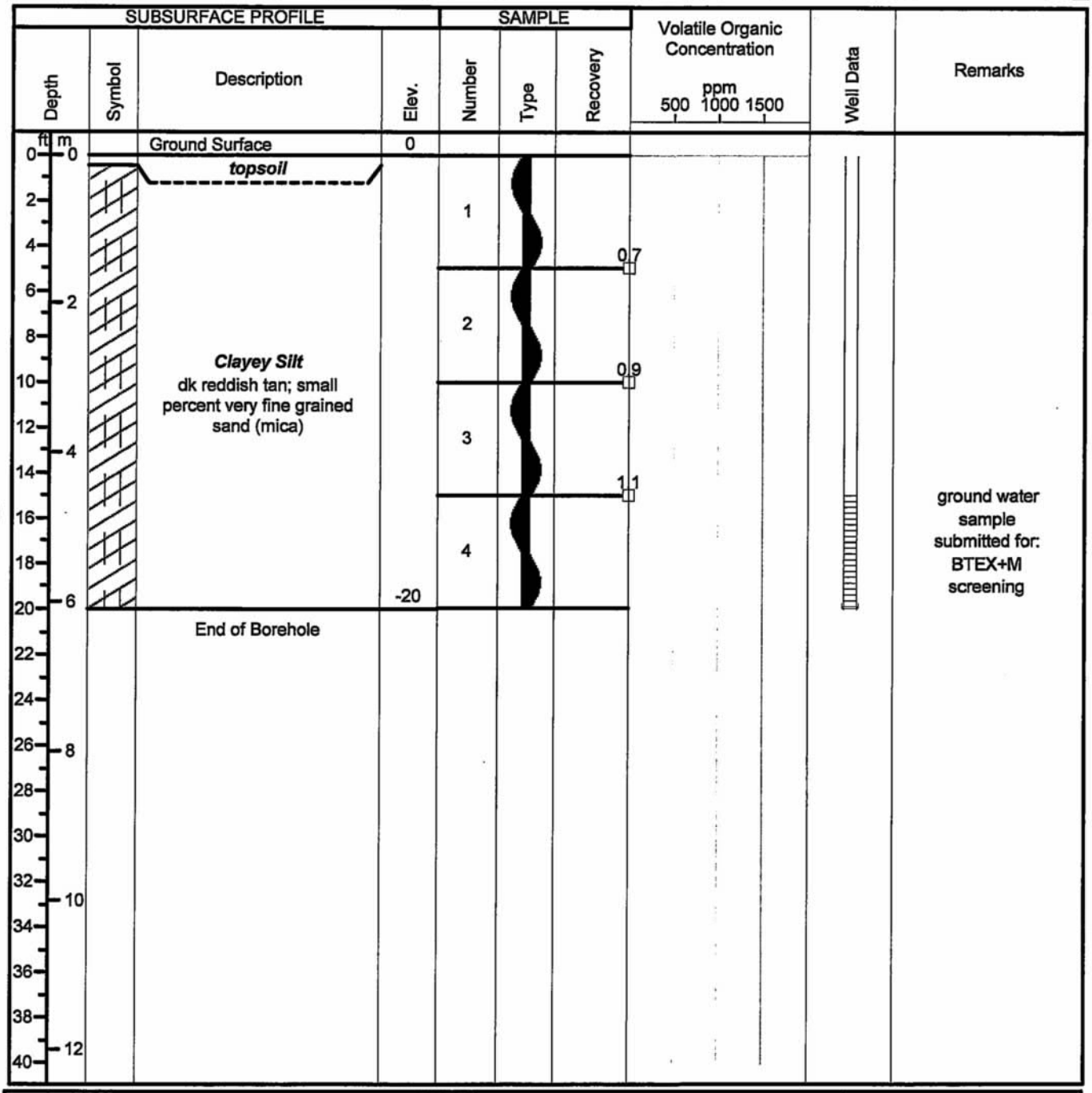
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-48

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

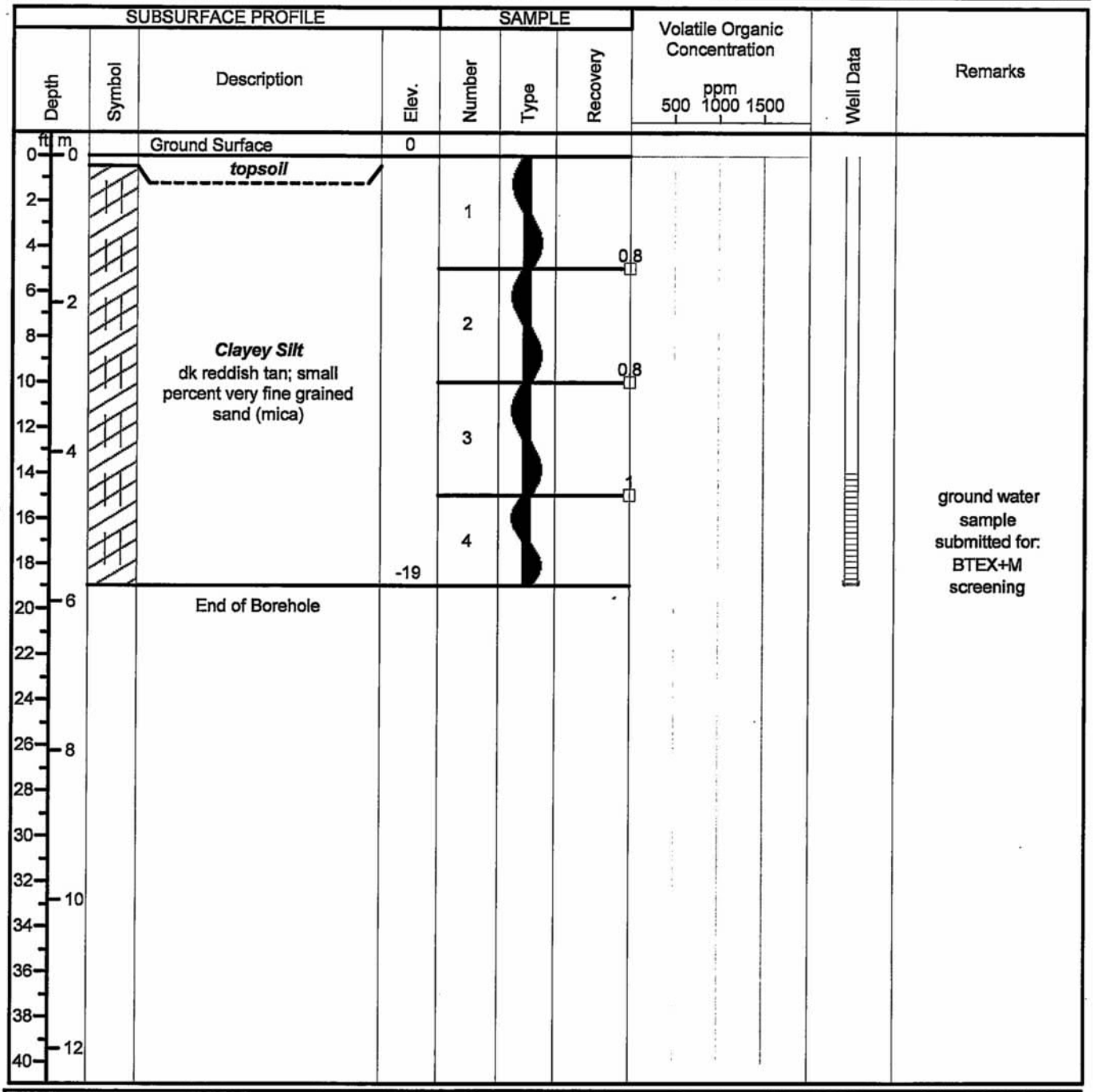
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-49

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/26/12

Casing Diameter: 1.0"

Total Depth of Well: 19.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

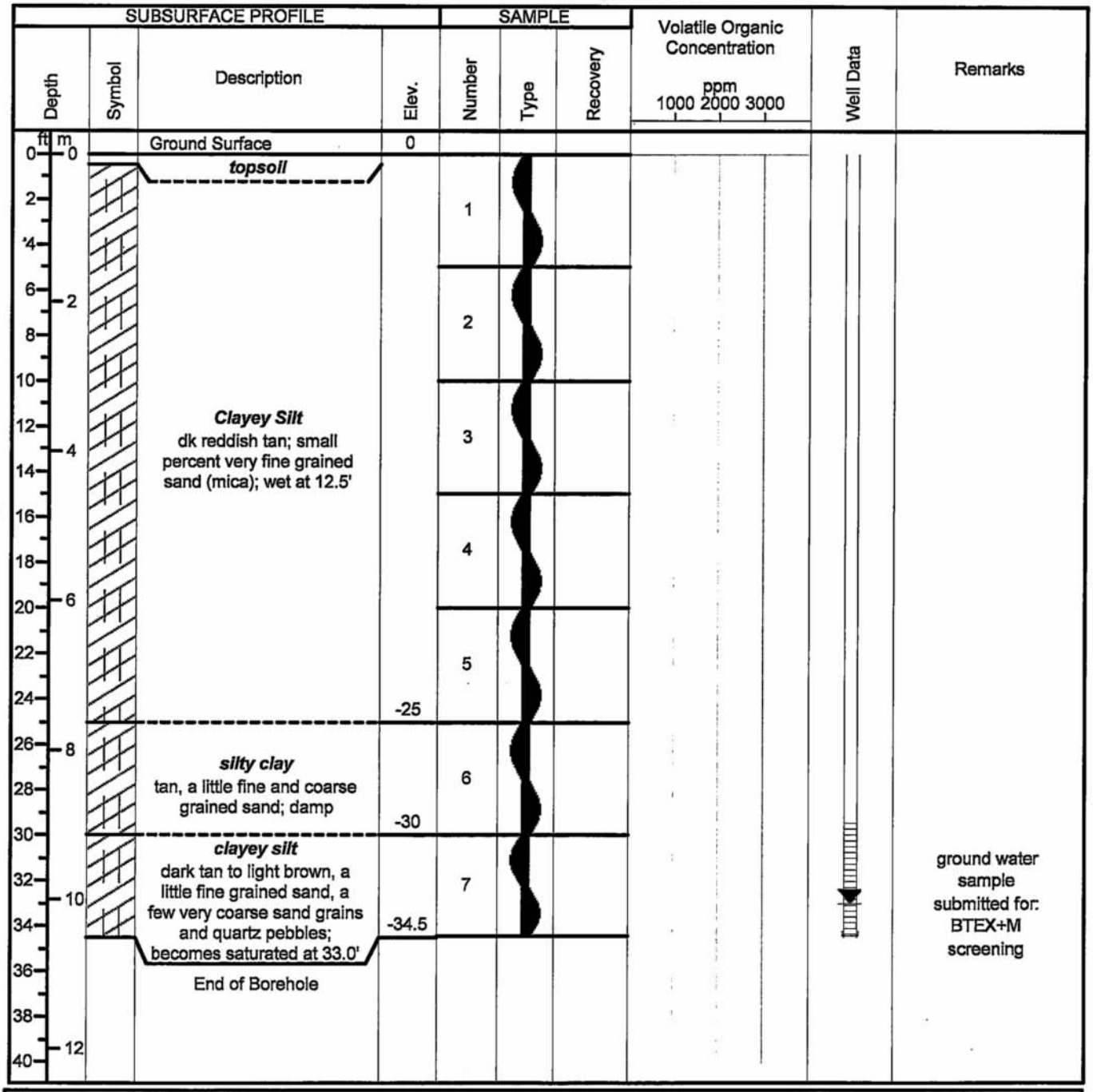
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-11D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/24/12

Casing Diameter: 1.0"

Total Depth of Well: 34.5

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 33.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

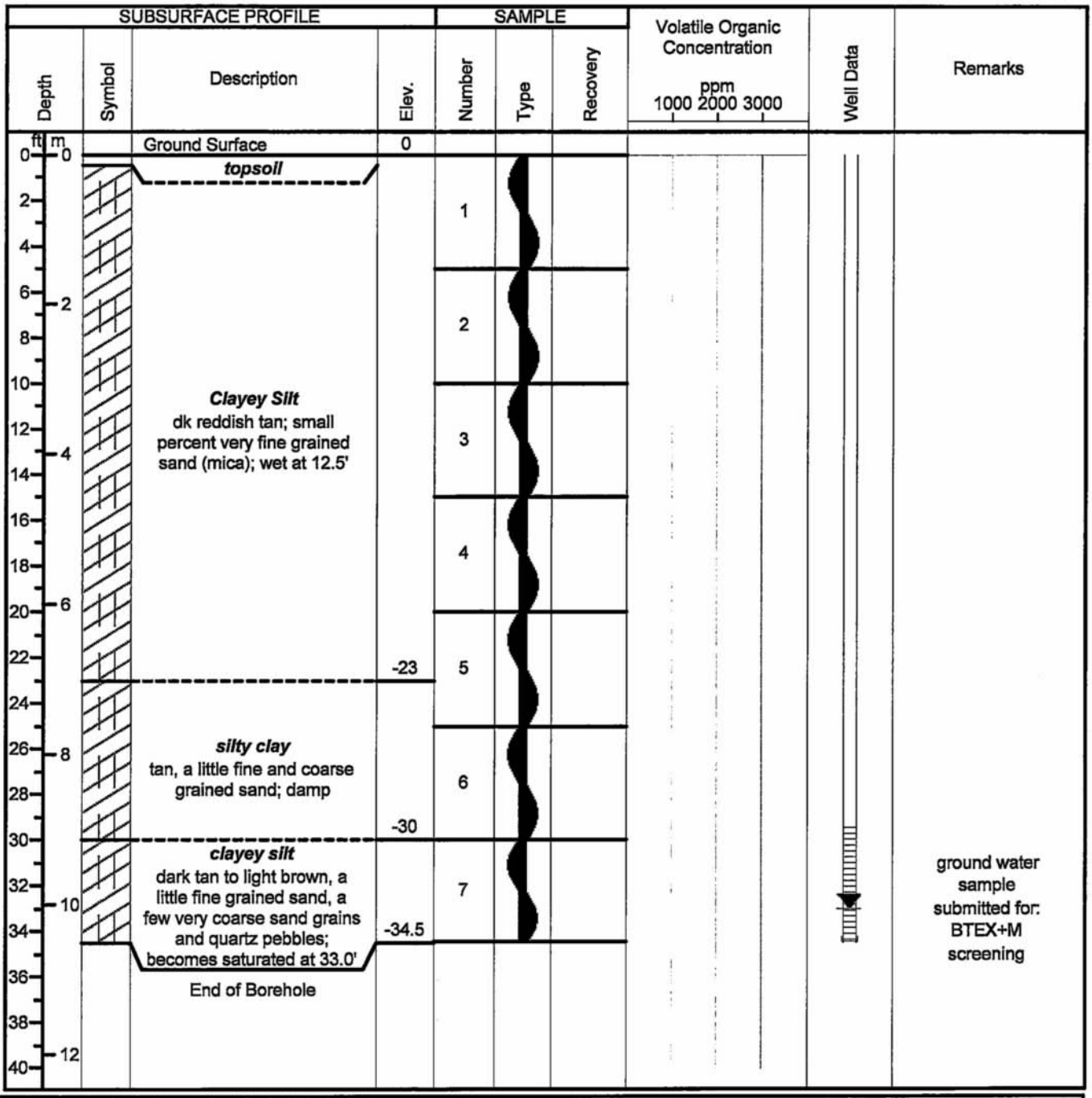
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-12D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/25/12

Casing Diameter: 1.0"

Total Depth of Well: 34.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 33.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

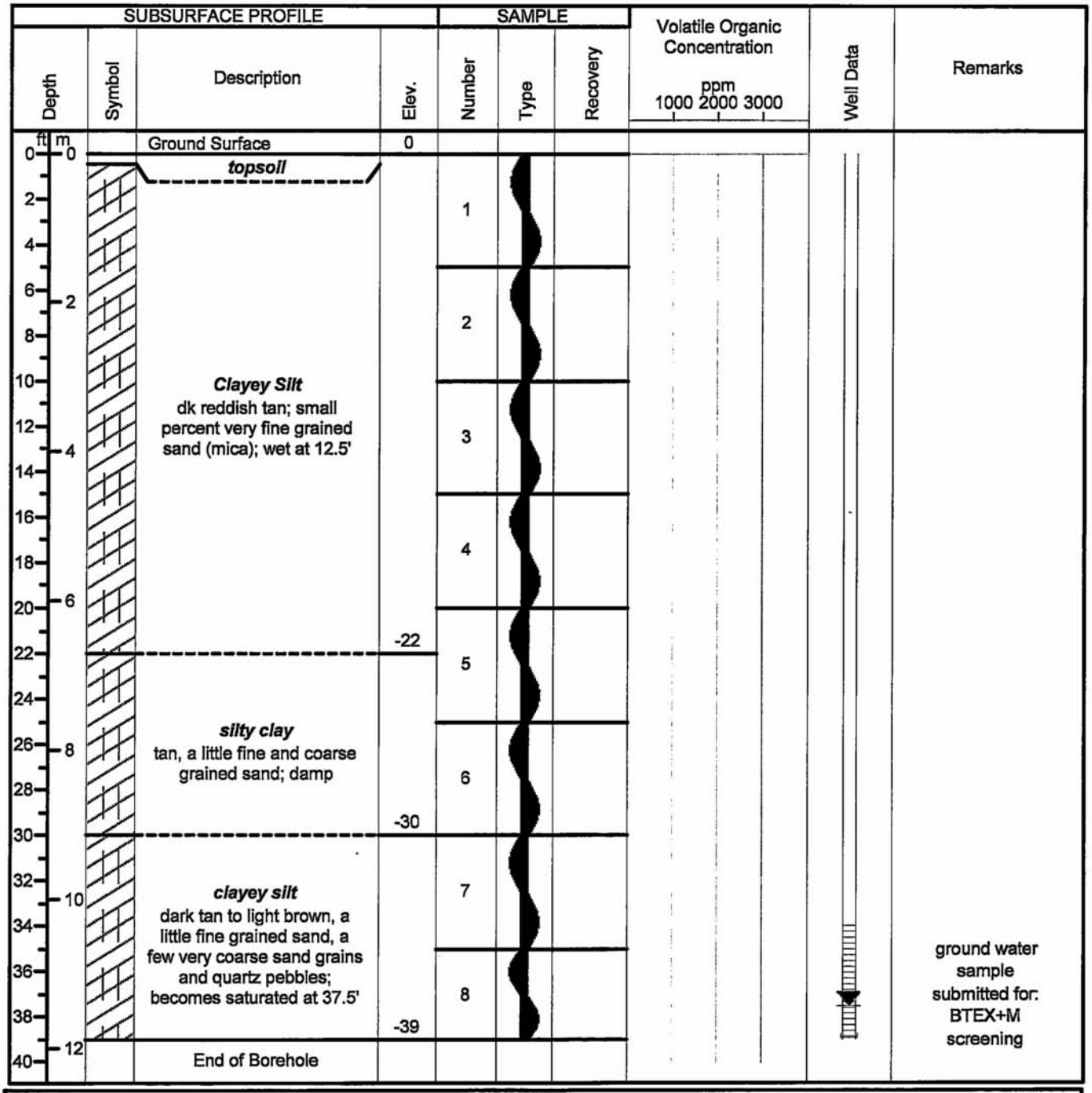
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-14D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/20/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

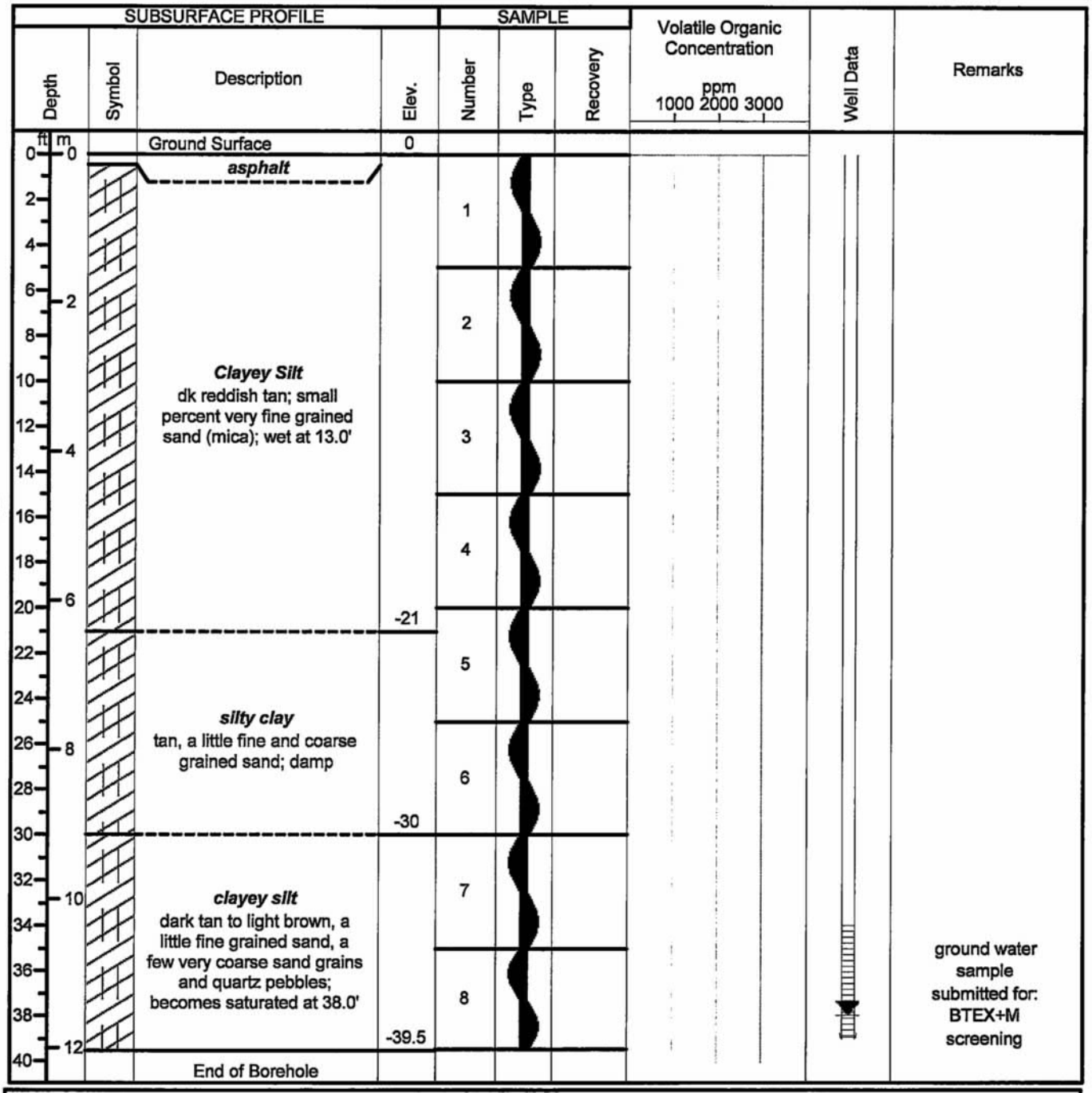
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-16D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/24/12

Casing Diameter: 1.0"

Total Depth of Well: 39.5

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

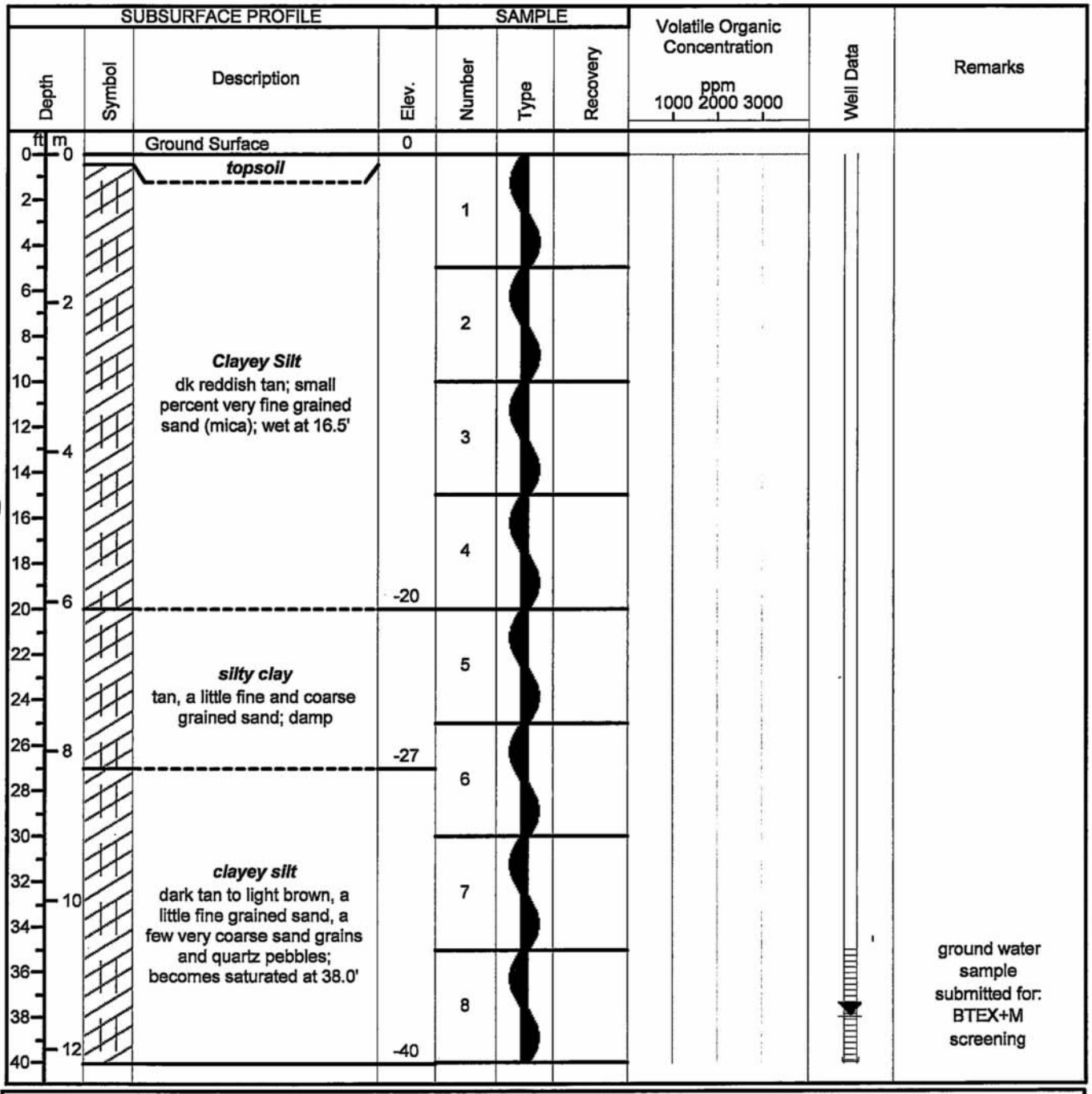
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-19D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/17/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

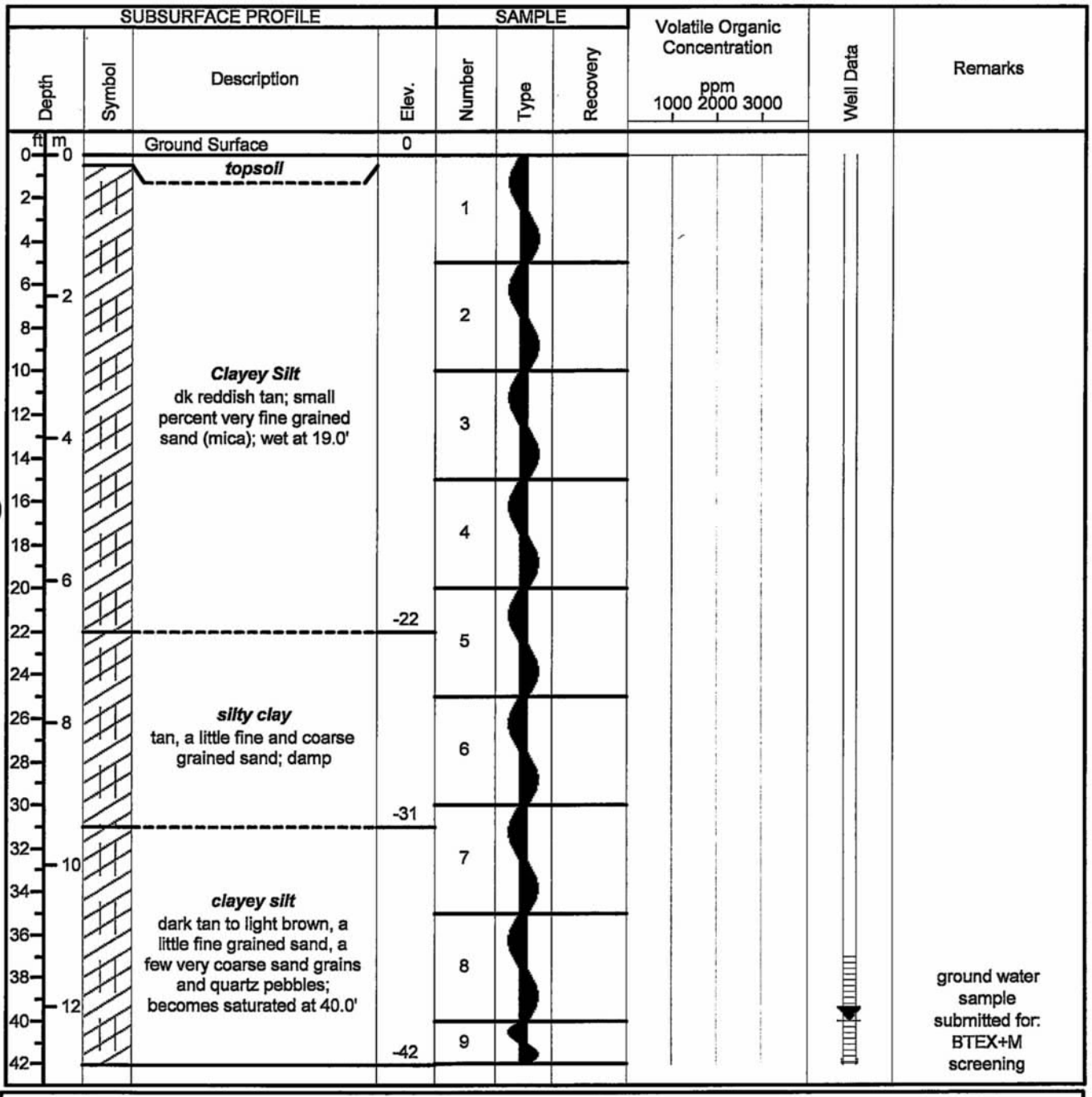
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-23D

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/19/12

Casing Diameter: 1.0"

Total Depth of Well: 42.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 40.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-25D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 1000 2000 3000	Well Data	Remarks
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt		1					
2									
4				2					
6 / 2									
8				3					
10									
12 / 4		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at 18.5'		4					
14									
16				5					
18 / 6									
20									
22									
24			-25						
26 / 8		***silty clay*** tan, a little fine and coarse grained sand; damp		6					
28									
30			-30						
32				7					
34 / 10		***clayey silt*** dark tan to light brown, a little fine grained sand, a few very coarse sand grains and quartz pebbles; becomes saturated at 38.0'							
36				8					ground water sample submitted for:
38									
40 / 12			-40						

Drill Method: auger rig

Drill Date: 7/19/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

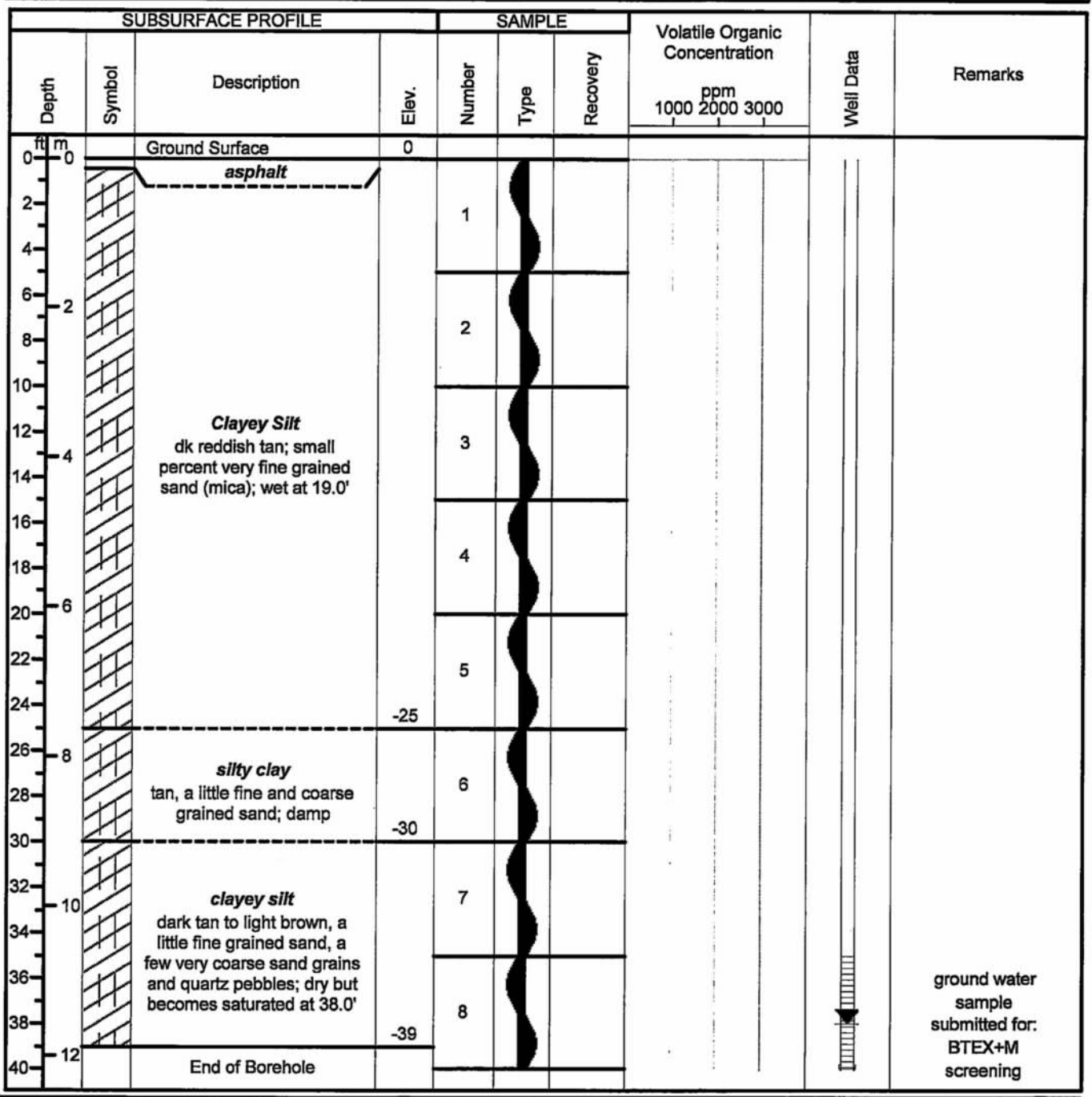
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-27D

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

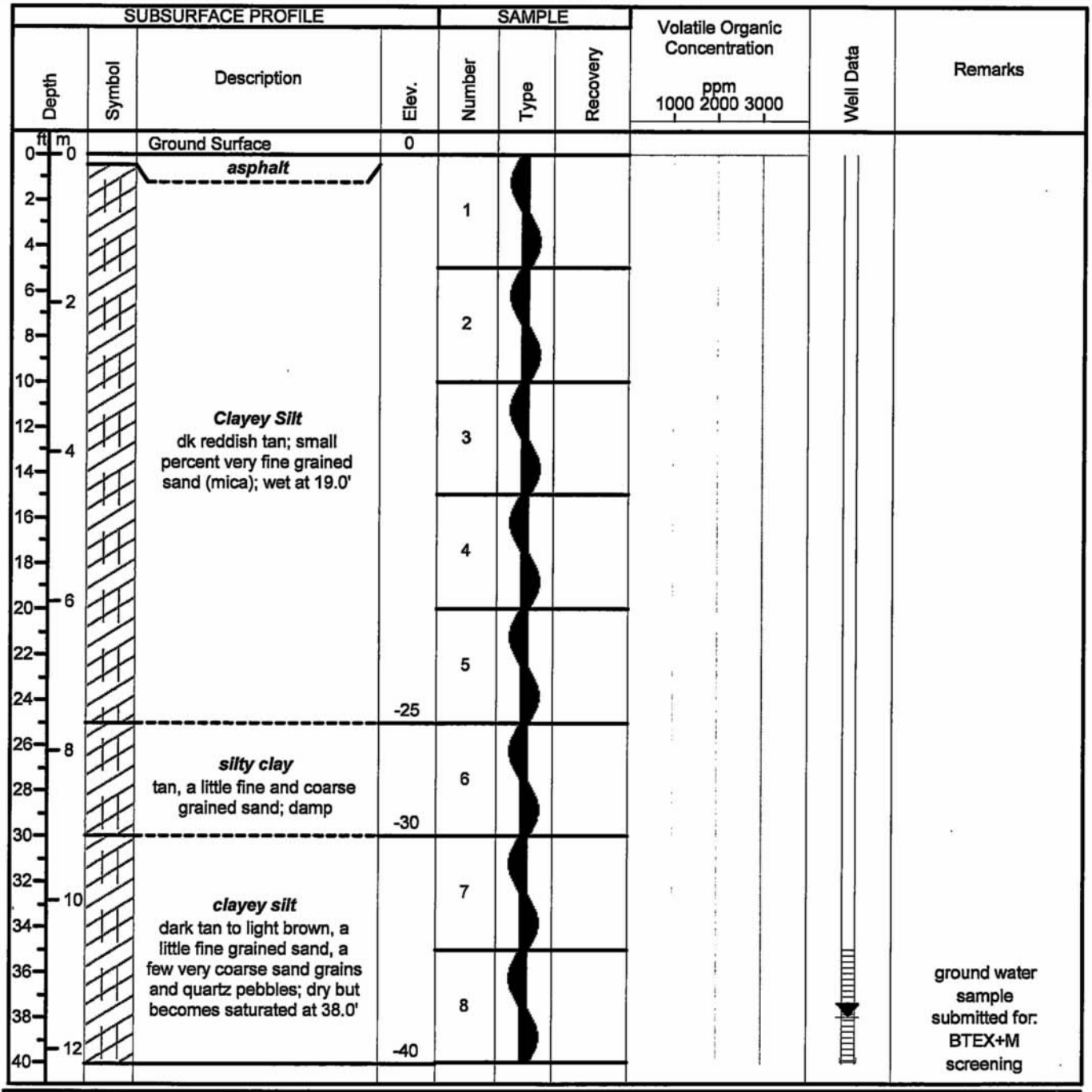
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-28D

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 6/20/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

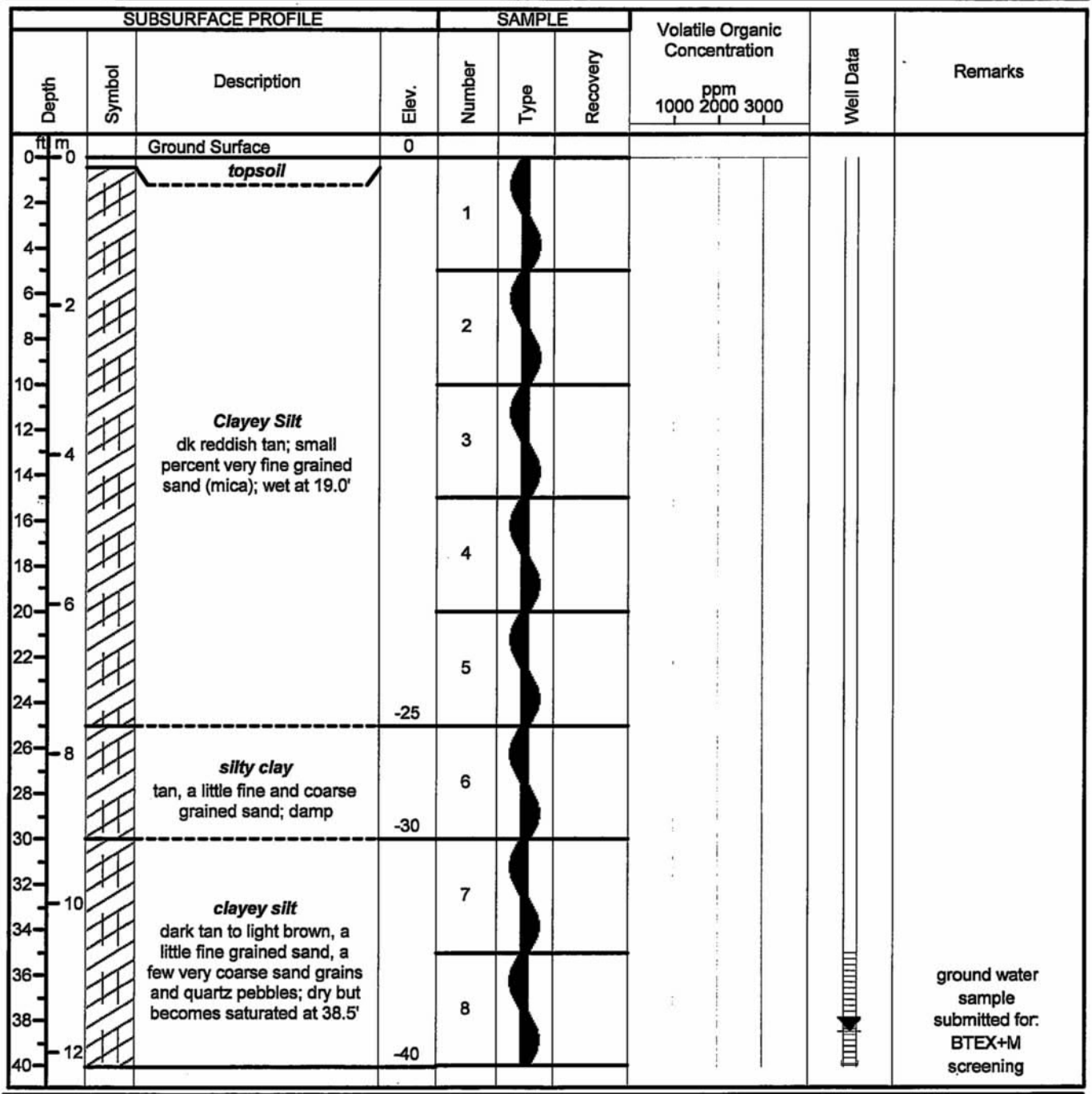
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-29D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/16/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

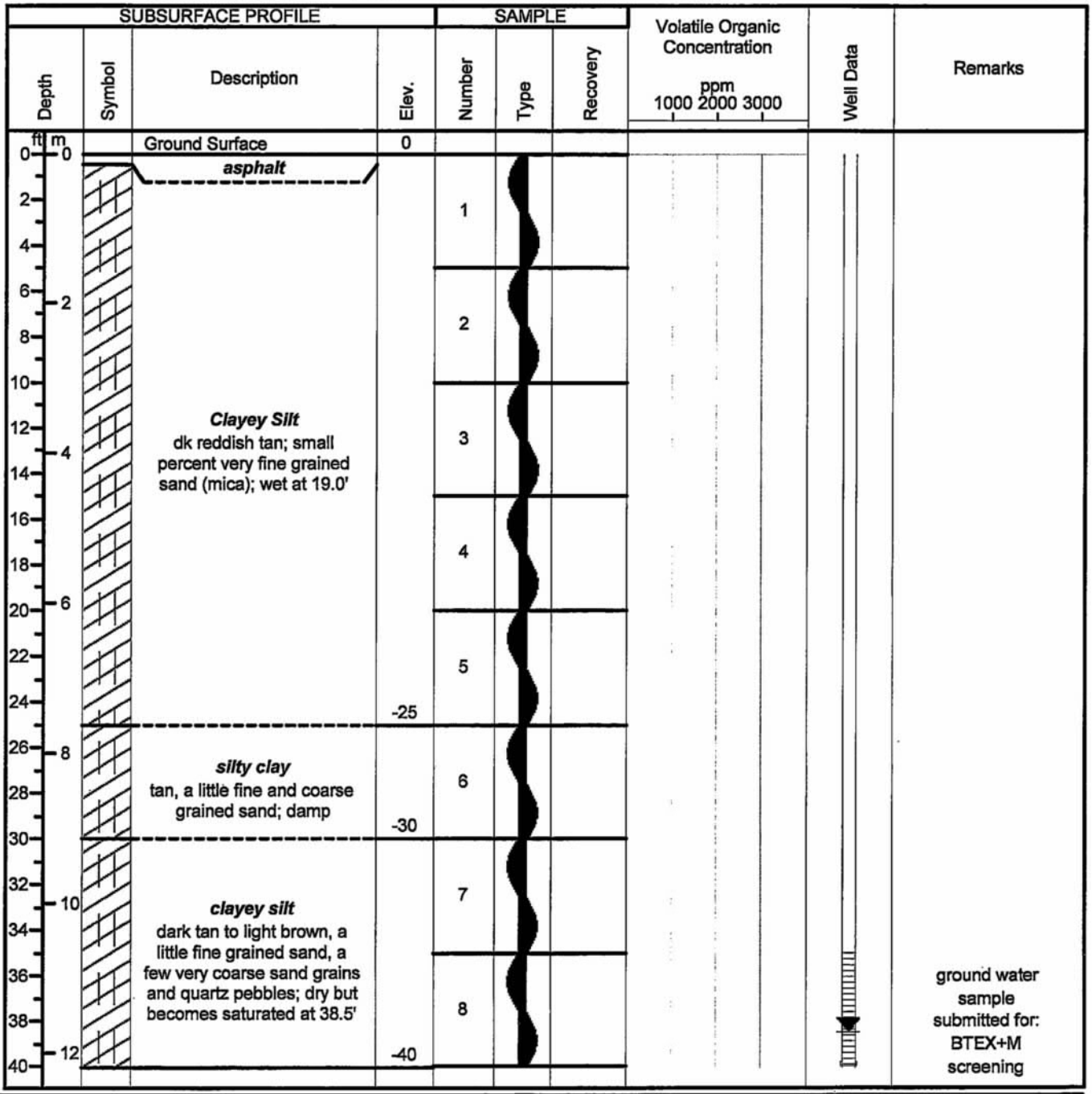
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-30D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/17/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

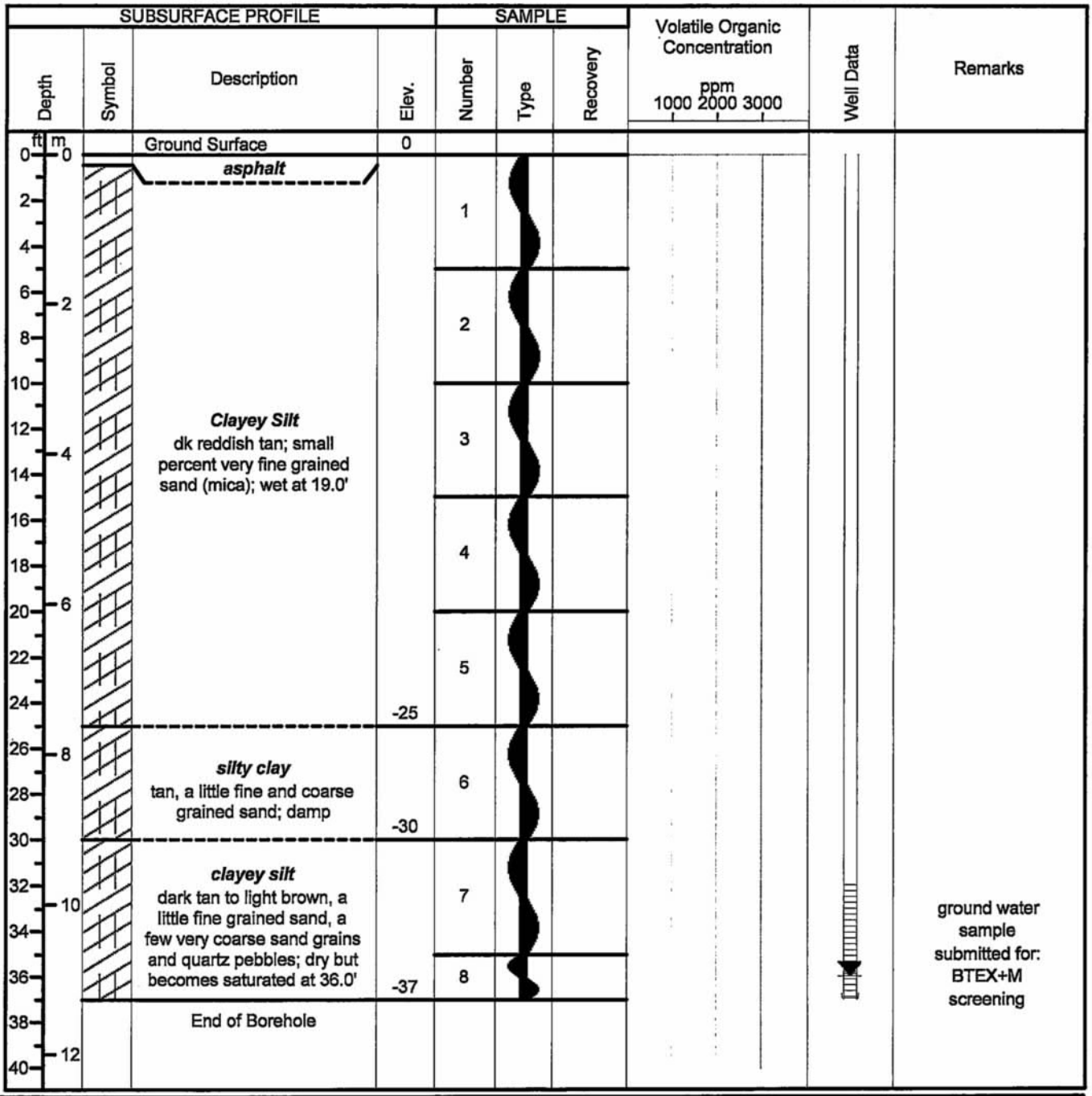
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-31D

Driller: Josh Register, cert. #1921

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/5/12

Casing Diameter: 1.0"

Total Depth of Well: 37.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 36.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-32D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE					
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery	Volatile Organic Concentration (ppm, 1000 2000 3000)	Well Data	Remarks
0 / 0		Ground Surface	0						
		asphalt		1					
2									
4				2					
6 / 2									
8				3					
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at 18.0'							
12 / 4				4					
14									
16				5					
18 / 6									
20									
22				6					
24			-25						
26 / 8		***silty clay*** tan, a little fine and coarse grained sand; damp							
28			-30	7					ground water sample submitted for: BTEX+M screening
30		***clayey silt*** dark tan to light brown, a little fine grained sand, a few very coarse sand grains and quartz pebbles; dry but becomes saturated at 38.5'							
32									
34 / 10									
36			-37	8					
38		End of Borehole							
40 / 12									

Drill Method: auger rig

Drill Date: 7/19/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-33D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 1000 2000 3000	Well Data	Remarks
Depth ft / m	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt		1					
2									
4				2					
6 / 2									
8				3					
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at 19.0'							
12 / 4				4					
14									
16				5					
18 / 6									
20									
22				6					
24			-25						
26 / 8		***silty clay*** tan, a little fine and coarse grained sand; damp							
28			-30	7					
30									
32 / 10		***clayey silt*** dark tan to light brown, a little fine grained sand, a few very coarse sand grains and quartz pebbles; dry but becomes saturated at 37.0'							ground water sample submitted for: BTEX+M screening
34				8					
36									
38			-39						
40 / 12		End of Borehole							

Drill Method: auger rig

Drill Date: 7/25/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

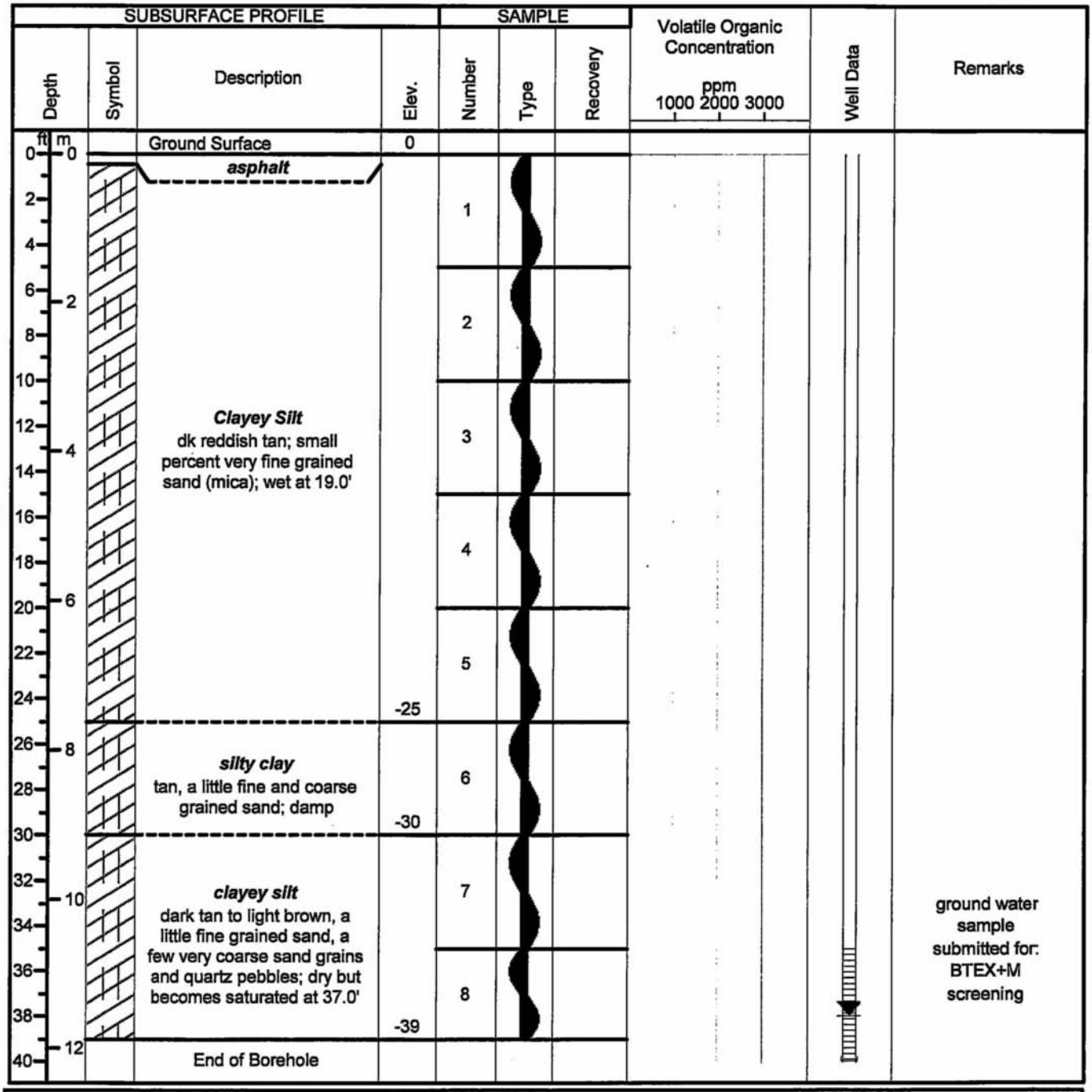
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-40D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/23/12

Casing Diameter: 1.0"

Total Depth of Well: 39.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 38.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

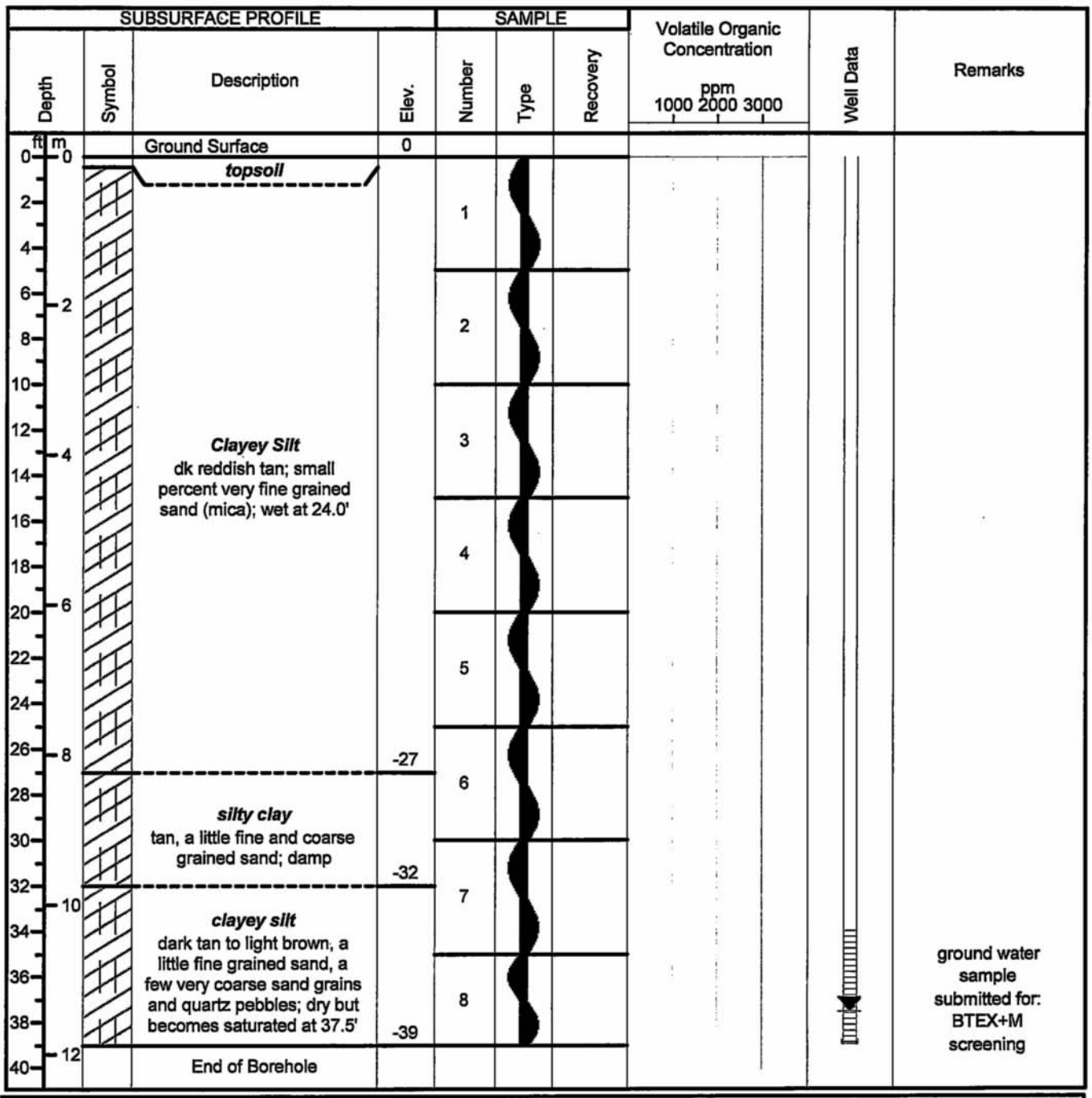
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-43D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/6/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

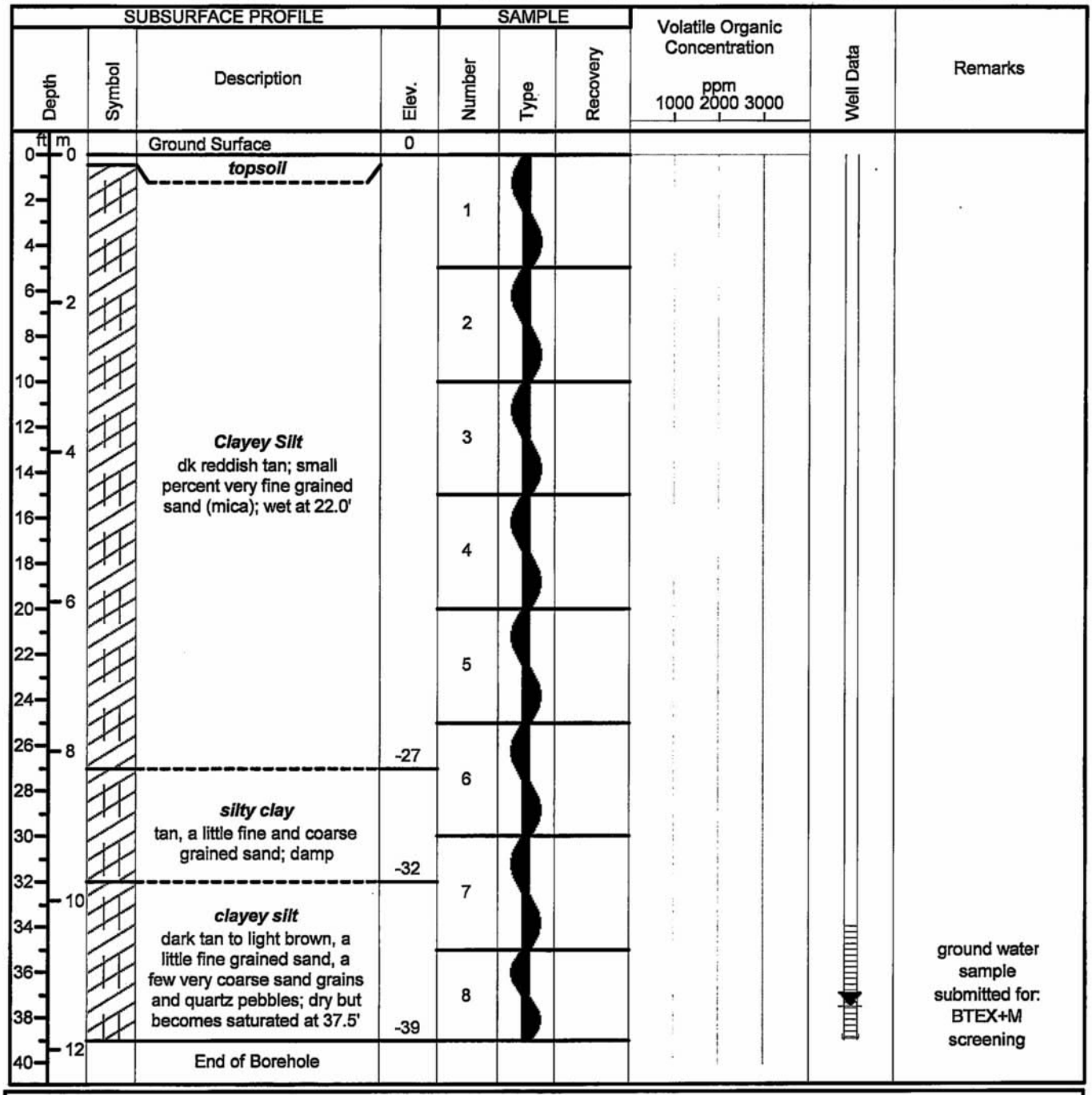
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-44D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/6/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

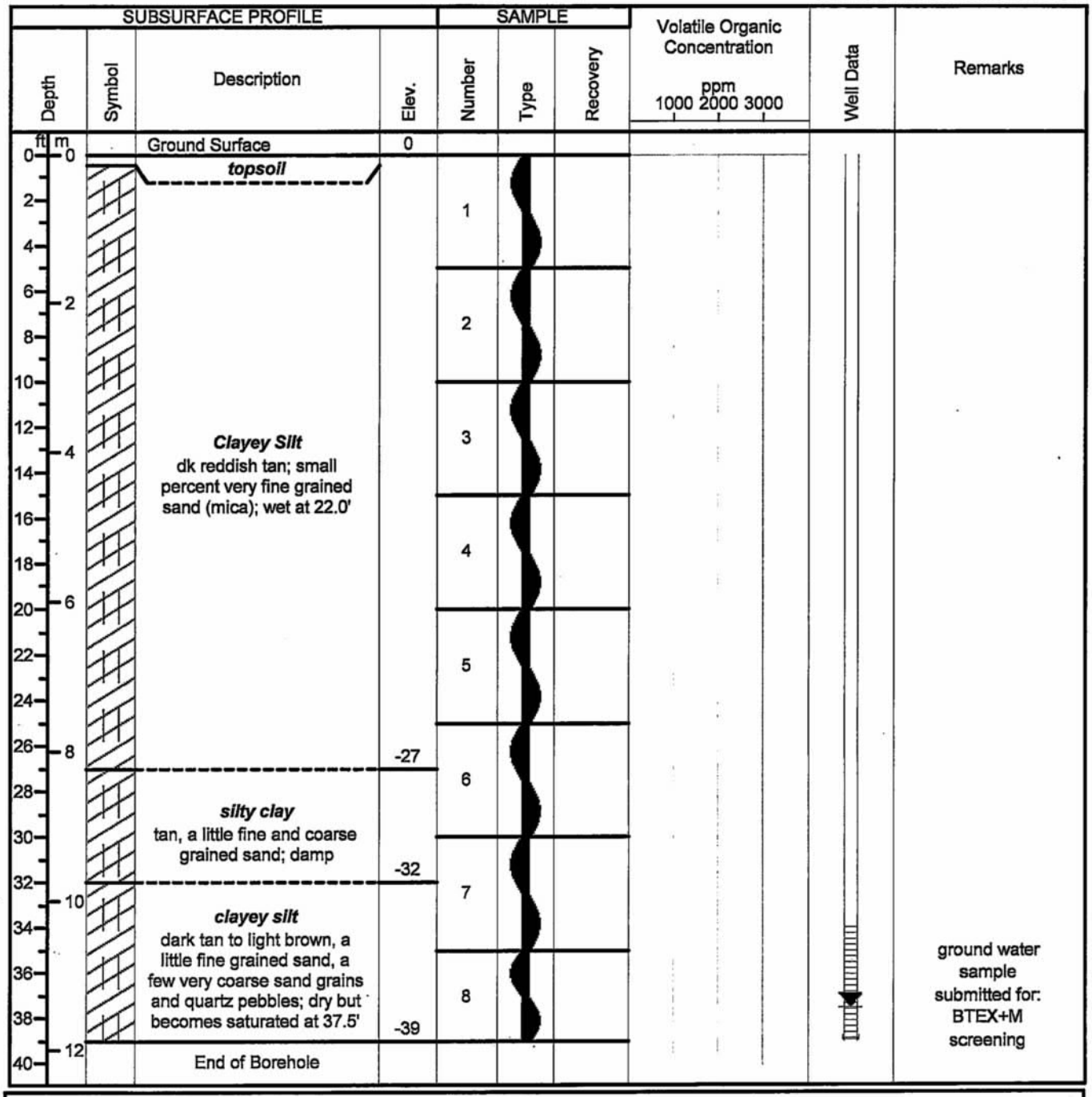
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-45D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/7/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

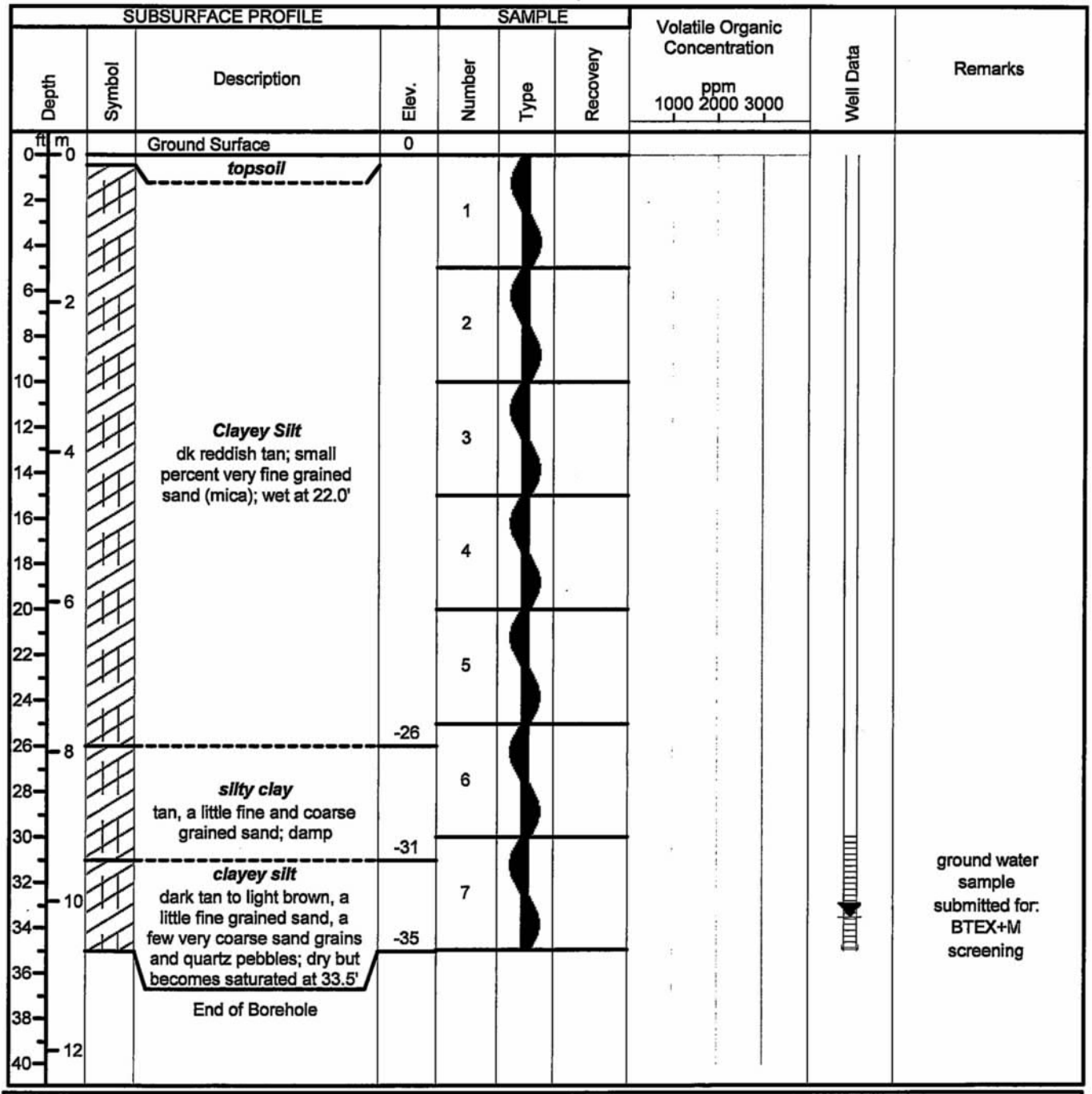
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-46D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/7/12

Casing Diameter: 1.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 33.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

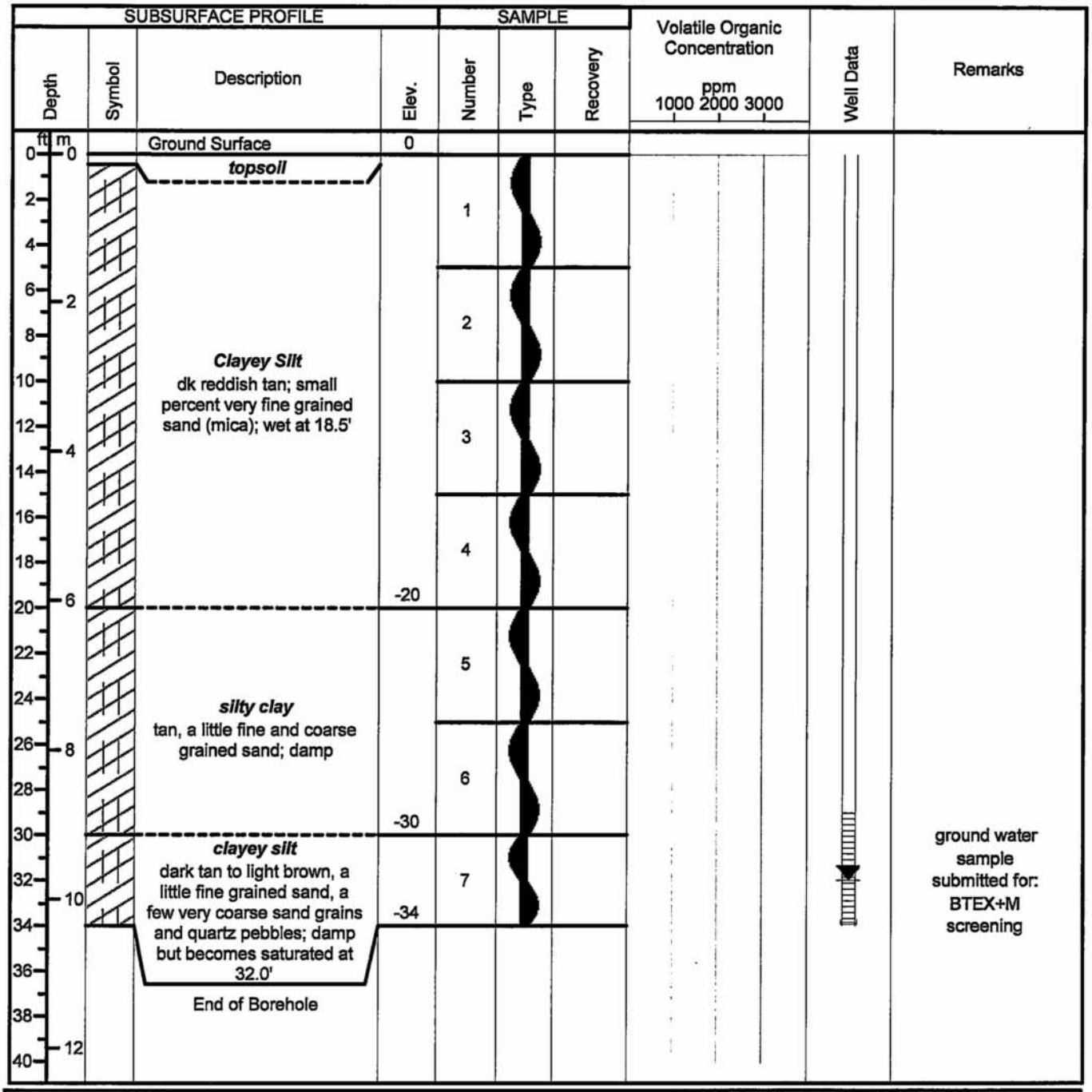
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-48D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/25/12

Casing Diameter: 1.0"

Total Depth of Well: 34.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 32.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

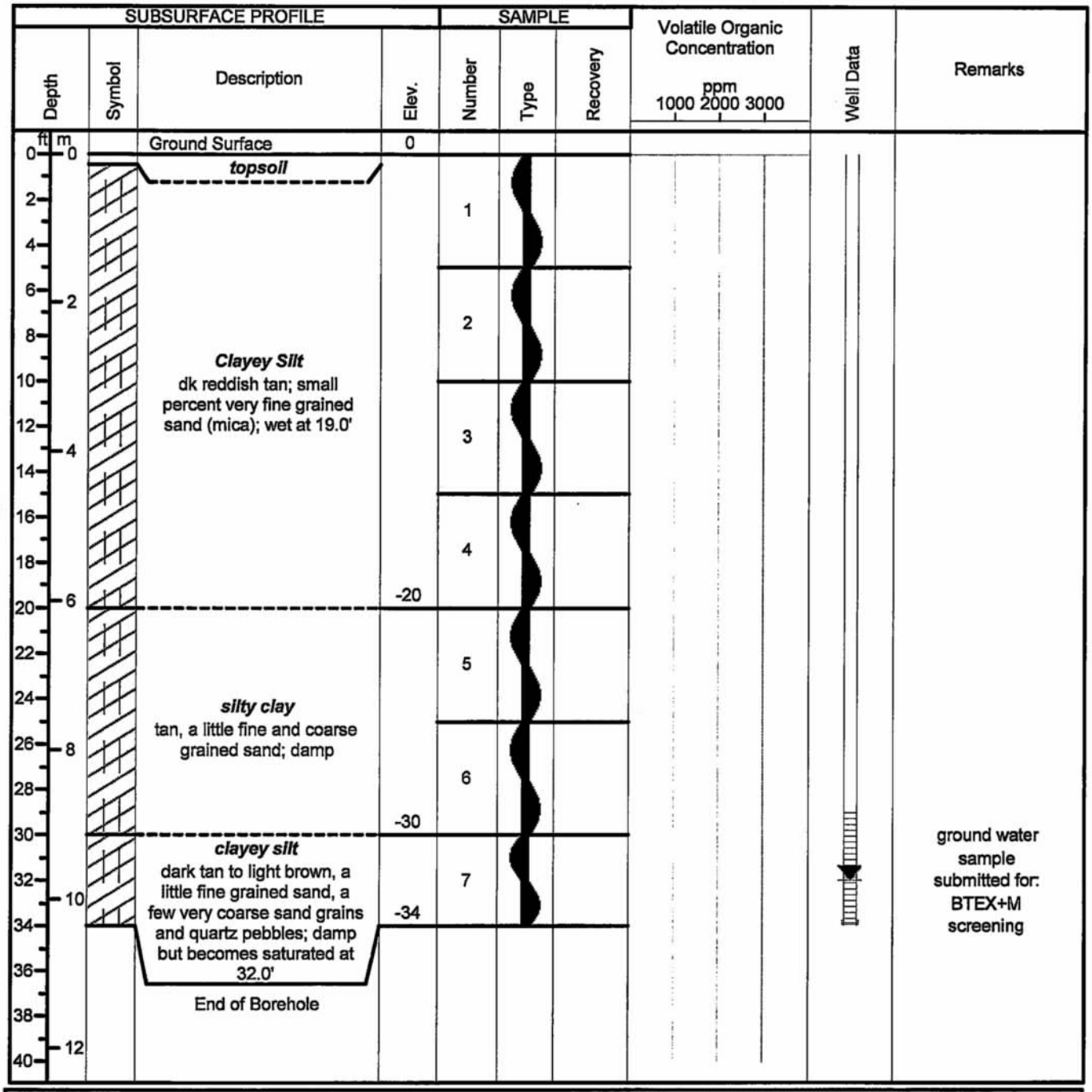
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-49D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 7/26/12

Casing Diameter: 1.0"

Total Depth of Well: 34.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 32.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

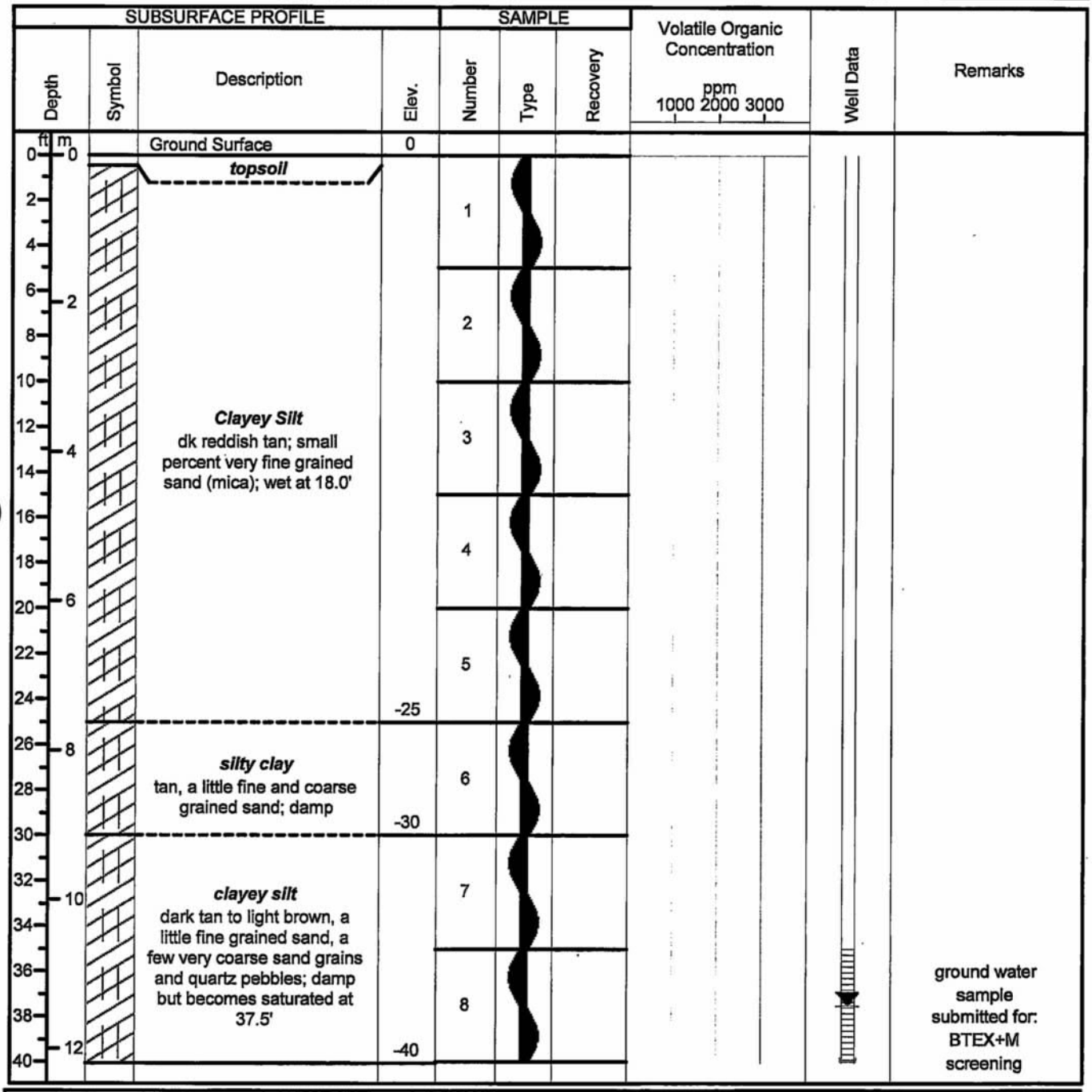
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-50D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/13/12

Casing Diameter: 1.0"

Total Depth of Well: 40.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.5' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

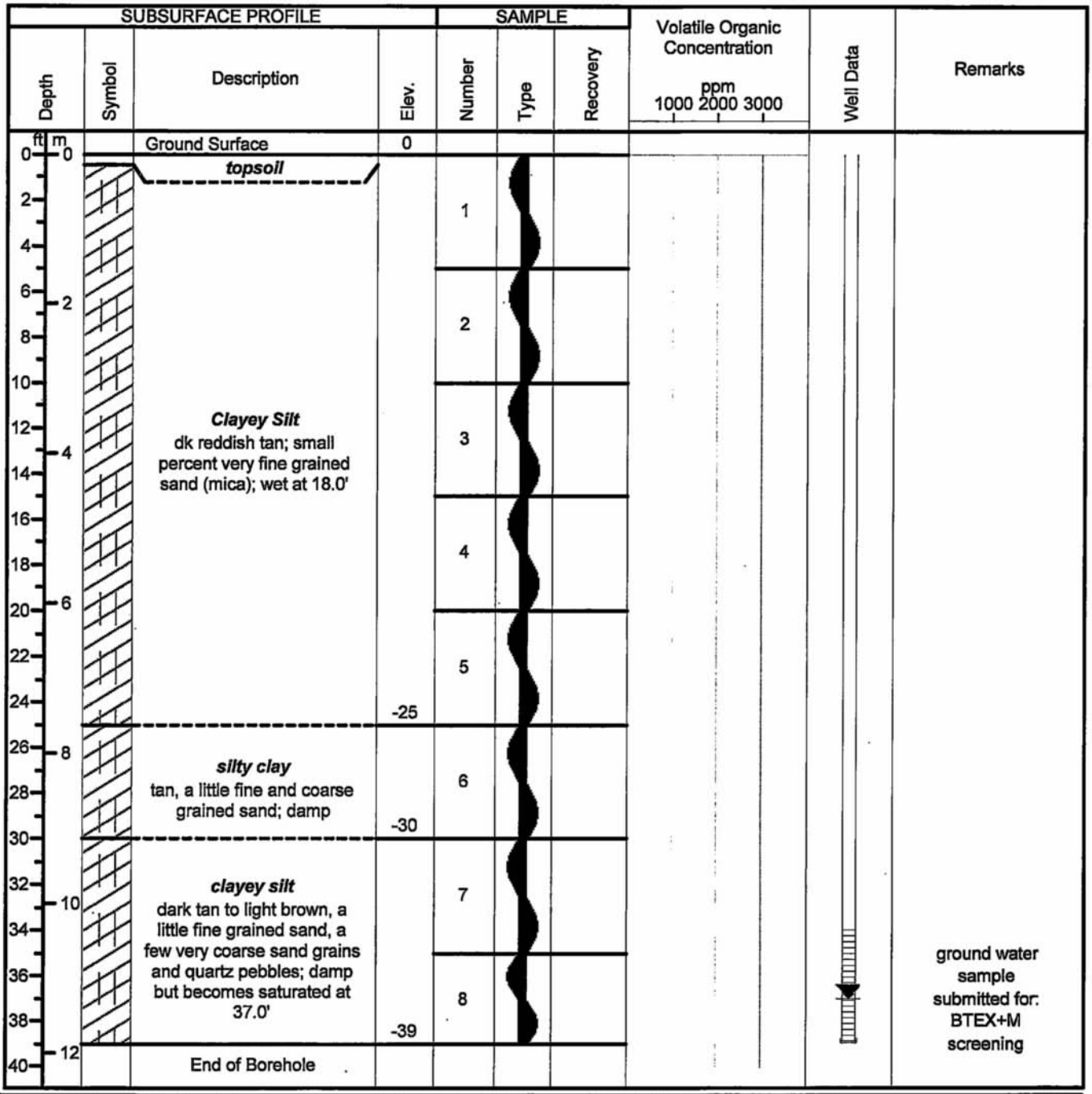
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-51D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/13/12

Casing Diameter: 1.0"

Total Depth of Well: 39.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 37.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

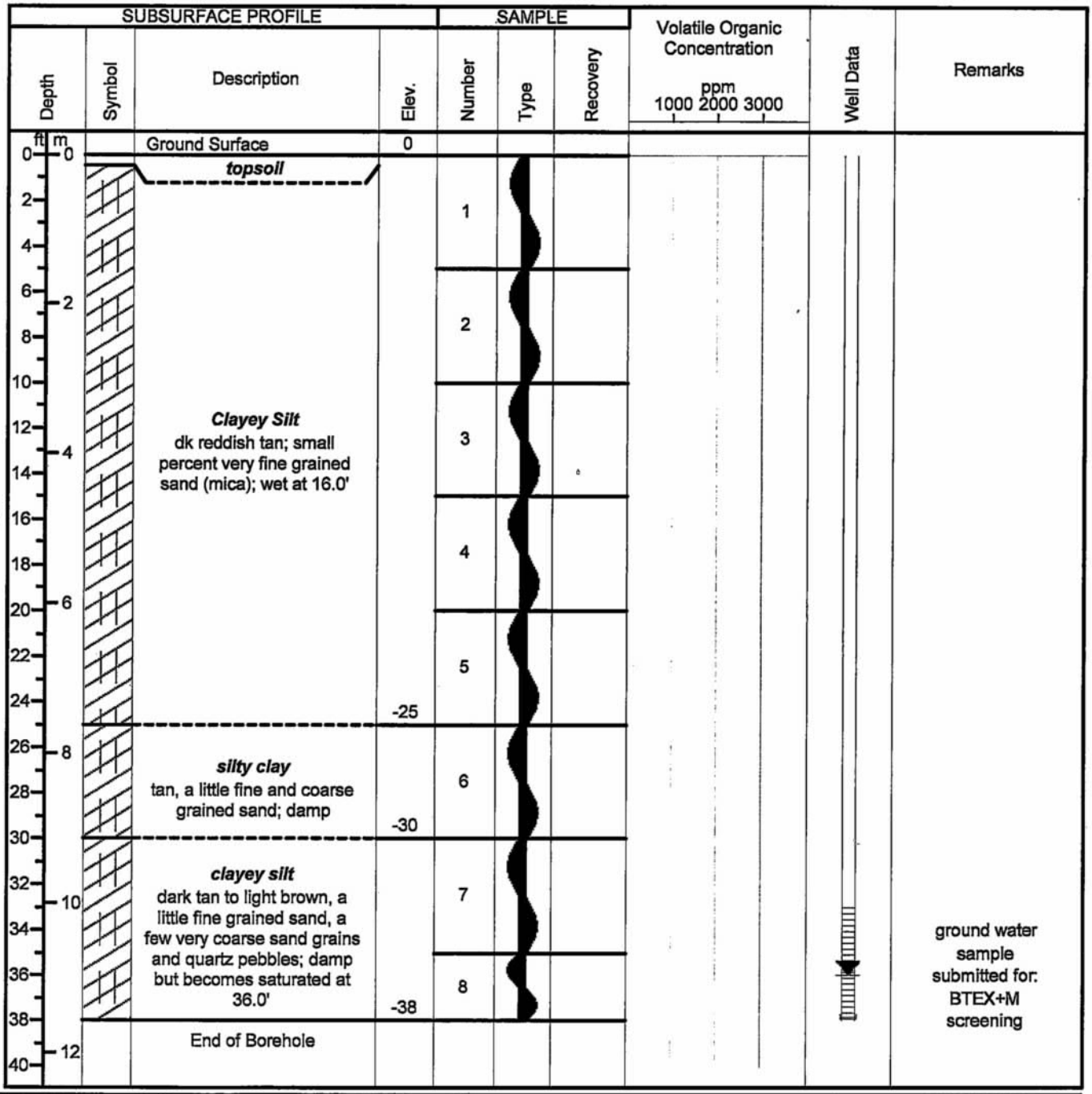
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-52D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/13/12

Casing Diameter: 1.0"

Total Depth of Well: 38.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 36.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-53D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE					
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery	Volatile Organic Concentration (ppm, 1000 2000 3000)	Well Data	Remarks
0 / 0		Ground Surface	0						
		asphalt		1					
2									
4				2					
6 / 2									
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at 15.0'		3					
10									
12 / 4				4					
14									
16									
18									
20 / 6			-20	5					
22									
24		***silty clay*** tan, a little fine and coarse grained sand; damp							
26 / 8				6					
28									
30			-30						
32		***clayey silt*** dark tan to light brown, a little fine grained sand, a few very coarse sand grains and quartz pebbles; damp but becomes saturated at 36.0'		7					ground water sample submitted for: BTEX+M screening
34 / 10									
36				8					
38			-38						
40 / 12		End of Borehole							

Drill Method: auger rig

Drill Date: 9/14/12

Casing Diameter: 1.0"

Total Depth of Well: 38.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 36.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

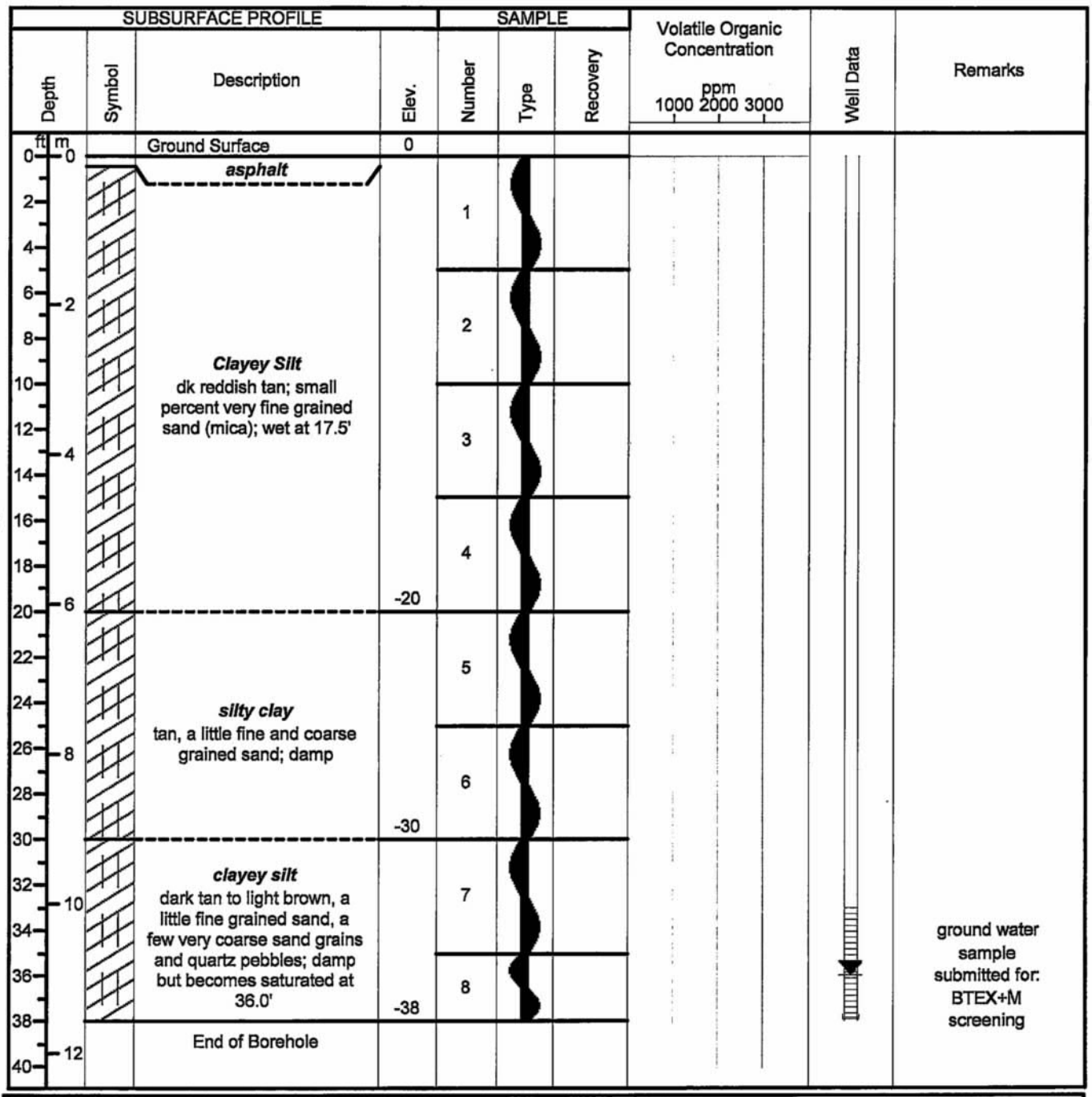
Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-54D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/14/12

Casing Diameter: 1.0"

Total Depth of Well: 38.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 36.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: TMW-55D

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 1000 2000 3000	Well Data	Remarks
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		topsoil		1					
2									
4				2					
6 / 2									
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at 18.5'		3					
10									
12 / 4				4					
14									
16									
18									
20 / 6			-20	5					
22									
24		***silty clay*** tan, a little fine and coarse grained sand; damp							
26 / 8				6					
28									
30			-30	7					ground water sample submitted for: BTEX+M screening
32		***clayey silt*** dark tan to light brown, a little fine grained sand, a few very coarse sand grains and quartz pebbles; damp but becomes saturated at 36.0'							
34 / 10									
36				8					
38			-38						
40 / 12		End of Borehole							

Drill Method: auger rig

Drill Date: 9/14/12

Casing Diameter: 1.0"

Total Depth of Well: 38.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 36.0' (enc.)

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

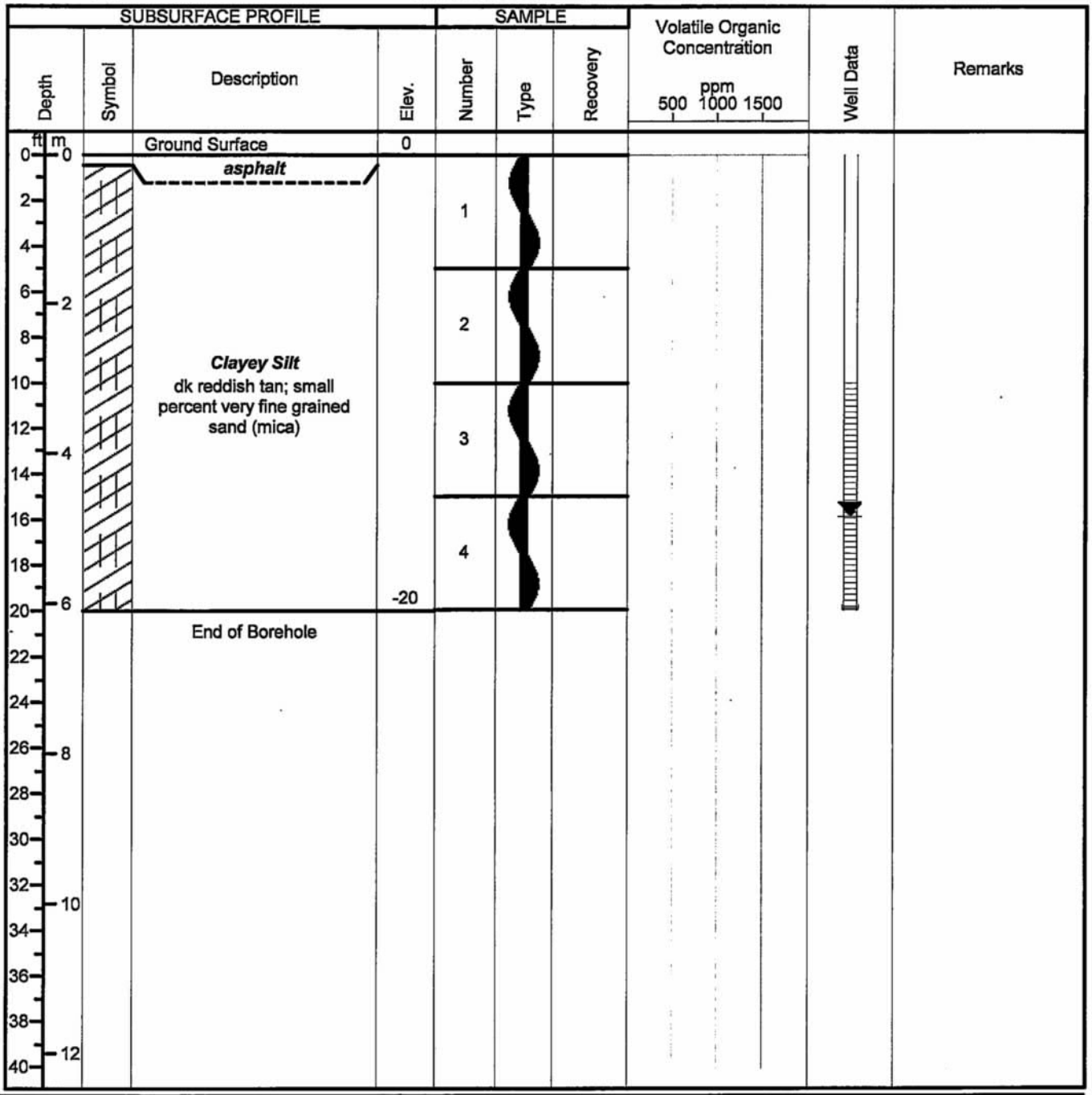
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-1

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.88'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-2

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 500 1000 1500	Well Data	Remarks
Depth ft / m	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt							
2				1					
4									
6 / 2				2					
8									
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
12 / 4				3					
14									
16				4					
18									
20 / 6			-20						
22		End of Borehole							
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 14.30'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

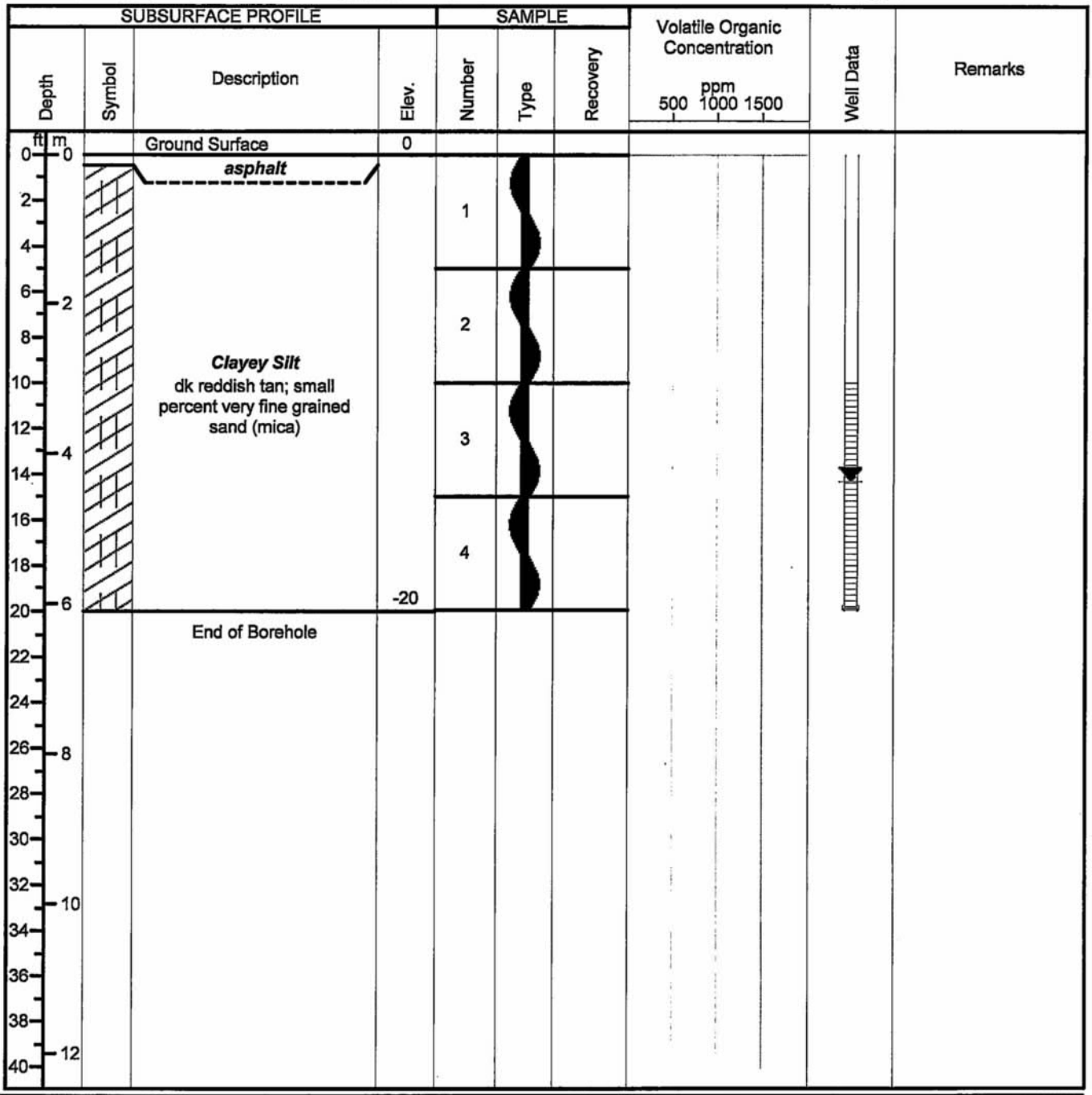
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-3

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 14.32'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-4

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery	ppm 500 1000 1500	Well Data	Remarks
0 / 0		Ground Surface	0						
0		***asphalt***							
2				1					
4									
6 / 2				2					
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
10									
12 / 4				3					
14									
16									
18				4					
20 / 6			-20						
20		End of Borehole							
22									
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 14.32'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-5

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 500 1000 1500	Well Data	Remarks
ft m		Ground Surface	0						
0 0		***asphalt***							
2				1					
4									
6 2				2					
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
10				3					
12 4									
14				4					
16									
18									
20 6			-20						
22		End of Borehole							
24									
26 8									
28									
30									
32 10									
34									
36									
38									
40 12									

Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.08'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-6

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 500 1000 1500	Well Data	Remarks
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt							
2				1					
4									
6 / 2				2					
8									
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
12 / 4				3					
14									
16				4					
18									
20 / 6			-20						
22		End of Borehole							
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/25/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.30'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-7

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 500 1000 1500	Well Data	Remarks
Depth ft / m	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt							
2				1					
4									
6 / 2				2					
8									
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
12 / 4				3					
14									
16									
18				4					
20 / 6			-20						
		End of Borehole							
22									
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.58'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

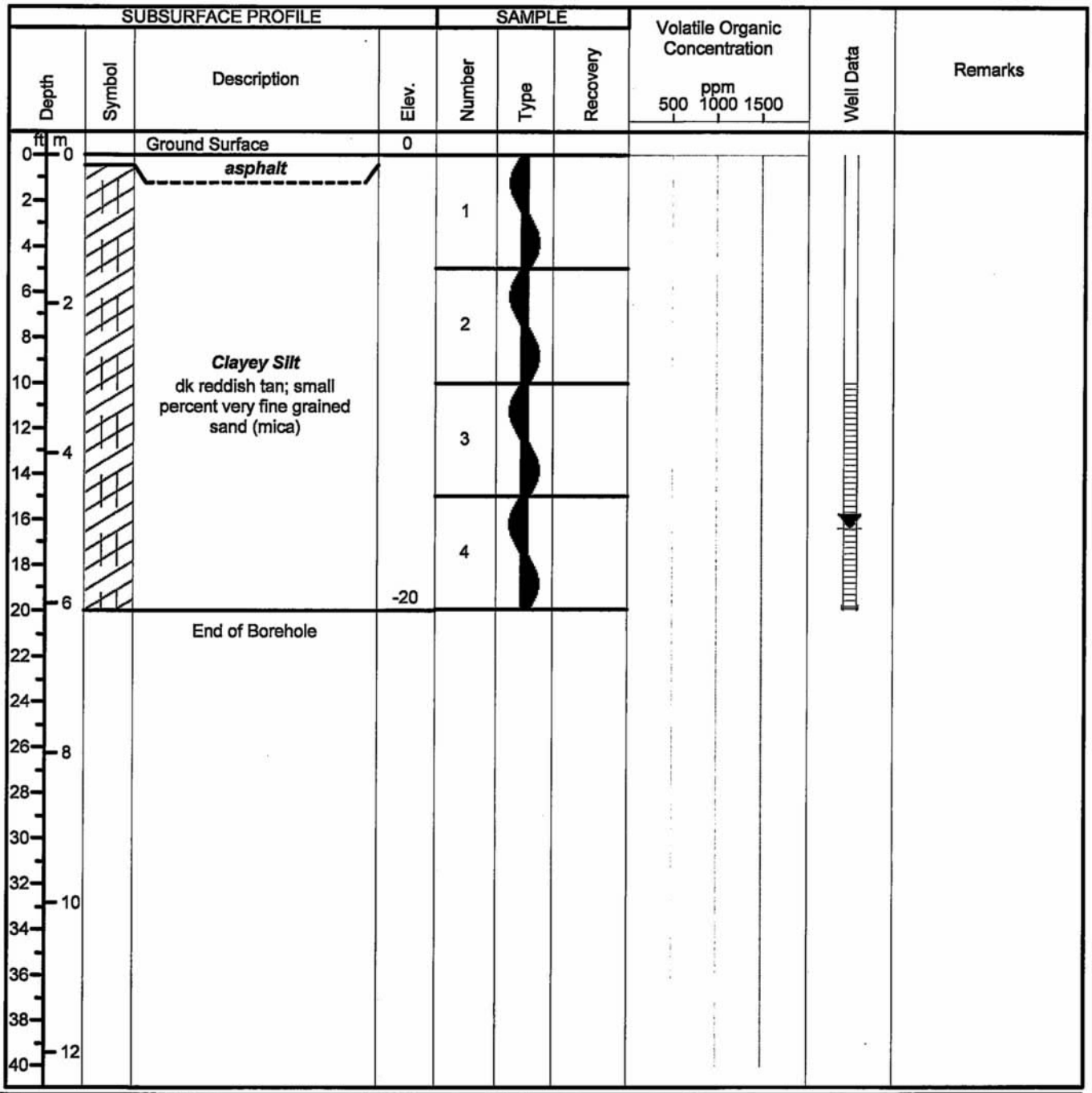
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-8

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.38'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

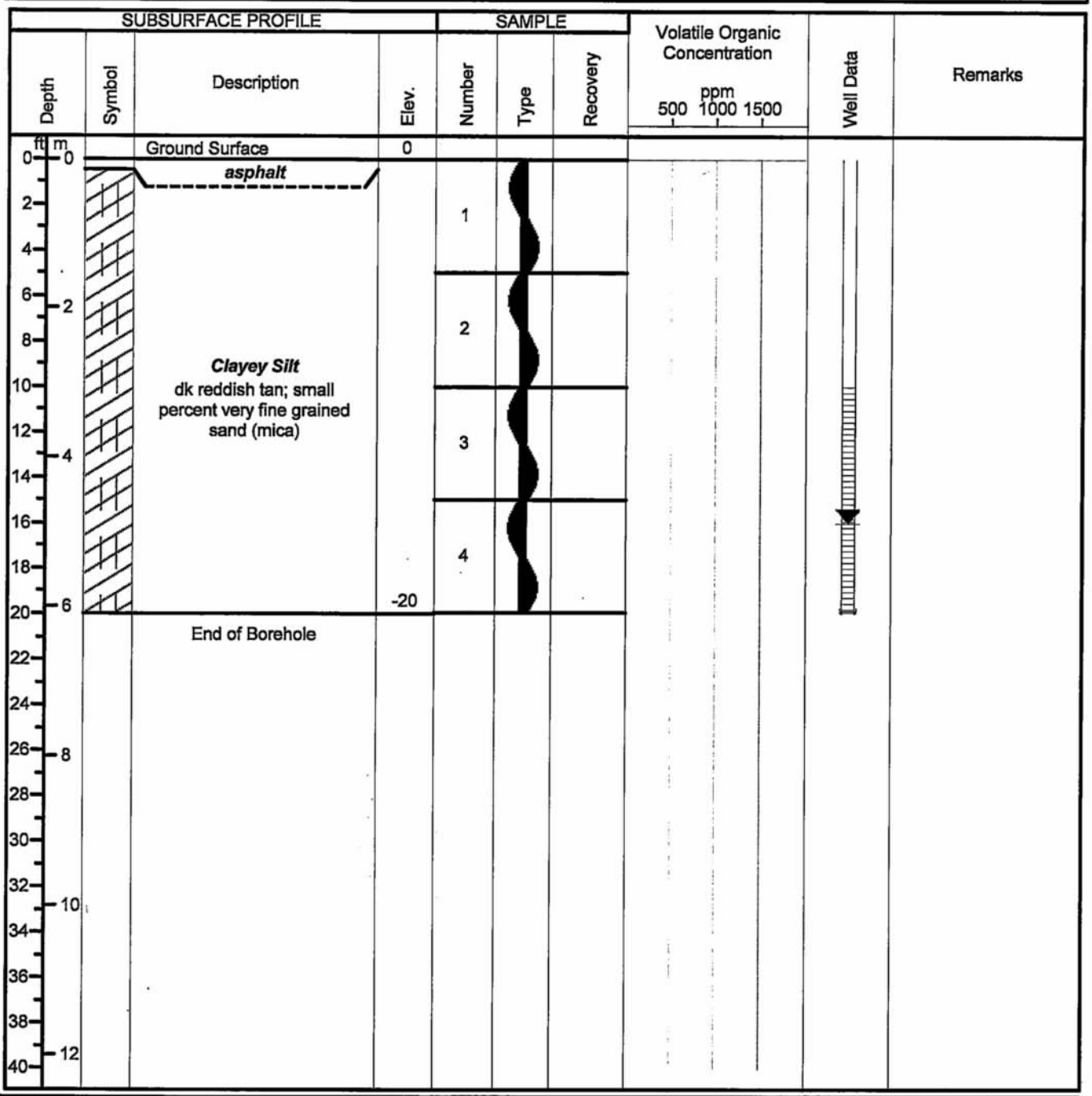
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-9

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.98'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

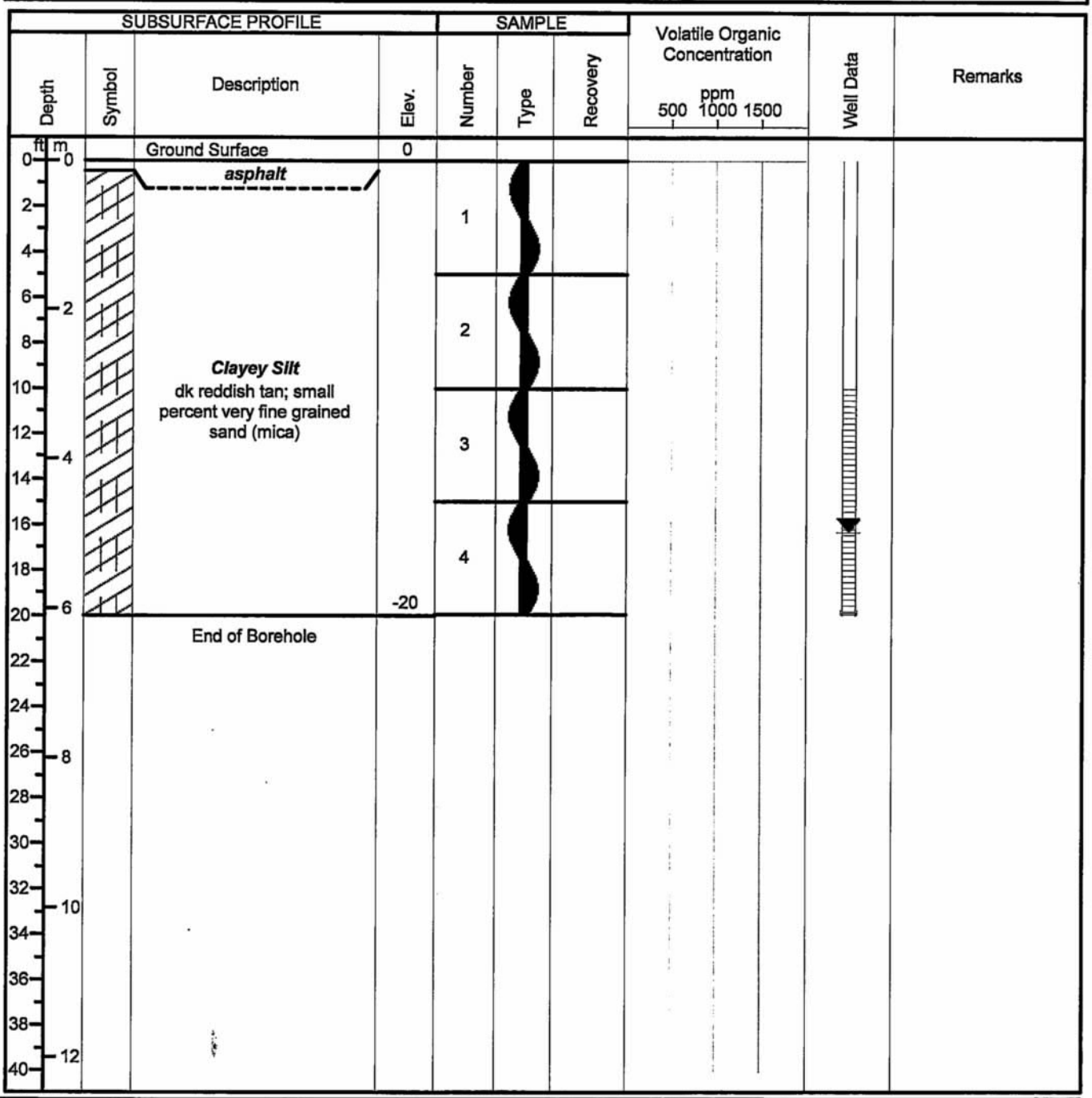
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-10

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.35'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-11

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 500 1000 1500	Well Data	Remarks
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt							
2				1					
4									
6 / 2				2					
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
10									
12 / 4				3					
14									
16				4					
18									
20 / 6			-20						
22		End of Borehole							
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/26/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.30'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-12

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 500 1000 1500	Well Data	Remarks
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		asphalt		1					
2									
4				2					
6 / 2		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
8				3					
10									
12 / 4				4					
14									
16									
18									
20 / 6			-20						
		End of Borehole							
22									
24									
26 / 8									
28									
30									
32 / 10									
34									
36									
38									
40 / 12									

Drill Method: auger rig

Drill Date: 9/27/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 14.43'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

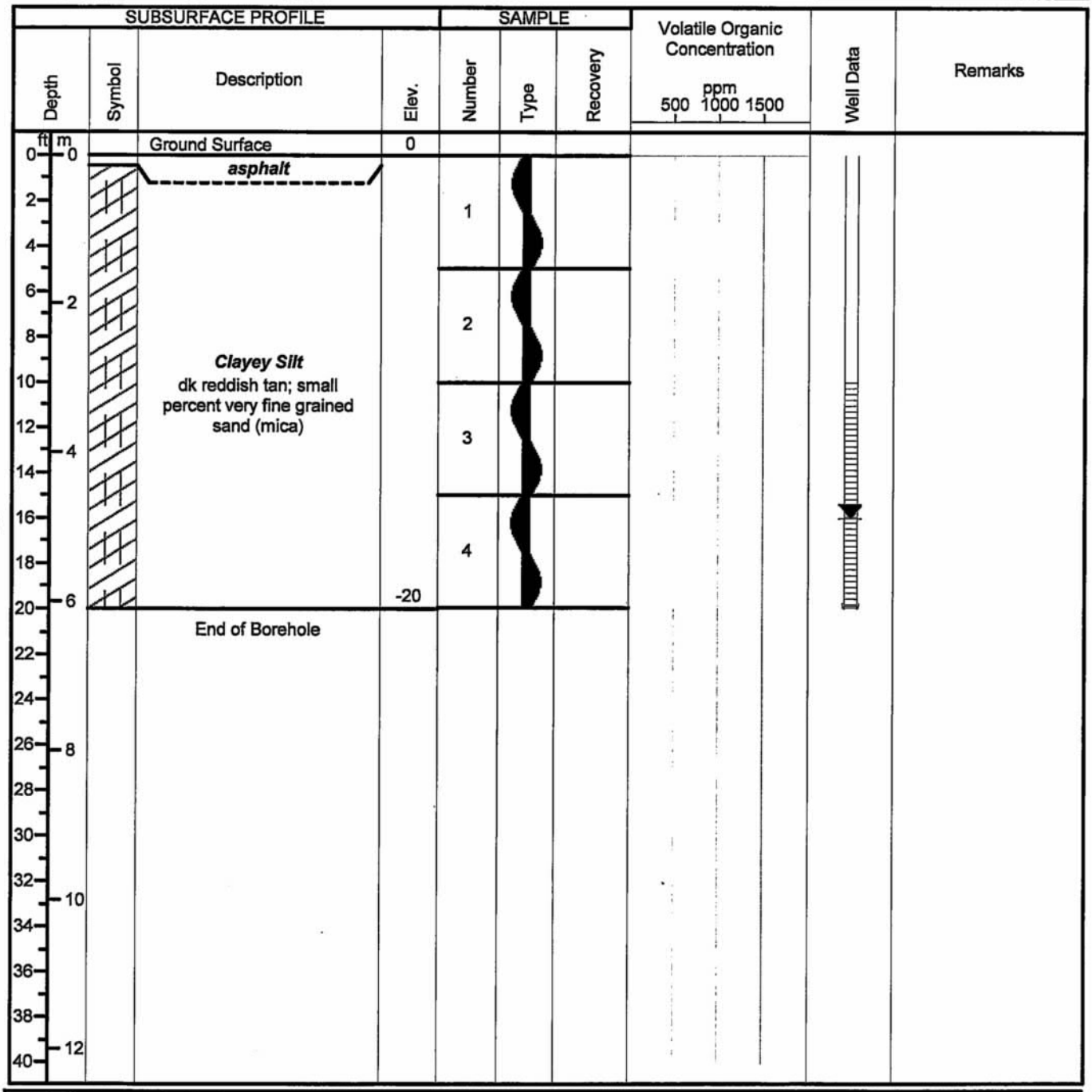
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-13

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/27/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.98'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-14

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration		
Depth	Symbol	Description	Elev.	Number	Type	Recovery	ppm 500 1000 1500	Well Data	Remarks
ft m		Ground Surface	0						
0 0		***asphalt***							
2				1					
4									
6 2				2					
8		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)							
10									
12 4				3					
14									
16				4					
18									
20 6			-20						
22		End of Borehole							
24									
26 8									
28									
30									
32 10									
34									
36									
38									
40 12									

Drill Method: auger rig

Drill Date: 9/27/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.07'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

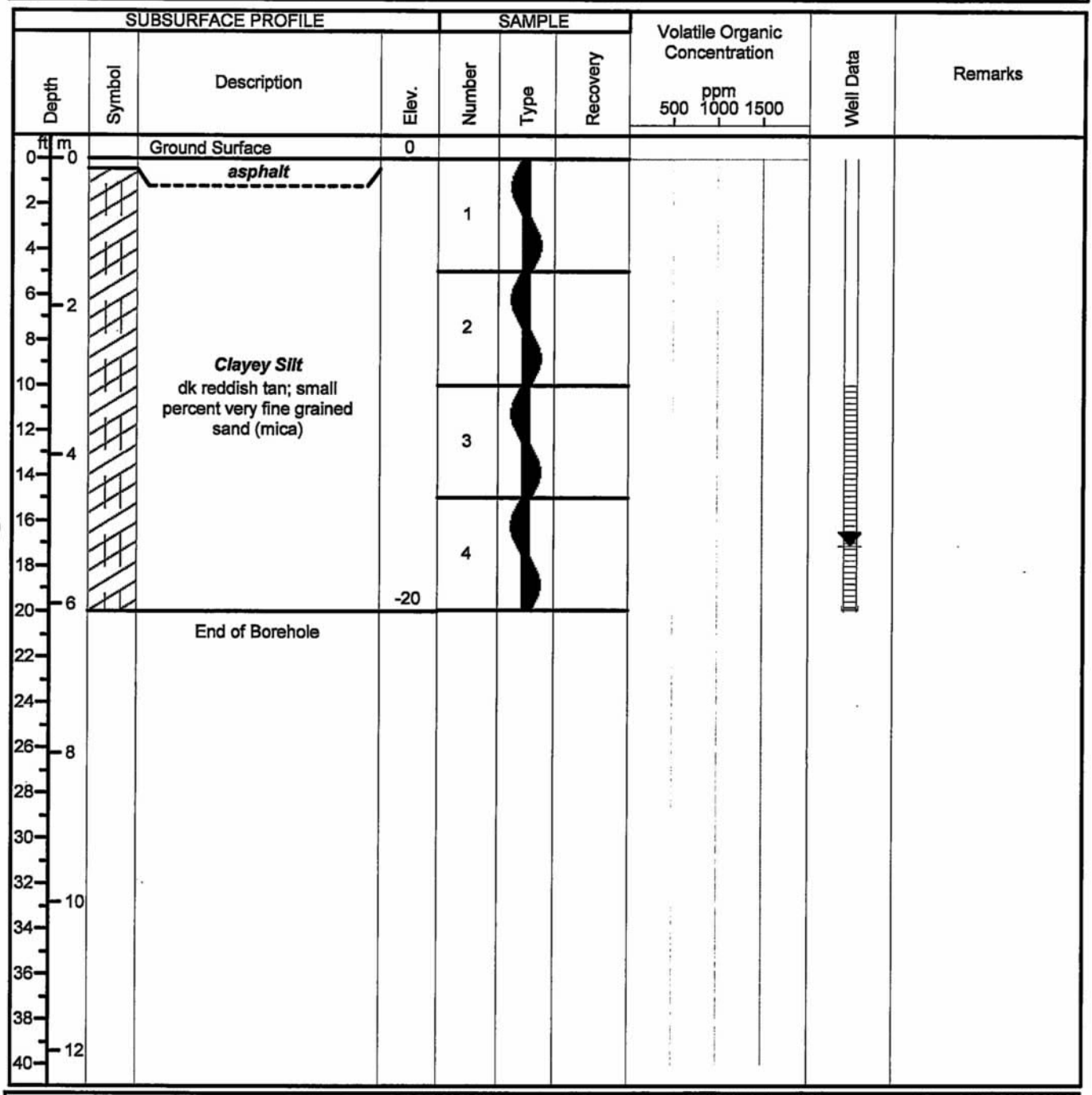
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-15

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/27/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.17'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

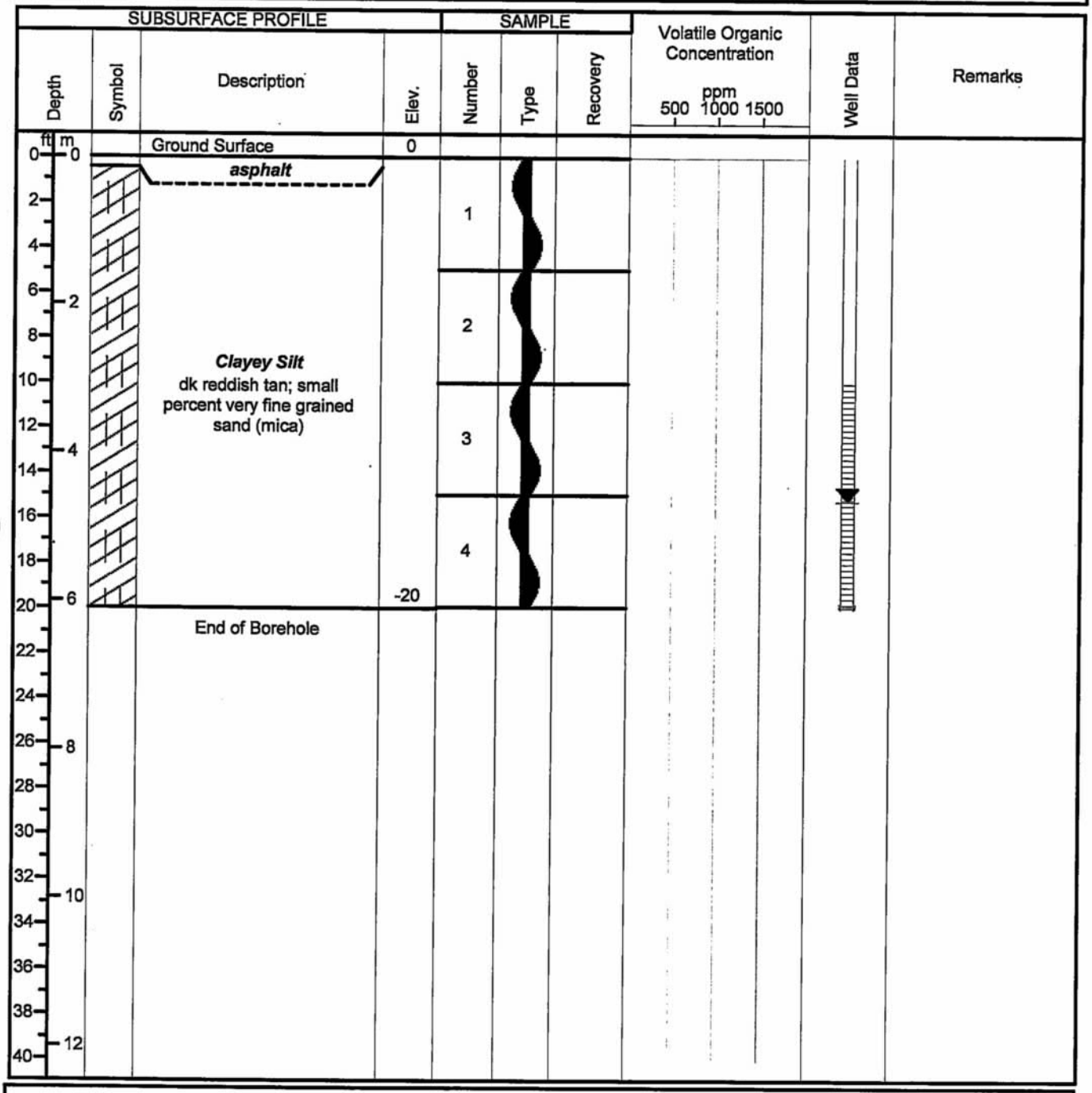
Client: Cecchini

Location: Columbia, SC

Log of Borehole: FP-16

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 9/27/12

Casing Diameter: 1.0"

Total Depth of Well: 20.0

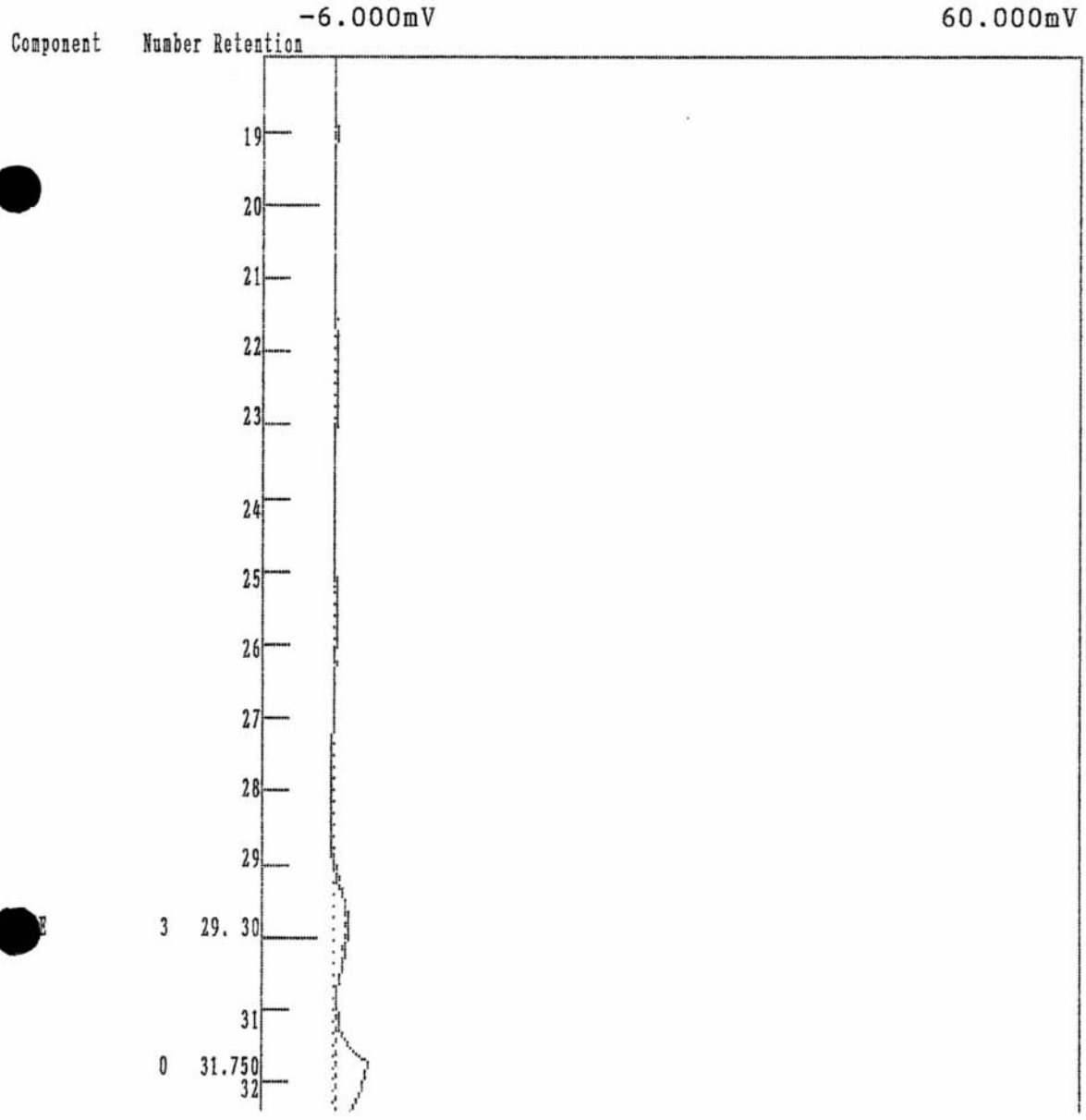
ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 15.26'

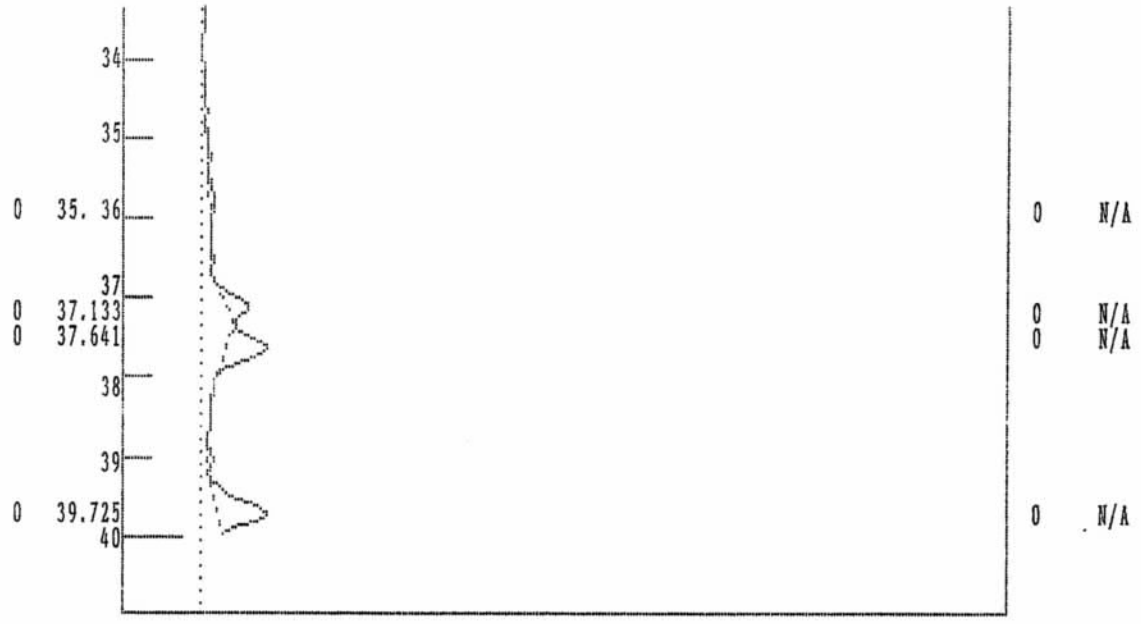
Latitude: N34d03.910'

Longitude: W81d07.012'

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/15/2010 17:16:17
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-1
Operator : TERRY L. TEATE

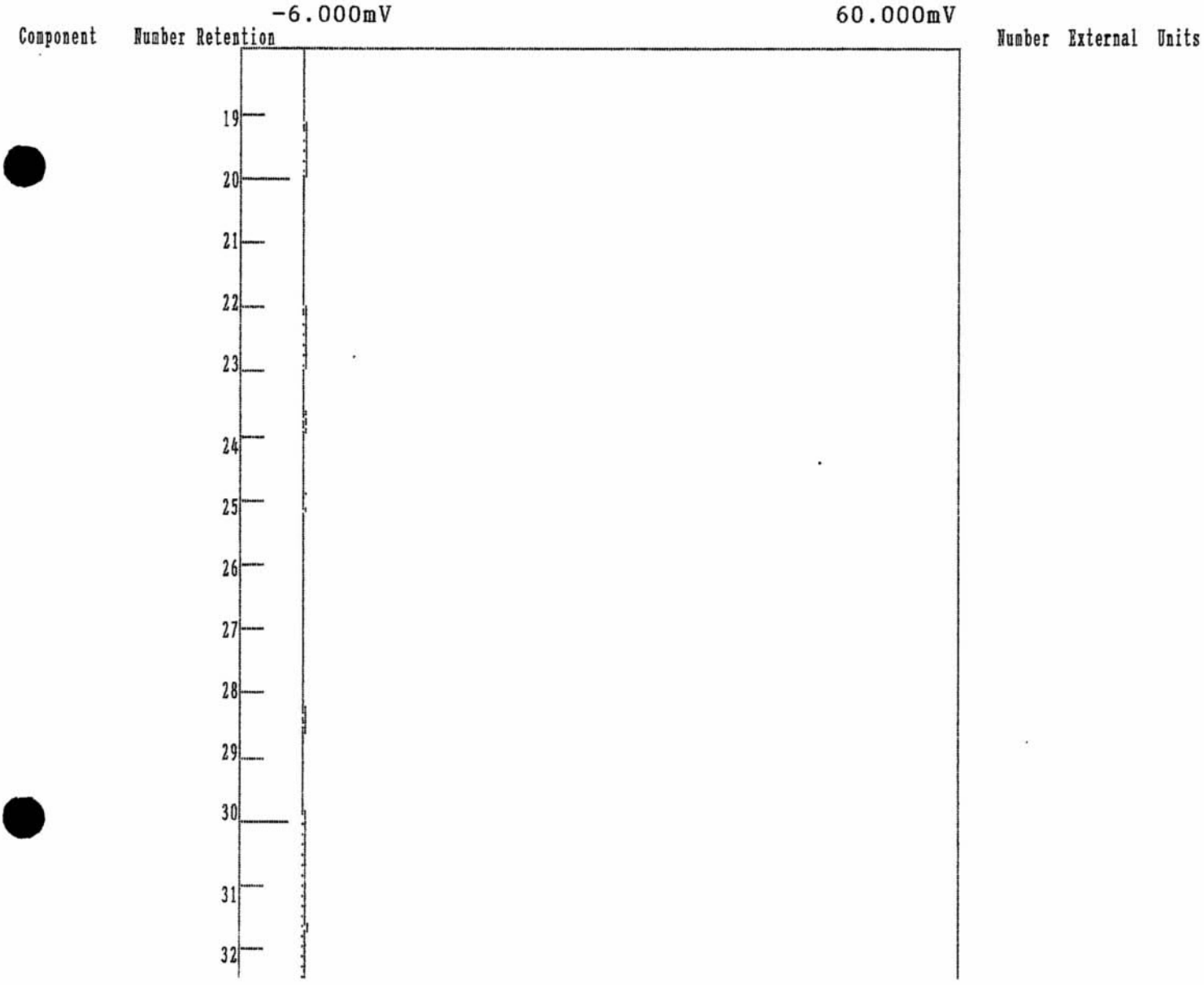


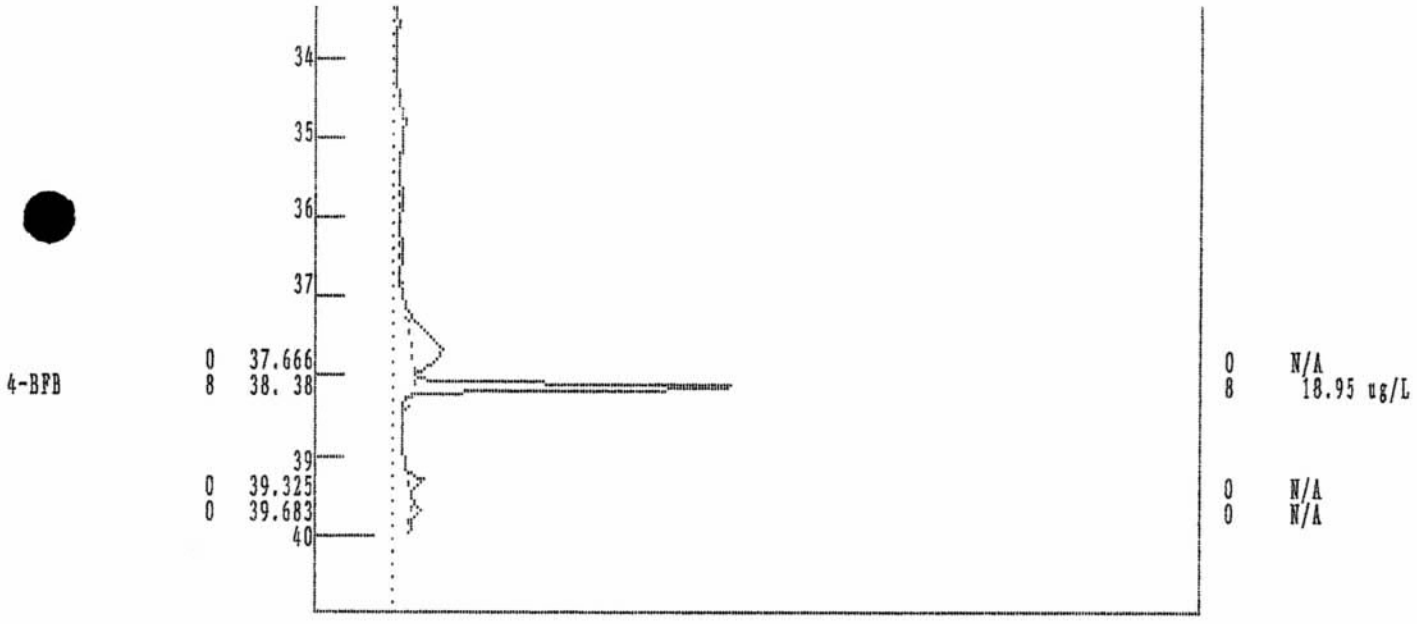
Component	Number	Retention	Number	External	Units
TO E	3	29. 30	3	0.74	ug/L
	0	31.750	0	N/A	



Component	Number	Retention	Area	External	Units
TOLUENE	3	29.841	7.75	0.74	ug/L
	1		**7.75**	**0.74**	

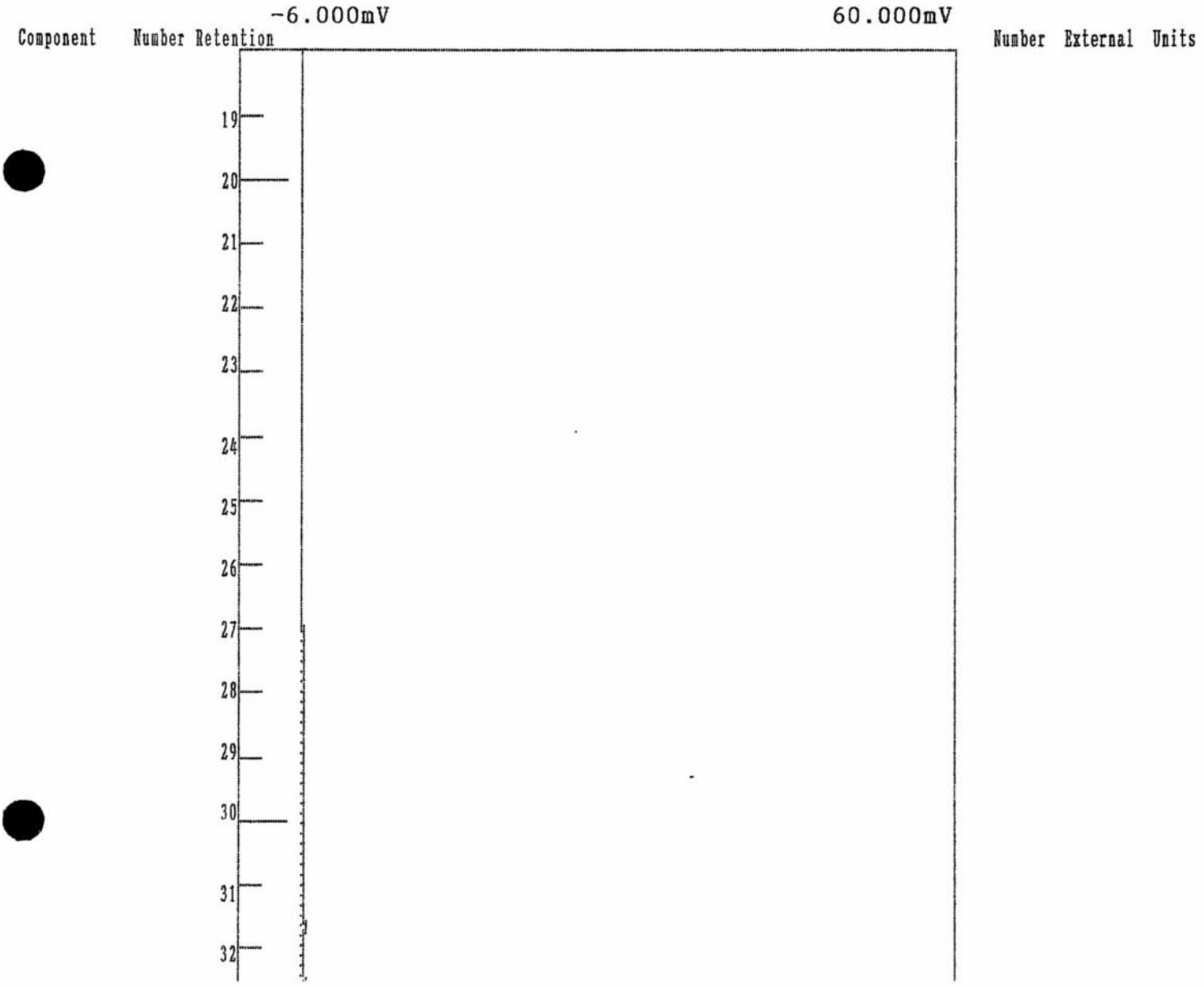
Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/15/2010 18:06:47
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-2
Operator : TERRY L. TEATE

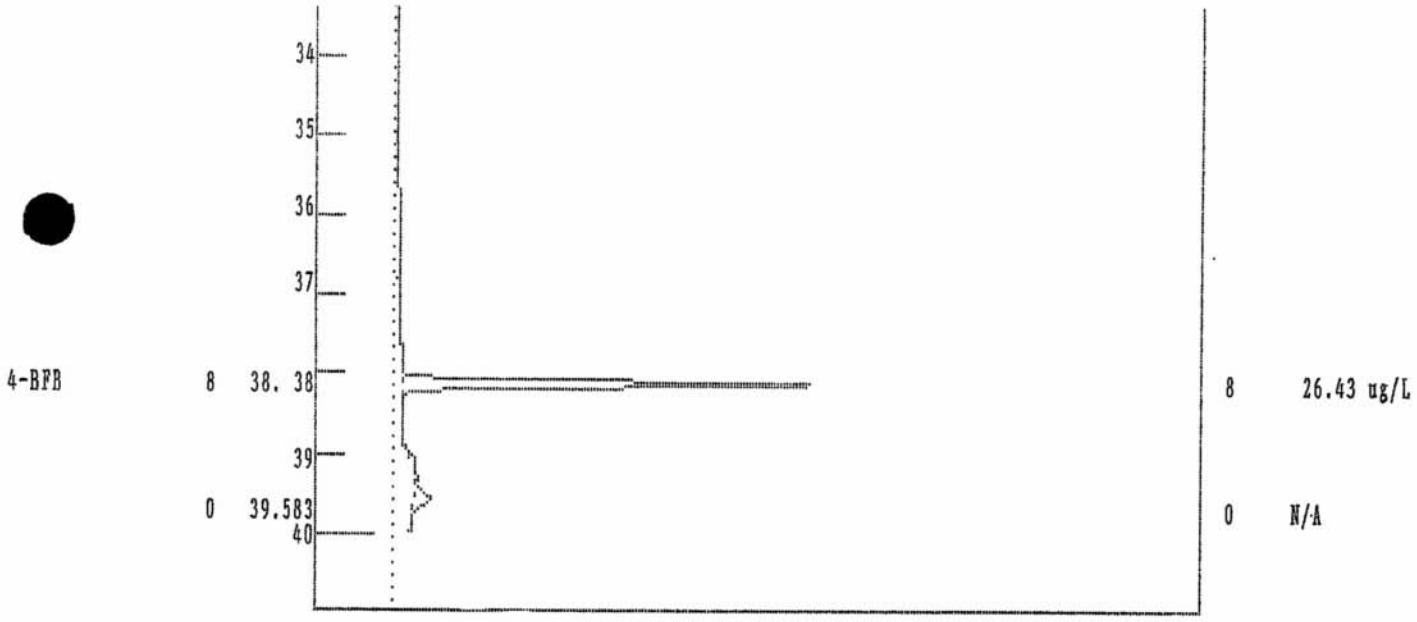




Component	Number	Retention	Area	External	Units
4-BFB	8	38.133	132.94	18.95	ug/L
	1		132.94	18.95	

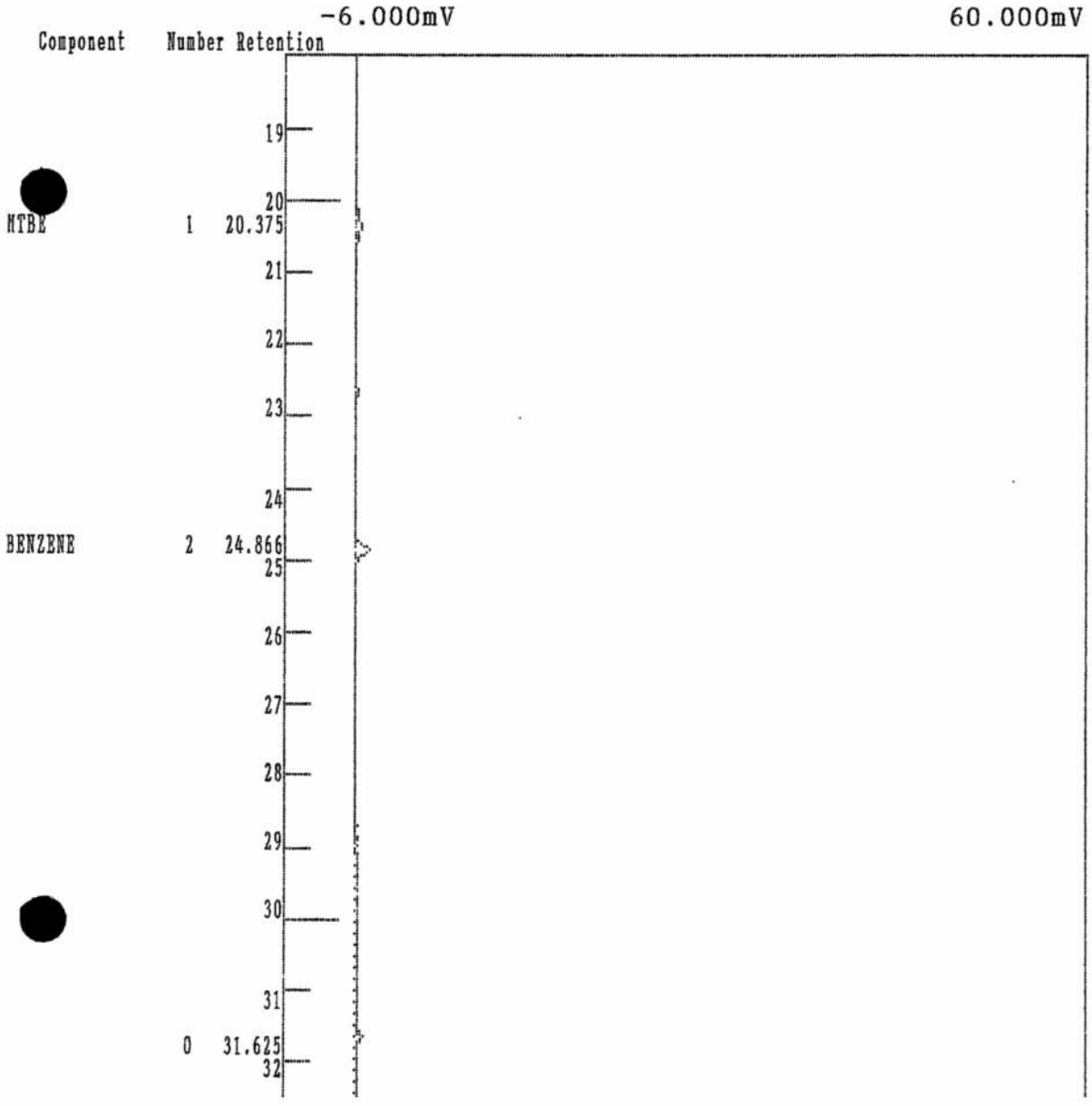
Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/15/2010 18:51:39
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-3
Operator : TERRY L. TEATE



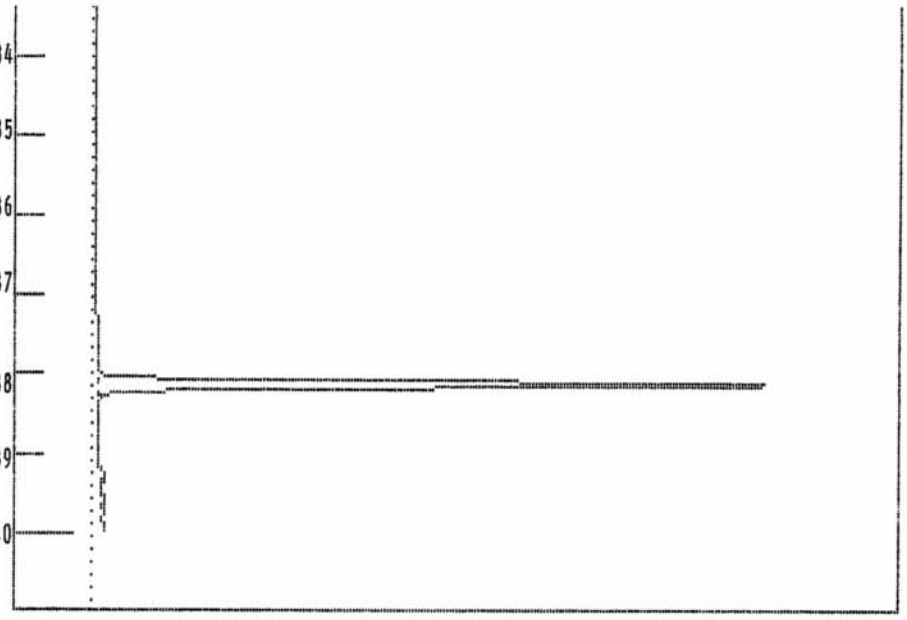


Component	Number	Retention	Area	External	Units
4-BFB	8	38.116	170.68	26.43	ug/L
	1		170.68	26.43	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/15/2010 19:35:01
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-4
Operator : TERRY L. TEATE



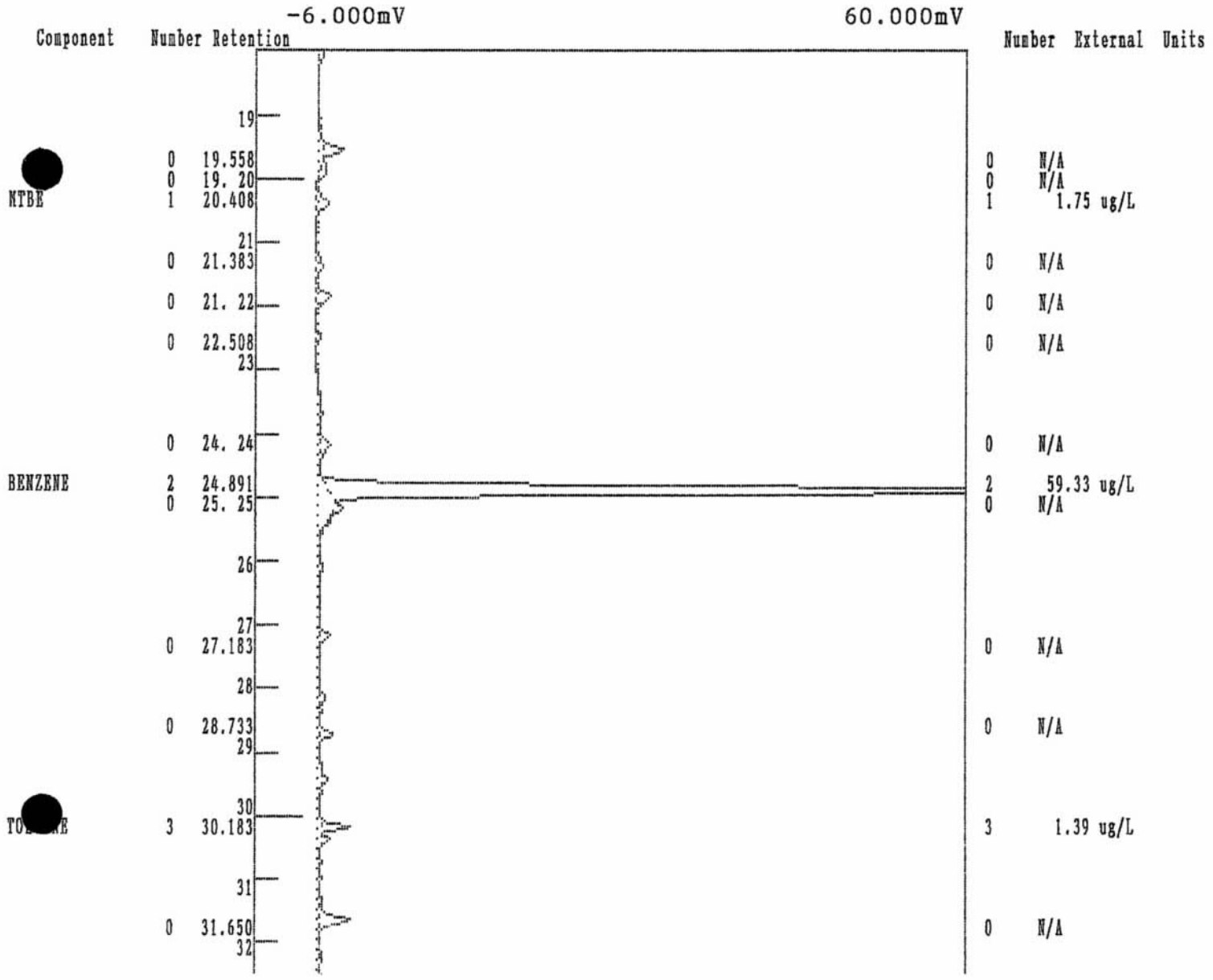
Component	Number	Retention	Number	External	Units
MTBE	1	20.375	1	0.67	ug/L
BENZENE	2	24.866	2	0.84	ug/L
	0	31.625	0	N/A	



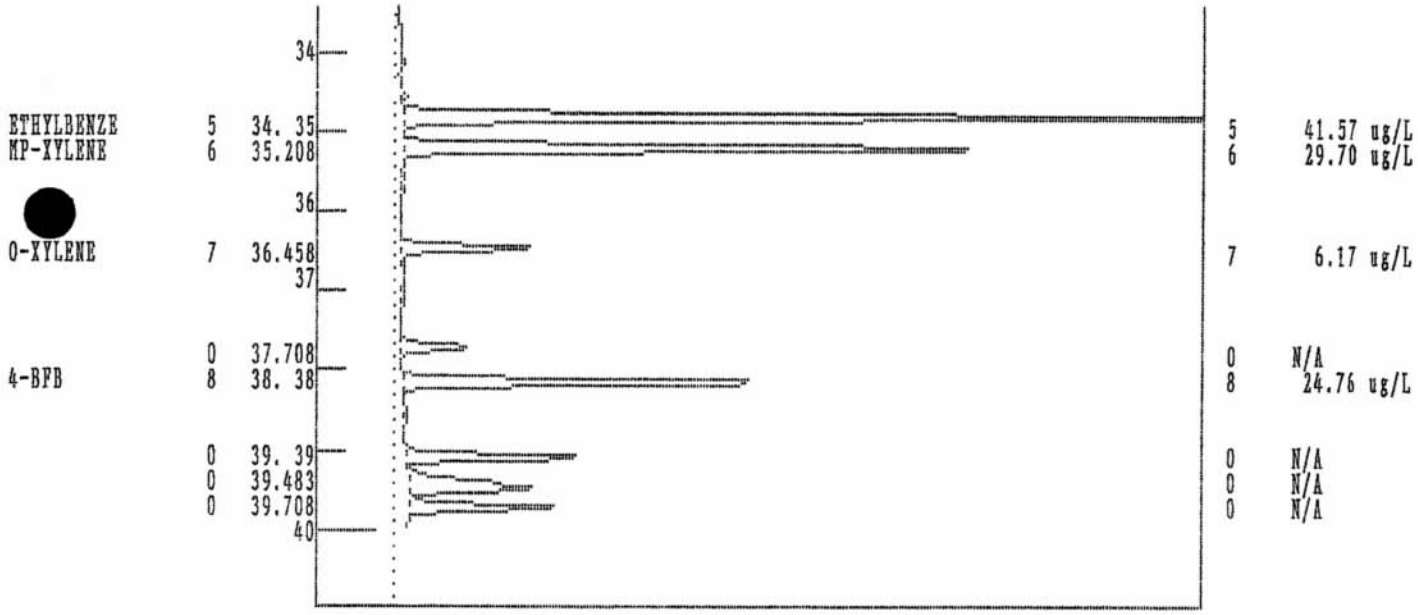
4-BFB 8 38. 8 50.65 ug/L

Component	Number	Retention	Area	External	Units
MTBE	1	20.375	5.35	0.67	ug/L
BENZENE	2	24.866	8.99	0.84	ug/L
4-BFB	8	38.116	279.32	50.65	ug/L
	3		293.66	52.17	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/15/2010 23:26:15
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-5
Operator : TERRY L. TEATE

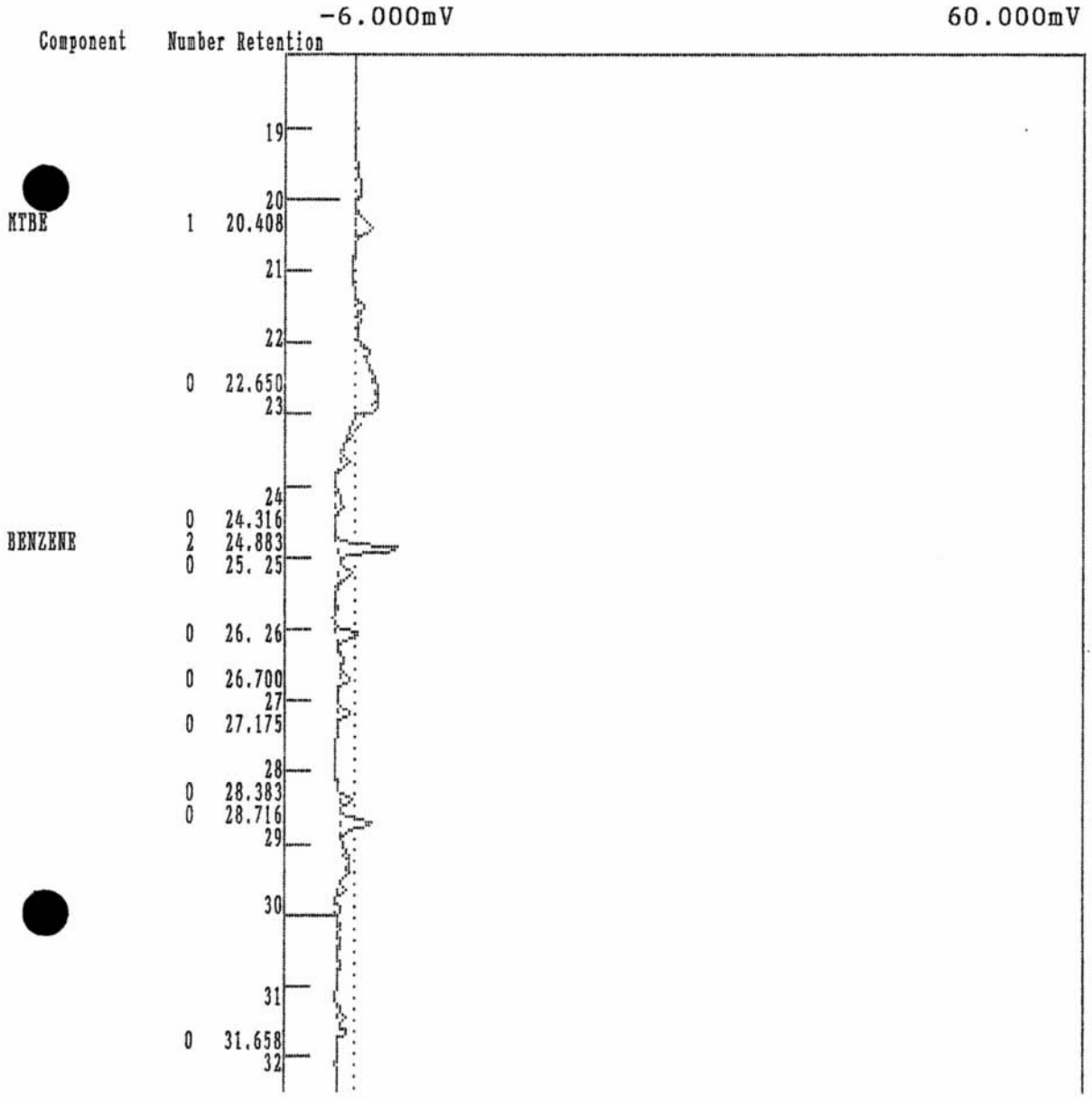


Component	Number	Retention	Number	External	Units
	0	19.558	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.408	1	1.75	ug/L
	0	21.383	0	N/A	
	0	21. 22	0	N/A	
	0	22.508	0	N/A	
	0	24. 24	0	N/A	
BENZENE	2	24.891	2	59.33	ug/L
	0	25. 25	0	N/A	
	0	27.183	0	N/A	
	0	28.733	0	N/A	
TOLUENE	3	30.183	3	1.39	ug/L
	0	31.650	0	N/A	

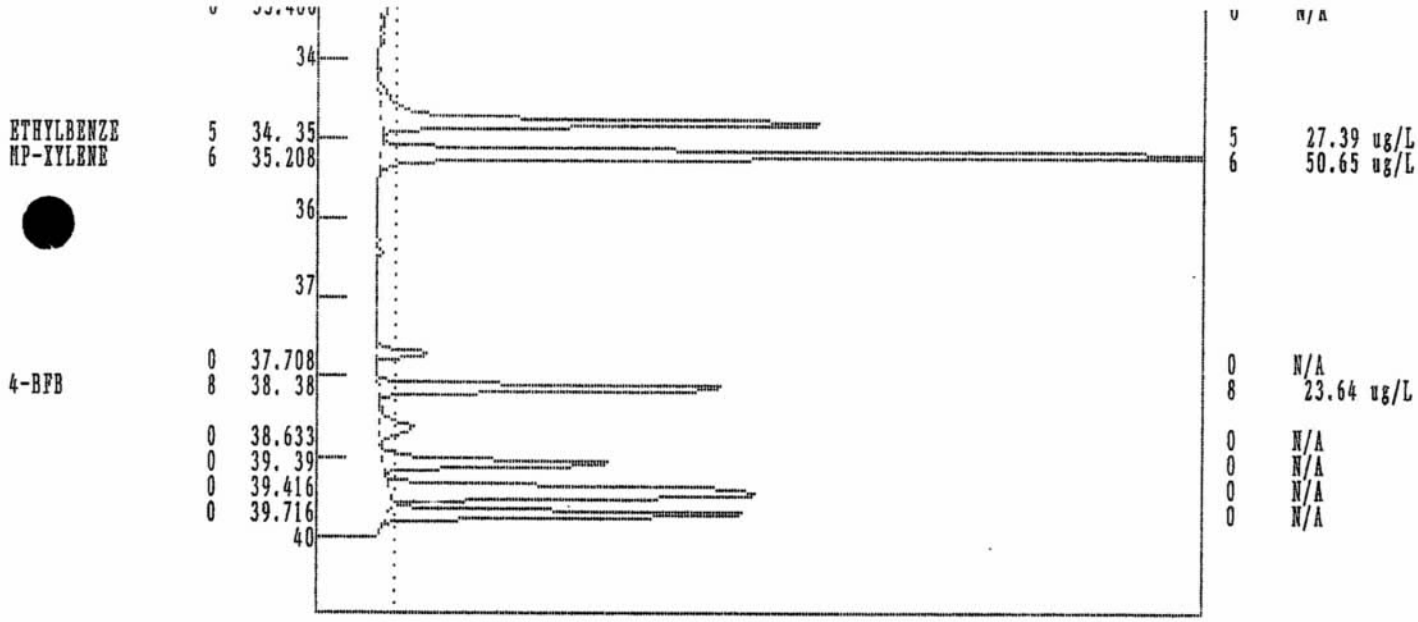


Component	Number	Retention	Area	External	Units
MTBE	1	20.408	13.84	1.75	ug/L
BENZENE	2	24.891	704.05	59.33	ug/L
TOLUENE	3	30.183	14.54	1.39	ug/L
ETHYLBENZE	5	34.825	393.39	41.57	ug/L
MP-XYLENE	6	35.208	256.38	29.70	ug/L
O-XYLENE	7	36.458	55.15	6.17	ug/L
4-BFB	8	38.141	163.20	24.76	ug/L
	7		1600.55	164.66	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/16/2010 00:56:53
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-6
Operator : TERRY L. TEATE

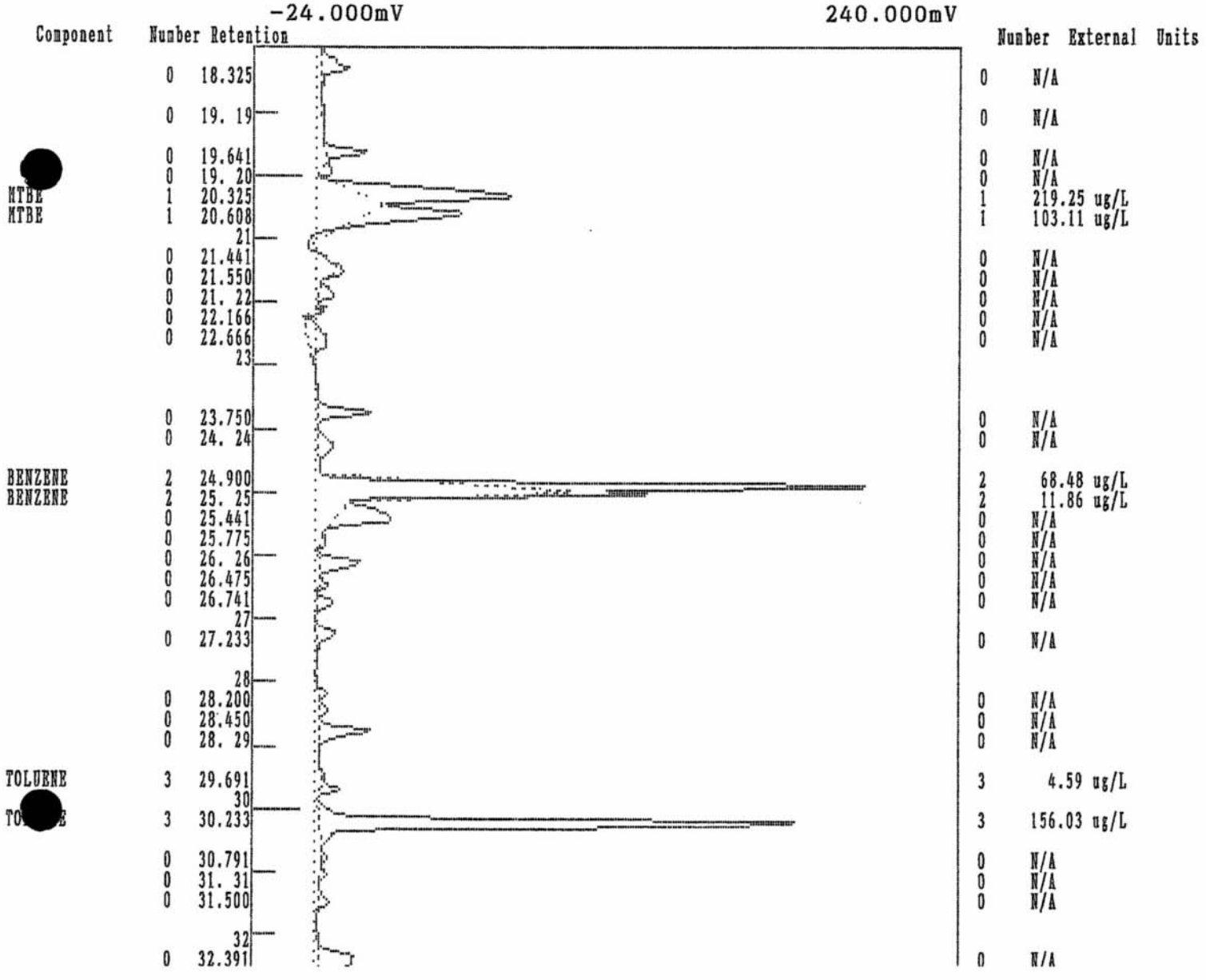


Component	Number	Retention	Number	External	Units
	1	20.408	1	2.50	ug/L
	0	22.650	0	N/A	
	0	24.316	0	N/A	
BENZENE	2	24.883	2	3.65	ug/L
	0	25. 25	0	N/A	
	0	26. 26	0	N/A	
	0	26.700	0	N/A	
	0	27.175	0	N/A	
	0	28.383	0	N/A	
	0	28.716	0	N/A	
	0	31.658	0	N/A	

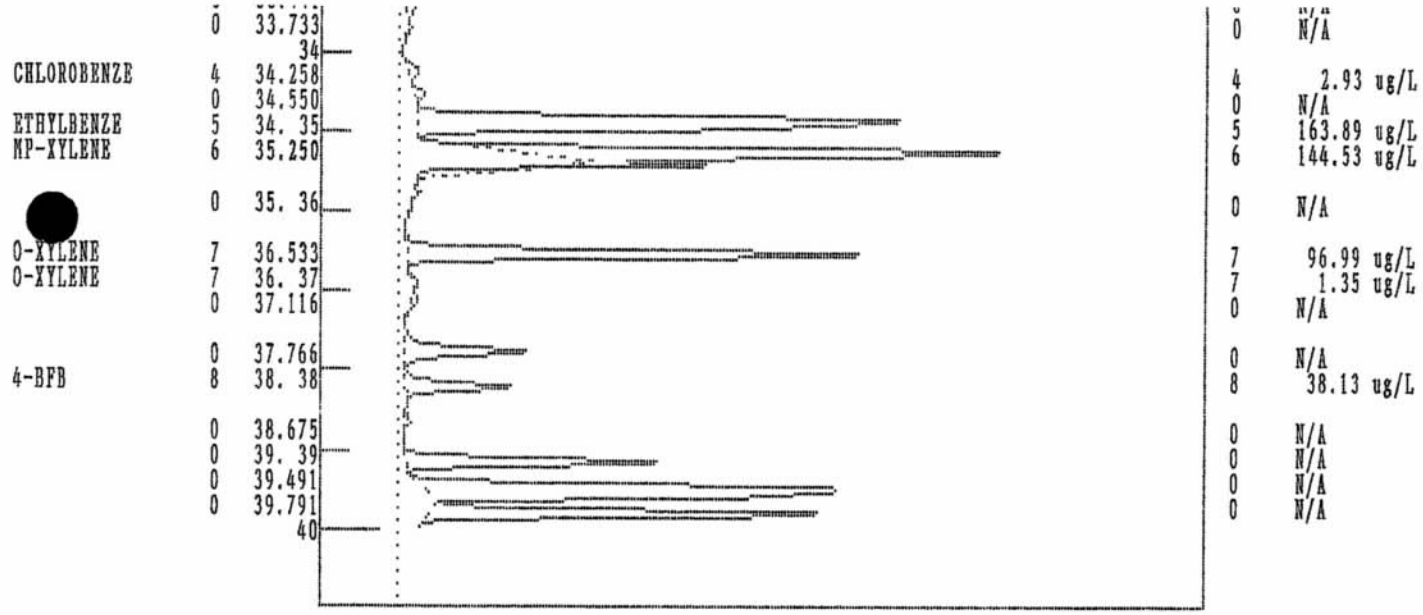


Component	Number	Retention	Area	External	Units
MTBE	1	20.408	19.84	2.50	ug/L
BENZENE	2	24.883	39.01	3.65	ug/L
ETHYLBENZE	5	34.816	241.25	27.39	ug/L
MP-XYLENE	6	35.208	440.60	50.65	ug/L
4-BFB	8	38.133	158.16	23.64	ug/L
	5		898.86	107.83	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/16/2010 01:42:29
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z-1-TW-7
Operator : TERRY L. TEATE

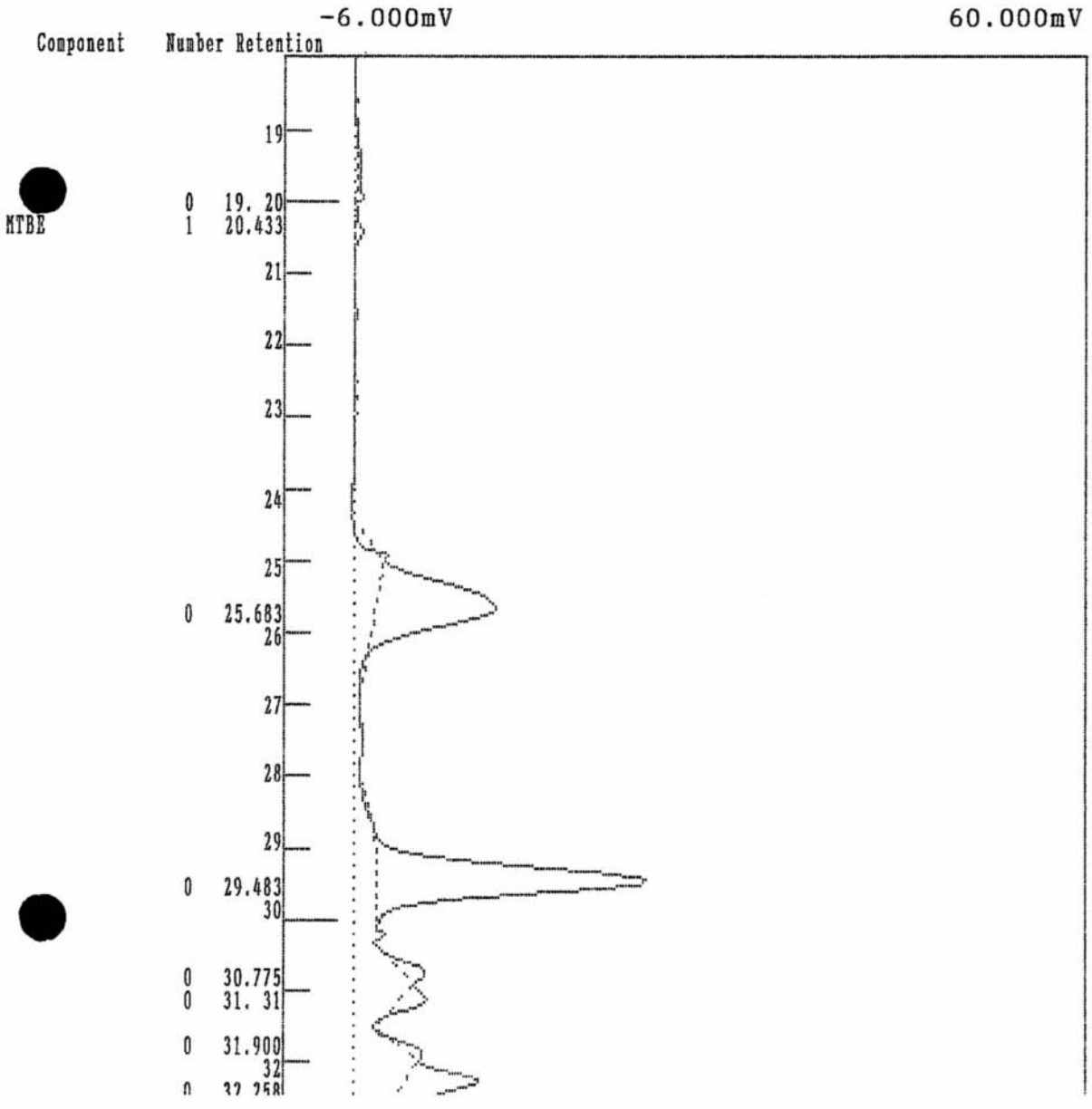


Component	Number	Retention	Number	External	Units
	0	18.325	0	N/A	
	0	19. 19	0	N/A	
	0	19.641	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.325	1	219.25	ug/L
MTBE	1	20.608	1	103.11	ug/L
		21			
	0	21.441	0	N/A	
	0	21.550	0	N/A	
	0	21. 22	0	N/A	
	0	22.166	0	N/A	
	0	22.666	0	N/A	
		23			
	0	23.750	0	N/A	
	0	24. 24	0	N/A	
BENZENE	2	24.900	2	68.48	ug/L
BENZENE	2	25. 25	2	11.86	ug/L
	0	25.441	0	N/A	
	0	25.775	0	N/A	
	0	26. 26	0	N/A	
	0	26.475	0	N/A	
	0	26.741	0	N/A	
		27			
	0	27.233	0	N/A	
		28			
	0	28.200	0	N/A	
	0	28.450	0	N/A	
	0	28. 29	0	N/A	
TOLUENE	3	29.691	3	4.59	ug/L
		30			
TOLUENE	3	30.233	3	156.03	ug/L
	0	30.791	0	N/A	
	0	31. 31	0	N/A	
	0	31.500	0	N/A	
		32			
	0	32.391	0	N/A	

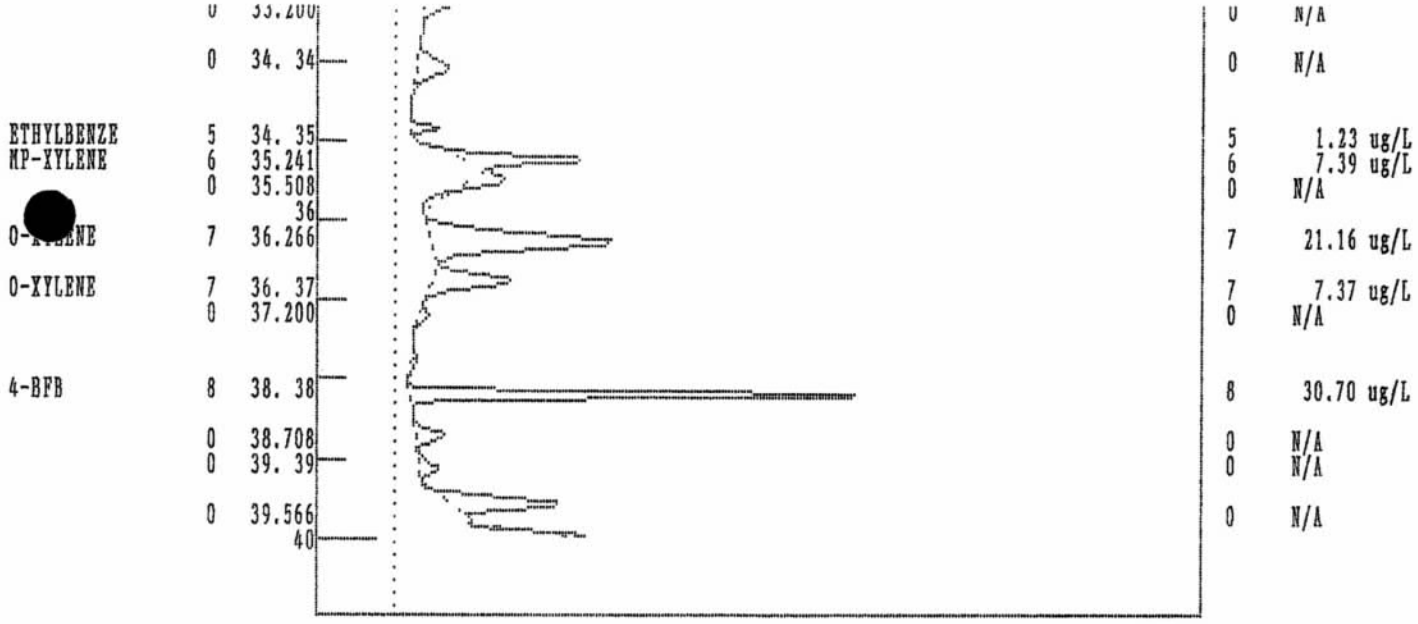


Component	Number	Retention	Area	External	Units
MTBE	1	20.325	719.13	219.25	ug/L
MTBE	1	20.608	345.65	103.11	ug/L
BENZENE	2	24.900	795.82	68.48	ug/L
BENZENE	2	25.033	116.09	11.86	ug/L
TOLUENE	3	29.691	47.90	4.59	ug/L
TOLUENE	3	30.233	1605.35	156.03	ug/L
CHLOROBENZE	4	34.258	30.73	2.93	ug/L
ETHYLBENZE	5	34.858	1530.85	163.89	ug/L
MP-XYLENE	6	35.250	1102.39	144.53	ug/L
O-XYLENE	7	36.533	979.55	96.99	ug/L
O-XYLENE	7	36.916	11.15	1.35	ug/L
4-BFB	8	38.200	223.15	38.13	ug/L
	12		7507.77	1011.13	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/16/2010 02:25:52
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-8
Operator : TERRY L. TEATE

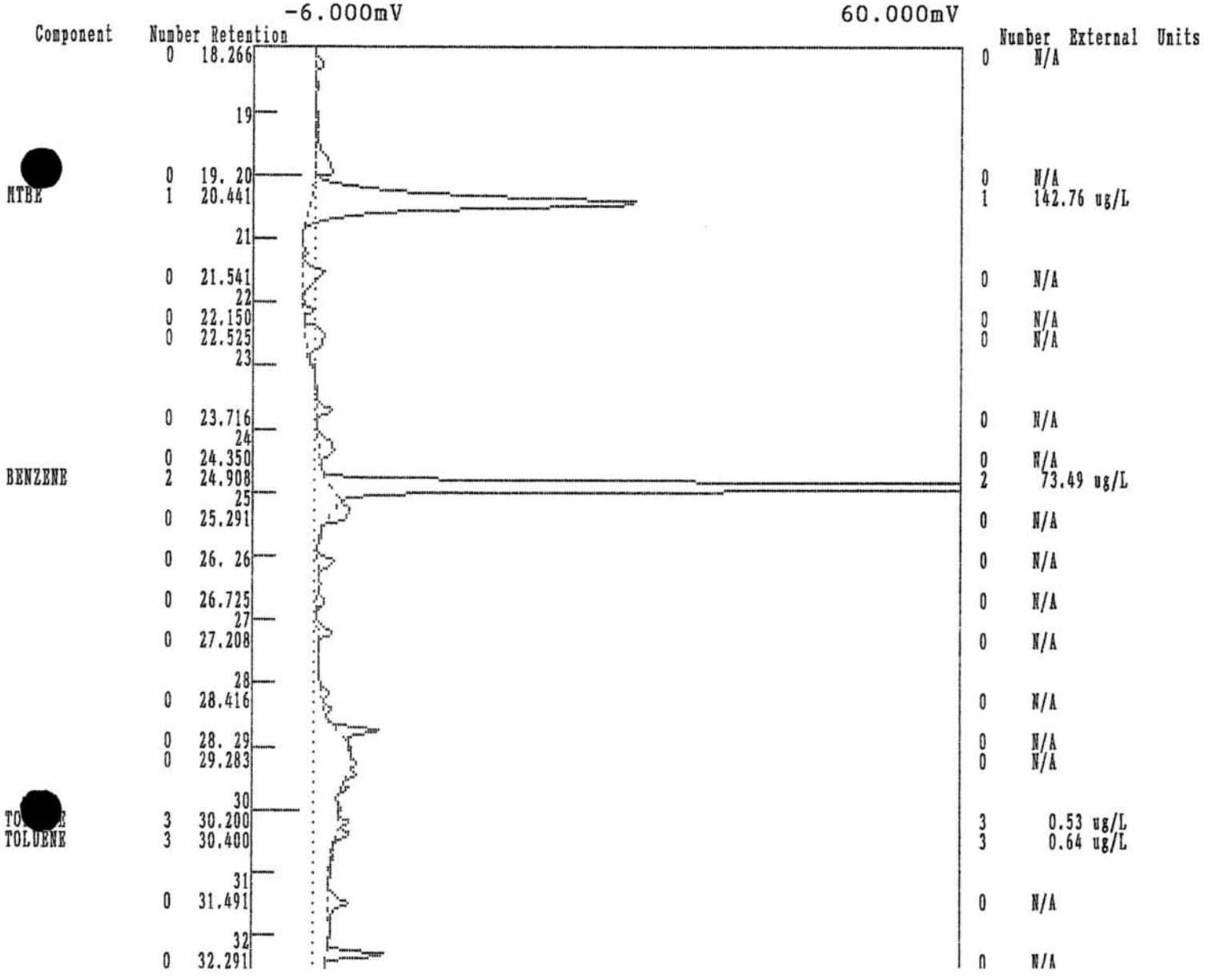


Component	Number	Retention	Number	External	Units
	0	19. 20	0	N/A	
MTBE	1	20.433	1	1.04	ug/L
	0	25.683	0	N/A	
	0	29.483	0	N/A	
	0	30.775	0	N/A	
	0	31. 31	0	N/A	
	0	31.900	0	N/A	
	0	32.258	0	N/A	

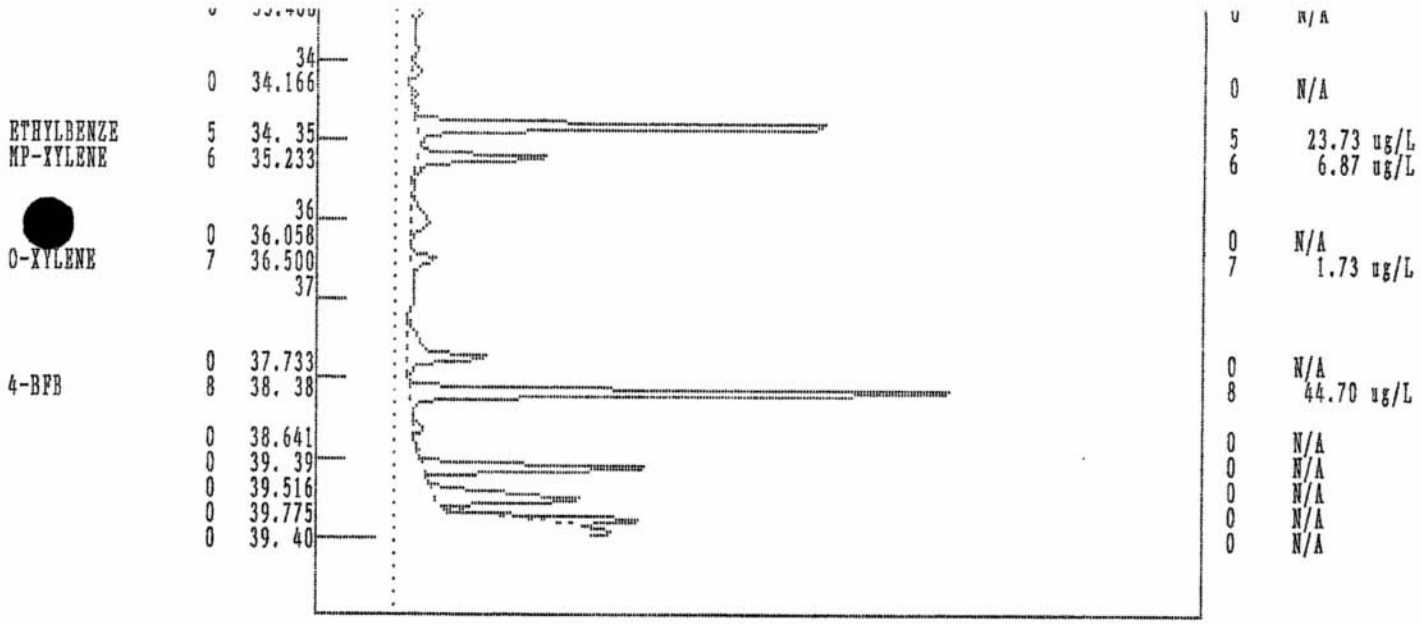


Component	Number	Retention	Area	External	Units
MTBE	1	20.433	8.24	1.04	ug/L
ETHYLBENZE	5	34.850	11.17	1.23	ug/L
MP-XYLENE	6	35.241	66.57	7.39	ug/L
O-XYLENE	7	36.266	194.12	21.16	ug/L
O-XYLENE	7	36.758	69.52	7.37	ug/L
4-BFB	8	38.191	189.84	30.70	ug/L
	6		539.46	68.89	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/16/2010 03:10:05
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-9
Operator : TERRY L. TEATE

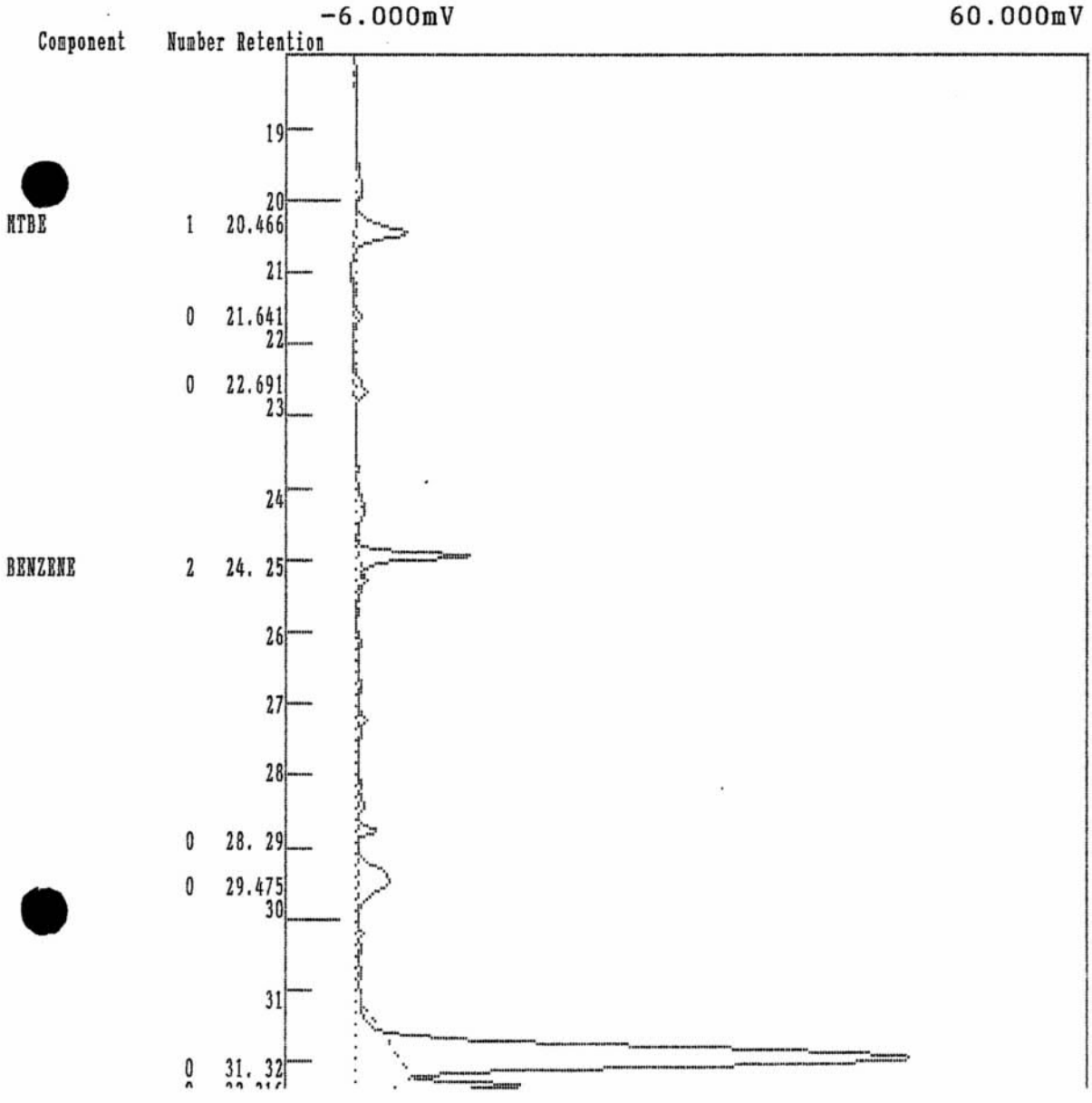


Component	Number	Retention	Number	External	Units
	0	18.266	0	N/A	
		19			
	0	19. 20	0	N/A	
MTBE	1	20.441	1	142.76	ug/L
		21			
	0	21.541	0	N/A	
		22			
	0	22.150	0	N/A	
	0	22.525	0	N/A	
		23			
	0	23.716	0	N/A	
		24			
	0	24.350	0	N/A	
BENZENE	2	24.908	2	73.49	ug/L
		25			
	0	25.291	0	N/A	
	0	26. 26	0	N/A	
	0	26.725	0	N/A	
		27			
	0	27.208	0	N/A	
		28			
	0	28.416	0	N/A	
	0	28. 29	0	N/A	
	0	29.283	0	N/A	
		30			
TO[illegible]E	3	30.200	3	0.53	ug/L
TOLUENE	3	30.400	3	0.64	ug/L
		31			
	0	31.491	0	N/A	
		32			
	0	32.291	0	N/A	

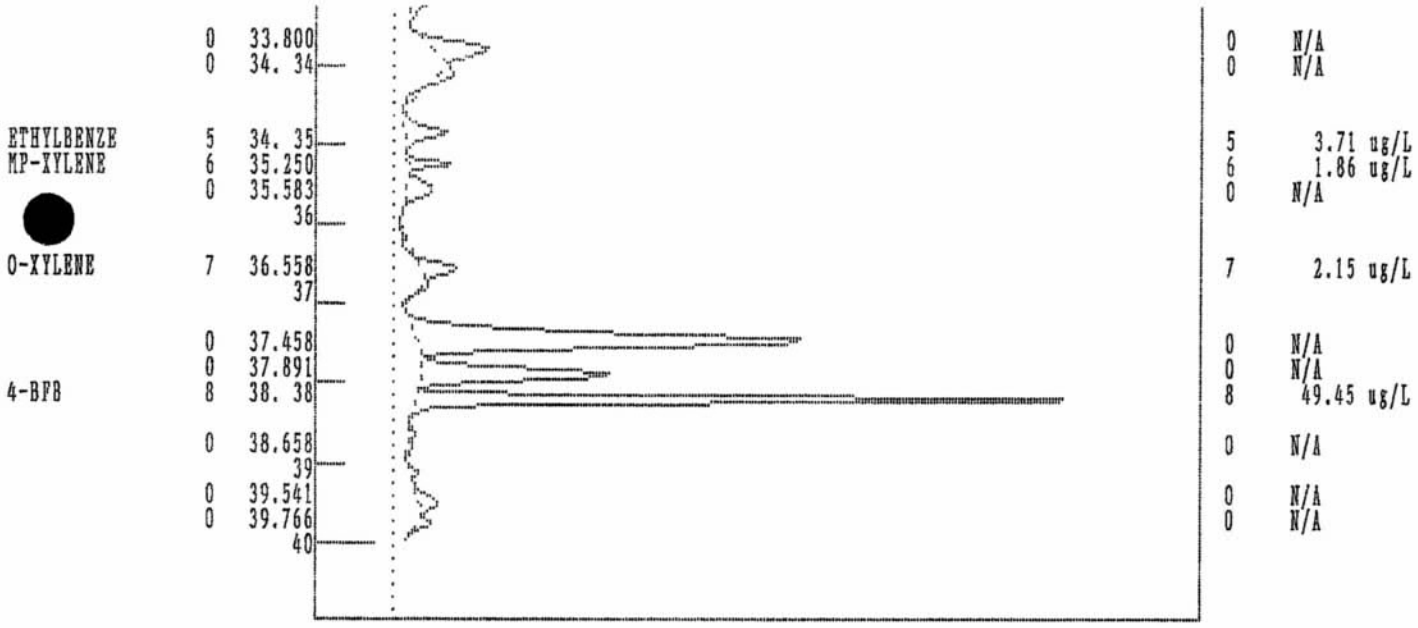


Component	Number	Retention	Area	External	Units
MTBE	1	20.441	468.25	142.76	ug/L
BENZENE	2	24.908	844.64	73.49	ug/L
TOLUENE	3	30.200	5.49	0.53	ug/L
TOLUENE	3	30.400	6.64	0.64	ug/L
ETHYLBENZE	5	34.841	202.22	23.73	ug/L
MP-XYLENE	6	35.233	61.94	6.87	ug/L
O-XYLENE	7	36.500	14.26	1.73	ug/L
4-BFB	8	38.175	252.62	44.70	ug/L
	8		1856.06	294.45	

Client : Broad River BP
Collected : 05/19/12
Analysis date : 11/16/2010 03:53:05
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z1-TW-10
Operator : TERRY L. TEATE

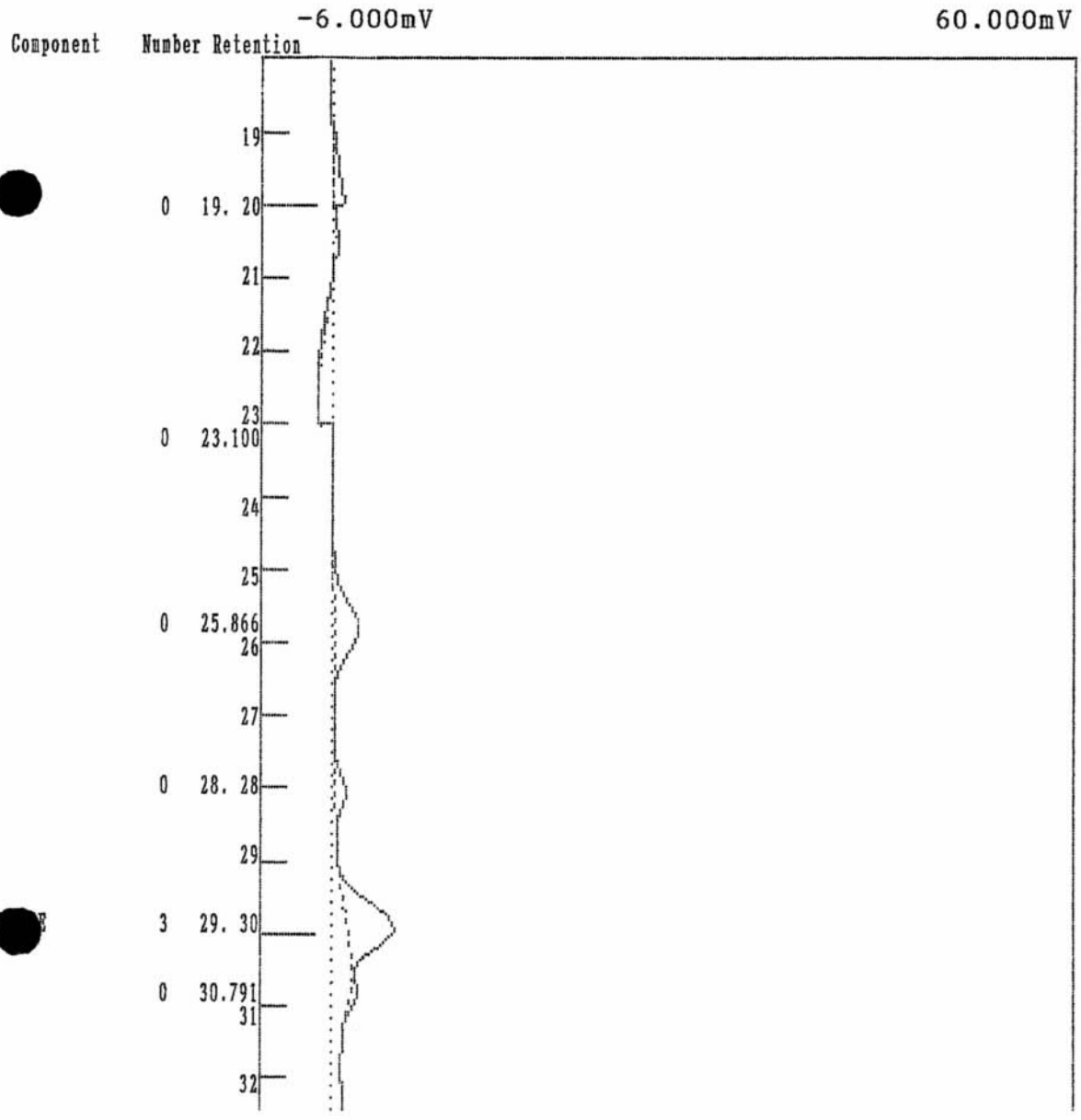


Component	Number	Retention	Number	External	Units
MTBE	1	20.466	1	9.69	ug/L
	0	21.641	0	N/A	
	0	22.691	0	N/A	
BENZENE	2	24. 25	2	7.34	ug/L
	0	28. 29	0	N/A	
	0	29.475	0	N/A	
	0	31. 32	0	N/A	

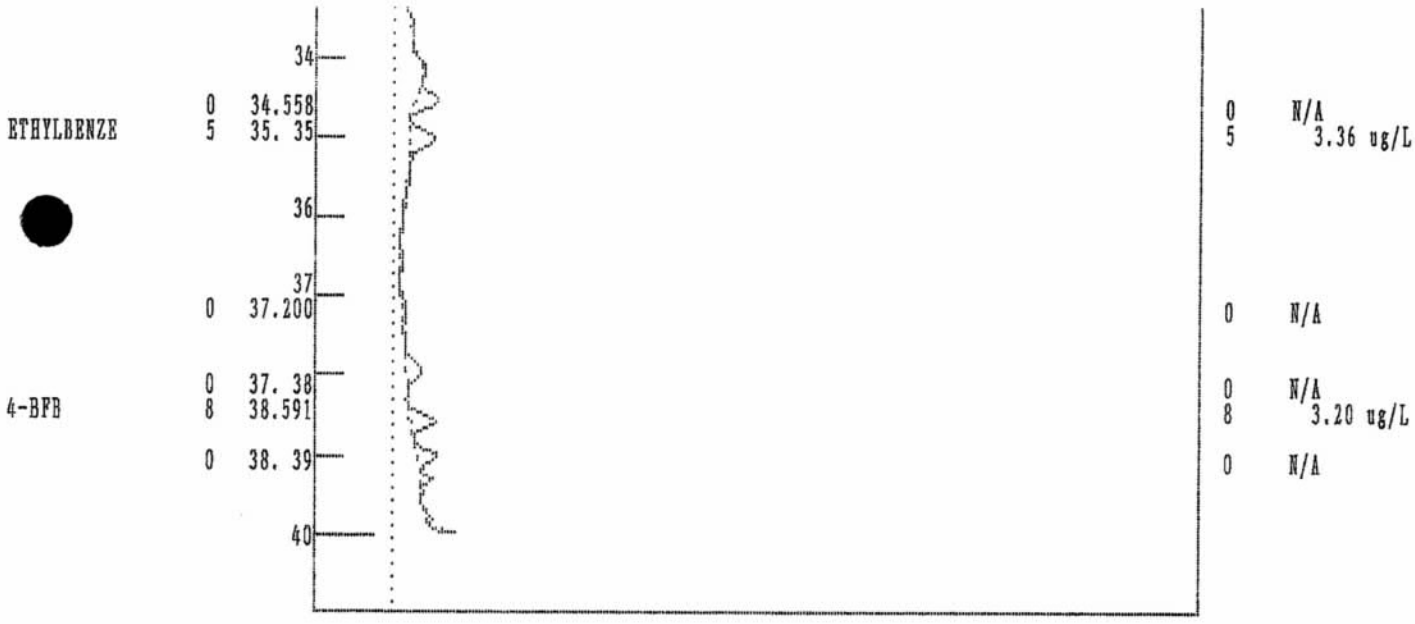


Component	Number	Retention	Area	External	Units
MTBE	1	20.466	61.05	9.69	ug/L
BENZENE	2	24.950	71.48	7.34	ug/L
ETHYLBENZE	5	34.875	33.70	3.71	ug/L
MP-XYLENE	6	35.250	16.79	1.86	ug/L
O-XYLENE	7	36.558	17.72	2.15	ug/L
4-BFB	8	38.191	273.91	49.45	ug/L
	6		**474.65**	**74.20**	

Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/17/2010 22:27:03
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-11
Operator : TERRY L. TEATE

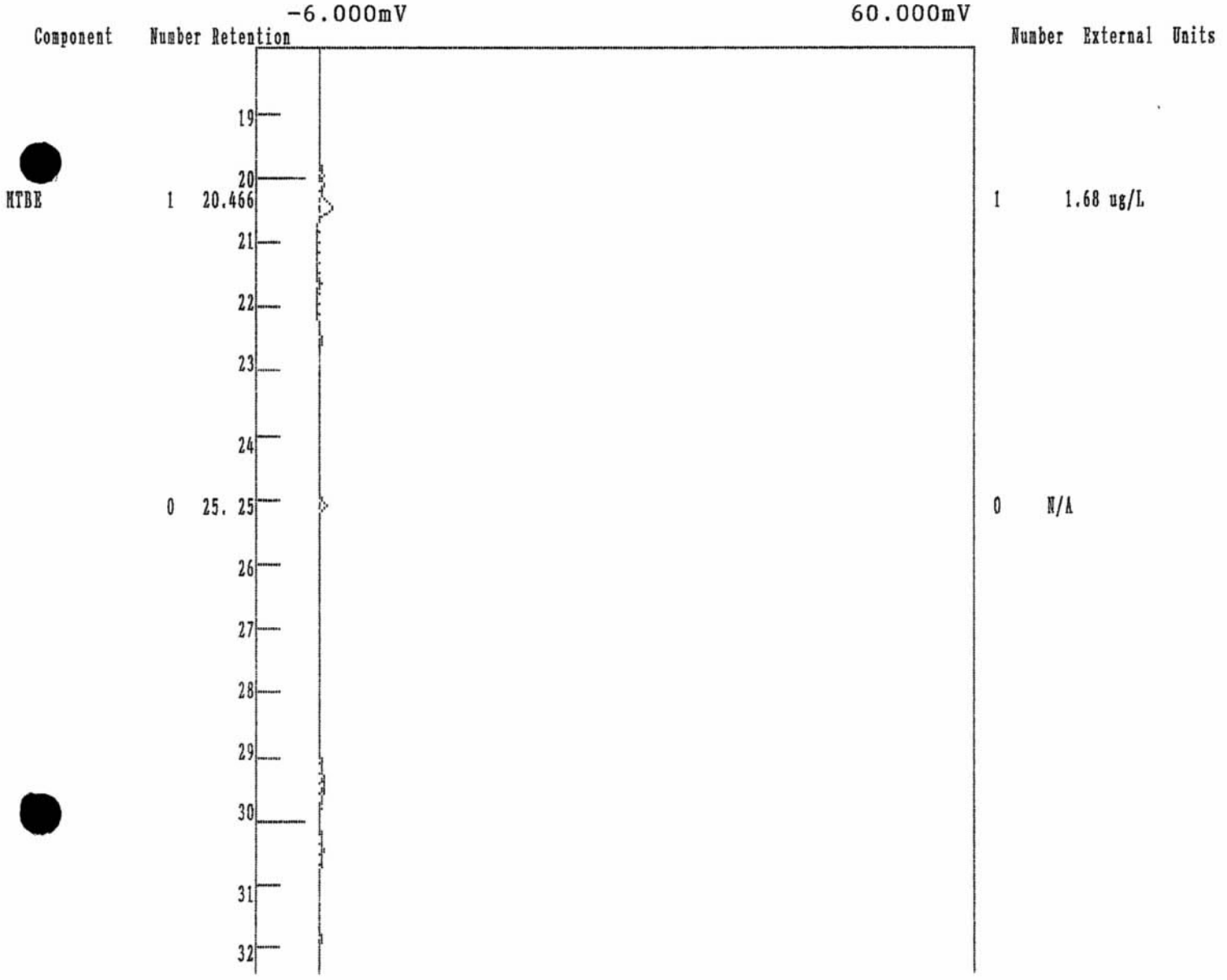


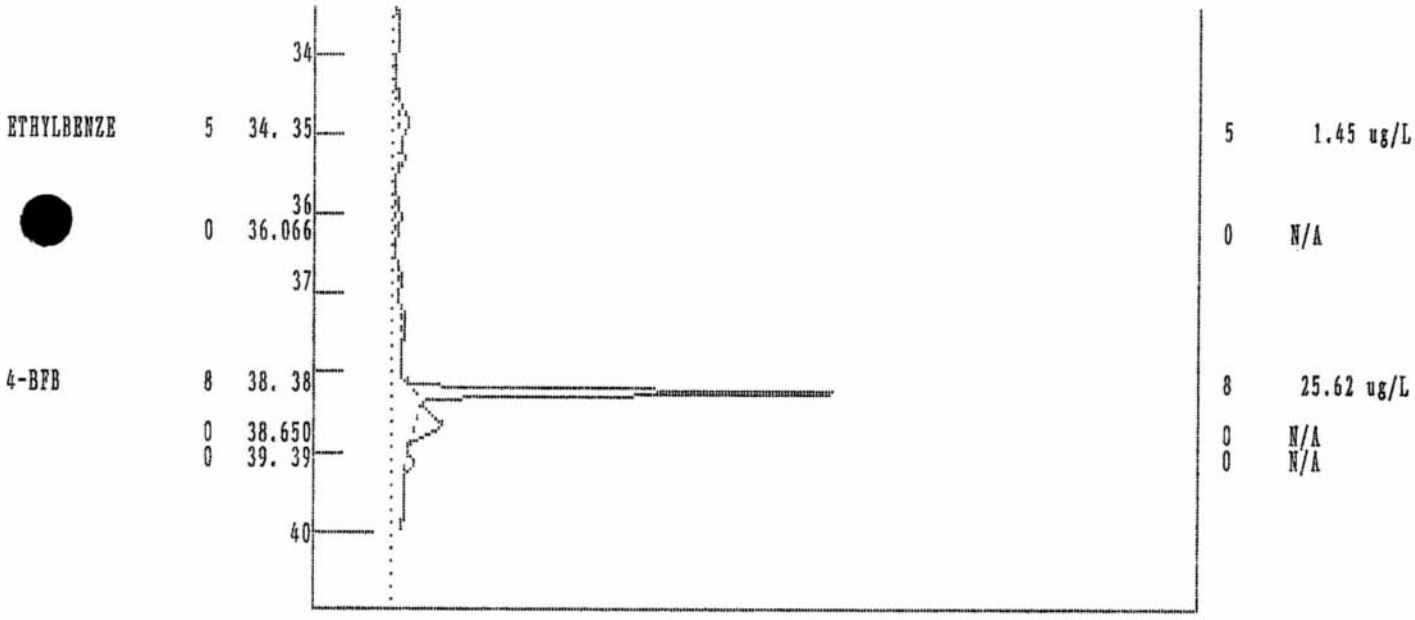
Component	Number	Retention	Number	External	Units
	0	19. 20	0	N/A	
	0	23.100	0	N/A	
	0	25.866	0	N/A	
	0	28. 28	0	N/A	
TO[illegible]E	3	29. 30	3	16.35	ug/L
	0	30.791	0	N/A	



Component	Number	Retention	Area	External	Units
TOLUENE	3	29.933	159.66	16.35	ug/L
ETHYLBENZE	5	35.041	30.50	3.36	ug/L
4-BFB	8	38.591	21.73	3.20	ug/L
	3		211.89	22.91	

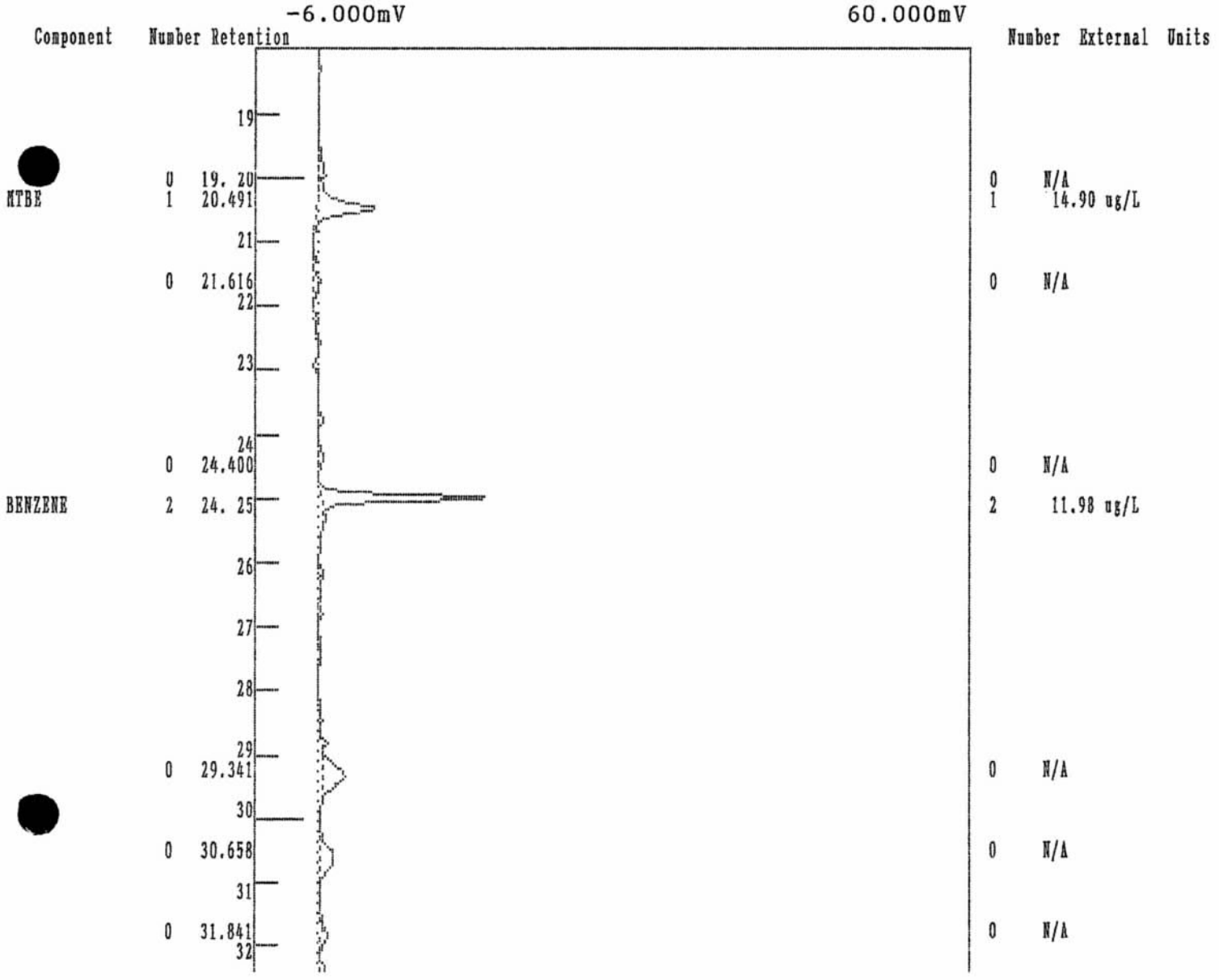
Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/17/2010 23:45:19
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-12
Operator : TERRY L. TEATE

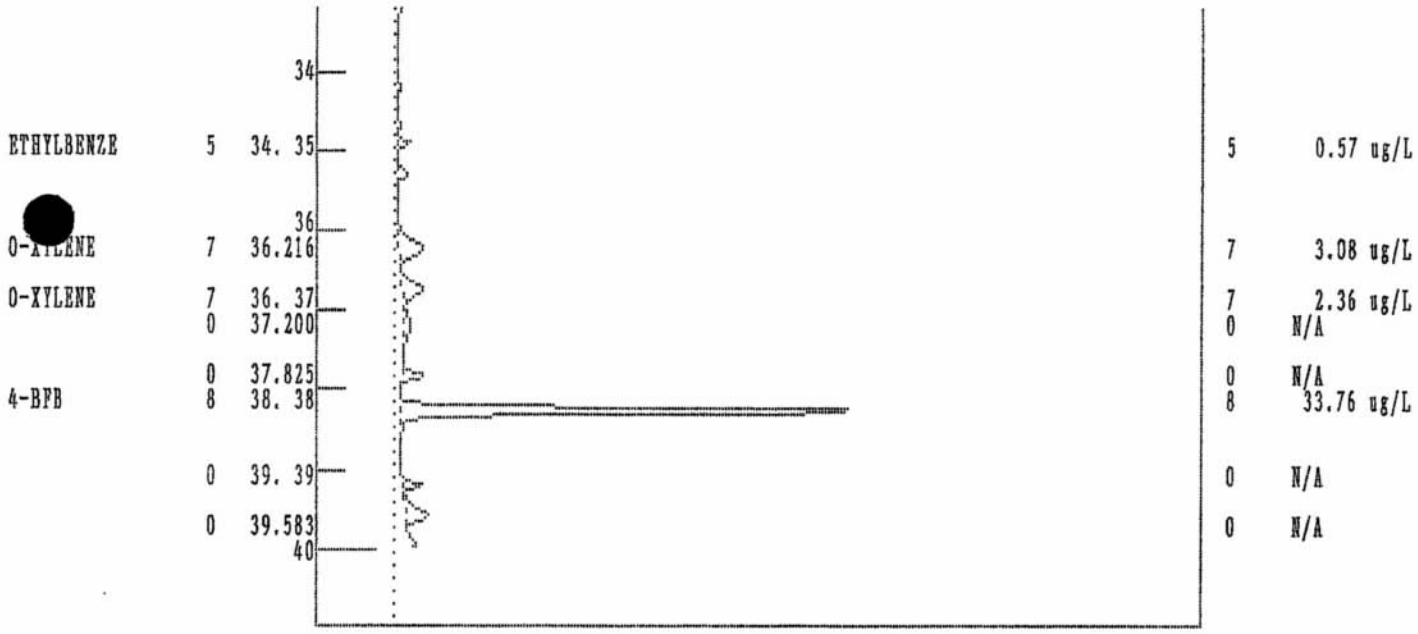




Component	Number	Retention	Area	External	Units
MTBE	1	20.466	13.30	1.68	ug/L
ETHYLBENZE	5	34.875	13.16	1.45	ug/L
4-BFB	8	38.233	167.04	25.62	ug/L
	3		193.50	28.74	

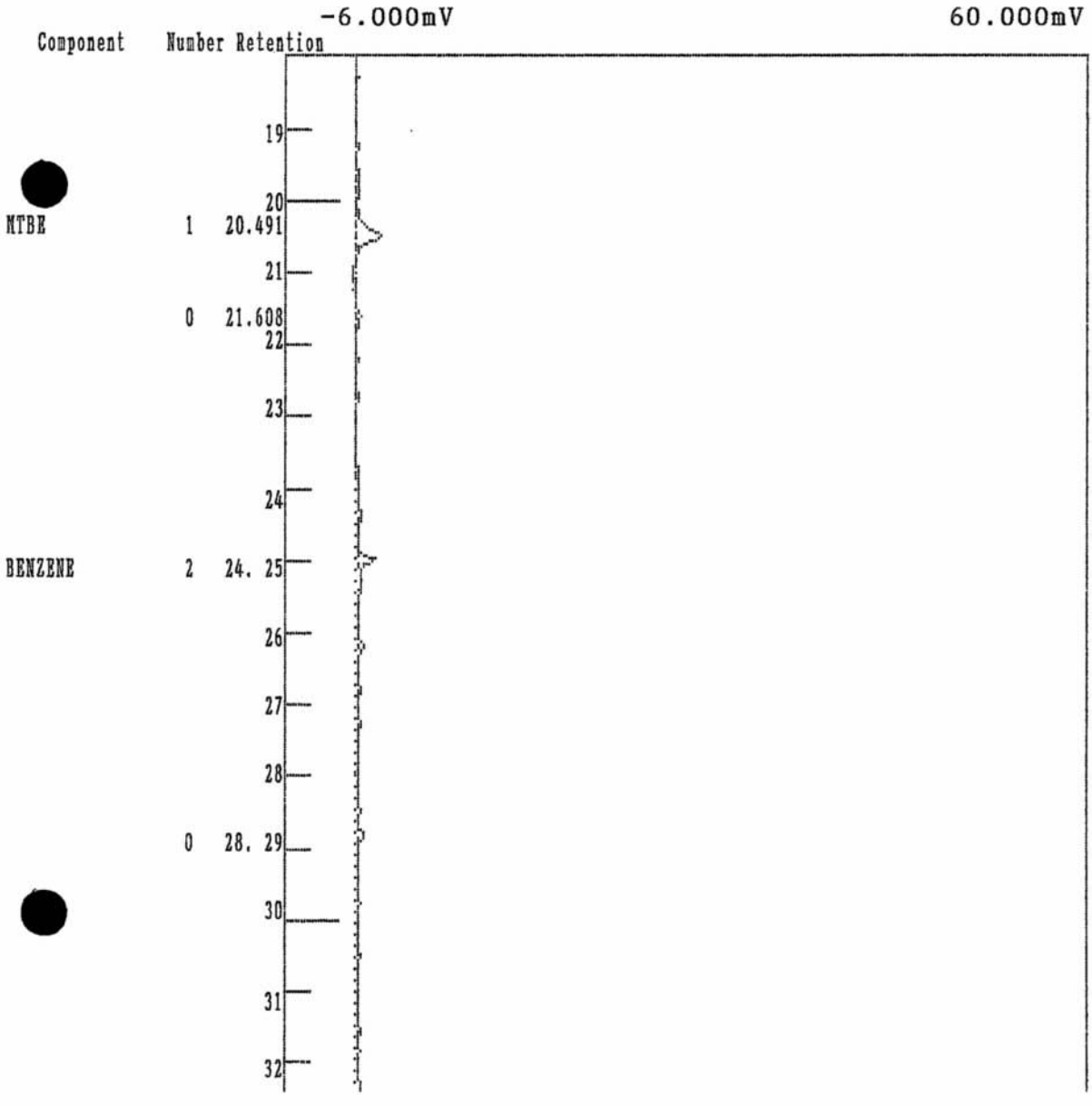
Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/18/2010 01:10:48
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-13
Operator : TERRY L. TEATE



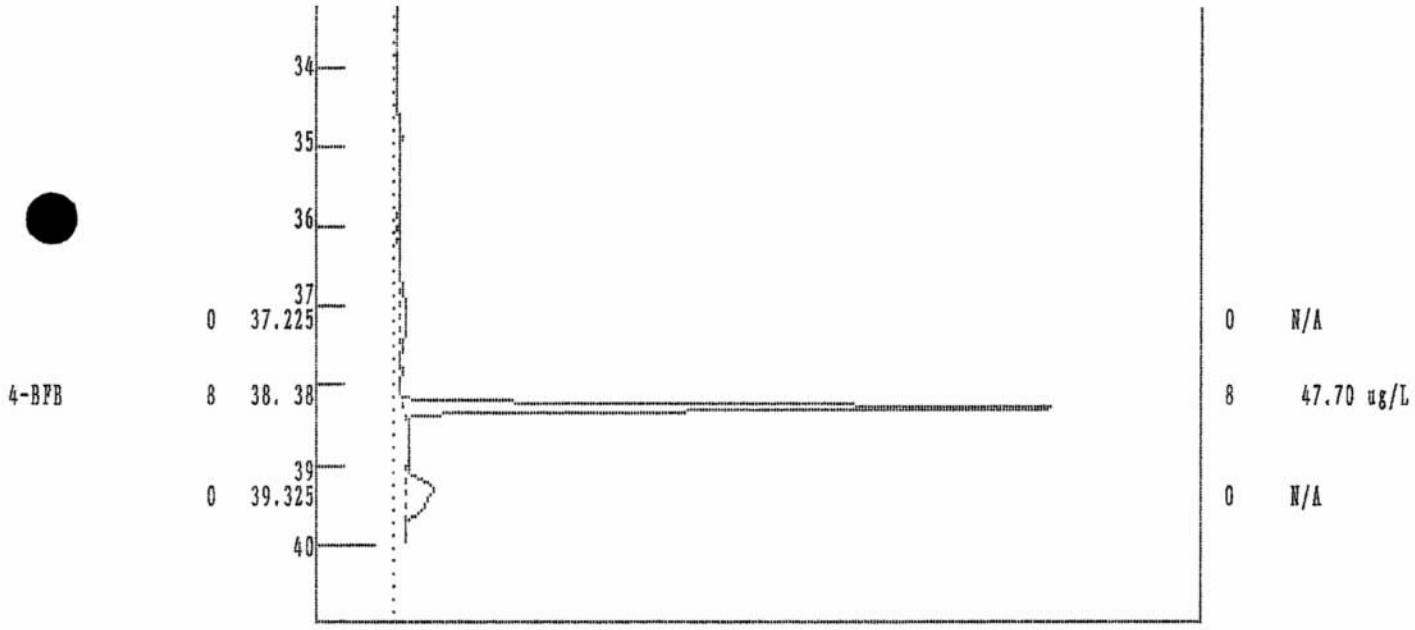


Component	Number	Retention	Area	External	Units
MTBE	1	20.491	77.57	14.90	ug/L
BENZENE	2	24.983	117.63	11.98	ug/L
ETHYLBENZE	5	34.925	5.15	0.57	ug/L
O-XYLENE	7	36.216	25.39	3.08	ug/L
O-XYLENE	7	36.741	19.47	2.36	ug/L
4-BFB	8	38.258	203.57	33.76	ug/L
	6		448.78	66.66	

Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/18/2010 00:28:02
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-14
Operator : TERRY L. TEATE

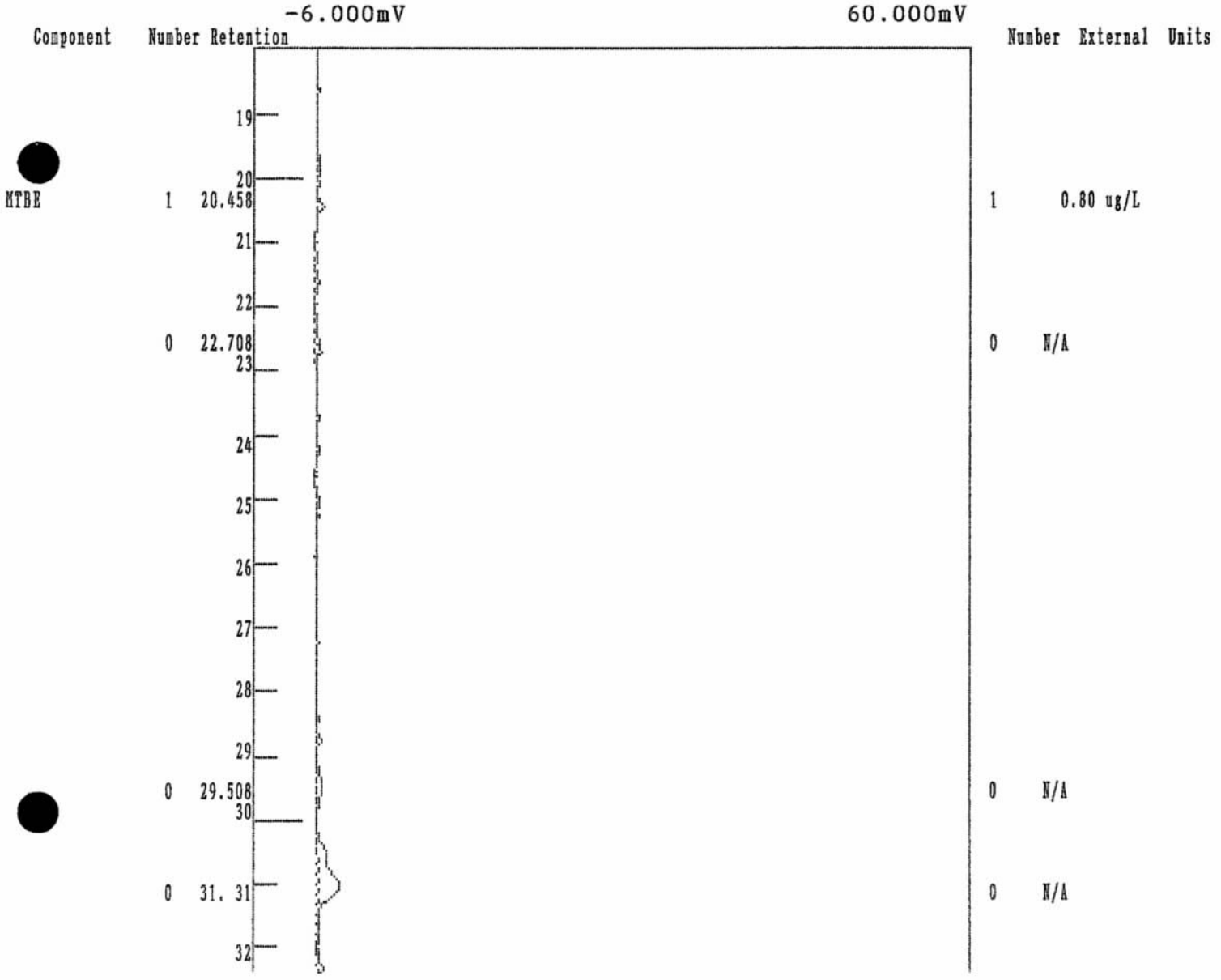


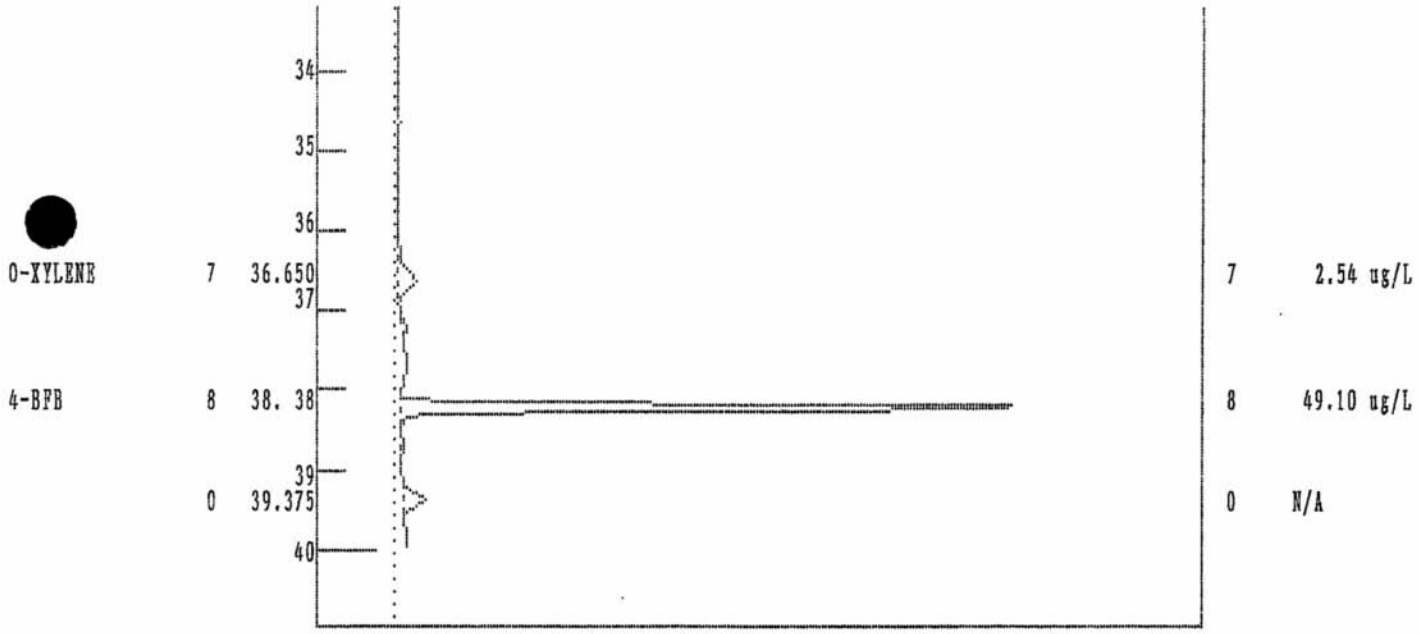
Component	Number	Retention	Number	External	Units
MTBE	1	20.491	1	4.06	ug/L
	0	21.608	0	N/A	
BENZENE	2	24.	2	0.98	ug/L
	0	28.	0	N/A	



Component	Number	Retention	Area	External	Units
MTBE	1	20.491	32.19	4.06	ug/L
BENZENE	2	24.991	10.52	0.98	ug/L
4-BFB	8	38.266	266.08	47.70	ug/L
	3		**308.78**	**52.75**	

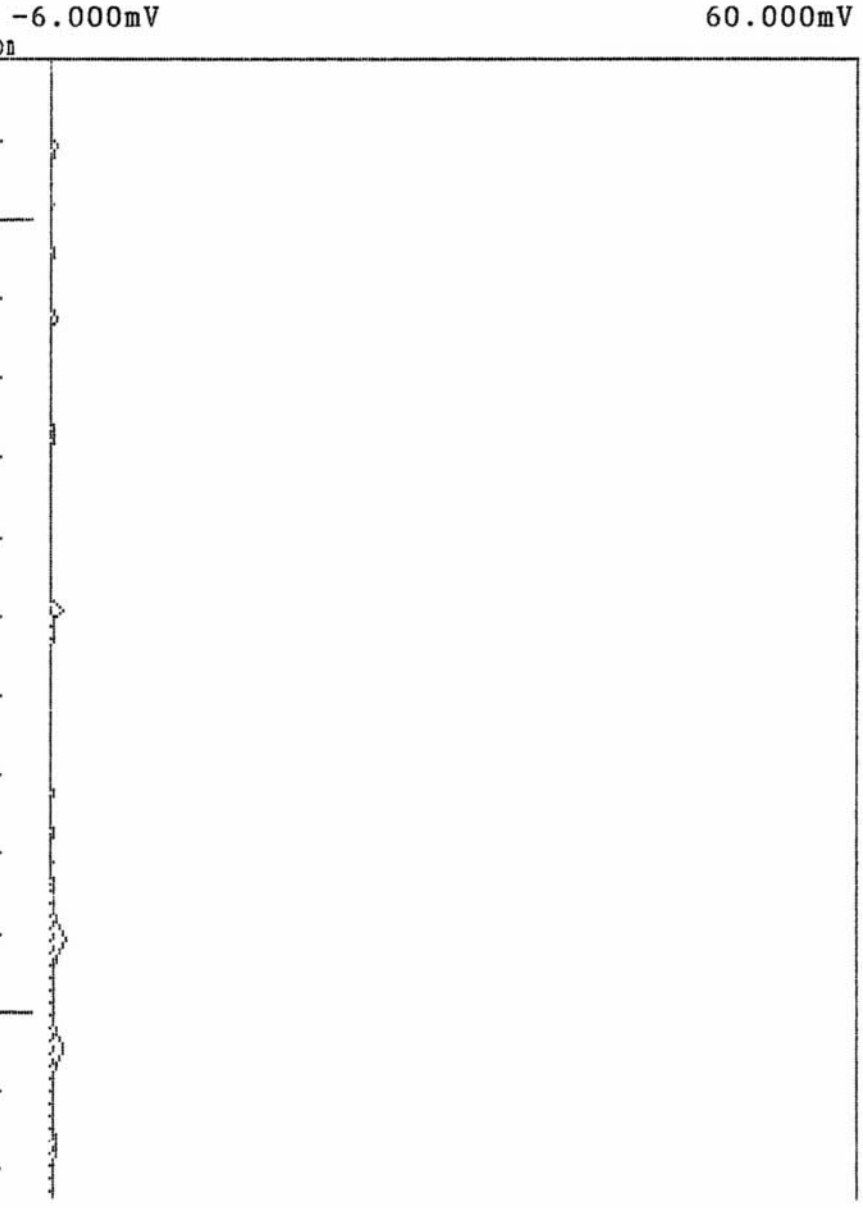
Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/18/2010 04:44:05
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-15
Operator : TERRY L. TEATE



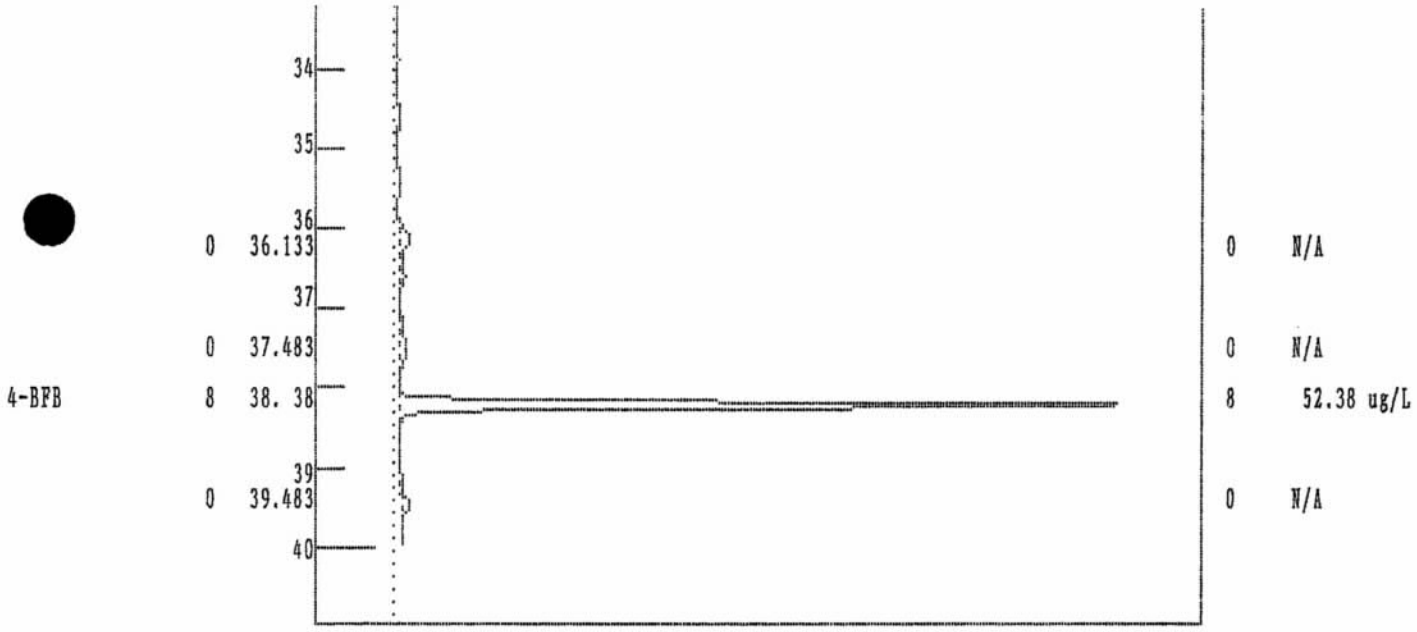


Component	Number	Retention	Area	External	Units
MTBE	1	20.458	6.37	0.80	ug/L
O-XYLENE	7	36.650	20.90	2.54	ug/L
4-BFB	8	38.208	272.35	49.10	ug/L
	3		299.61	52.44	

Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/18/2010 05:27:47
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-16
Operator : TERRY L. TEATE

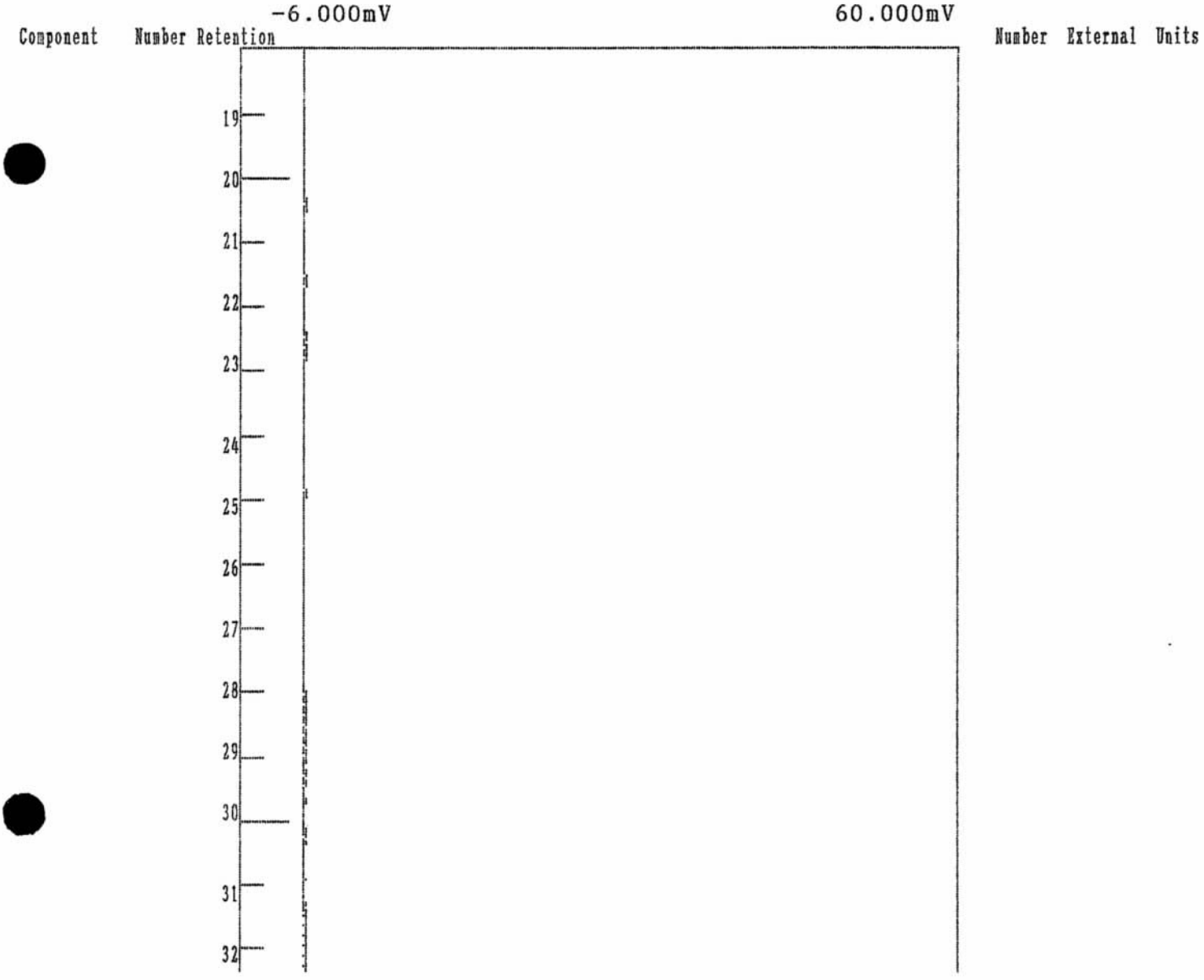


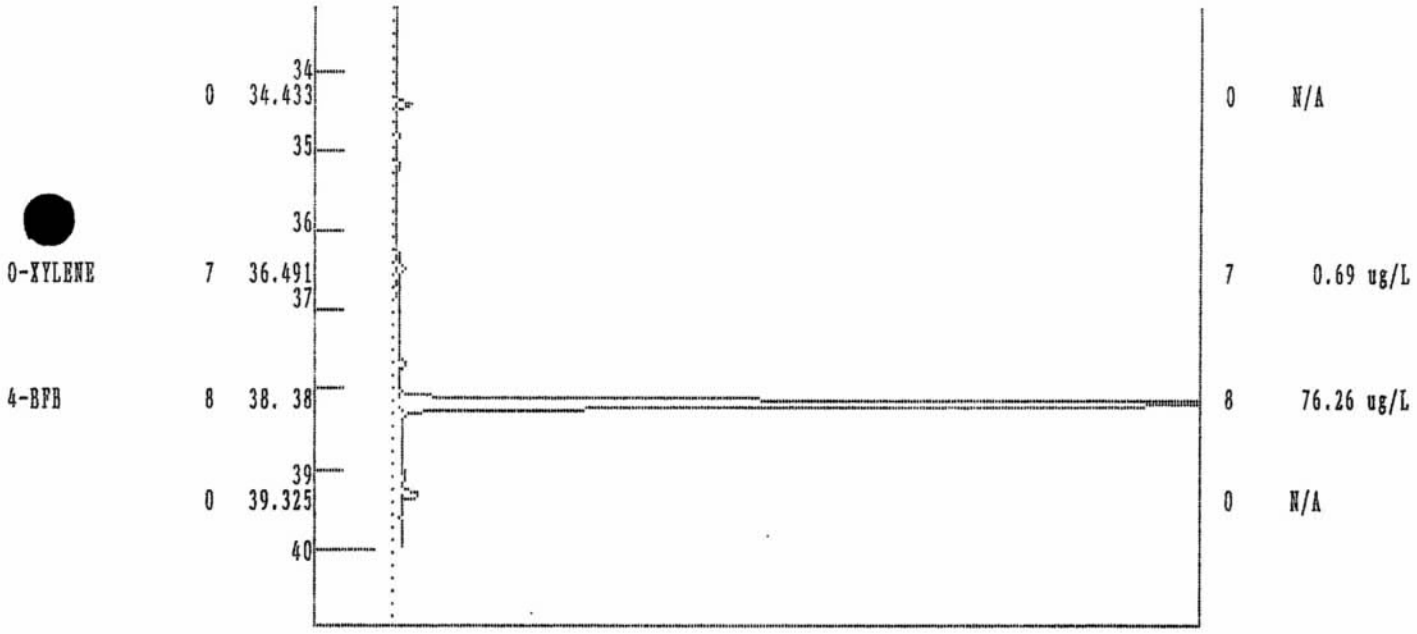
Component	Number	Retention	Number	External	Units
BENZENE	2	24.	2	0.57	ug/L
	0	29.075	0	N/A	
TOLUENE	3	30.466	3	1.67	ug/L
	0	31.741	0	N/A	



Component	Number	Retention	Area	External	Units
BENZENE	2	24.950	6.08	0.57	ug/L
TOLUENE	3	30.466	17.44	1.67	ug/L
4-BFB	8	38.200	287.05	52.38	ug/L
	3		310.57	54.61	

Client : Broad River BP
Collected : 05/27/12
Analysis date : 11/18/2010 07:07:39
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : Z!-TW-17
Operator : TERRY L. TEATE

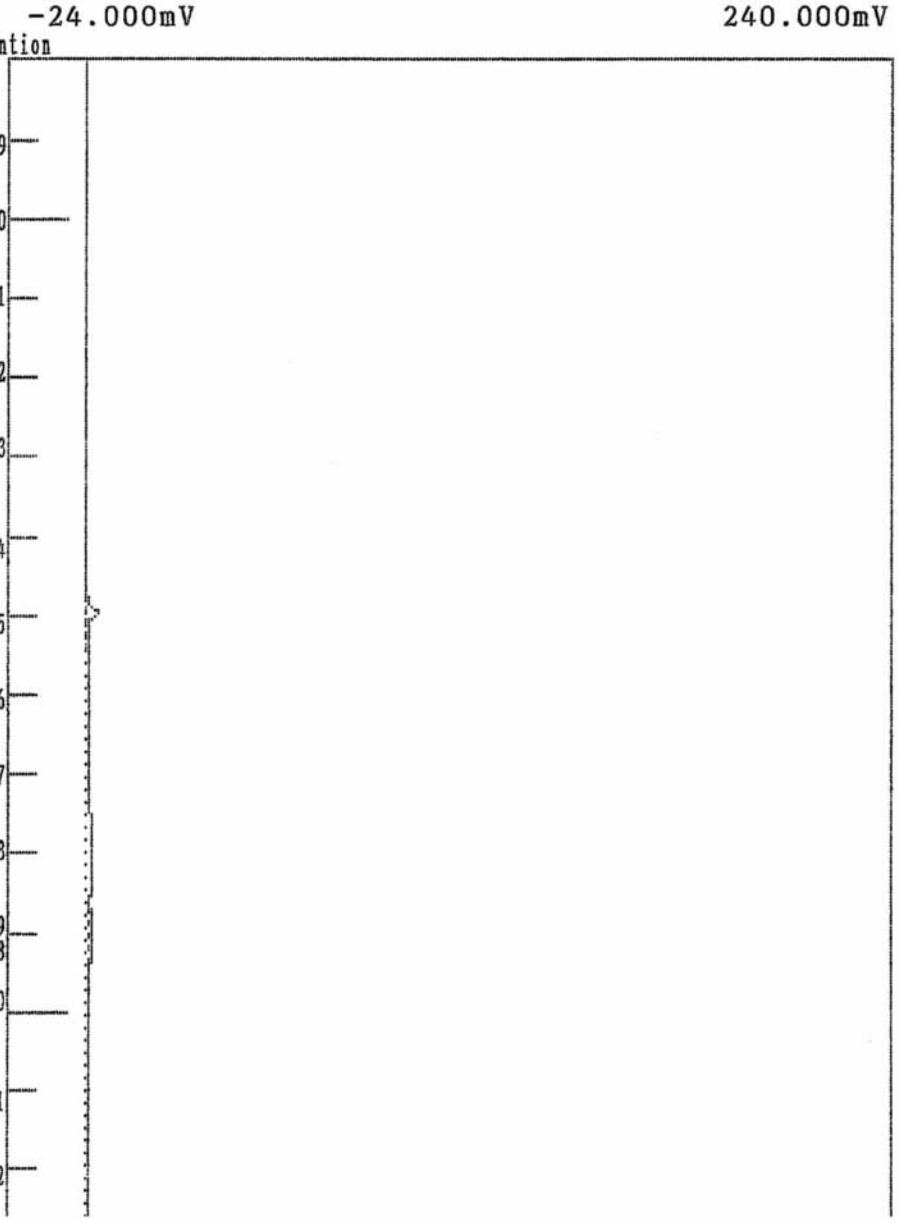




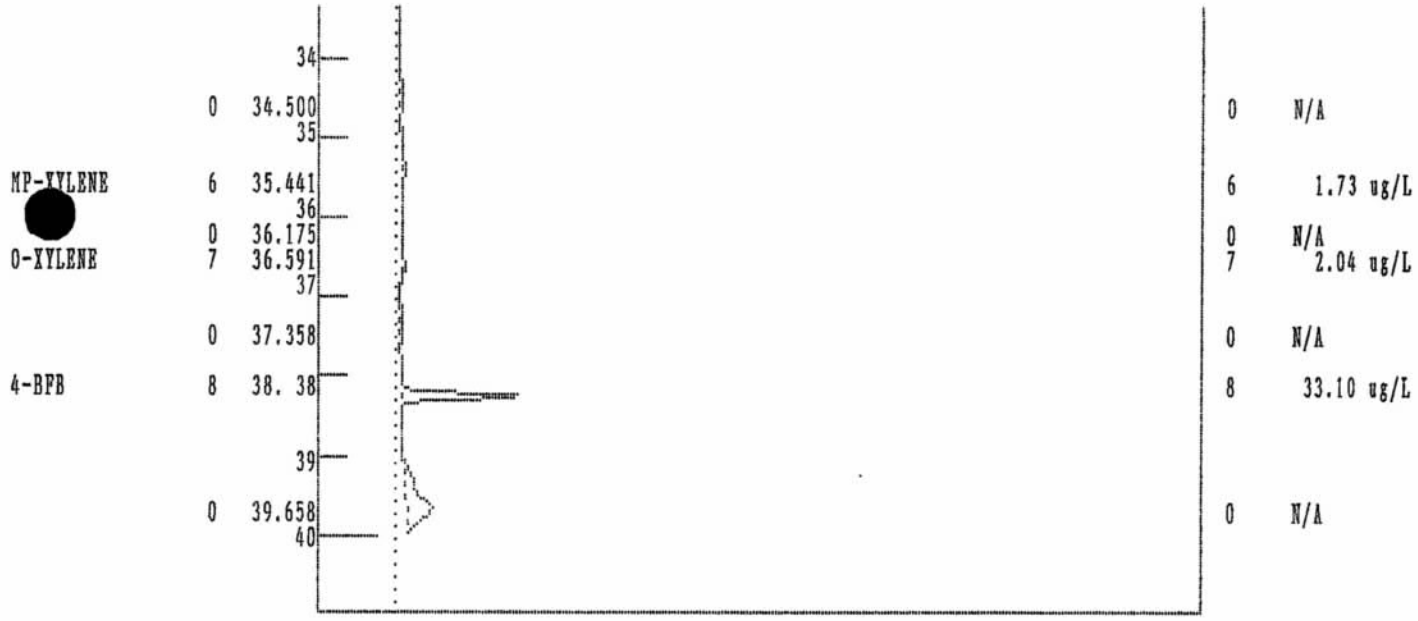
Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.491	5.65	0.69	ug/L
4-BFB	8	38.175	394.15	76.26	ug/L
	2		399.81	76.94	

6-21-12

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-23
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
BENZENE	2	24.	2	3.13	ug/L
	0	29.108	0	N/A	



Component	Number	Retention	Area	External	Units
BENZENE	2	24.975	33.37	3.13	ug/L
MP-XYLENE	6	35.441	15.62	1.73	ug/L
O-XYLENE	7	36.591	16.77	2.04	ug/L
4-BFB	8	38.250	200.61	33.10	ug/L
	4		266.38	40.00	

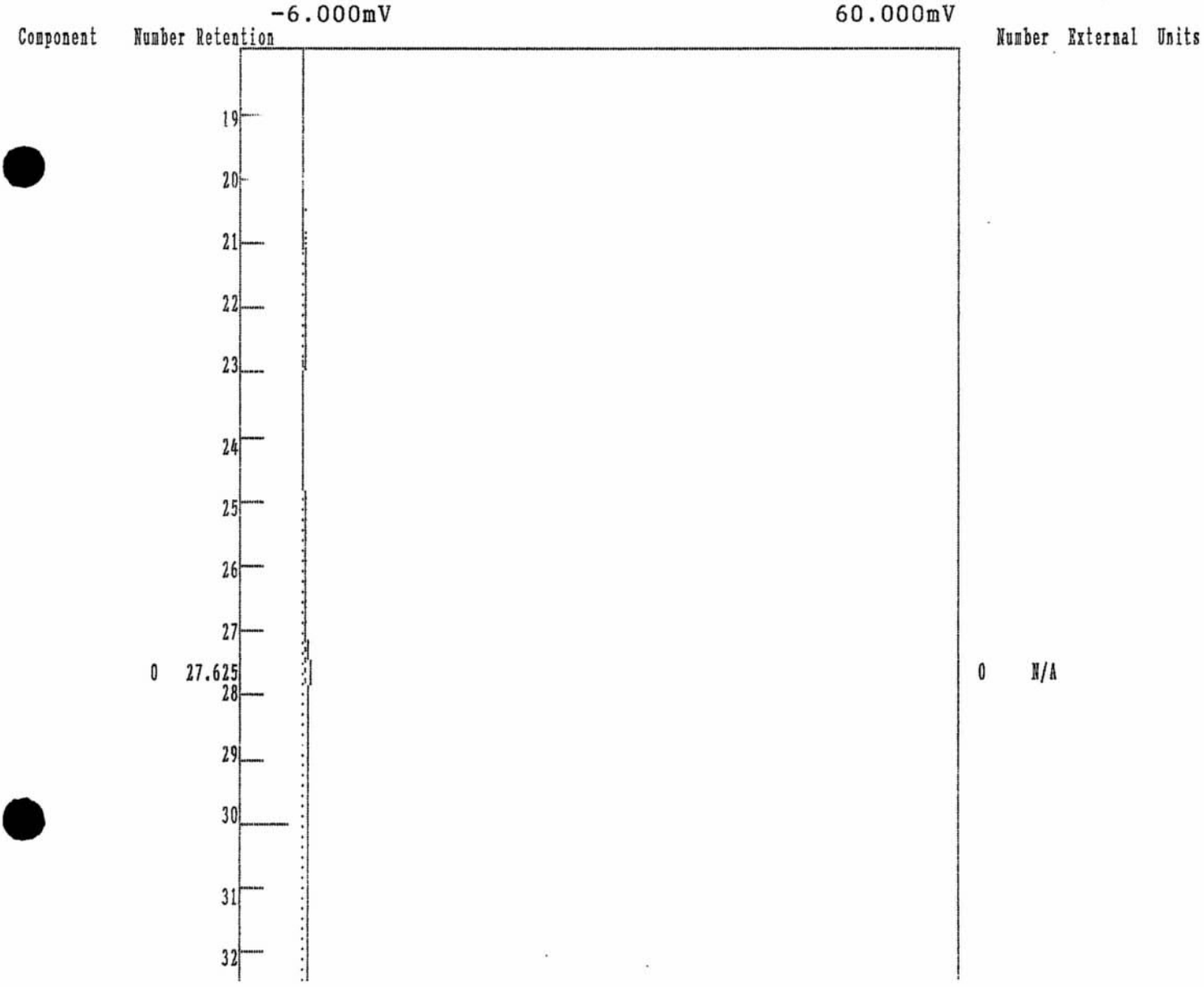
Benzene
3 ug-L

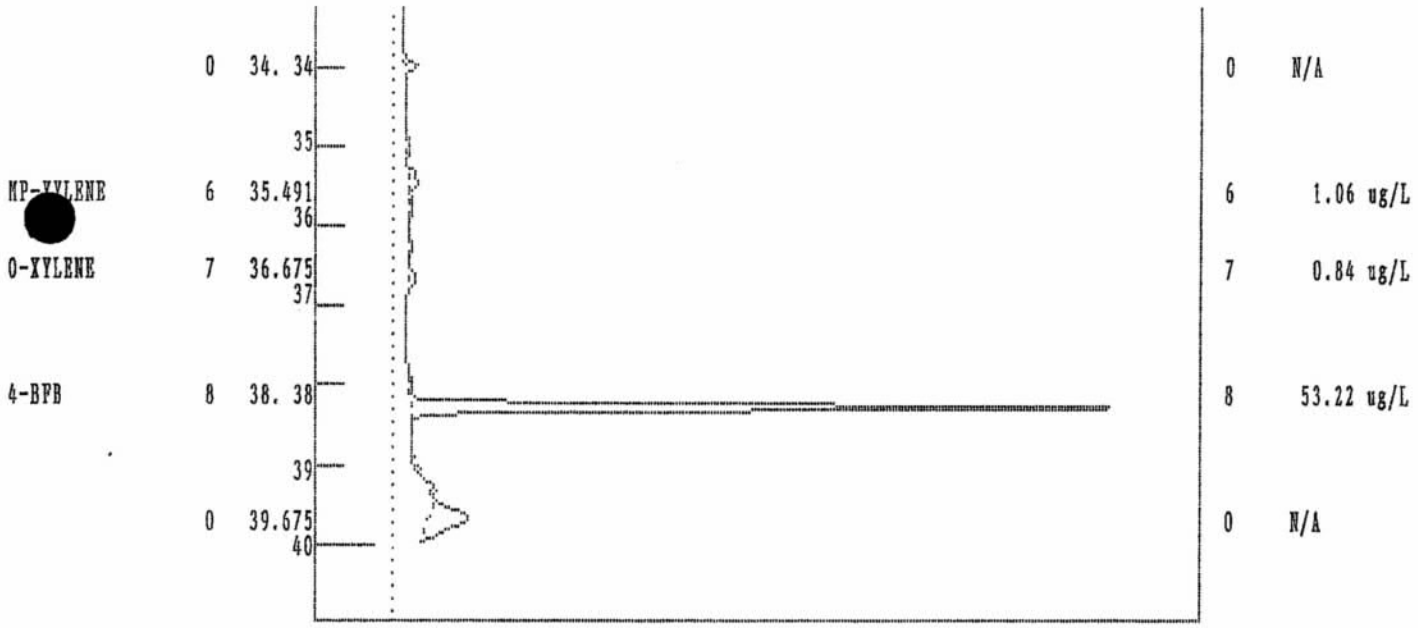
MTBE
0

Total MBTEX
7 ug-L.

6-24-12

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-23-D
Operator : TERRY L. TEATE





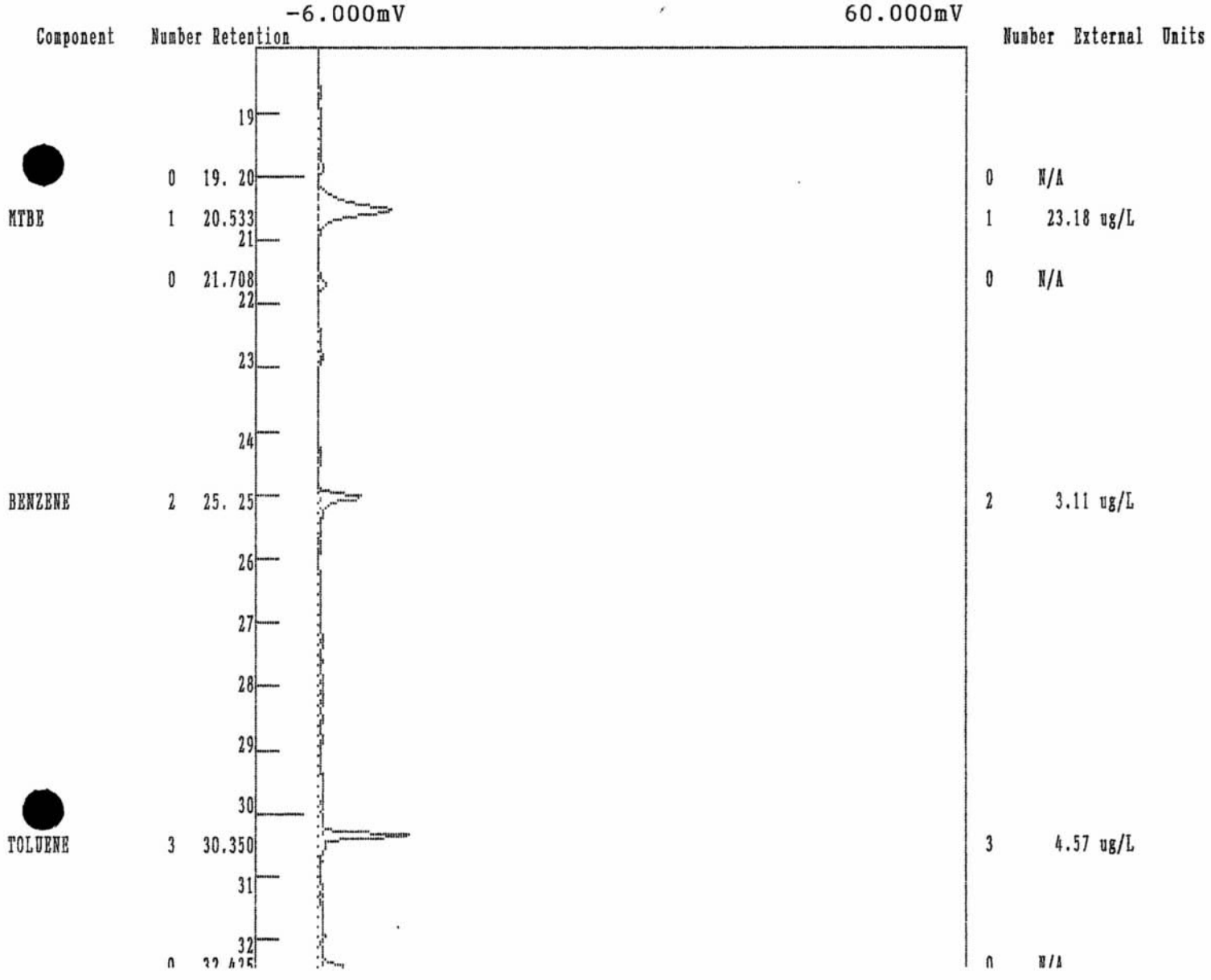
Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.491	9.56	1.06	ug/L
O-XYLENE	7	36.675	6.94	0.84	ug/L
4-BFB	8	38.275	290.82	53.22	ug/L
	3		307.32	55.12	

Benzene MTBE MBTEX

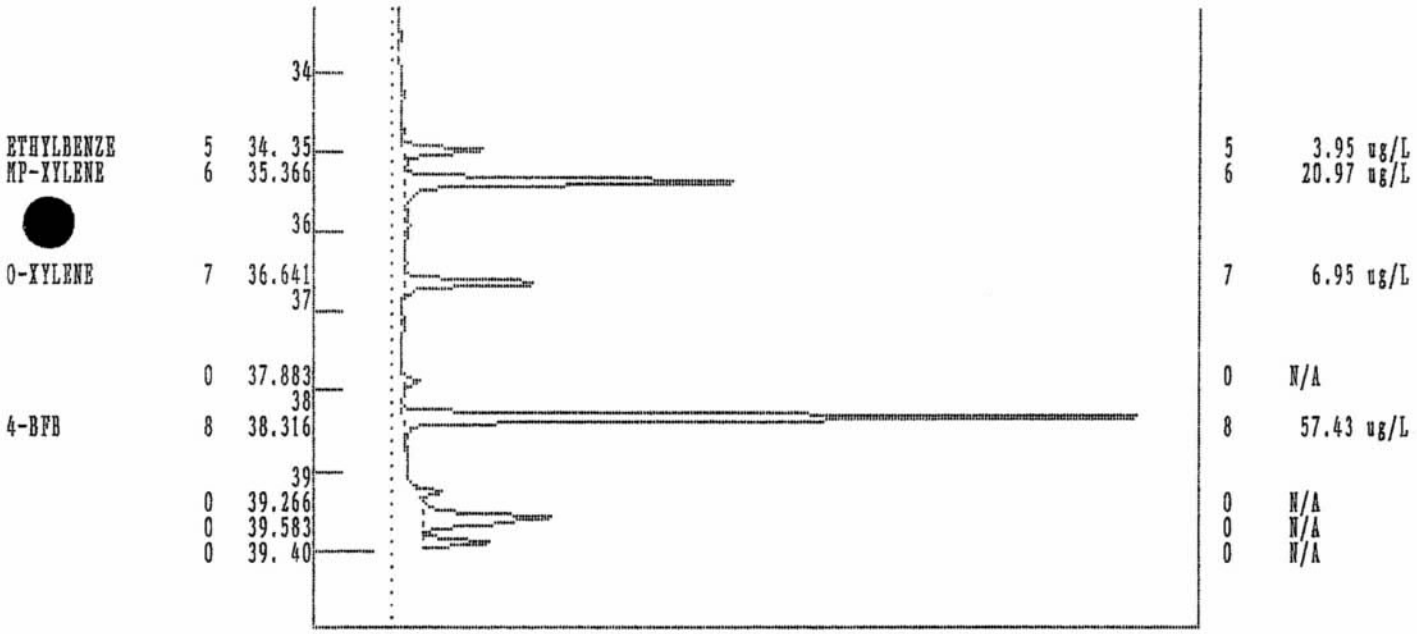
6 0 2

6-7412

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-24
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	19. 20	0	N/A	
MTBE	1	20.533	1	23.18	ug/L
	0	21.708	0	N/A	
BENZENE	2	25. 25	2	3.11	ug/L
TOLUENE	3	30.350	3	4.57	ug/L
	0	32.425	0	N/A	



Component	Number	Retention	Area	External	Units
MTBE	1	20.533	103.11	23.18	ug/L
BENZENE	2	25.041	33.20	3.11	ug/L
TOLUENE	3	30.350	47.78	4.57	ug/L
ETHYLBENZE	5	34.991	35.88	3.95	ug/L
MP-XYLENE	6	35.366	155.42	20.97	ug/L
O-XYLENE	7	36.641	64.53	6.95	ug/L
4-BFB	8	38.316	309.70	57.43	ug/L
	7		749.63	120.15	

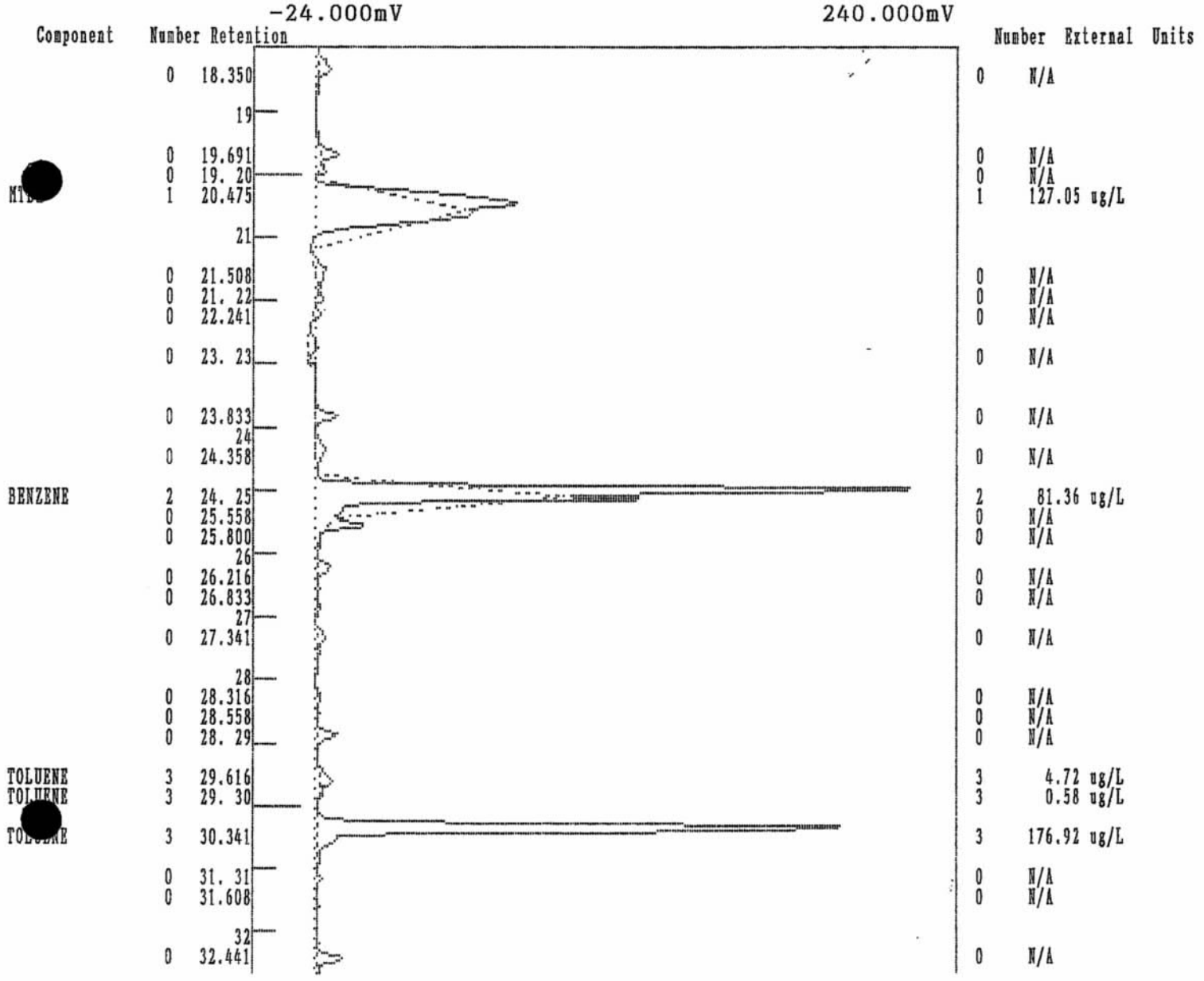
Benzene 3

MTBE 23

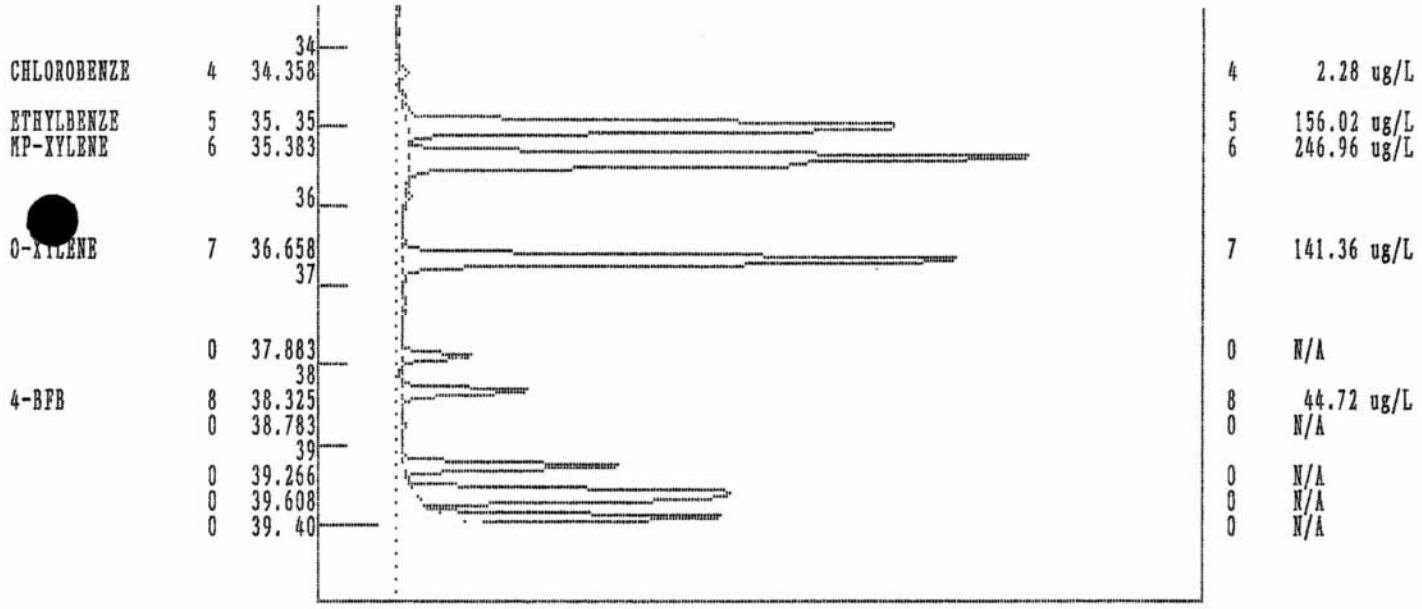
MBTEX 63

6-24-12

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-27
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	18.350	0	N/A	
		19			
	0	19.691	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.475	1	127.05	ug/L
		21			
	0	21.508	0	N/A	
	0	21. 22	0	N/A	
	0	22.241	0	N/A	
	0	23. 23	0	N/A	
	0	23.833	0	N/A	
		24			
	0	24.358	0	N/A	
BENZENE	2	24. 25	2	81.36	ug/L
	0	25.558	0	N/A	
	0	25.800	0	N/A	
		26			
	0	26.216	0	N/A	
	0	26.833	0	N/A	
		27			
	0	27.341	0	N/A	
		28			
	0	28.316	0	N/A	
	0	28.558	0	N/A	
	0	28. 29	0	N/A	
TOLUENE	3	29.616	3	4.72	ug/L
TOLUENE	3	29. 30	3	0.58	ug/L
TOLUENE	3	30.341	3	176.92	ug/L
	0	31. 31	0	N/A	
	0	31.608	0	N/A	
		32			
	0	32.441	0	N/A	



Component	Number	Retention	Area	External	Units
MTBE	1	20.475	416.74	127.05	ug/L
BENZENE	2	24.983	921.37	81.36	ug/L
TOLUENE	3	29.616	49.33	4.72	ug/L
TOLUENE	3	29.808	6.04	0.58	ug/L
TOLUENE	3	30.341	1807.89	176.92	ug/L
CHLOROBENZE	4	34.358	23.98	2.28	ug/L
ETHYLBENZE	5	35.000	1460.36	156.02	ug/L
MP-XYLENE	6	35.383	1913.09	246.96	ug/L
O-XYLENE	7	36.658	1427.76	141.36	ug/L
4-BFB	8	38.325	252.71	44.72	ug/L
	10		8279.26	981.98	

Benzene

81

MTBE

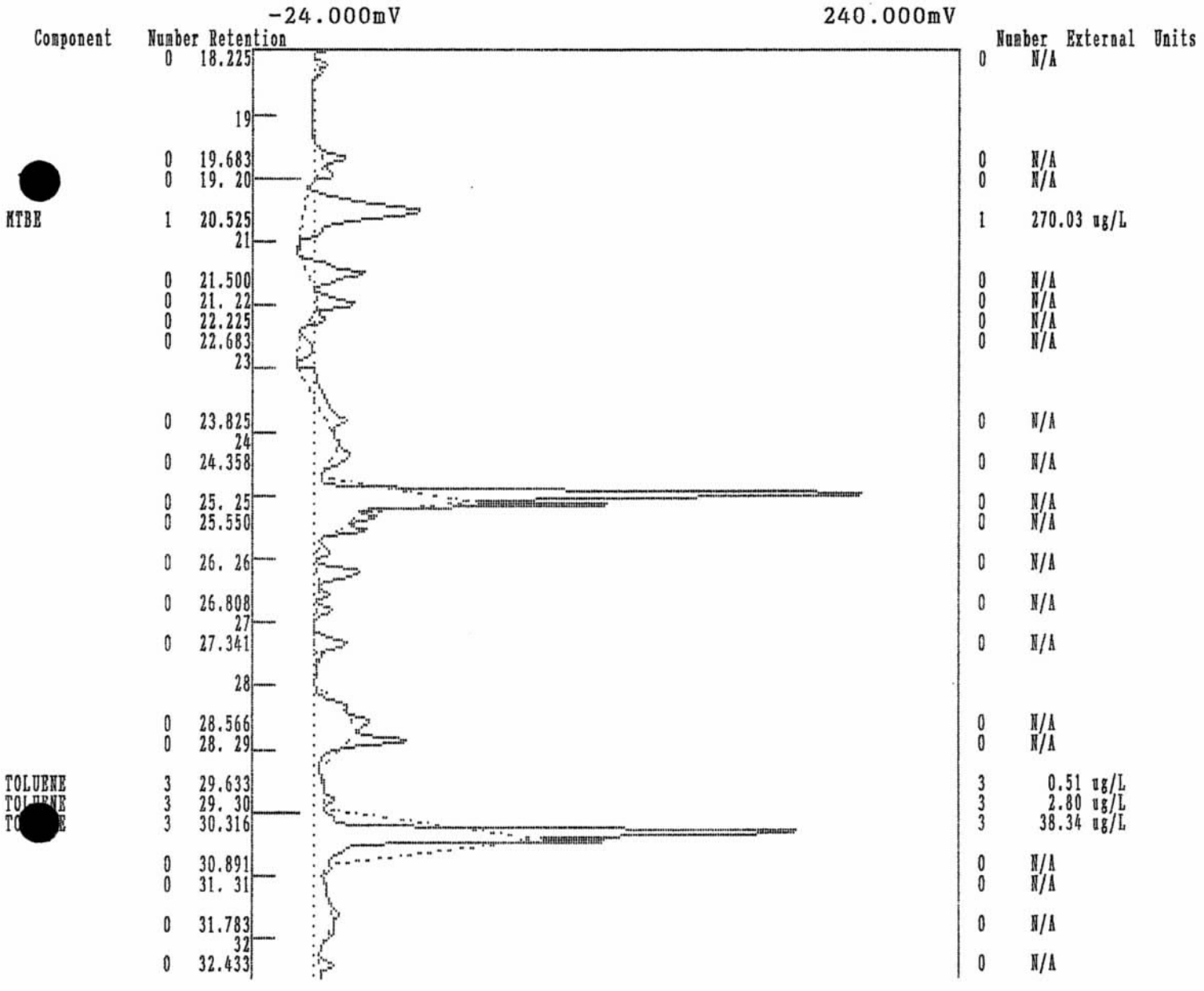
127

MBTEX

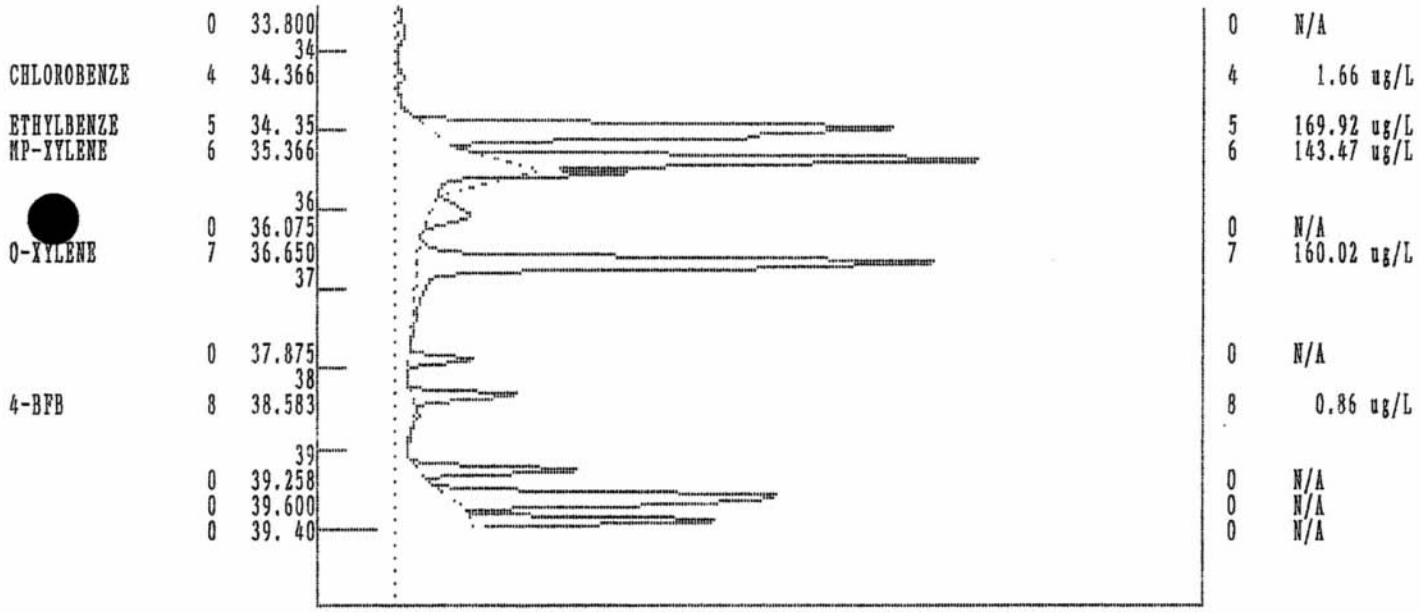
938

6-24-12

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-28
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	18.225	0	N/A	
		19			
	0	19.683	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.525	1	270.03	ug/L
		21			
	0	21.500	0	N/A	
	0	21. 22	0	N/A	
	0	22.225	0	N/A	
	0	22.683	0	N/A	
		23			
	0	23.825	0	N/A	
		24			
	0	24.358	0	N/A	
	0	25. 25	0	N/A	
	0	25.550	0	N/A	
	0	26. 26	0	N/A	
	0	26.808	0	N/A	
		27			
	0	27.341	0	N/A	
		28			
	0	28.566	0	N/A	
	0	28. 29	0	N/A	
TOLUENE	3	29.633	3	0.51	ug/L
TOLUENE	3	29. 30	3	2.80	ug/L
TOLUENE	3	30.316	3	38.34	ug/L
	0	30.891	0	N/A	
	0	31. 31	0	N/A	
	0	31.783	0	N/A	
		32			
	0	32.433	0	N/A	



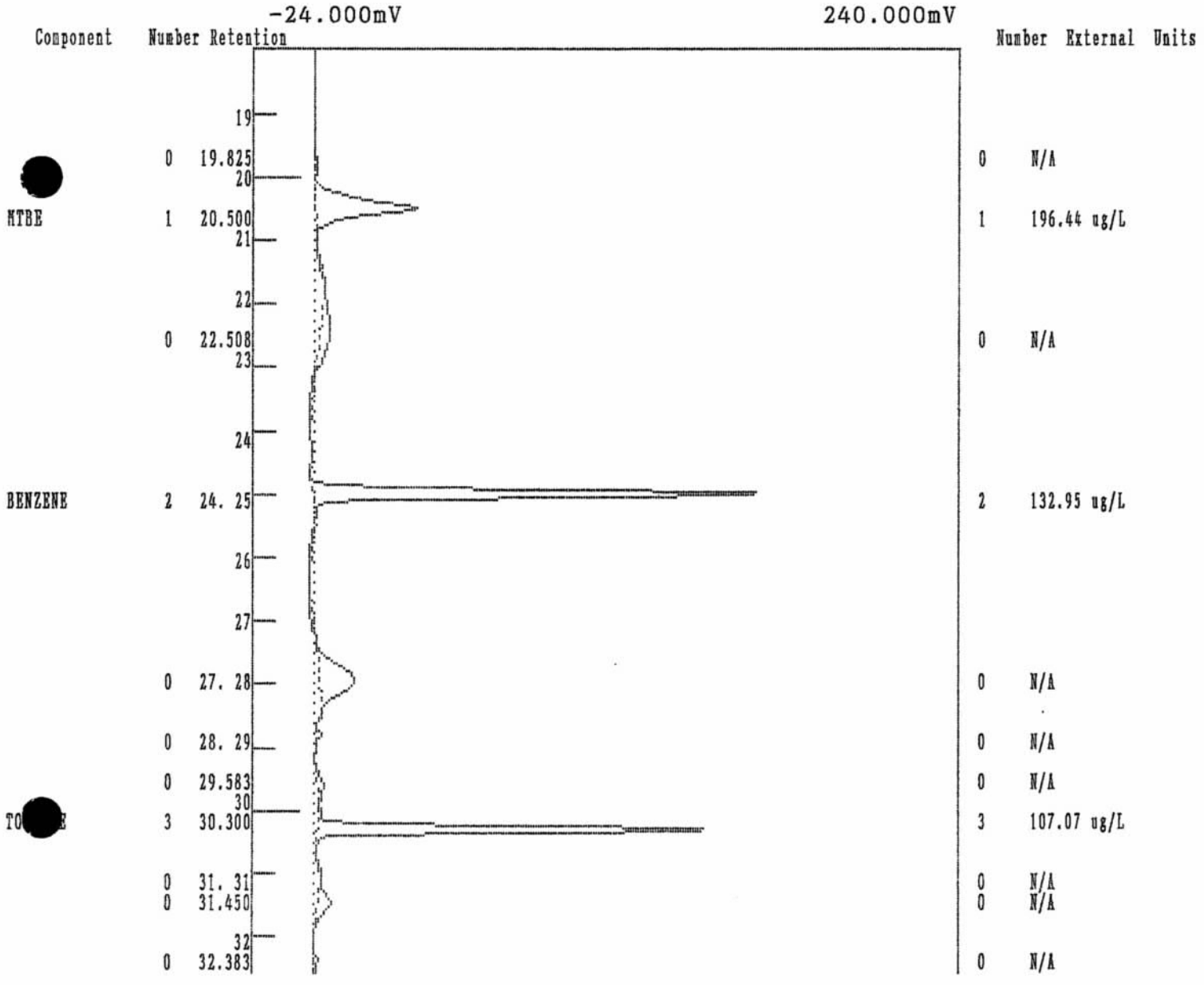
Component	Number	Retention	Area	External	Units
MTBE	1	20.525	885.71	270.03	ug/L
BENZENE	2	24.983	1119.25	101.65	ug/L
TOLUENE	3	29.633	5.29	0.51	ug/L
TOLUENE	3	29.800	29.30	2.80	ug/L
TOLUENE	3	30.316	407.58	38.34	ug/L
CHLOROBENZE	4	34.366	17.43	1.66	ug/L
ETHYLBENZE	5	34.966	1584.96	169.92	ug/L
MP-XYLENE	6	35.366	1093.95	143.47	ug/L
O-XYLENE	7	36.650	1616.17	160.02	ug/L
4-BFB	8	38.325	227.32	39.06	ug/L
4-BFB	8	38.583	5.85	0.86	ug/L
	11		6992.81	928.31	

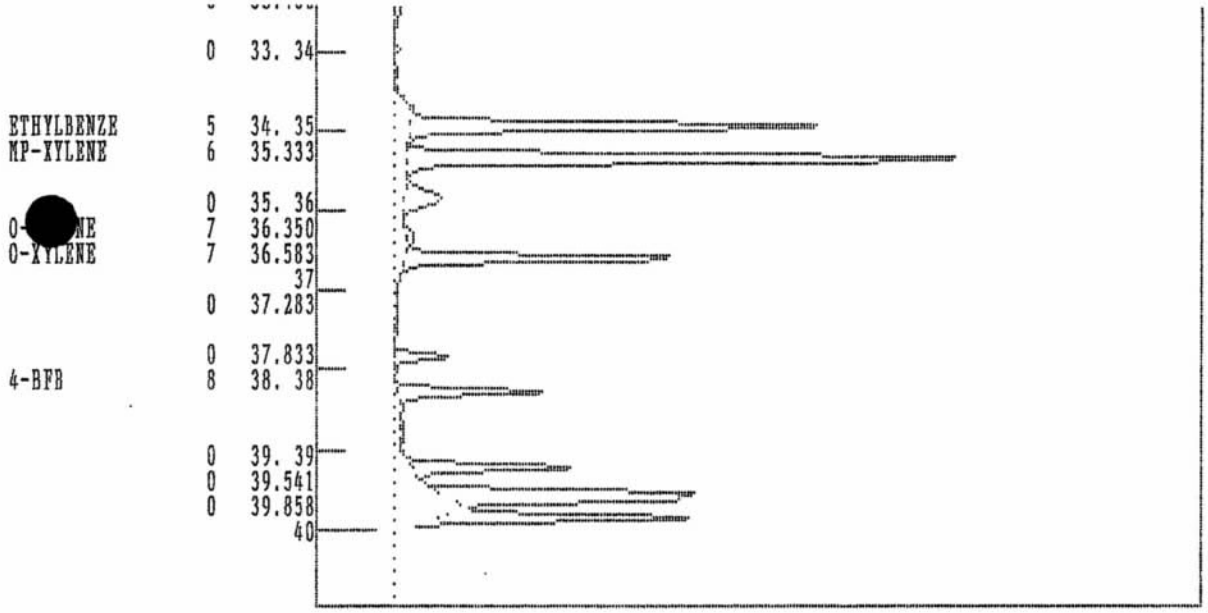
Benzene MTBE MBTEX

102 270 888

6-24-12

Client : Broad River BP
Collected : 06/22/12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TMW-28-D
Operator : TERRY L. TEATE



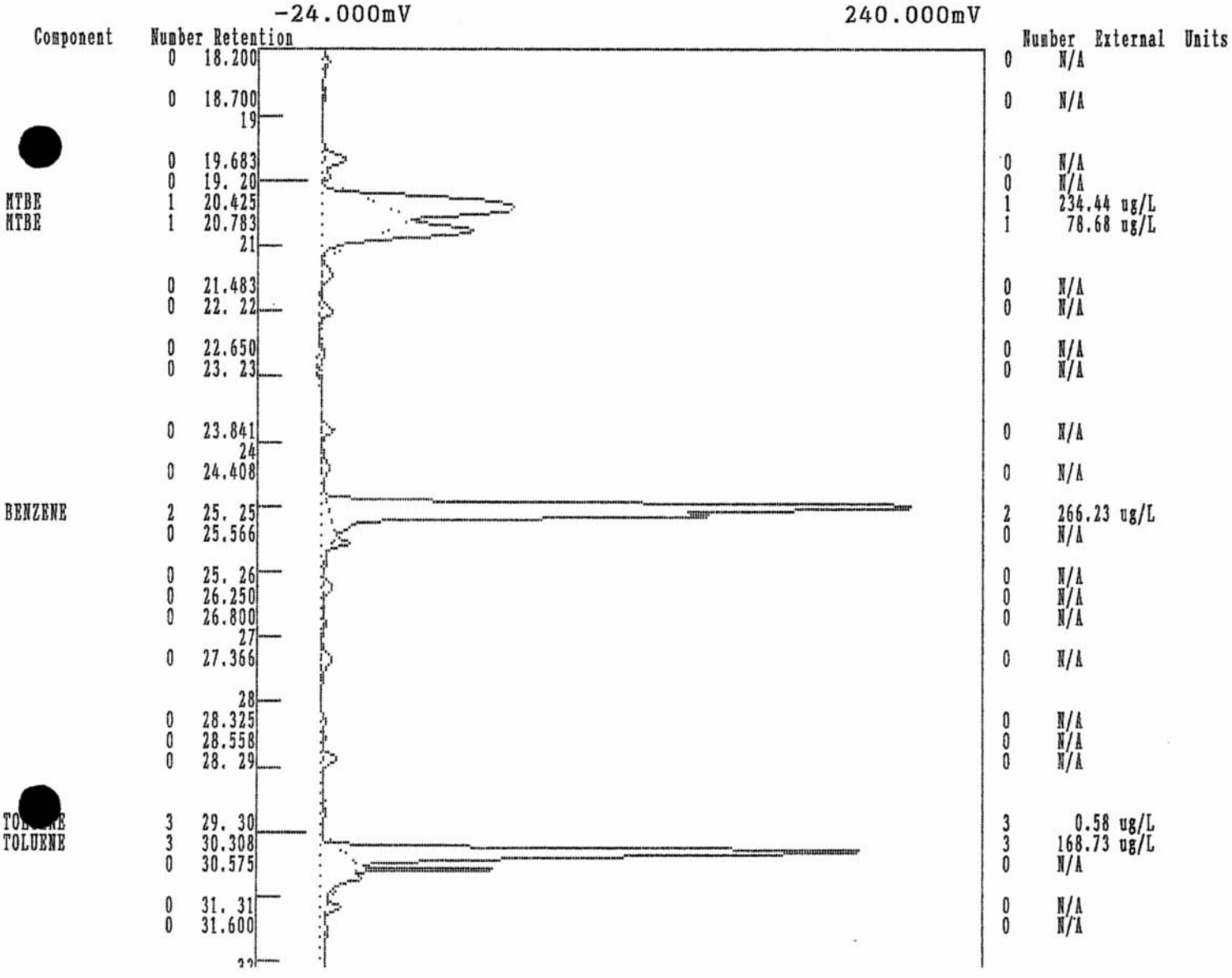


Component	Number	Retention	Area	External	Units
MTBE	1	20.500	644.33	196.44	ug/L
BENZENE	2	24.983	1424.56	132.95	ug/L
TOLUENE	3	30.300	1130.74	107.07	ug/L
ETHYLBENZE	5	34.950	859.85	89.03	ug/L
MP-XYLENE	6	35.333	1314.17	171.29	ug/L
O-XYLENE	7	36.350	21.58	2.62	ug/L
O-XYLENE	7	36.583	522.03	51.69	ug/L
4-BFB	8	38.266	277.47	50.24	ug/L
	8		6194.74	801.33	

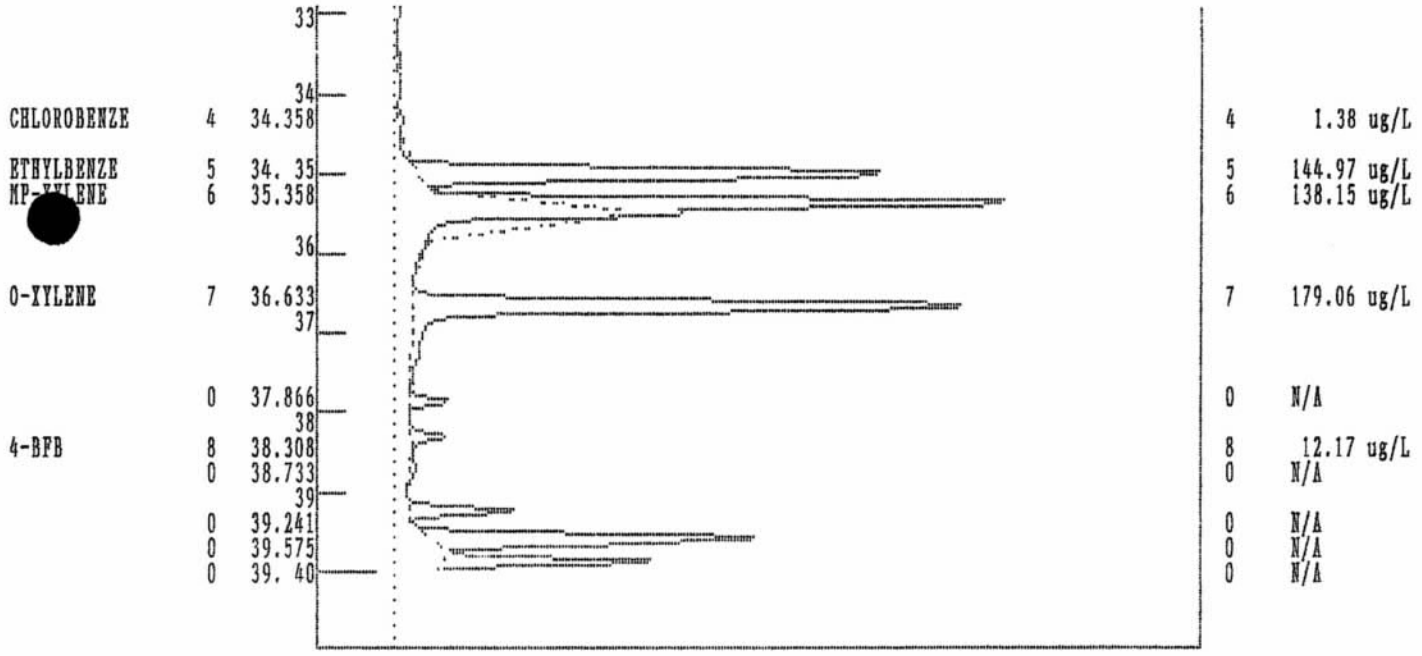
Benzene MTBE MTBEX

132 196 751

Client : Broad River BP
Collected : 07/10/12
Analysis date : 11/22/2010 07:42:13
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-25
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	18.200	0	N/A	
	0	18.700	0	N/A	
	0	19.683	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.425	1	234.44	ug/L
MTBE	1	20.783	1	78.68	ug/L
	0	21.483	0	N/A	
	0	22. 22	0	N/A	
	0	22.650	0	N/A	
	0	23. 23	0	N/A	
	0	23.841	0	N/A	
	0	24.408	0	N/A	
BENZENE	2	25. 25	2	266.23	ug/L
	0	25.566	0	N/A	
	0	25. 26	0	N/A	
	0	26.250	0	N/A	
	0	26.800	0	N/A	
	0	27.366	0	N/A	
	0	28.325	0	N/A	
	0	28.558	0	N/A	
	0	28. 29	0	N/A	
TOLUENE	3	29. 30	3	0.58	ug/L
TOLUENE	3	30.308	3	168.73	ug/L
	0	30.575	0	N/A	
	0	31. 31	0	N/A	
	0	31.600	0	N/A	



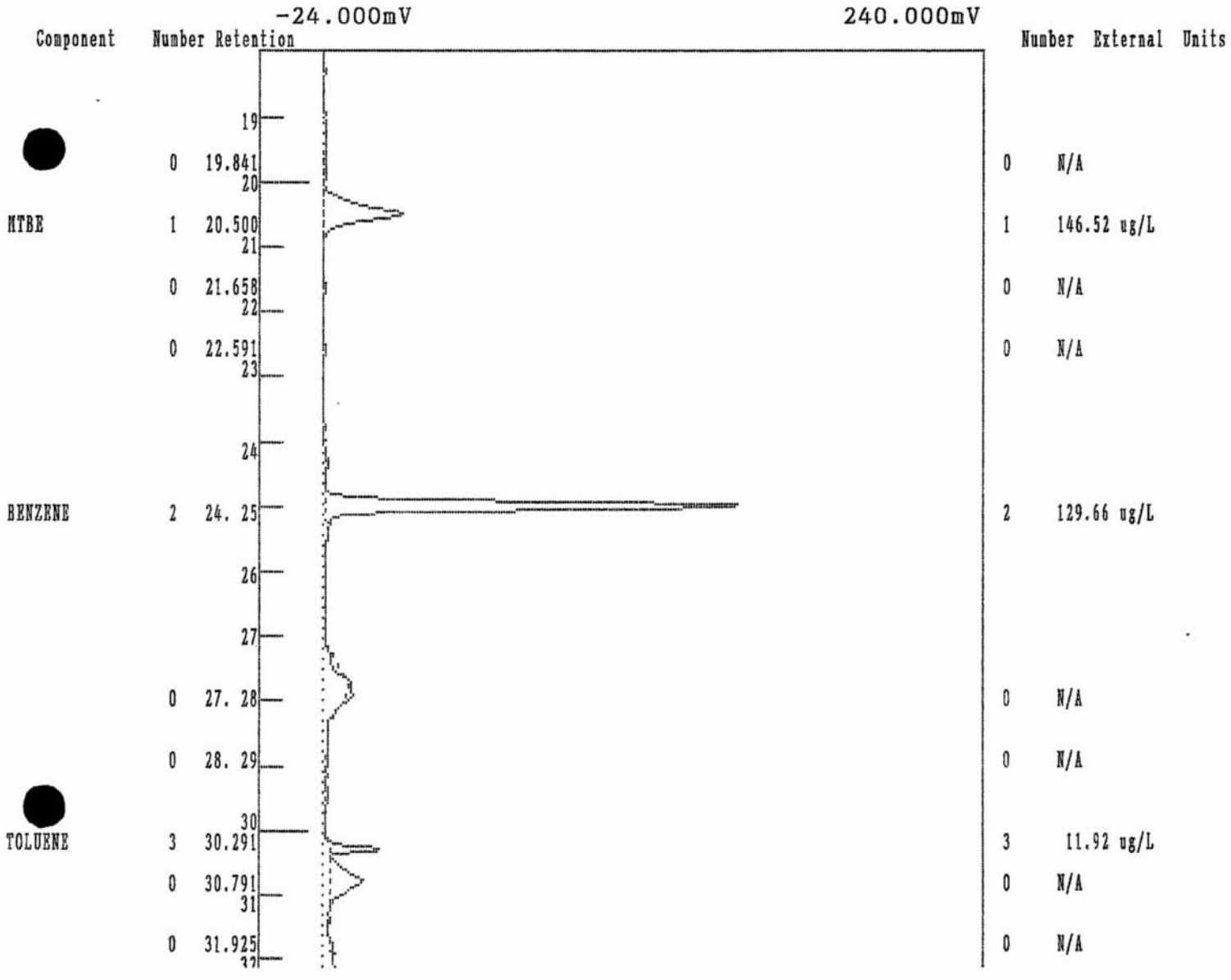
Component	Number	Retention	Area	External	Units
MTBE	1	20.425	768.98	234.44	ug/L
MTBE	1	20.783	273.83	78.68	ug/L
BENZENE	2	25.008	2724.43	266.23	ug/L
TOLUENE	3	29.716	6.01	0.58	ug/L
TOLUENE	3	30.308	1728.54	168.73	ug/L
CHLOROBENZE	4	34.358	14.51	1.38	ug/L
ETHYLBENZE	5	34.983	1361.28	144.97	ug/L
MP-XYLENE	6	35.358	1051.90	138.15	ug/L
O-XYLENE	7	36.633	1808.54	179.06	ug/L
4-BFB	8	38.308	75.72	12.17	ug/L
	10		9813.73	1224.40	

MTBE 234

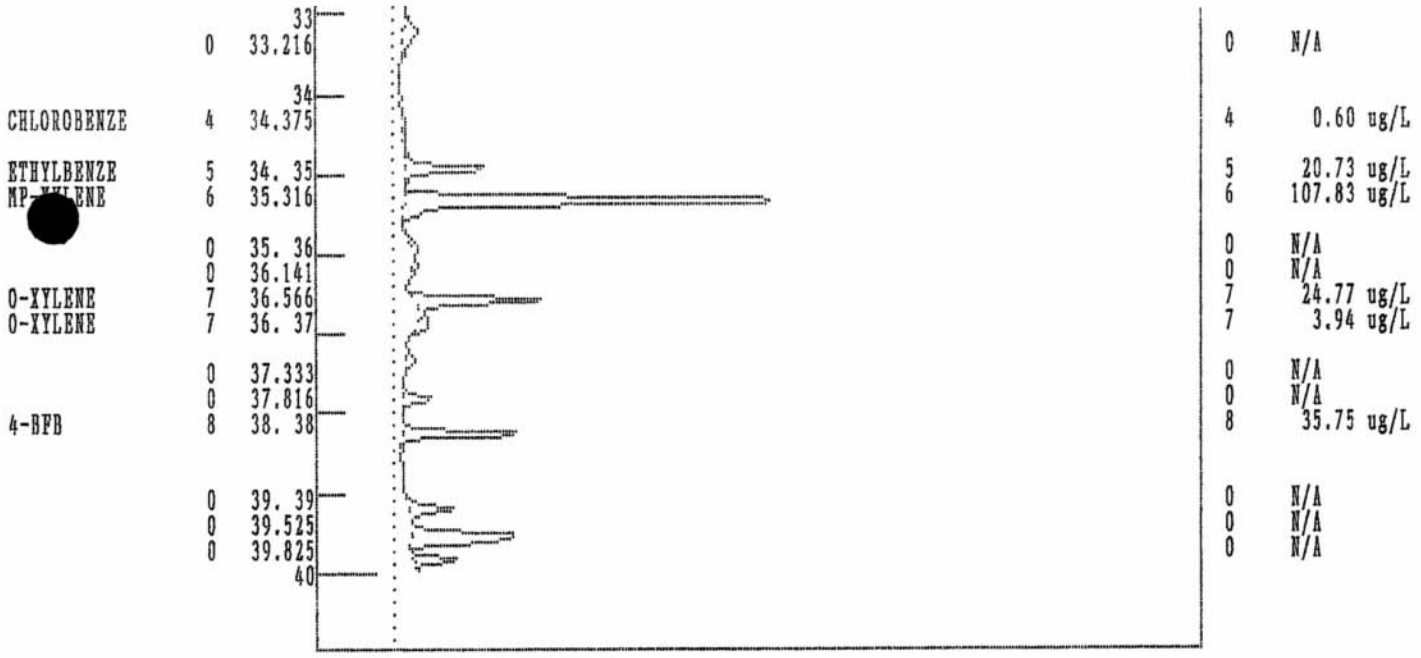
Benzene 266

MBTEX 1212

Client : Broad River BP
Collected : 07/10/12
Analysis date : 11/22/2010 08:26:04
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-27-D
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	19.841	0	N/A	
MTBE	1	20.500	1	146.52	ug/L
	0	21.658	0	N/A	
	0	22.591	0	N/A	
BENZENE	2	24. 25	2	129.66	ug/L
	0	27. 28	0	N/A	
	0	28. 29	0	N/A	
TOLUENE	3	30.291	3	11.92	ug/L
	0	30.791	0	N/A	
	0	31.925	0	N/A	



Component	Number	Retention	Area	External	Units
MTBE	1	20.500	480.58	146.52	ug/L
BENZENE	2	24.991	1392.44	129.66	ug/L
TOLUENE	3	30.291	109.41	11.92	ug/L
CHLOROBENZE	4	34.375	6.29	0.60	ug/L
ETHYLBENZE	5	34.925	170.21	20.73	ug/L
MP-XYLENE	6	35.316	820.43	107.83	ug/L
O-XYLENE	7	36.566	234.26	24.77	ug/L
O-XYLENE	7	36.850	32.45	3.94	ug/L
4-BFB	8	38.258	212.50	35.75	ug/L
	9		3458.57	481.71	

MTBE

147

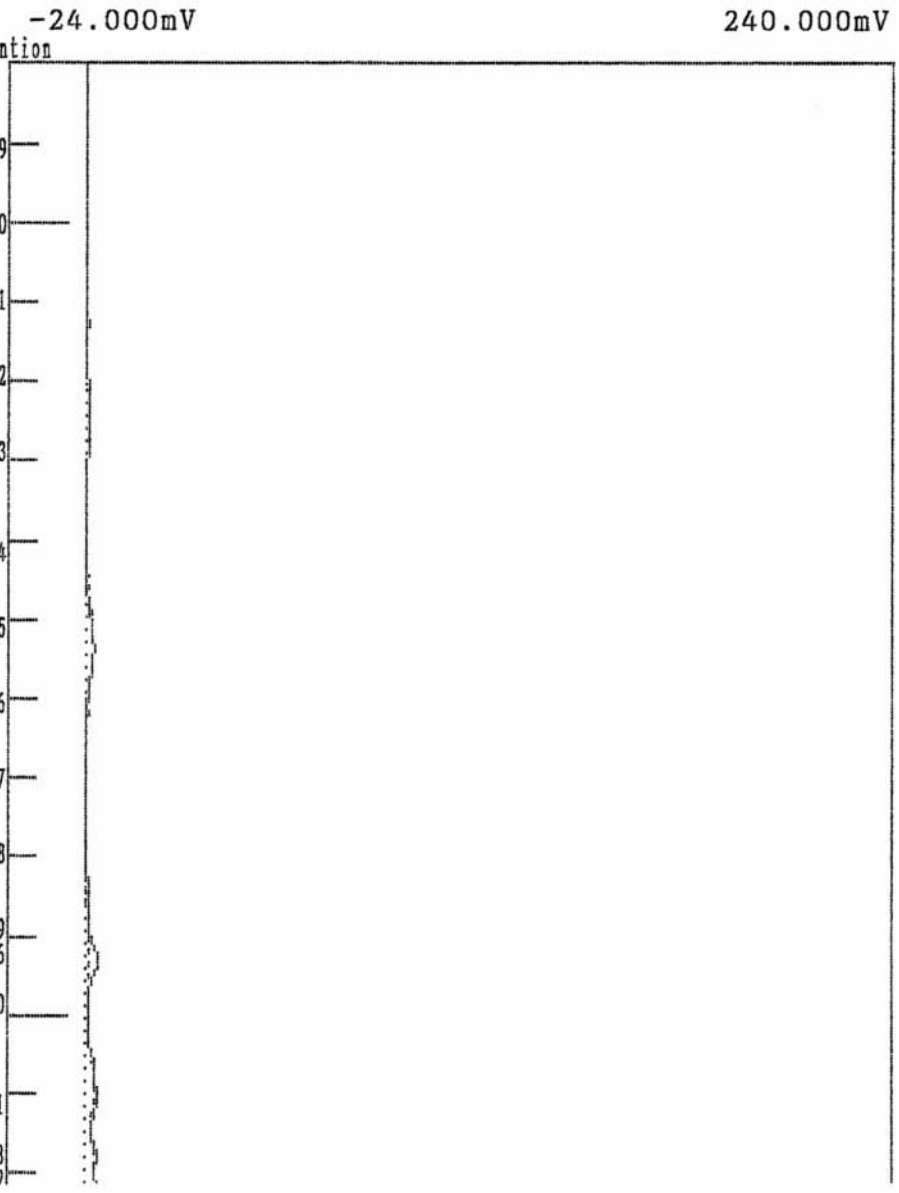
Benzene

130

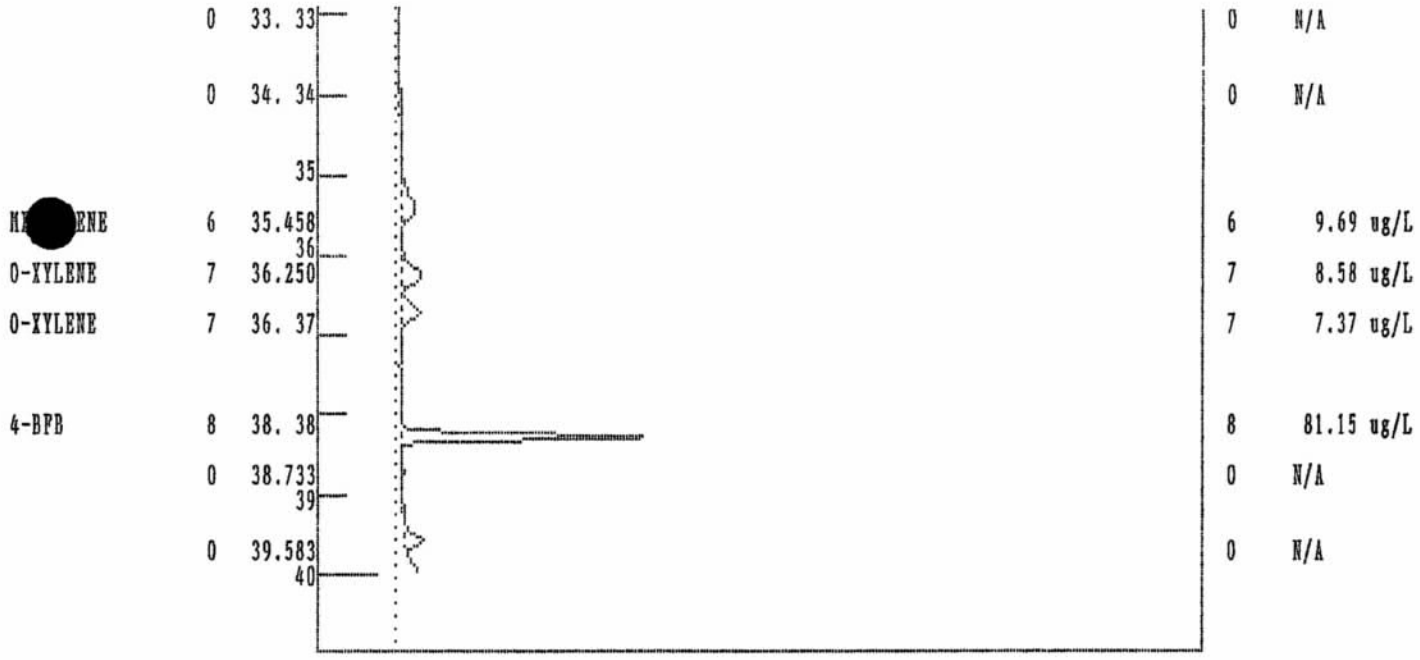
MBTEX

446

Client : Broad River BP
Collected : 07/10/12
Analysis date : 11/22/2010 09:10:08
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-29
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
0	29.316		0	N/A	
0	31. 31		0	N/A	
0	31.808		0	N/A	



Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.458	87.28	9.69	ug/L
O-XYLENE	7	36.250	84.00	8.58	ug/L
O-XYLENE	7	36.733	69.52	7.37	ug/L
4-BFB	8	38.275	416.12	81.15	ug/L
	4		656.93	106.79	

MTBE

0

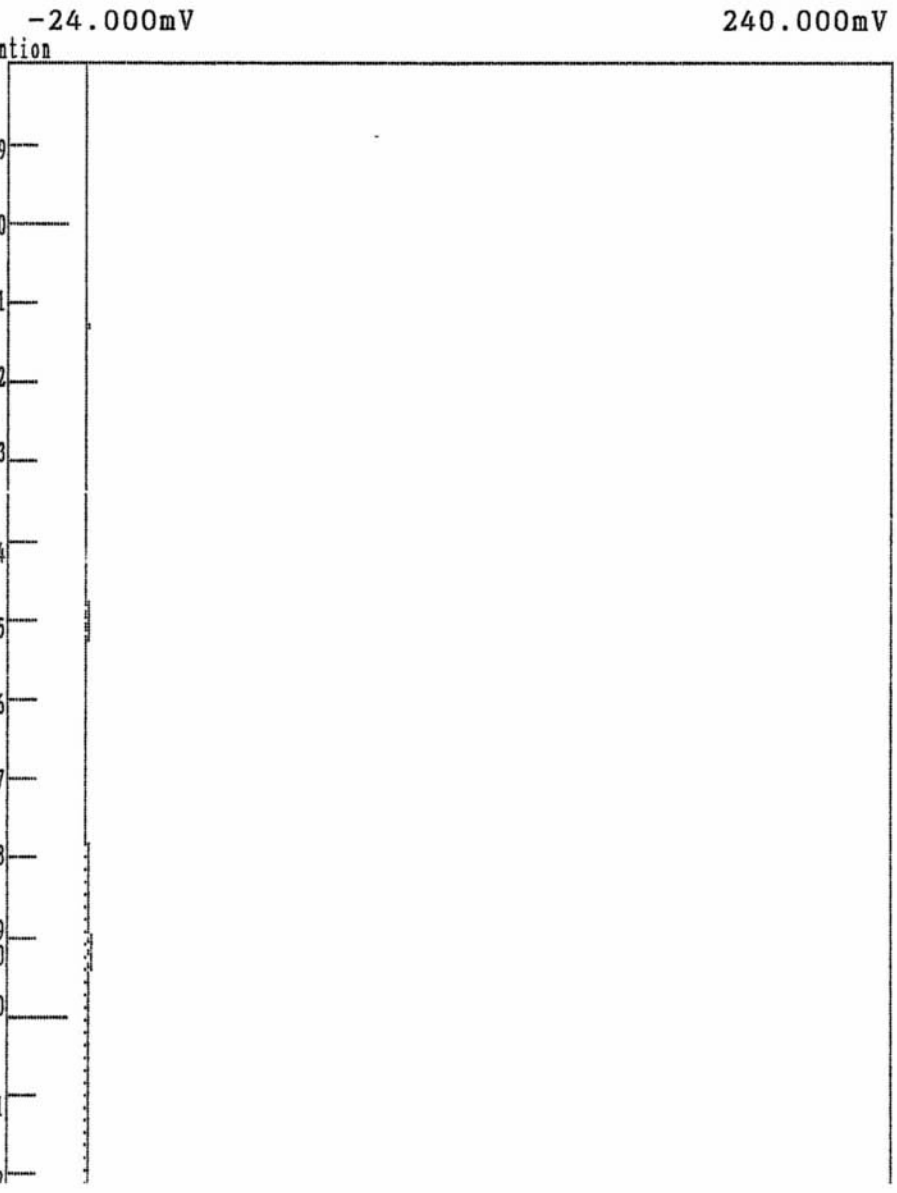
Benzene

0

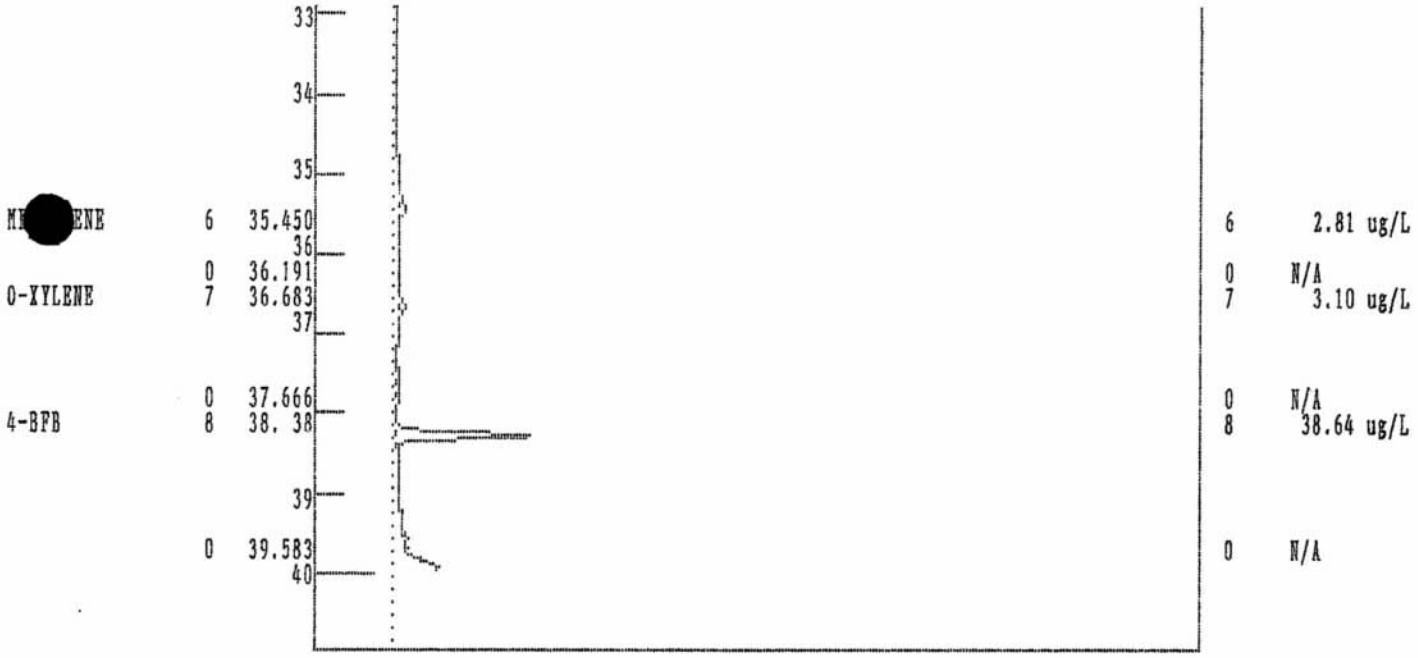
MBTEX

25

Client : Broad River BP
Collected : 07/10/12
Analysis date : 11/22/2010 09:57:01
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-30
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
BENZENE	2	24.25	2	0.97	ug/L
	0	29.200	0	N/A	

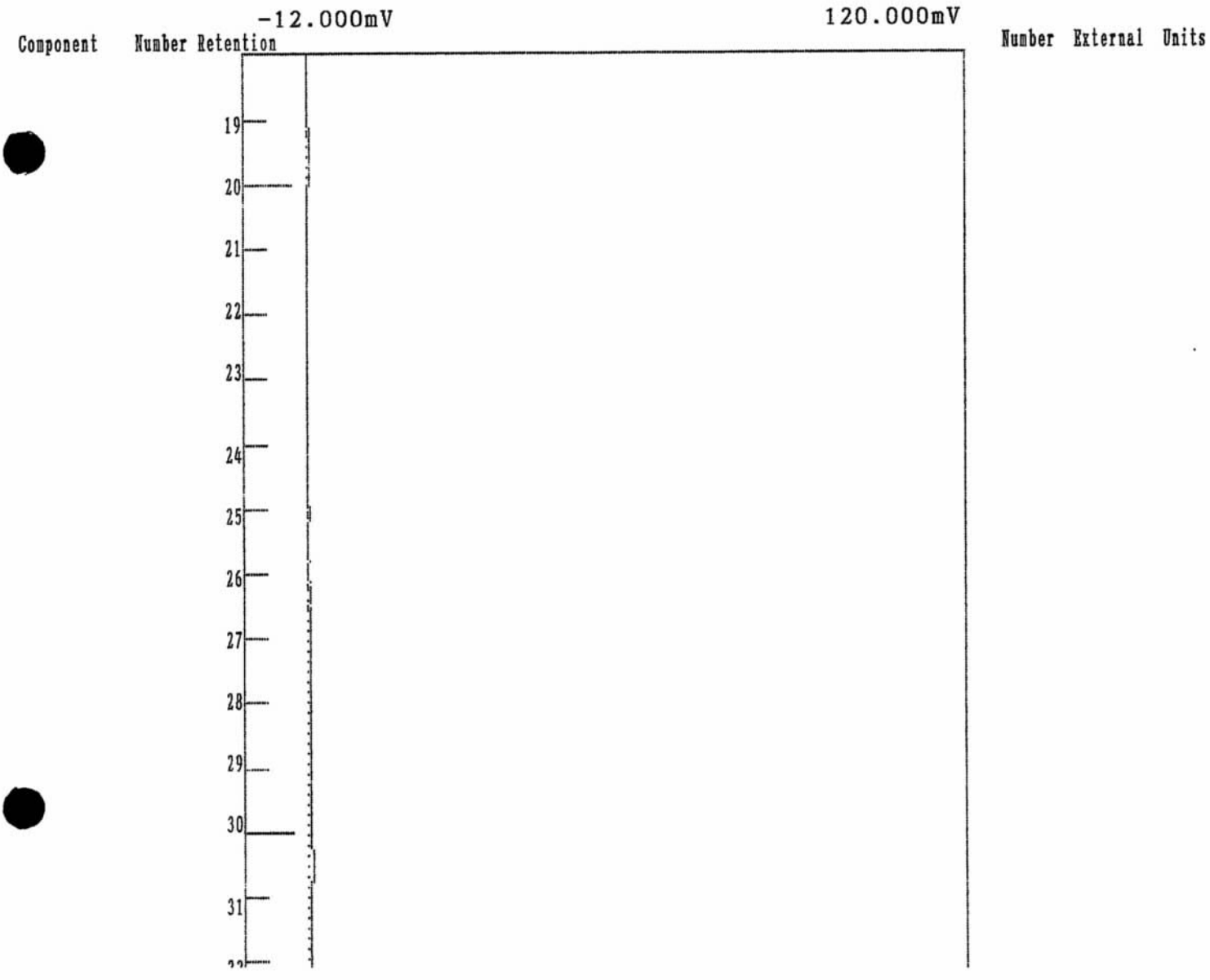


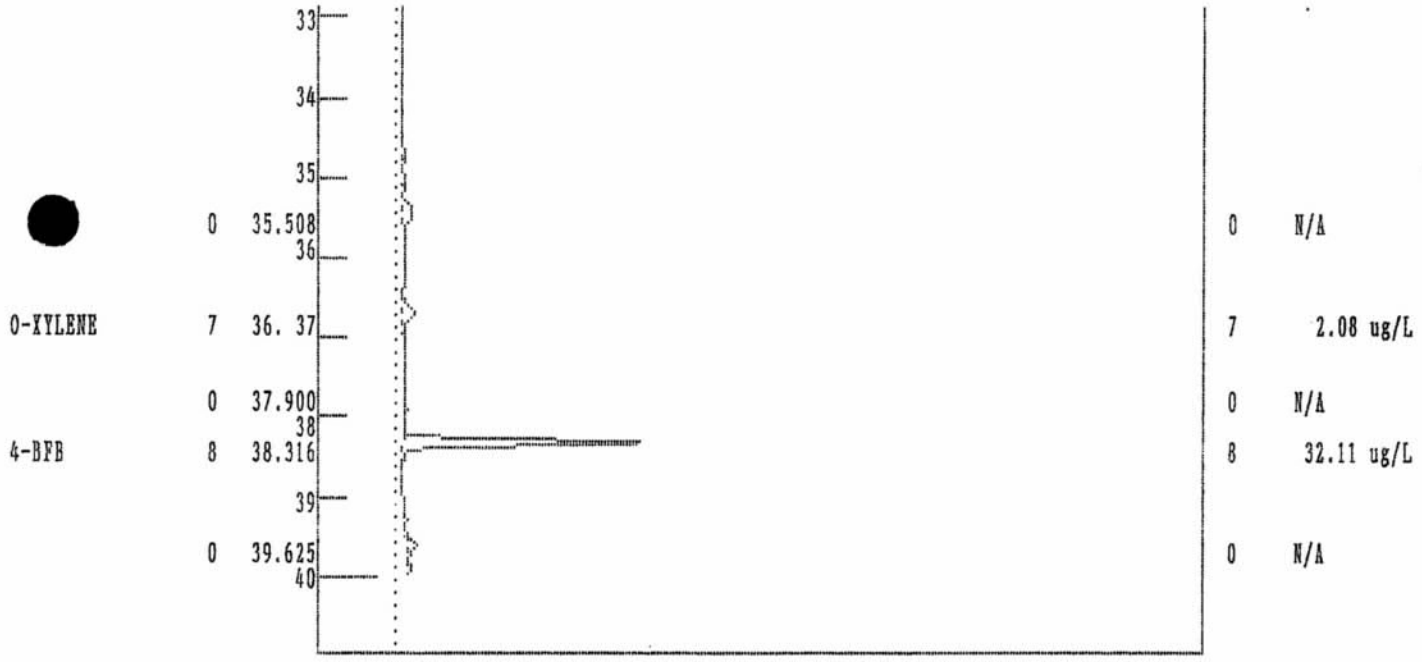
Component	Number	Retention	Area	External	Units
BENZENE	2	24.983	10.32	0.97	ug/L
MP-XYLENE	6	35.450	25.30	2.81	ug/L
O-XYLENE	7	36.683	25.56	3.10	ug/L
4-BFB	8	38.275	225.44	38.64	ug/L
	4		286.62	45.52	

MTBE Benzene MBTEX

0 1 7

Client : Broad River BP
Collected : 07/10/12
Analysis date : 11/22/2010 10:39:57
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-31
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.725	17.10	2.08	ug/L
4-BFB	8	38.316	196.16	32.11	ug/L
	2		213.26	34.19	

MTBE

0

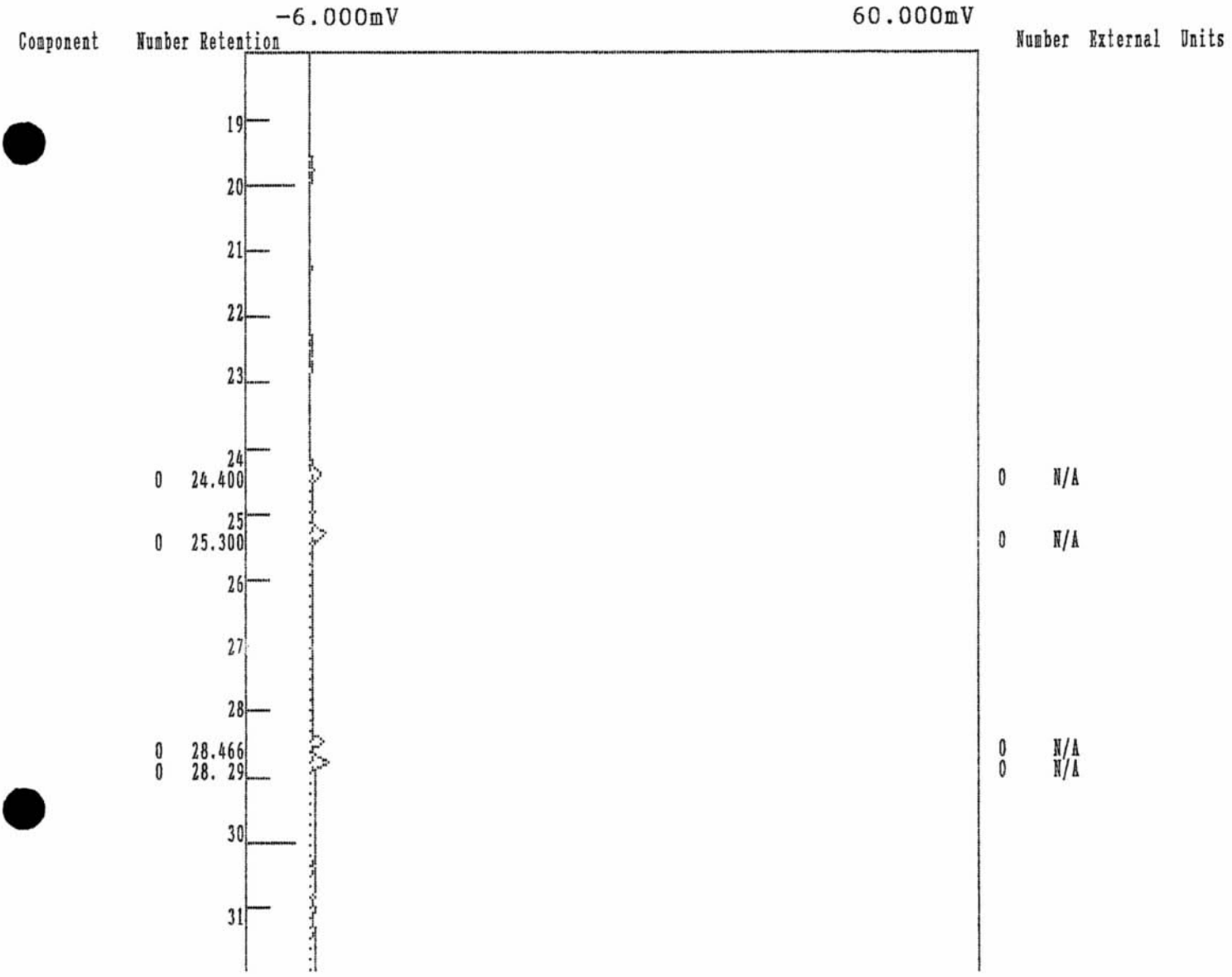
Benzene

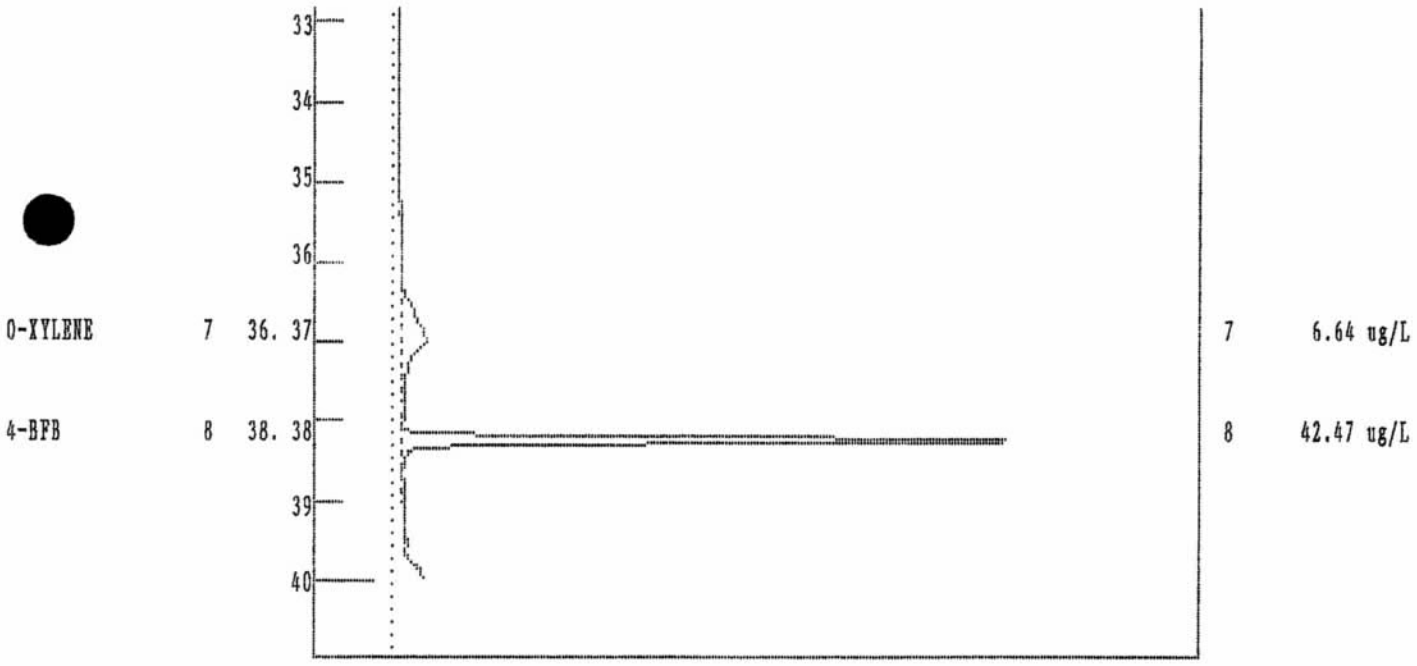
0

MBTEX

2

Client : Broad River BP
Collected : 7/09/12
Analysis date : 11/22/2010 16:50:28
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-32
Operator : TERRY L. TEATE





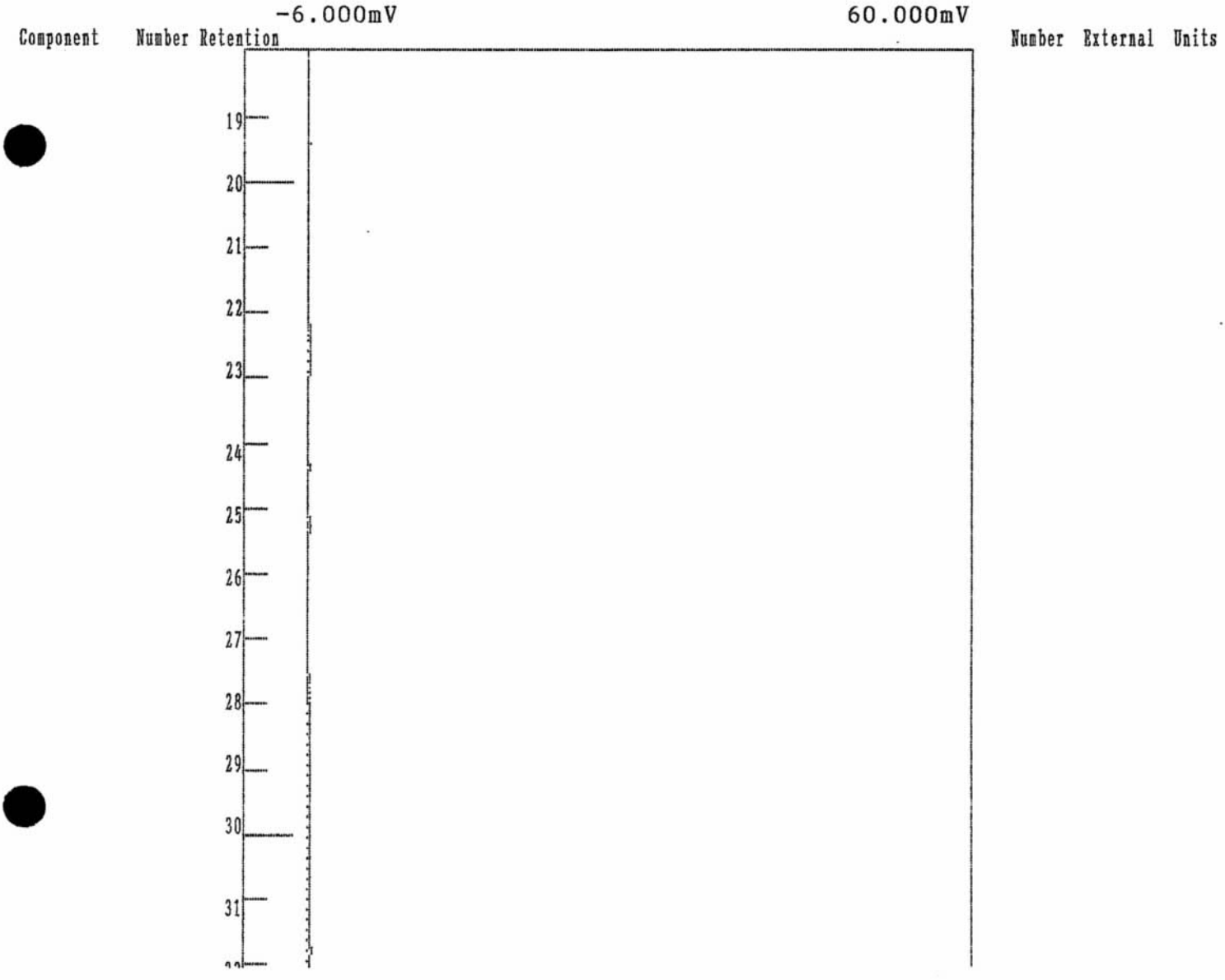
Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.950	60.78	6.64	ug/L
4-BFB	8	38.233	242.60	42.47	ug/L
	2		303.38	49.10	

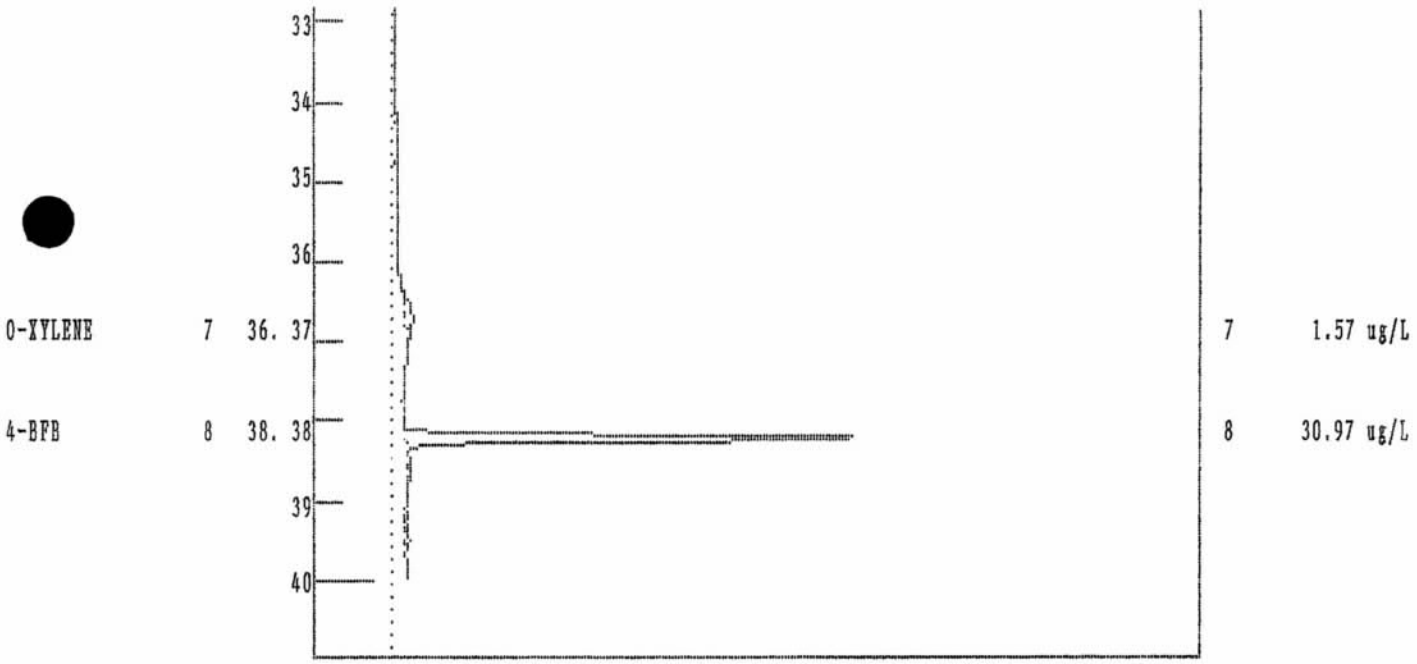
MTBE 0

Benzene 0

MBTEX 7

Client : Broad River BP
Collected : 7/09/12
Analysis date : 11/22/2010 17:39:13
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-33
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.708	12.96	1.57	ug/L
4-BFB	8	38.208	191.04	30.97	ug/L
	2		204.00	32.54	

MTBE

0

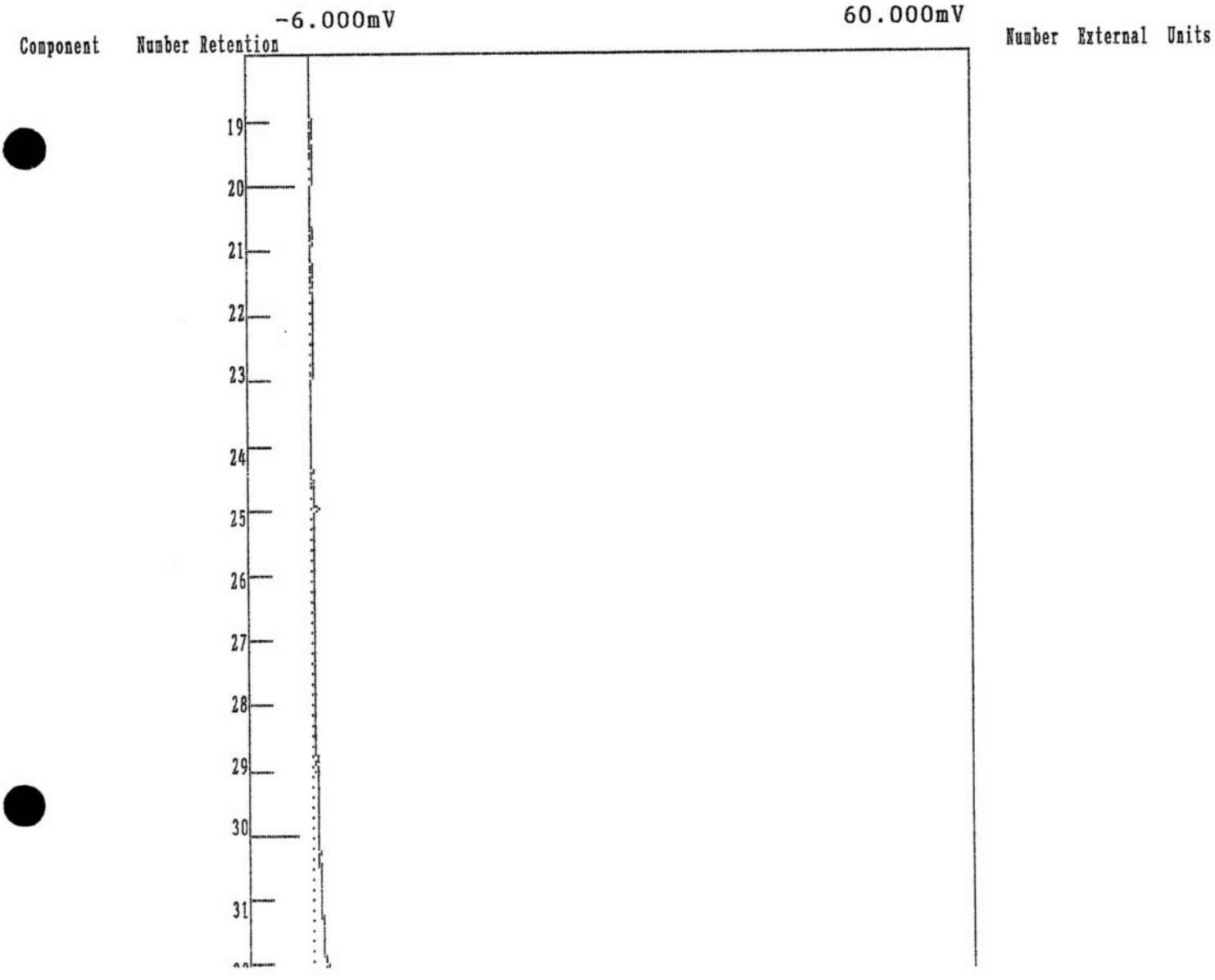
Benzene

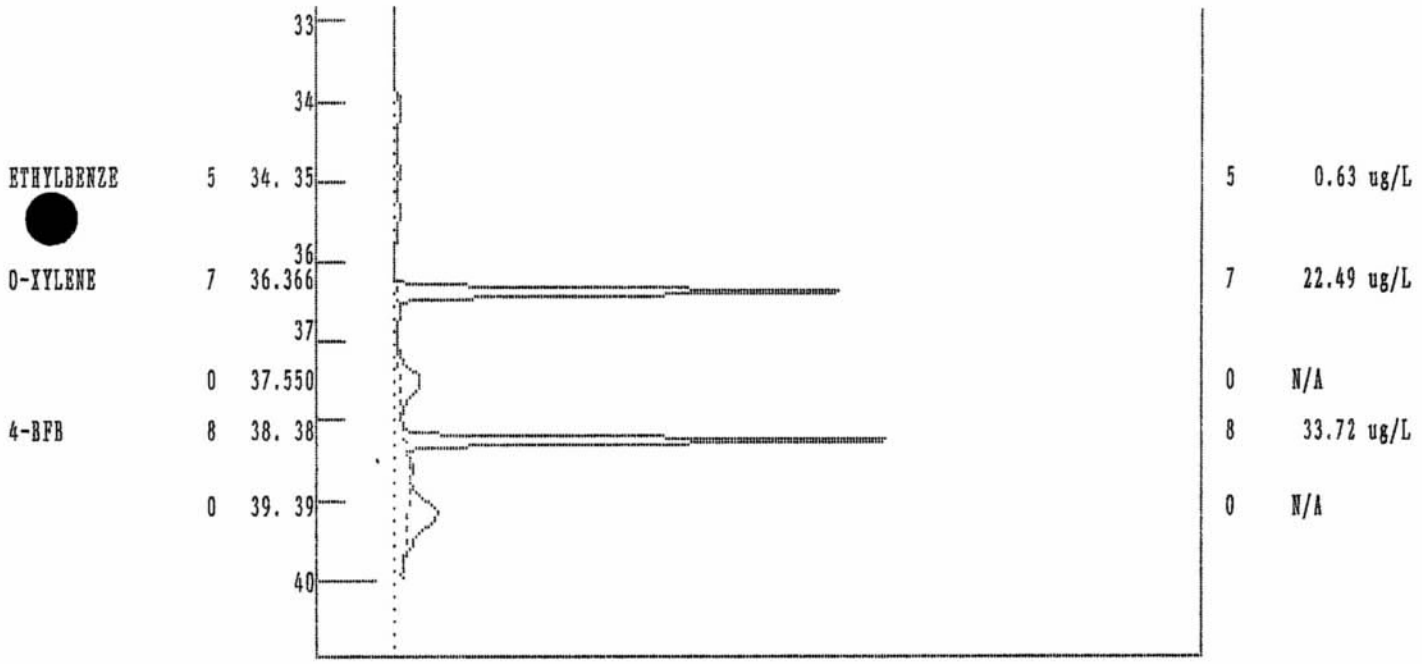
0

MBTEX

2

Client : Broad River BP
Collected : 7/09/12
Analysis date : 11/22/2010 16:07:49
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-31-D
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
ETHYLBENZE	5	34.908	5.71	0.63	ug/L
O-XYLENE	7	36.366	208.88	22.49	ug/L
4-BFB	8	38.241	203.37	33.72	ug/L
	3		417.96	56.83	

MTBE 0

Benzene 0

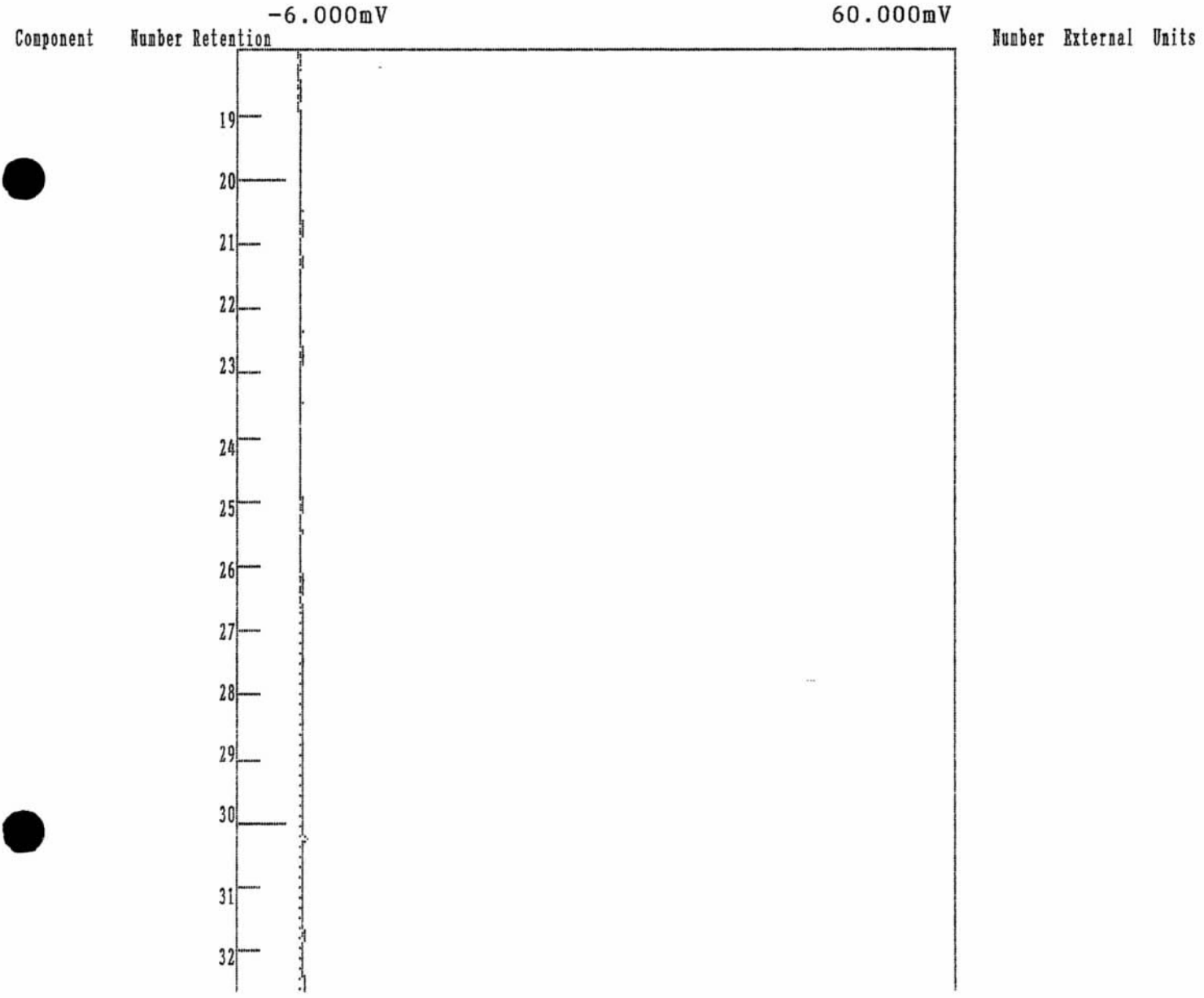
MBTEX 23

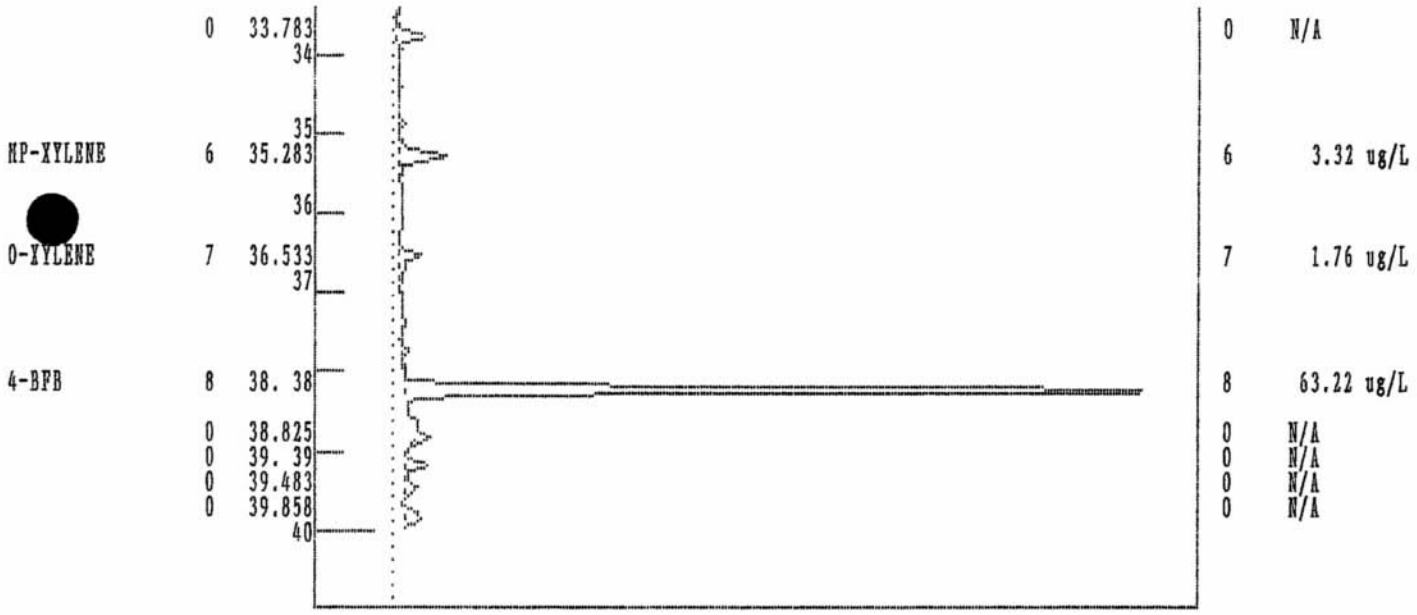
MTBE
0

Benzene
0

MBTEX
5.0

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 15:06:50
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-18
Operator : TERRY L. TEATE





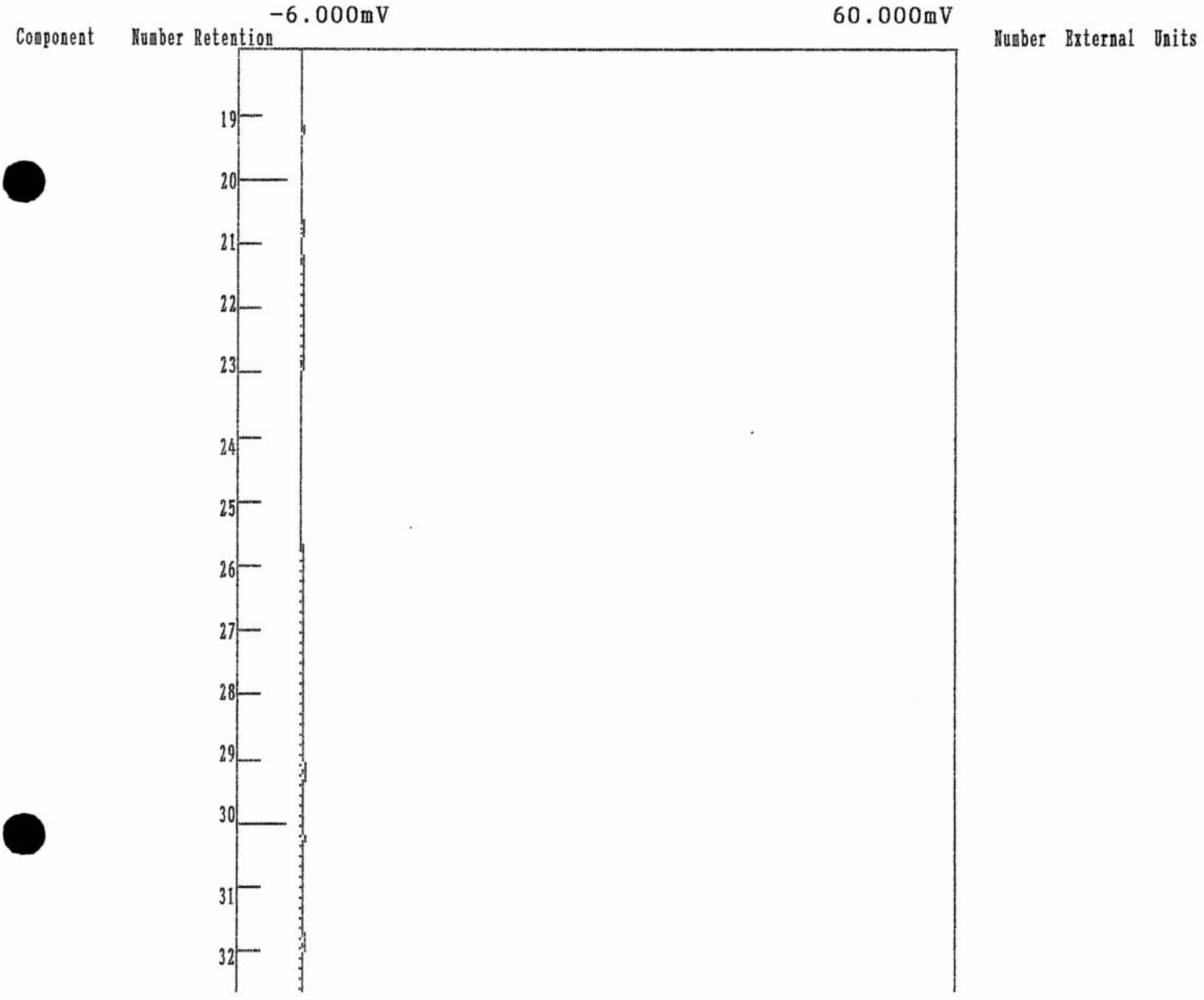
Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.283	29.91	3.32	ug/L
O-XYLENE	7	36.533	14.48	1.76	ug/L
4-BFB	8	38.225	335.70	63.22	ug/L
	3		**380.10**	**68.30**	

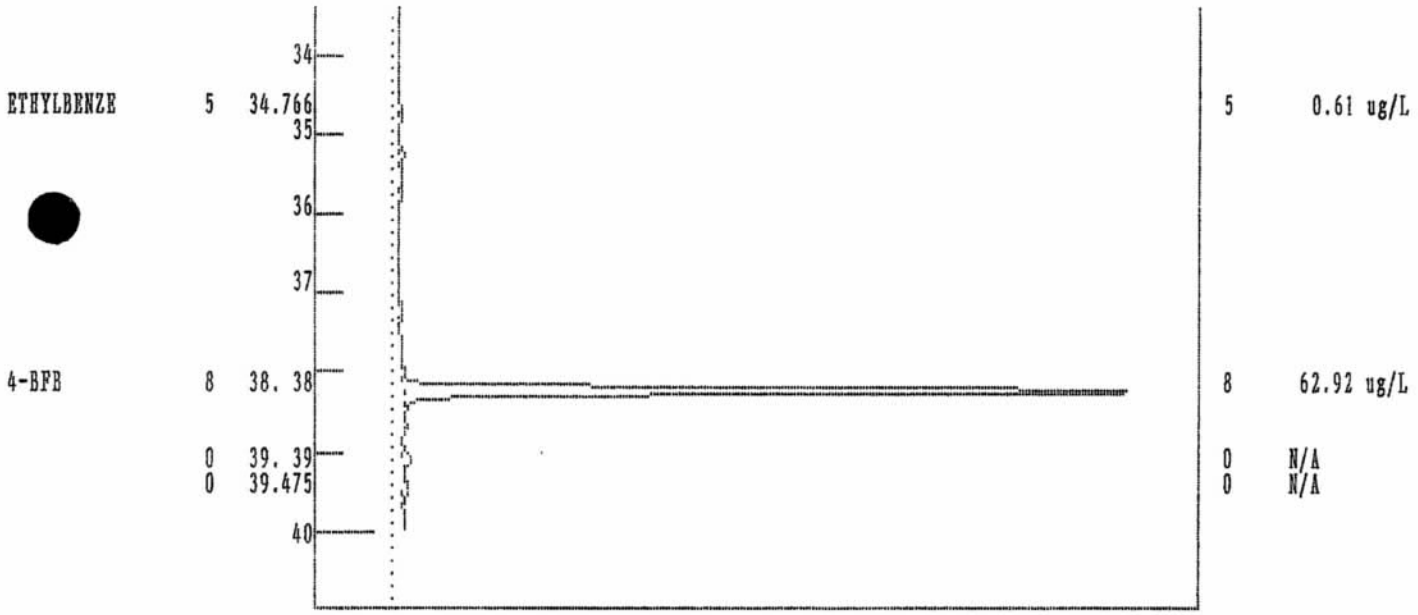
MTBE 0

Benzene 0

MBTEX 0

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 16:22:33
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-19
Operator : TERRY L. TEATE





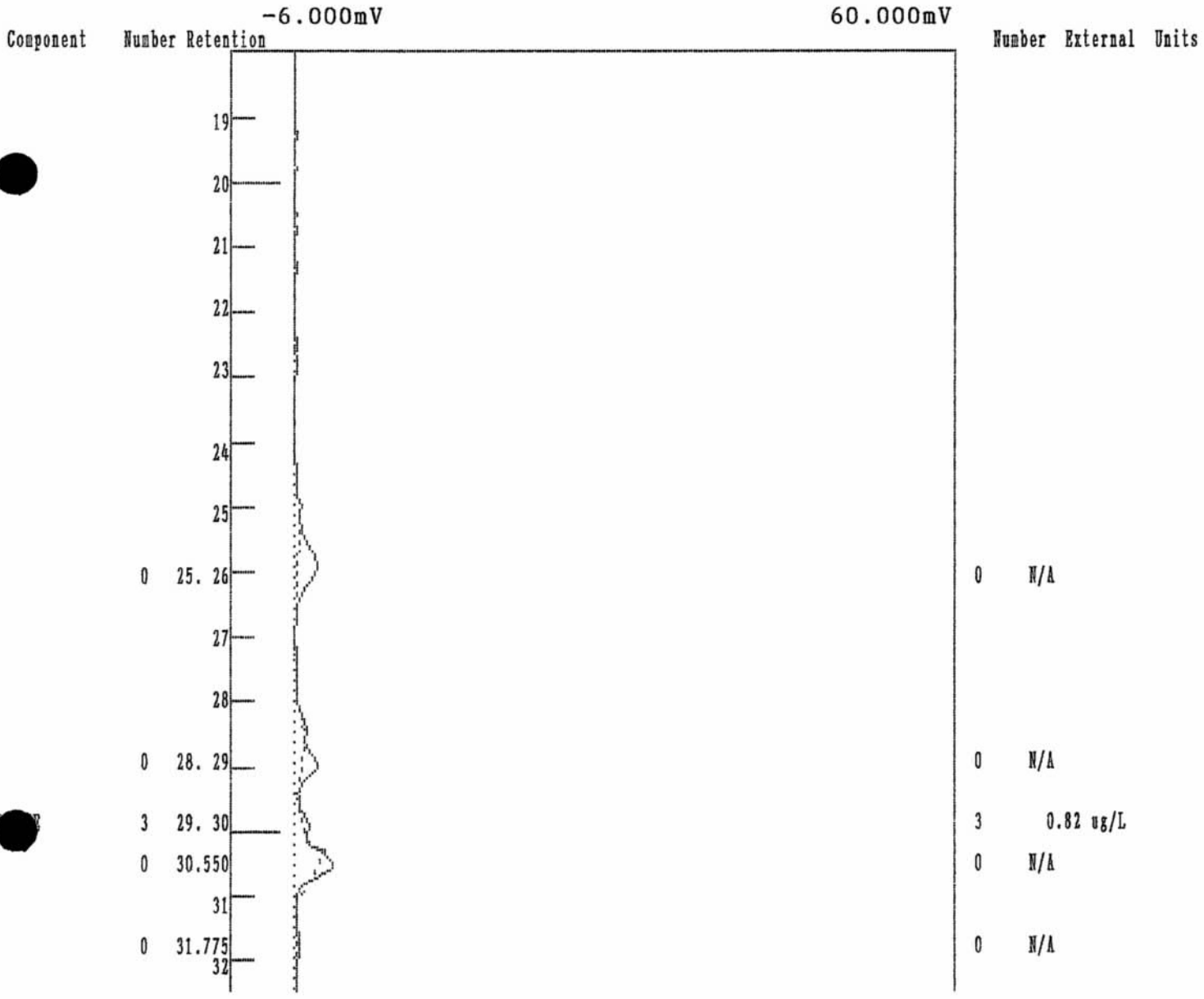
Component	Number	Retention	Area	External	Units
ETHYLBENZE	5	34.766	5.55	0.61	ug/L
4-BFB	8	38.225	334.35	62.92	ug/L
	2		339.90	63.53	

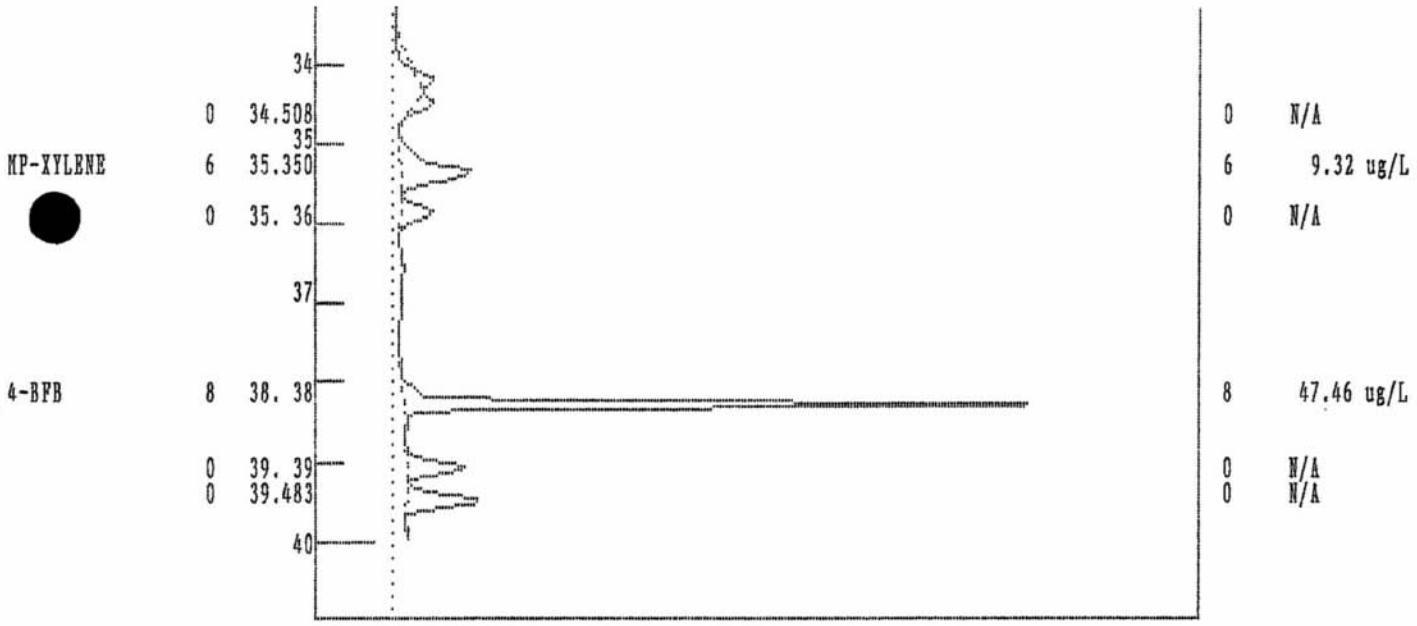
MTBE >1

Benzene >1

MBTEx 9

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 19:11:12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-20
Operator : TERRY L. TEATE



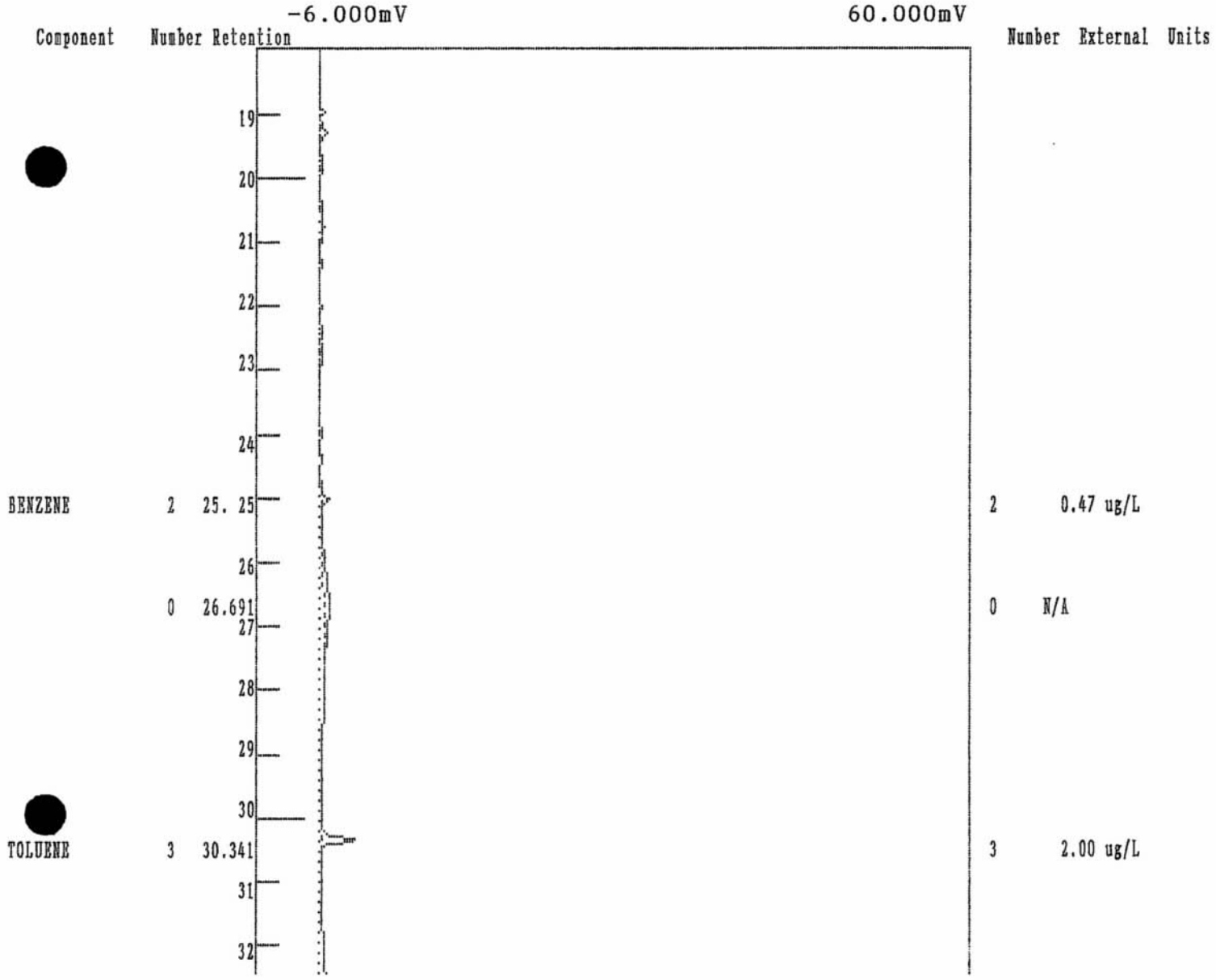


Component	Number	Retention	Area	External	Units
TOLUENE	3	29.958	8.60	0.82	ug/L
MP-XYLENE	6	35.350	83.98	9.32	ug/L
4-BFB	8	38.275	265.02	47.46	ug/L
	3		357.61	57.61	

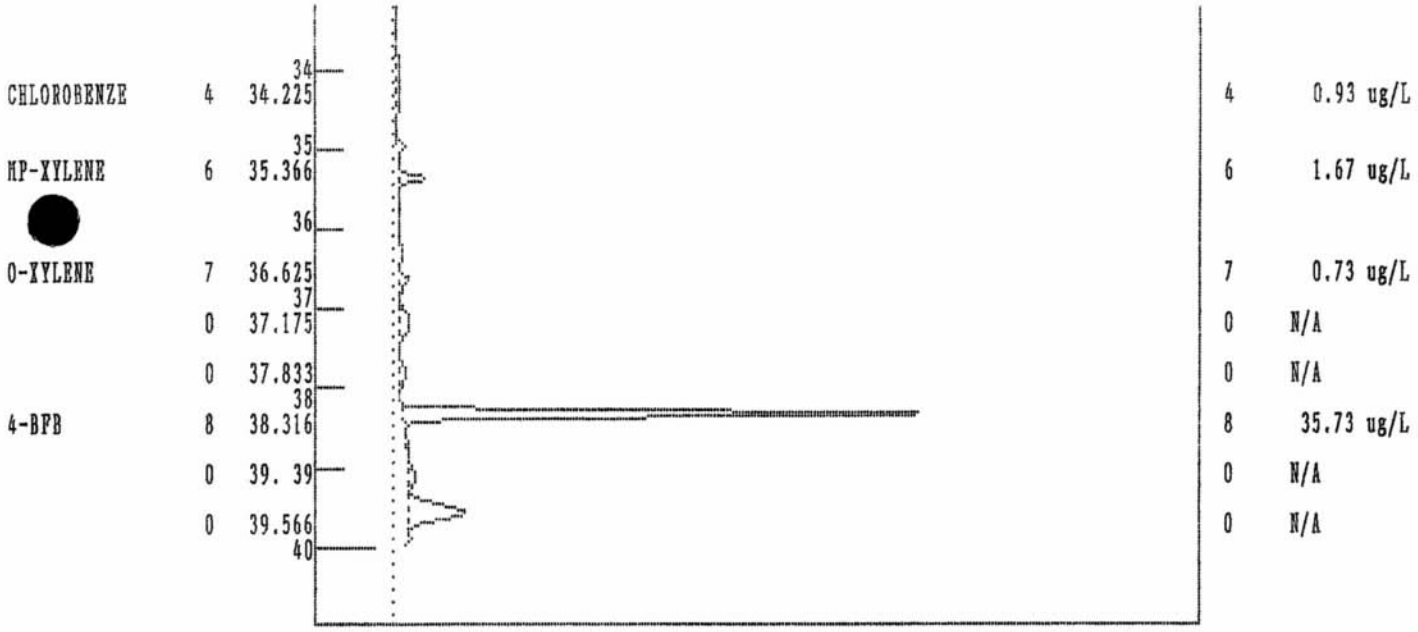
MTBE Benzene MBTEX

71 71 4

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 20:00:17
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-21
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
BENZENE	2	25.25	2	0.47	ug/L
	0	26.691	0	N/A	
TOLUENE	3	30.341	3	2.00	ug/L



Component	Number	Retention	Area	External	Units
BENZENE	2	25.033	5.07	0.47	ug/L
TOLUENE	3	30.341	20.86	2.00	ug/L
CHLOROBENZE	4	34.225	9.75	0.93	ug/L
MP-XYLENE	6	35.366	15.01	1.67	ug/L
O-XYLENE	7	36.625	6.03	0.73	ug/L
4-BFB	8	38.316	212.38	35.73	ug/L
	6		269.10	41.53	

MTBE

?0

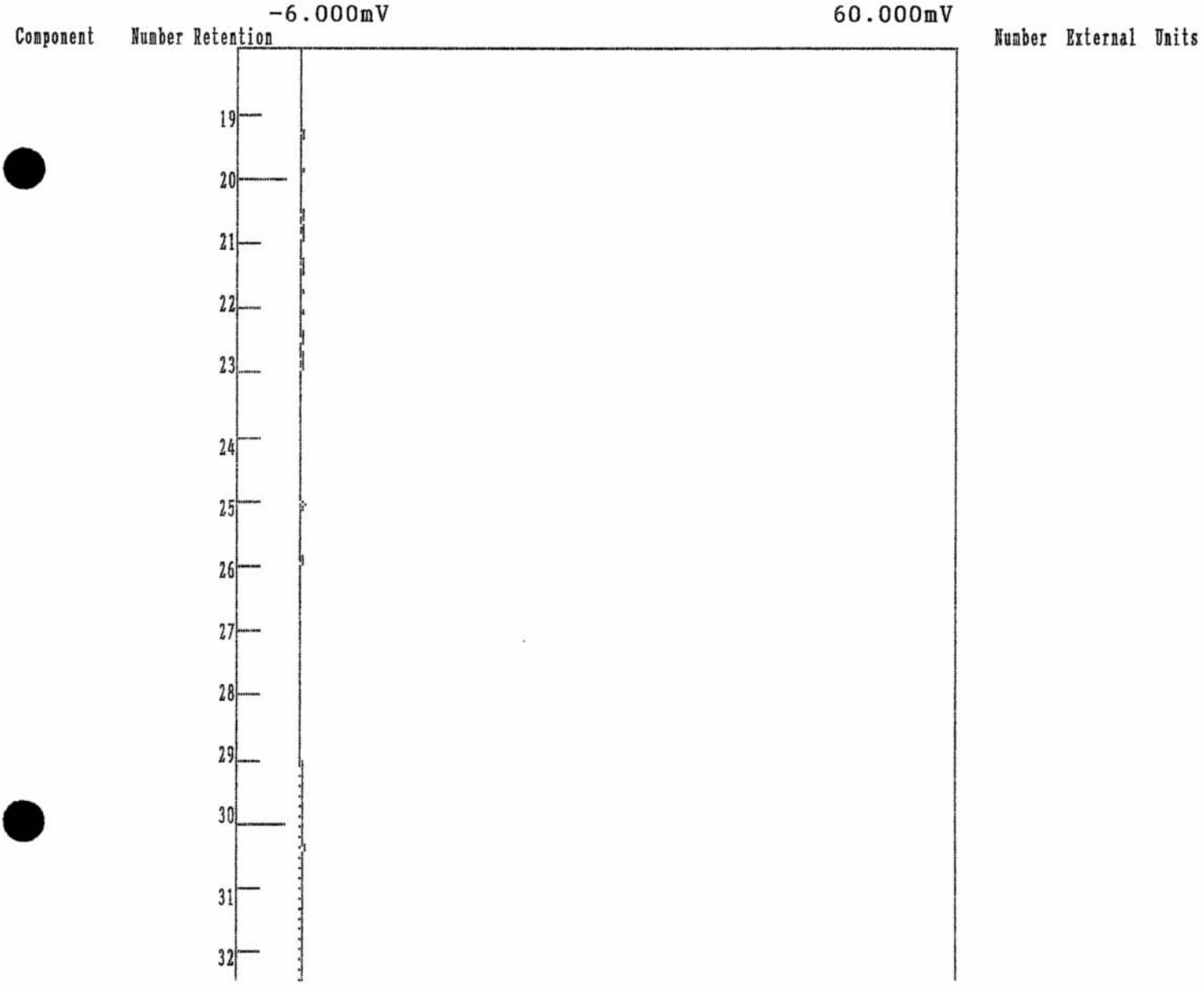
Benzene

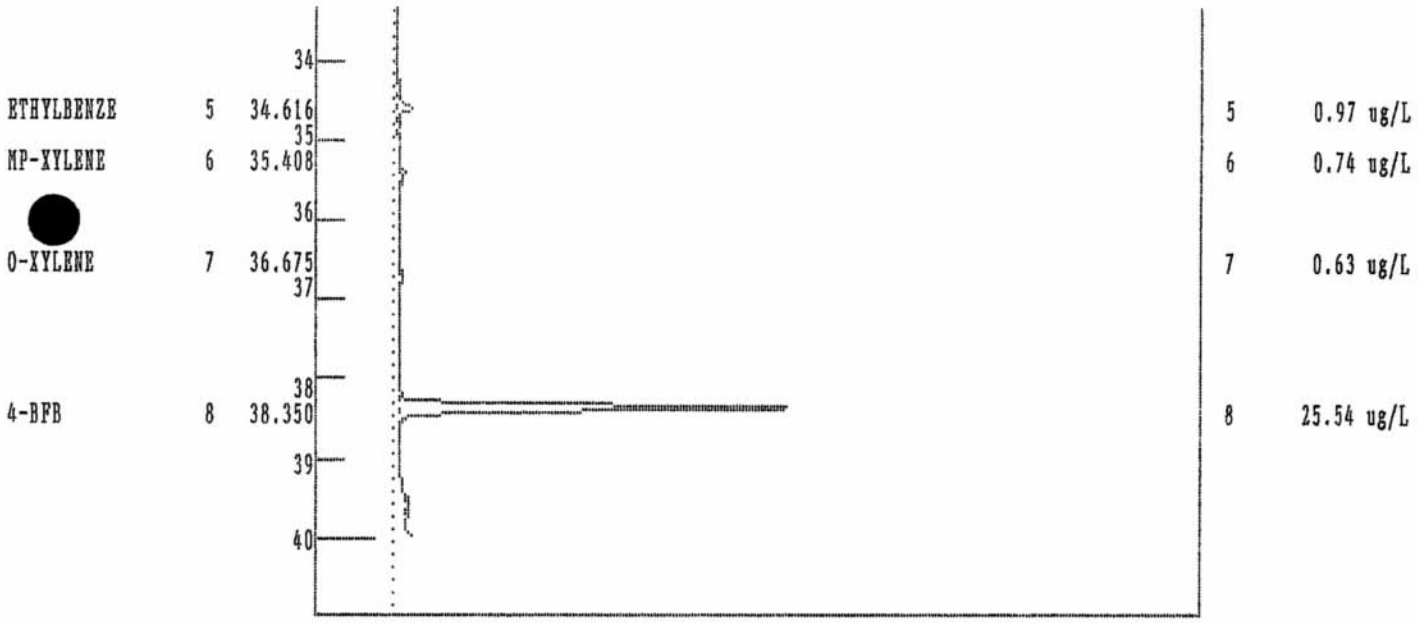
>1

MBTEX

0

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 20:45:10
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-22
Operator : TERRY L. TEATE



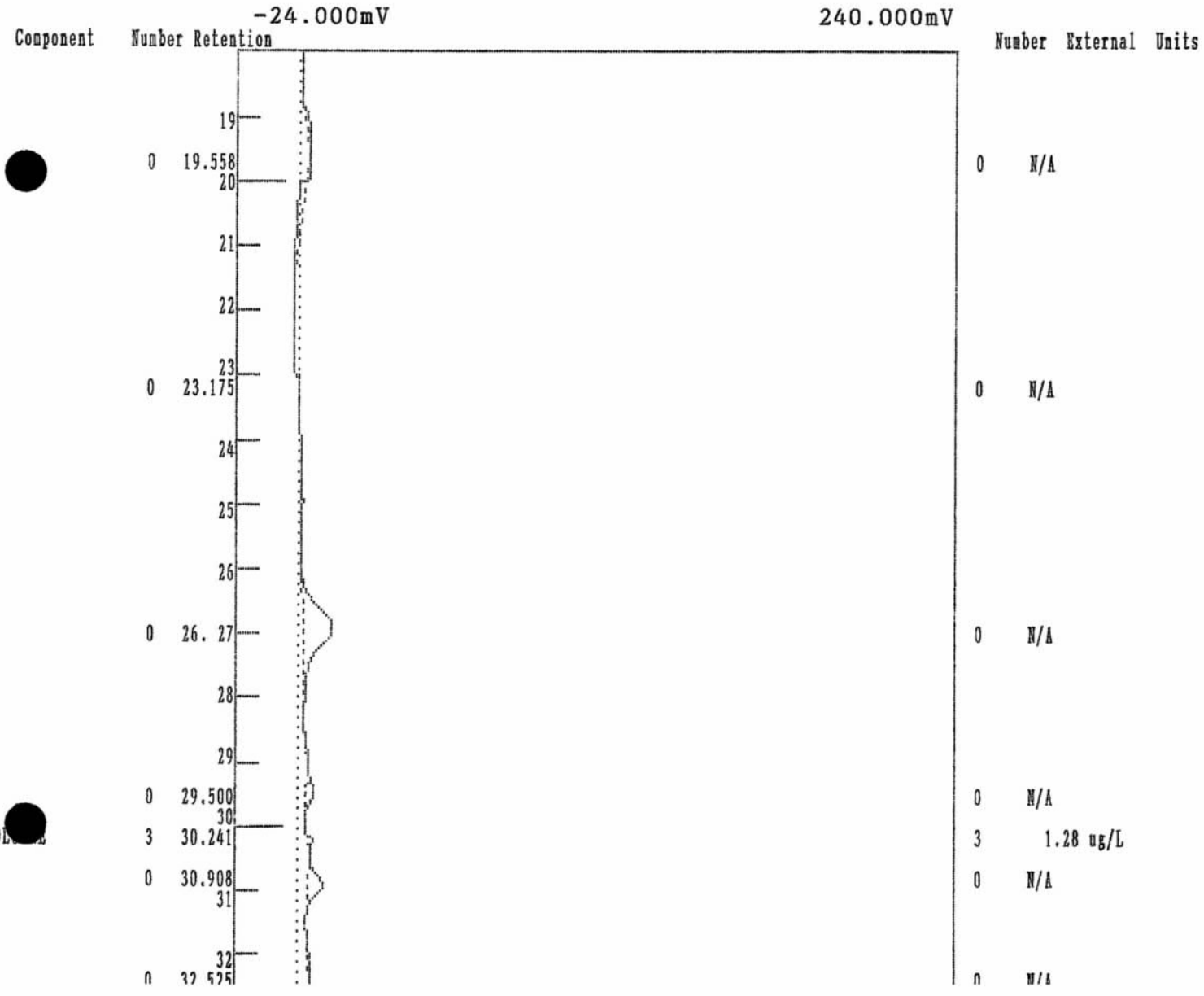


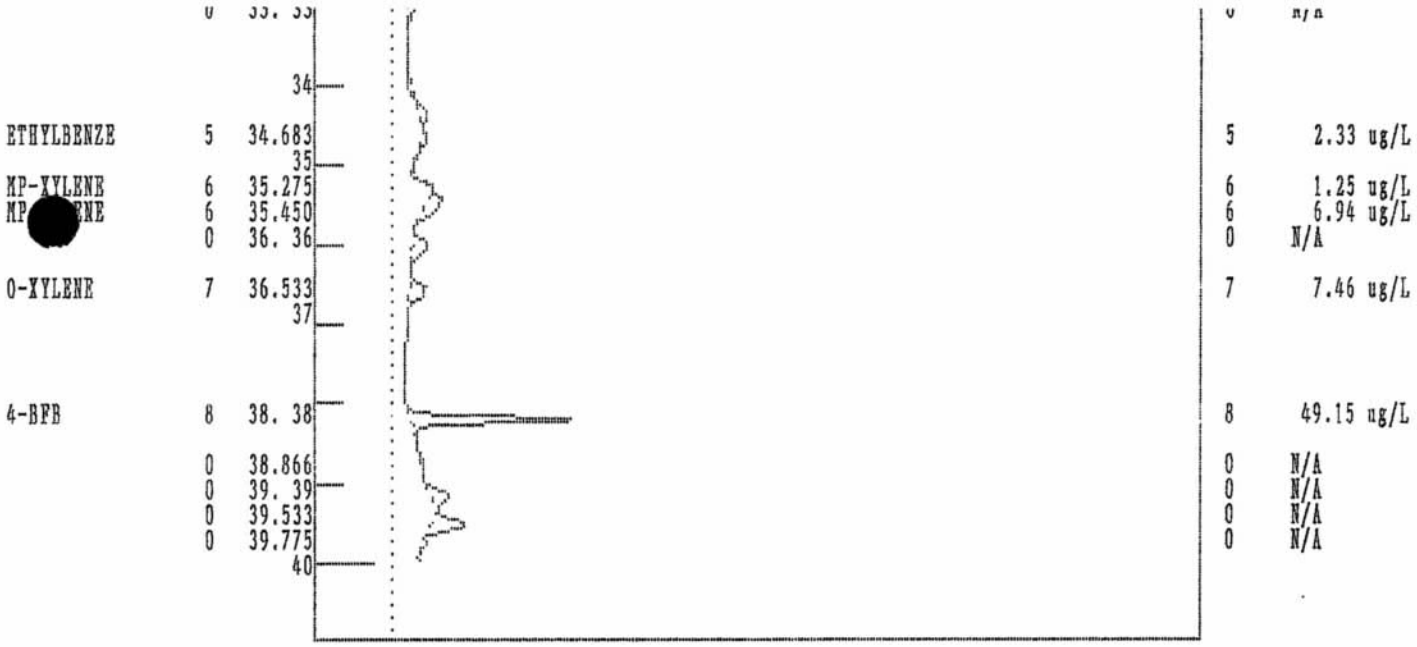
Component	Number	Retention	Area	External	Units
ETHYLBENZE	5	34.616	8.81	0.97	ug/L
MP-XYLENE	6	35.408	6.67	0.74	ug/L
O-XYLENE	7	36.675	5.17	0.63	ug/L
4-BFB	8	38.350	166.69	25.54	ug/L
	4		**187.34**	**27.88**	

MTBE Benzene MBTEX

0 0 19

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/26/2010 02:14:33
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-Deep Well 290
Operator : TERRY L. TEATE



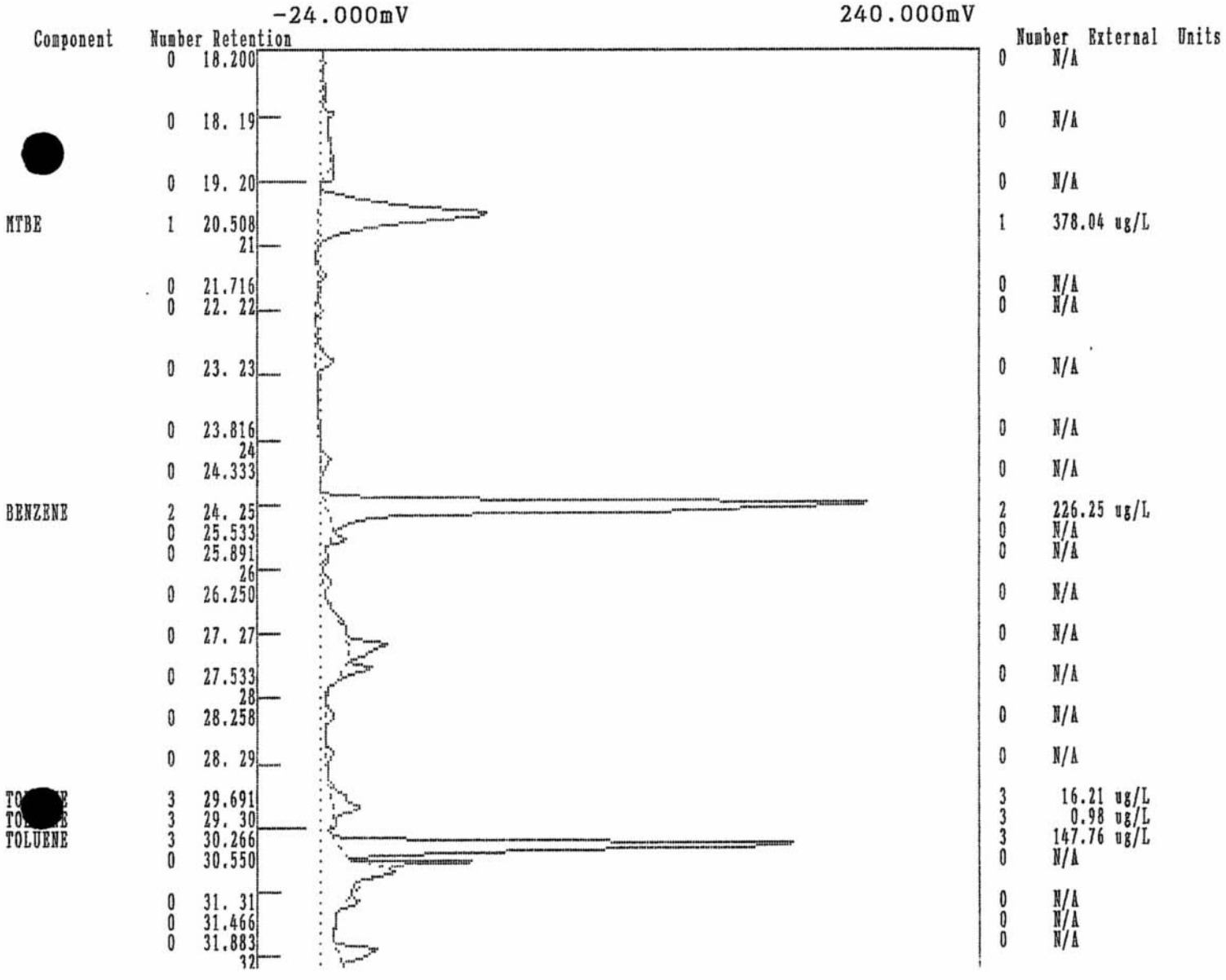


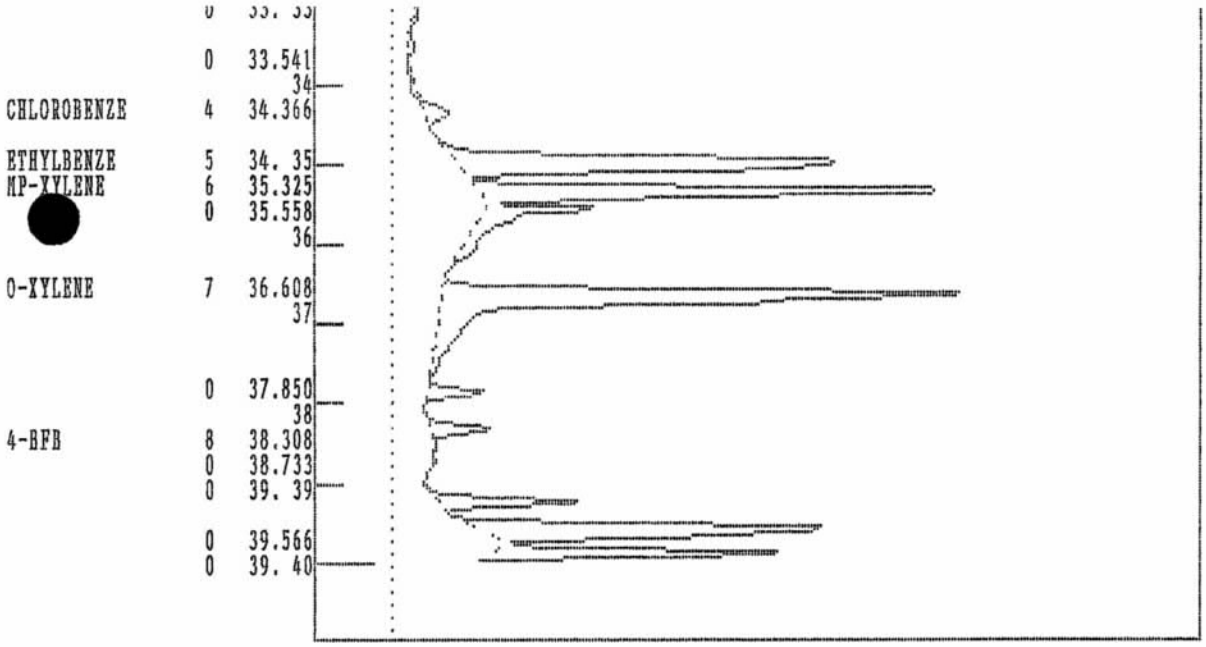
Component	Number	Retention	Area	External	Units
TOLUENE	3	30.241	13.39	1.28	ug/L
ETHYLBENZE	5	34.683	21.17	2.33	ug/L
MP-XYLENE	6	35.275	11.28	1.25	ug/L
MP-XYLENE	6	35.450	62.50	6.94	ug/L
O-XYLENE	7	36.533	70.57	7.46	ug/L
4-BFB	8	38.191	272.60	49.15	ug/L
	6		451.50	68.41	

MTBE Benzene MBTEX

378 226 1275

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/26/2010 01:02:56
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-34
Operator : TERRY L. TEATE



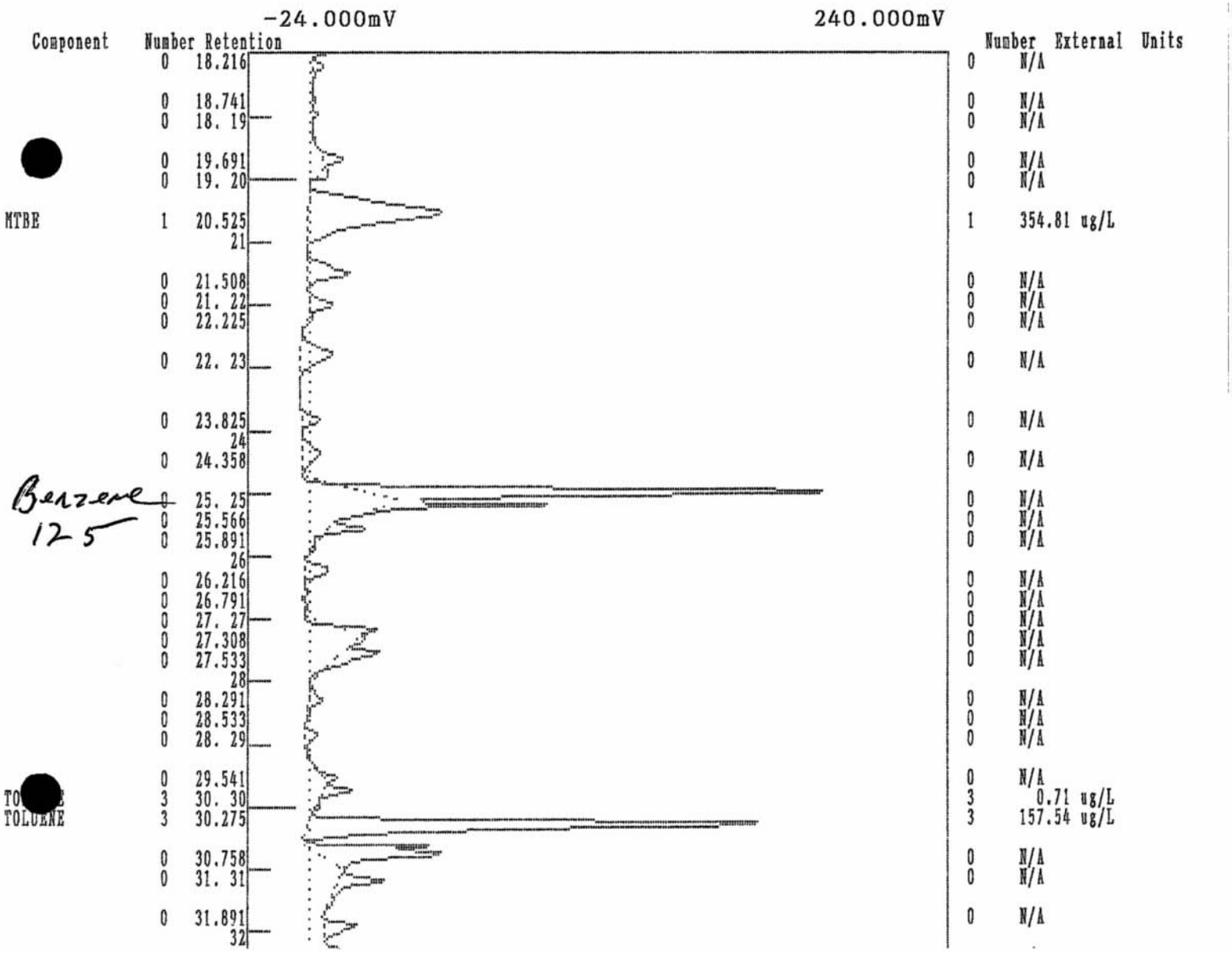


Component	Number	Retention	Area	External	Units
MTBE	1	20.508	1239.96	378.04	ug/L
BENZENE	2	24.983	2334.51	226.25	ug/L
TOLUENE	3	29.691	158.06	16.21	ug/L
TOLUENE	3	29.950	10.21	0.98	ug/L
TOLUENE	3	30.266	1525.24	147.76	ug/L
CHLOROBENZE	4	34.366	51.64	4.92	ug/L
ETHYLBENZE	5	34.966	1367.06	145.61	ug/L
MP-XYLENE	6	35.325	1185.30	155.01	ug/L
O-XYLENE	7	36.608	2020.40	200.04	ug/L
4-BFB	8	38.308	136.00	19.31	ug/L
	10		10028.39	1294.13	

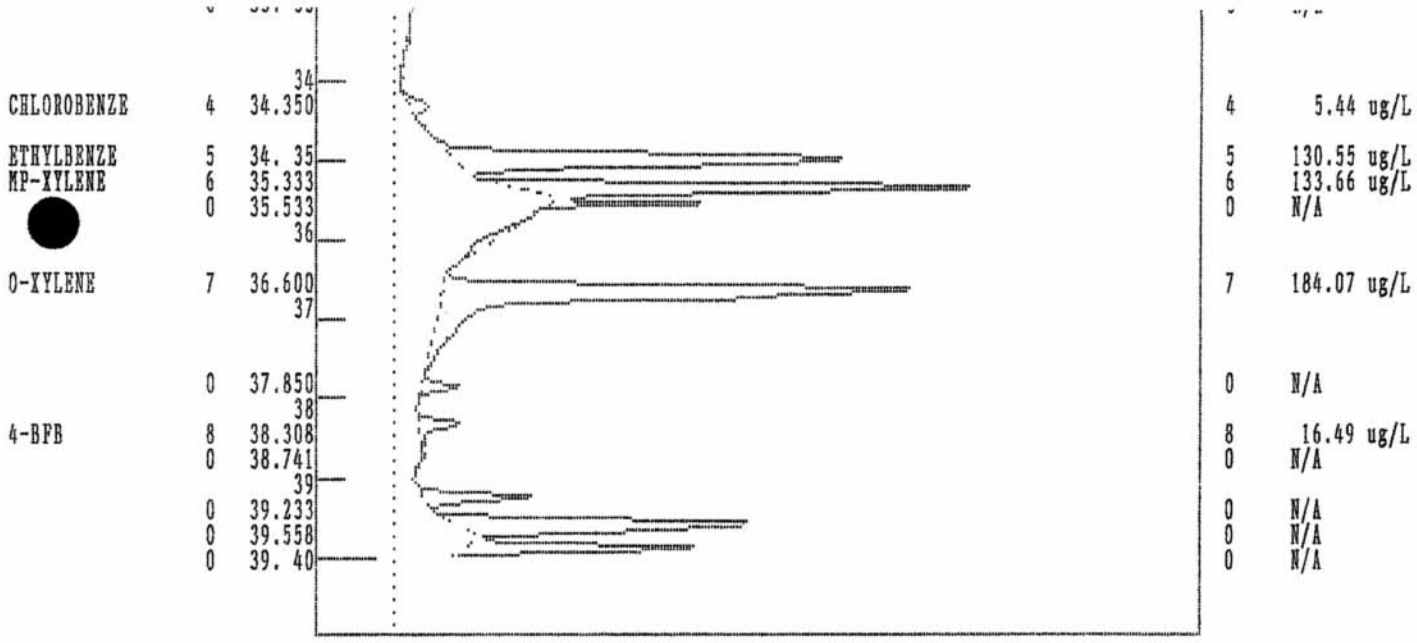
MTBE Benzene MBTEX

955 125 1100

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 23:50:58
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-35
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	18.216	0	N/A	
	0	18.741	0	N/A	
	0	18. 19	0	N/A	
	0	19.691	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.525	1	354.81	ug/L
		21			
	0	21.508	0	N/A	
	0	21. 22	0	N/A	
	0	22.225	0	N/A	
	0	22. 23	0	N/A	
	0	23.825	0	N/A	
		24			
	0	24.358	0	N/A	
Benzene	0	25. 25	0	N/A	
125	0	25.566	0	N/A	
	0	25.891	0	N/A	
		26			
	0	26.216	0	N/A	
	0	26.791	0	N/A	
	0	27. 27	0	N/A	
	0	27.308	0	N/A	
	0	27.533	0	N/A	
		28			
	0	28.291	0	N/A	
	0	28.533	0	N/A	
	0	28. 29	0	N/A	
	0	29.541	0	N/A	
[illegible]	3	30. 30	3	0.71	ug/L
TOLUENE	3	30.275	3	157.54	ug/L
	0	30.758	0	N/A	
	0	31. 31	0	N/A	
	0	31.891	0	N/A	
		32			



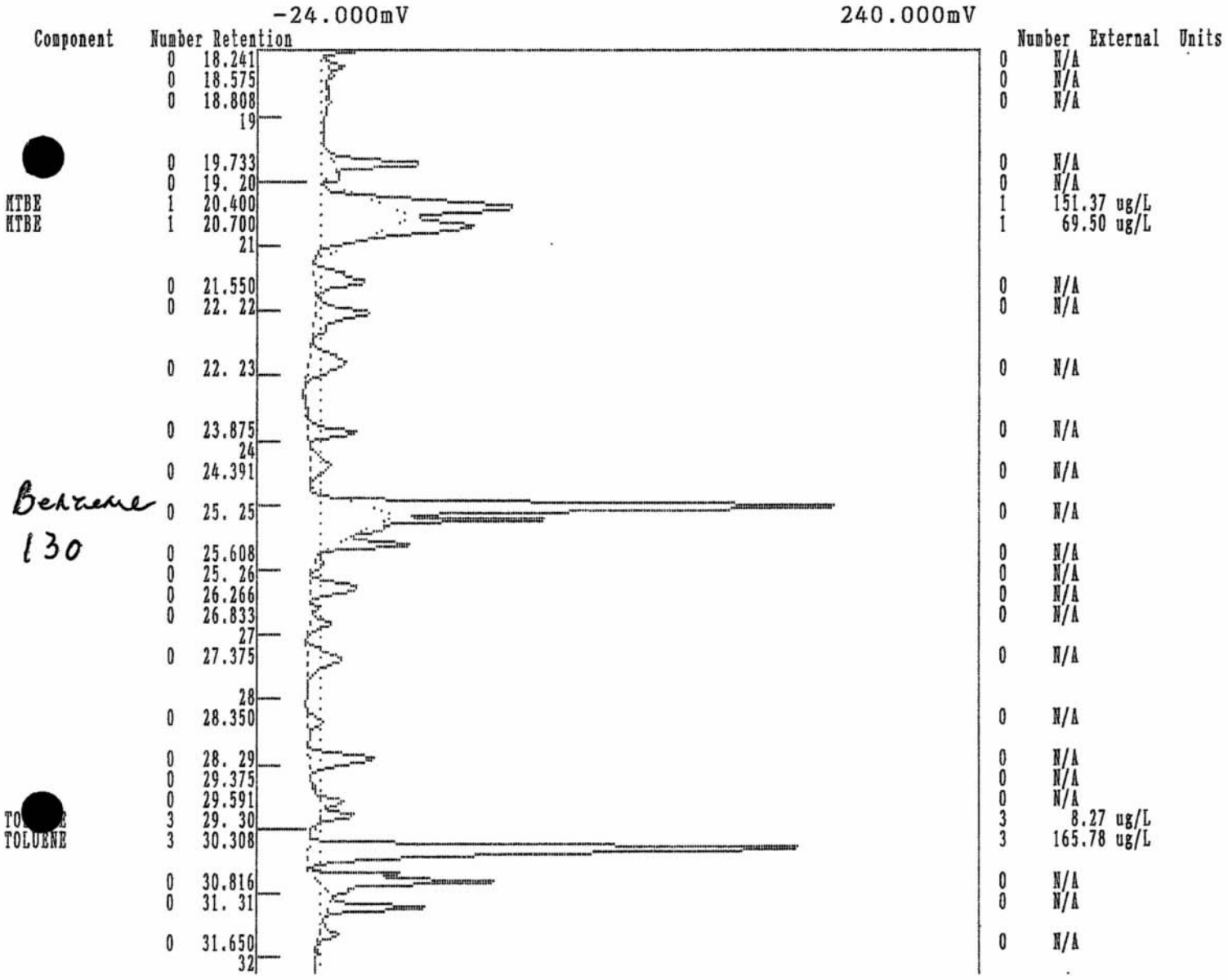
Component	Number	Retention	Area	External	Units
MTBE	1	20.525	1163.79	354.81	ug/L
BENZENE	2	24.975	1352.90	125.60	ug/L
TOLUENE	3	29.733	74.08	8.08	ug/L
TOLUENE	3	30.008	7.38	0.71	ug/L
TOLUENE	3	30.275	1620.06	157.54	ug/L
CHLOROBENZE	4	34.350	56.32	5.44	ug/L
ETHYLBENZE	5	34.983	1232.03	130.55	ug/L
MP-XYLENE	6	35.333	1016.33	133.66	ug/L
O-XYLENE	7	36.600	1859.14	184.07	ug/L
4-BFB	8	38.308	112.14	16.49	ug/L
	10		8494.17	1116.96	

MTBE 220

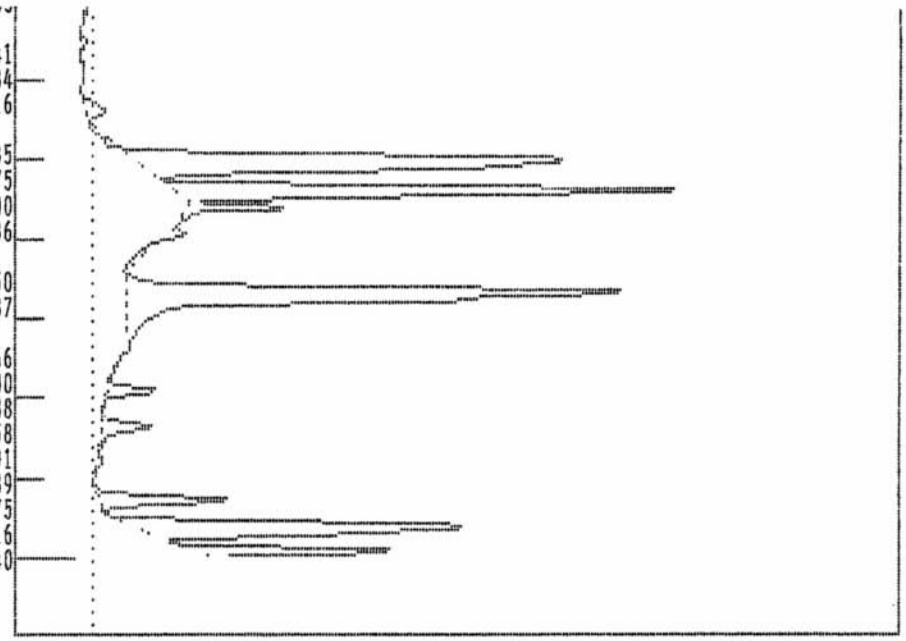
Benzene 130

MBTEX 1026

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 22:43:00
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-36
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	18.241	0	N/A	
	0	18.575	0	N/A	
	0	18.808	0	N/A	
		19			
	0	19.733	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.400	1	151.37	ug/L
MTBE	1	20.700	1	69.50	ug/L
		21			
	0	21.550	0	N/A	
	0	22. 22	0	N/A	
	0	22. 23	0	N/A	
	0	23.875	0	N/A	
		24			
	0	24.391	0	N/A	
Benzene	0	25. 25	0	N/A	
130	0	25.608	0	N/A	
	0	25. 26	0	N/A	
	0	26.266	0	N/A	
	0	26.833	0	N/A	
		27			
	0	27.375	0	N/A	
		28			
	0	28.350	0	N/A	
	0	28. 29	0	N/A	
	0	29.375	0	N/A	
	0	29.591	0	N/A	
TOLUENE	3	29. 30	3	8.27	ug/L
TOLUENE	3	30.308	3	165.78	ug/L
	0	30.816	0	N/A	
	0	31. 31	0	N/A	
	0	31.650	0	N/A	
		32			



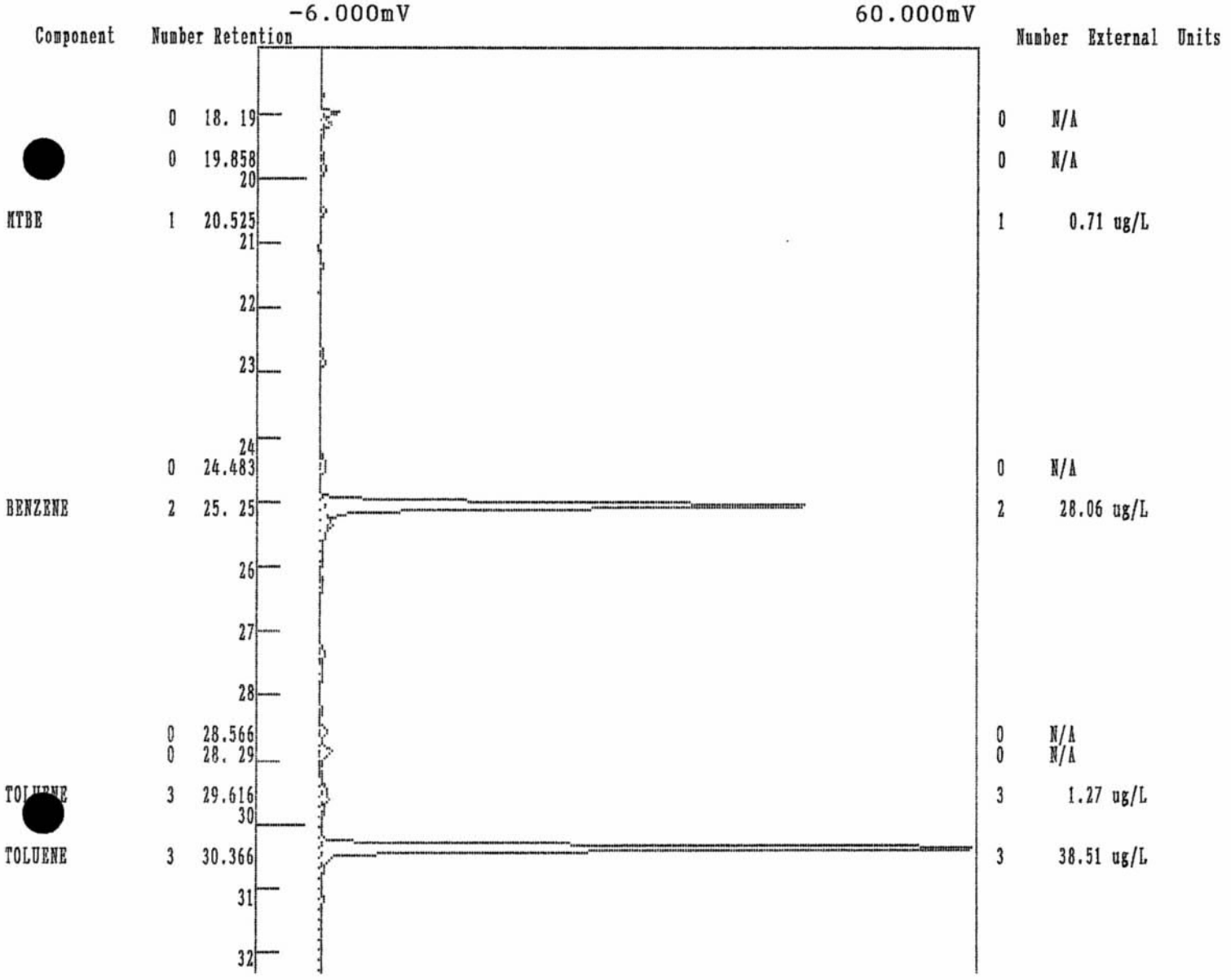
	0	33.541	0	N/A	
		34			
	0	34.416	0	N/A	
ETHYLBENZE	5	35. 35	5	165.59	ug/L
MP-XYLENE	6	35.375	6	154.56	ug/L
	0	35.600	0	N/A	
		36			
O-XYLENE	7	36.650	7	180.63	ug/L
		37			
	0	37.366	0	N/A	
	0	37.900	0	N/A	
		38			
4-BFB	8	38.358	8	17.81	ug/L
	0	38.791	0	N/A	
		39			
	0	39.275	0	N/A	
	0	39.616	0	N/A	
	0	39. 40	0	N/A	

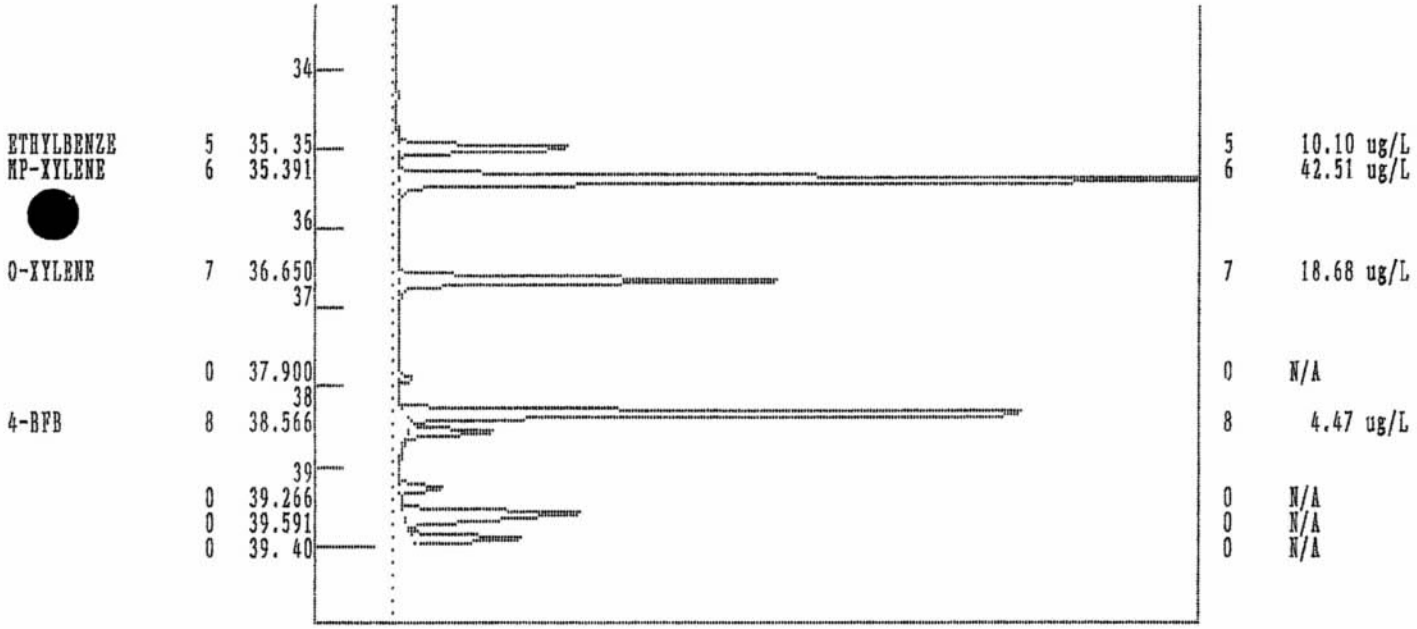
Component	Number	Retention	Area	External	Units
MTBE	1	20.400	496.50	151.37	ug/L
MTBE	1	20.700	246.03	69.50	ug/L
BENZENE	2	25.025	1399.26	130.36	ug/L
TOLUENE	3	29.800	75.38	8.27	ug/L
TOLUENE	3	30.308	1699.95	165.78	ug/L
ETHYLBENZE	5	35.000	1546.11	165.59	ug/L
MP-XYLENE	6	35.375	1181.73	154.56	ug/L
O-XYLENE	7	36.650	1824.35	180.63	ug/L
4-BFB	8	38.358	123.36	17.81	ug/L
	9		8592.66	1043.86	

MTBE Benzene MBTEX

1 28 140

Client : Broad River BP
Collected : 07/16/12
Analysis date : 11/25/2010 21:28:41
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-38
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
MTBE	1	20.525	5.59	0.71	ug/L
BENZENE	2	25.058	310.15	28.06	ug/L
TOLUENE	3	29.616	13.29	1.27	ug/L
TOLUENE	3	30.366	409.52	38.51	ug/L
ETHYLBENZE	5	35.008	80.67	10.10	ug/L
MP-XYLENE	6	35.391	390.89	42.51	ug/L
O-XYLENE	7	36.650	170.60	18.68	ug/L
4-BFB	8	38.333	276.87	50.11	ug/L
4-BFB	8	38.566	30.41	4.47	ug/L
	9		1687.99	194.42	

MTBE

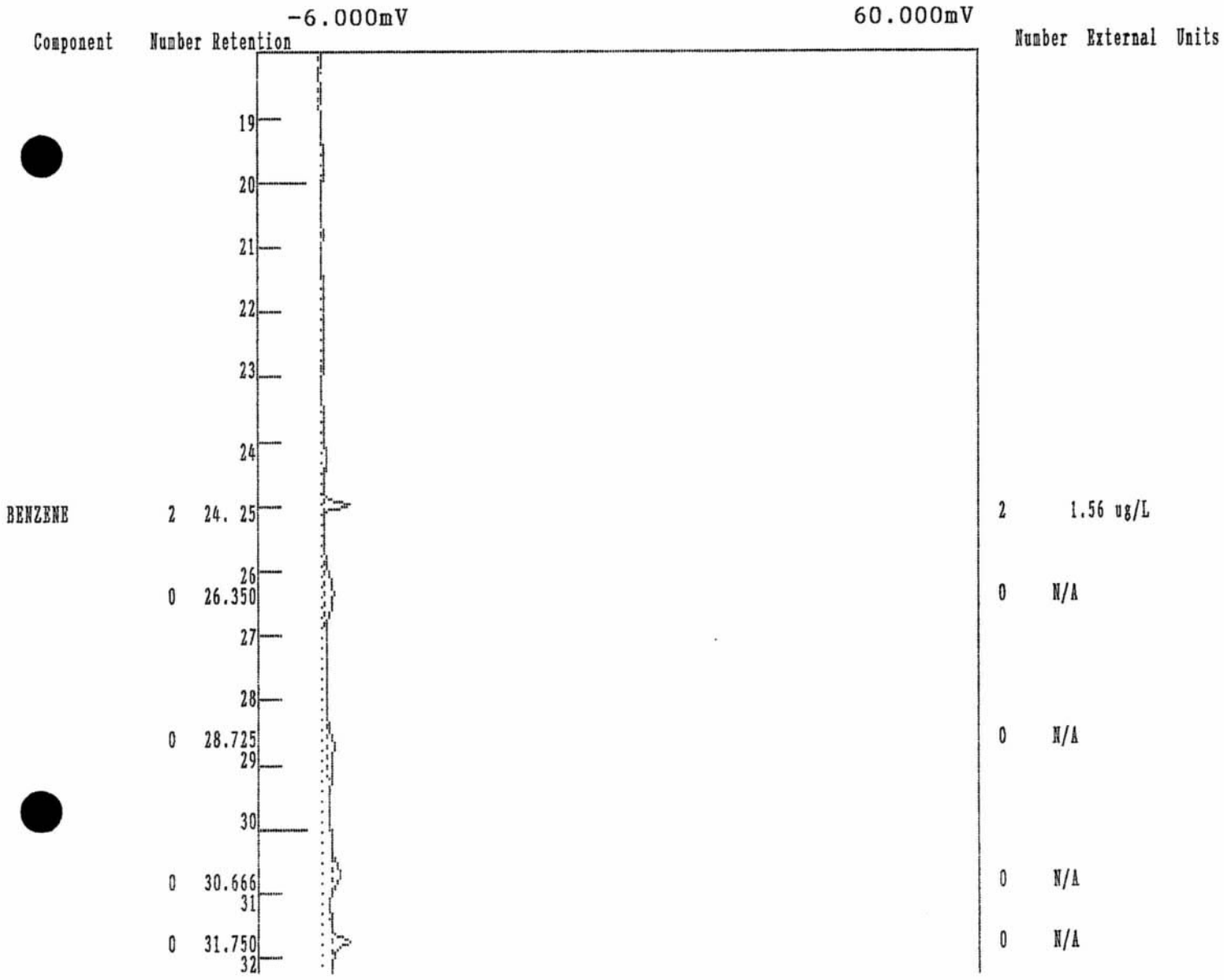
Benzene

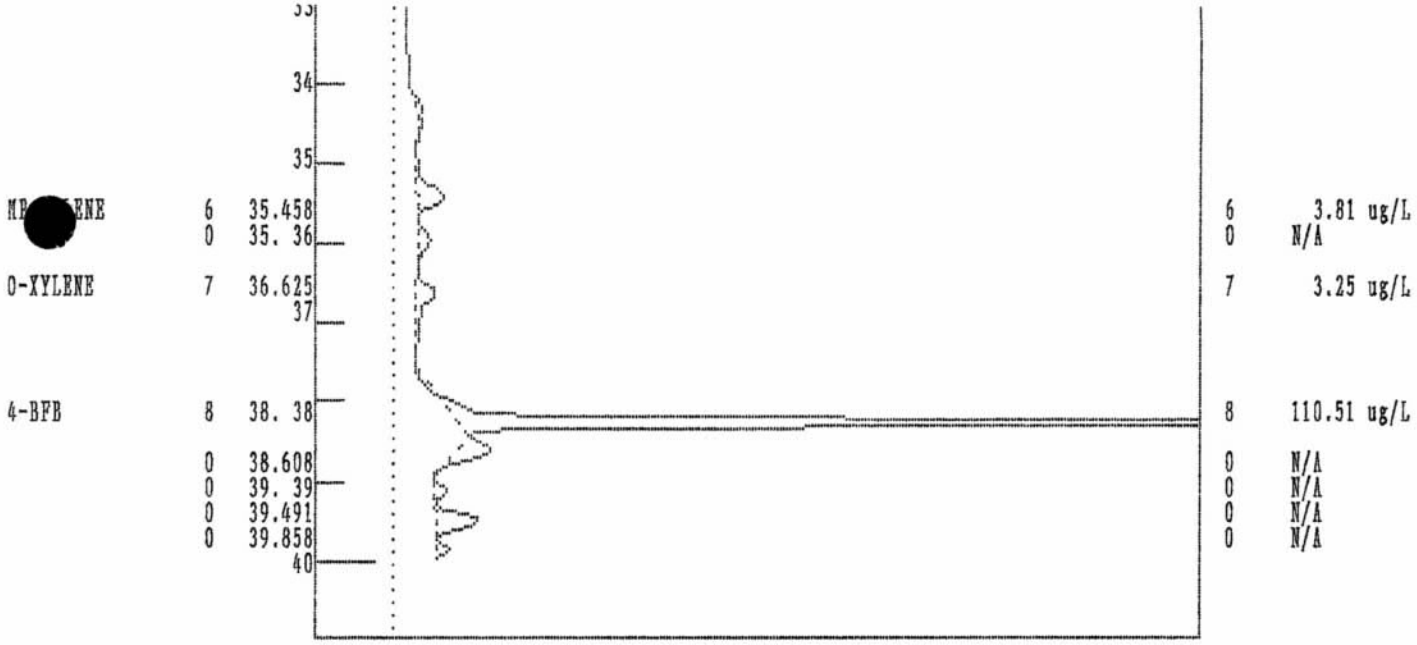
MBTEX

1

9

Client : Broad River BP
Collected : 07/18/12
Analysis date : 11/28/2010 18:34:59
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-19-D
Operator : TERRY L. TEATE





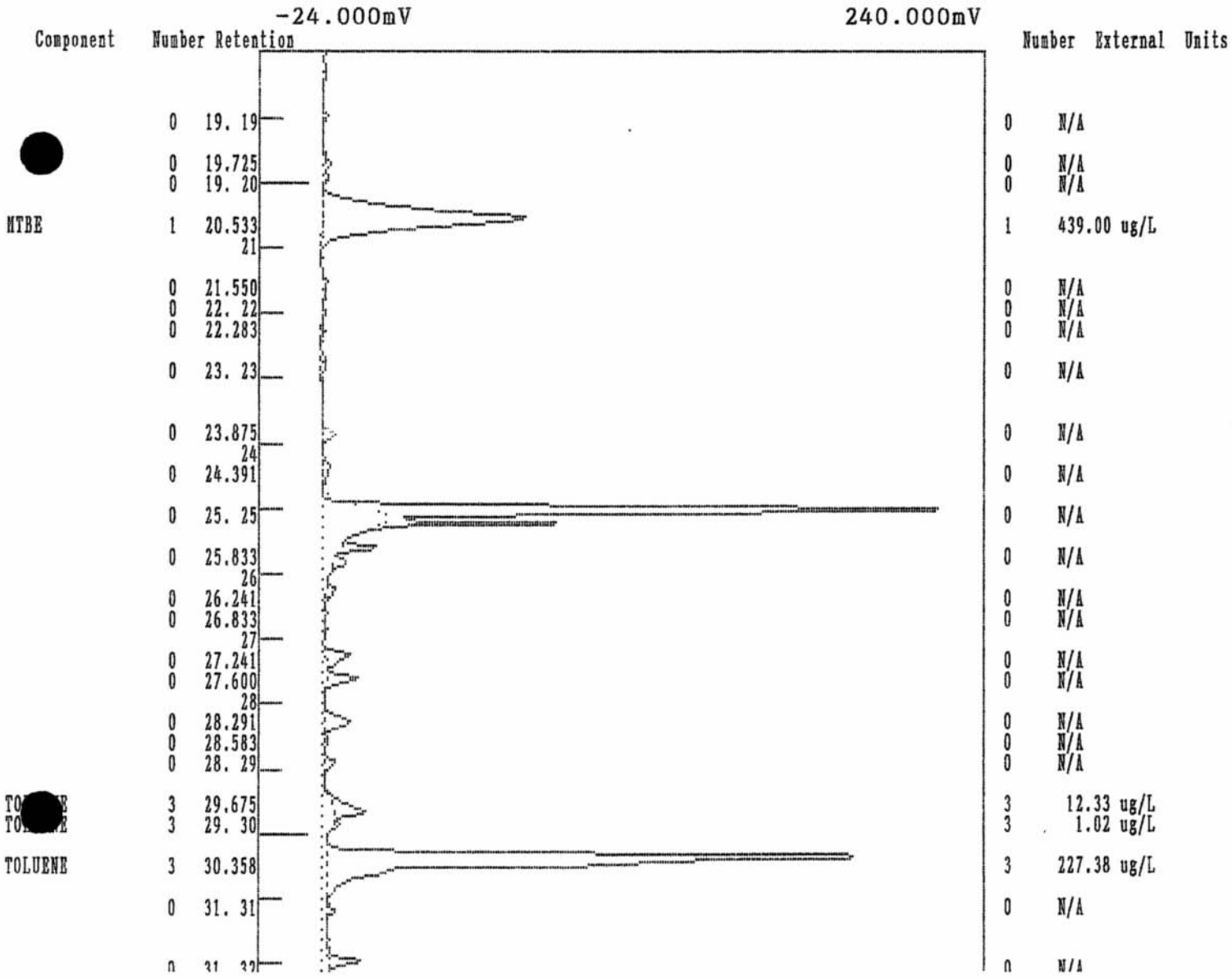
Component	Number	Retention	Area	External	Units
BENZENE	2	24.991	16.68	1.56	ug/L
MP-XYLENE	6	35.458	34.33	3.81	ug/L
O-XYLENE	7	36.625	26.76	3.25	ug/L
4-BFB	8	38.258	547.78	110.51	ug/L
	4		625.56	119.13	

MTBE
440

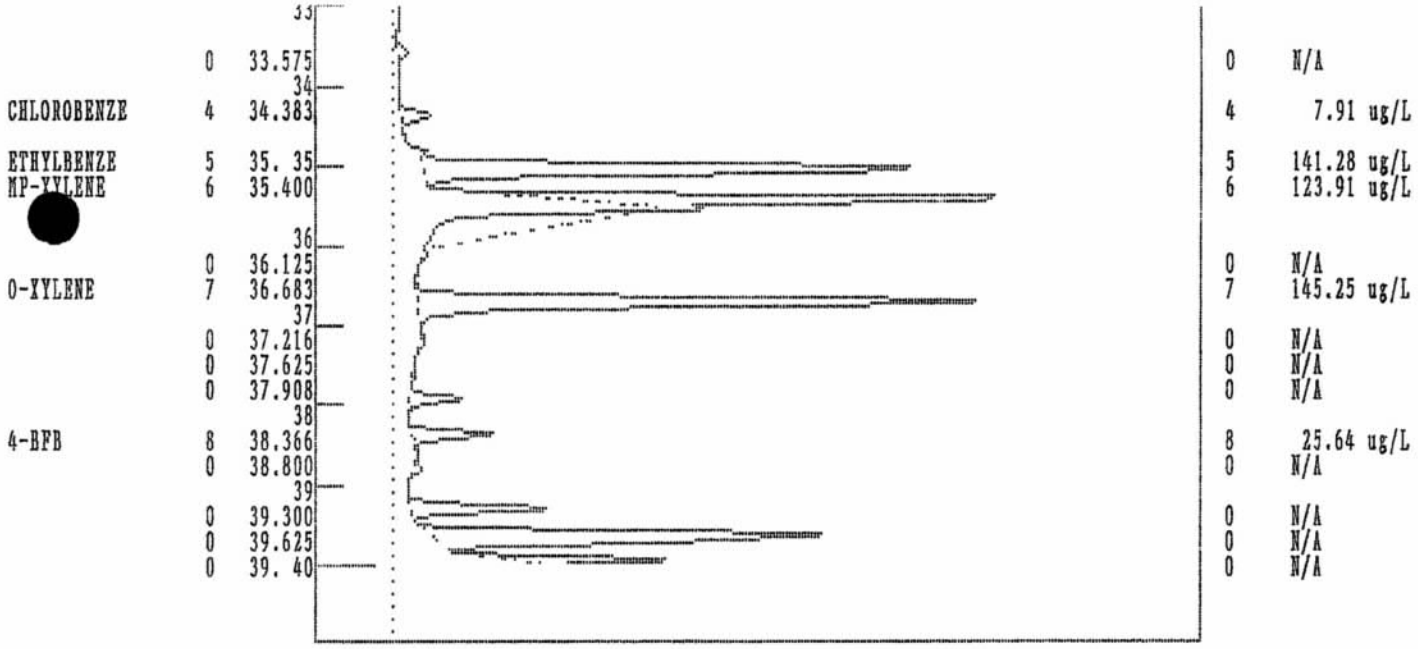
Benzene
138

MTBE
1239

Client : Broad River BP
Collected : 07/19/12
Analysis date : 11/28/2010 22:39:51
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-25-D
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	19. 19	0	N/A	
	0	19.725	0	N/A	
	0	19. 20	0	N/A	
MTBE	1	20.533	1	439.00	ug/L
		21			
	0	21.550	0	N/A	
	0	22. 22	0	N/A	
	0	22.283	0	N/A	
	0	23. 23	0	N/A	
	0	23.875	0	N/A	
		24			
	0	24.391	0	N/A	
	0	25. 25	0	N/A	
	0	25.833	0	N/A	
		26			
	0	26.241	0	N/A	
	0	26.833	0	N/A	
		27			
	0	27.241	0	N/A	
	0	27.600	0	N/A	
		28			
	0	28.291	0	N/A	
	0	28.583	0	N/A	
	0	28. 29	0	N/A	
[illegible]	3	29.675	3	12.33	ug/L
[illegible]	3	29. 30	3	1.02	ug/L
TOLUENE	3	30.358	3	227.38	ug/L
	0	31. 31	0	N/A	
	0	31. 32	0	N/A	



Component	Number	Retention	Area	External	Units
MTBE	1	20.533	1439.93	439.00	ug/L
BENZENE	2	25.016	1490.38	139.70	ug/L
TOLUENE	3	29.675	114.00	12.33	ug/L
TOLUENE	3	29.850	10.65	1.02	ug/L
TOLUENE	3	30.358	2297.12	227.38	ug/L
CHLOROBENZE	4	34.383	77.58	7.91	ug/L
ETHYLBENZE	5	34.833	11.34	1.25	ug/L
ETHYLBENZE	5	35.016	1328.20	141.28	ug/L
M[redacted]XYLENE	6	35.400	939.15	123.91	ug/L
O[redacted]YLENE	7	36.683	1467.02	145.25	ug/L
4-BFB	8	38.366	167.13	25.64	ug/L
	11		9342.52	1264.66	

MBTEX

Benzene

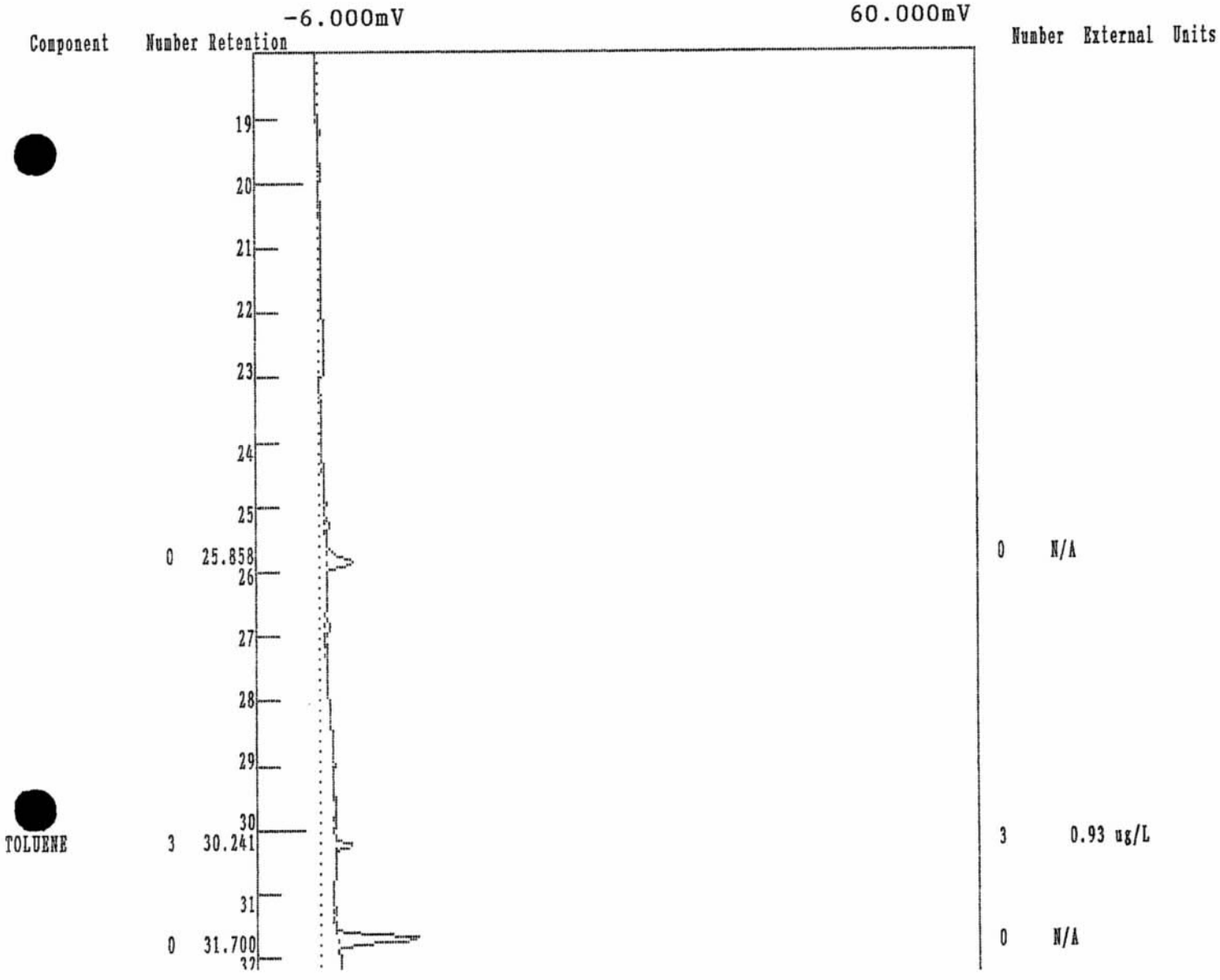
MBTEX

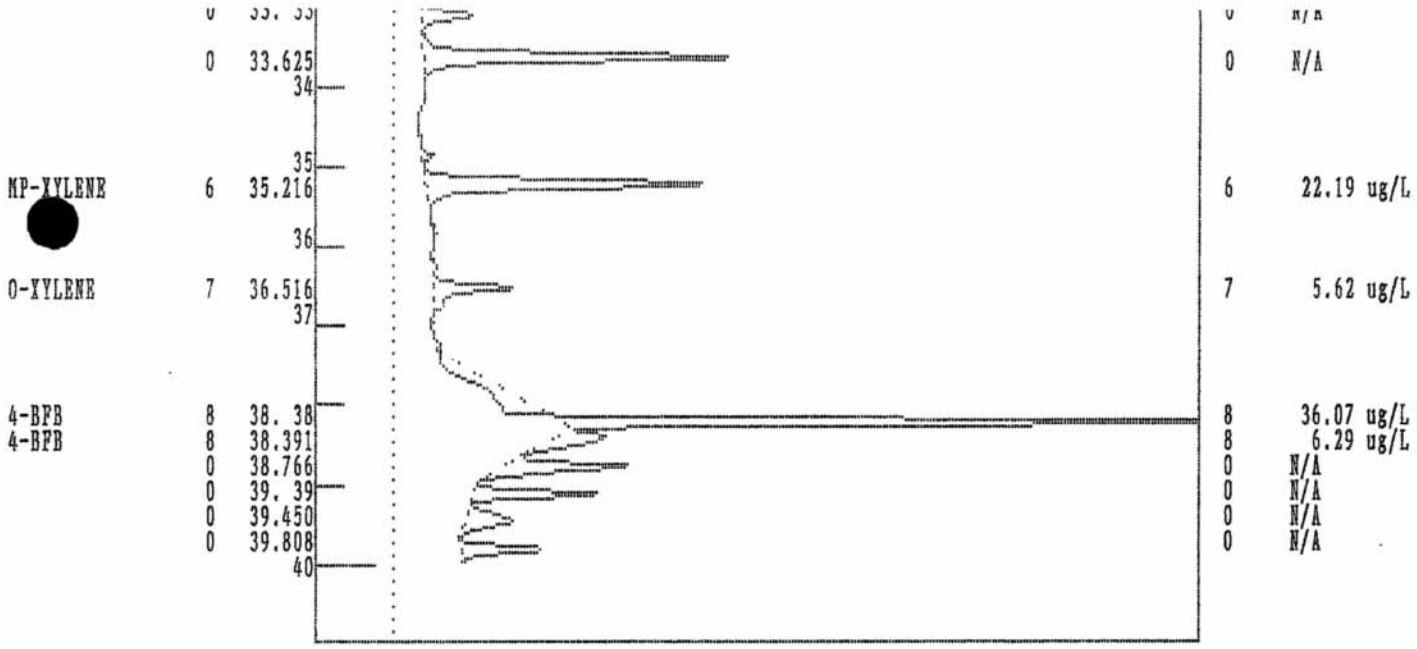
0

0

28

Client : Broad River BP
Collected : 07/18/12
Analysis date : 11/28/2010 17:46:41
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-30-D
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
TOLUENE	3	30.241	9.76	0.93	ug/L
MP-XYLENE	6	35.216	169.56	22.19	ug/L
O-XYLENE	7	36.516	48.57	5.62	ug/L
4-BFB	8	38.208	213.91	36.07	ug/L
4-BFB	8	38.391	40.02	6.29	ug/L
	5		481.82	71.10	

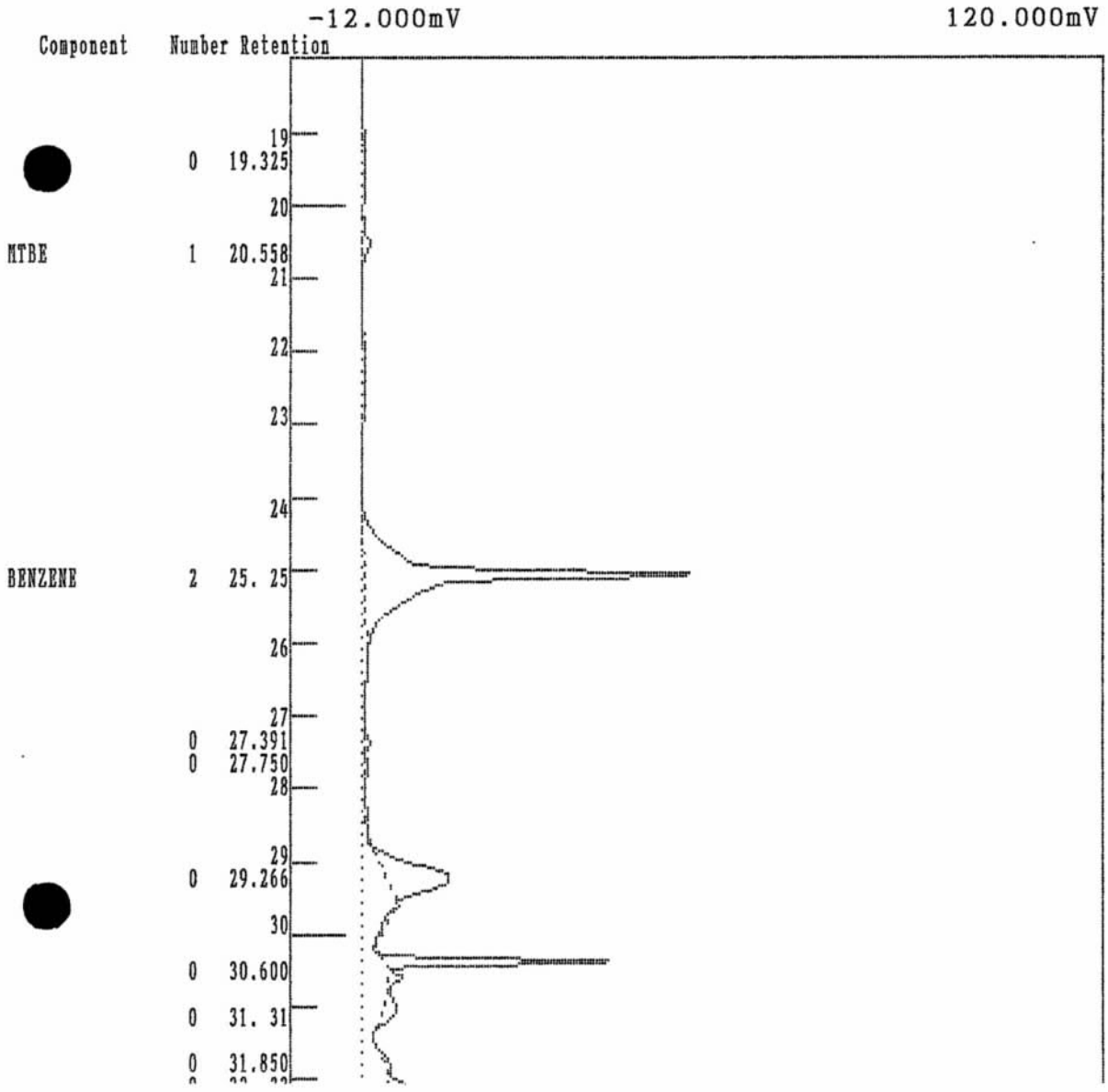
MTBE 2.2

Benzene 70

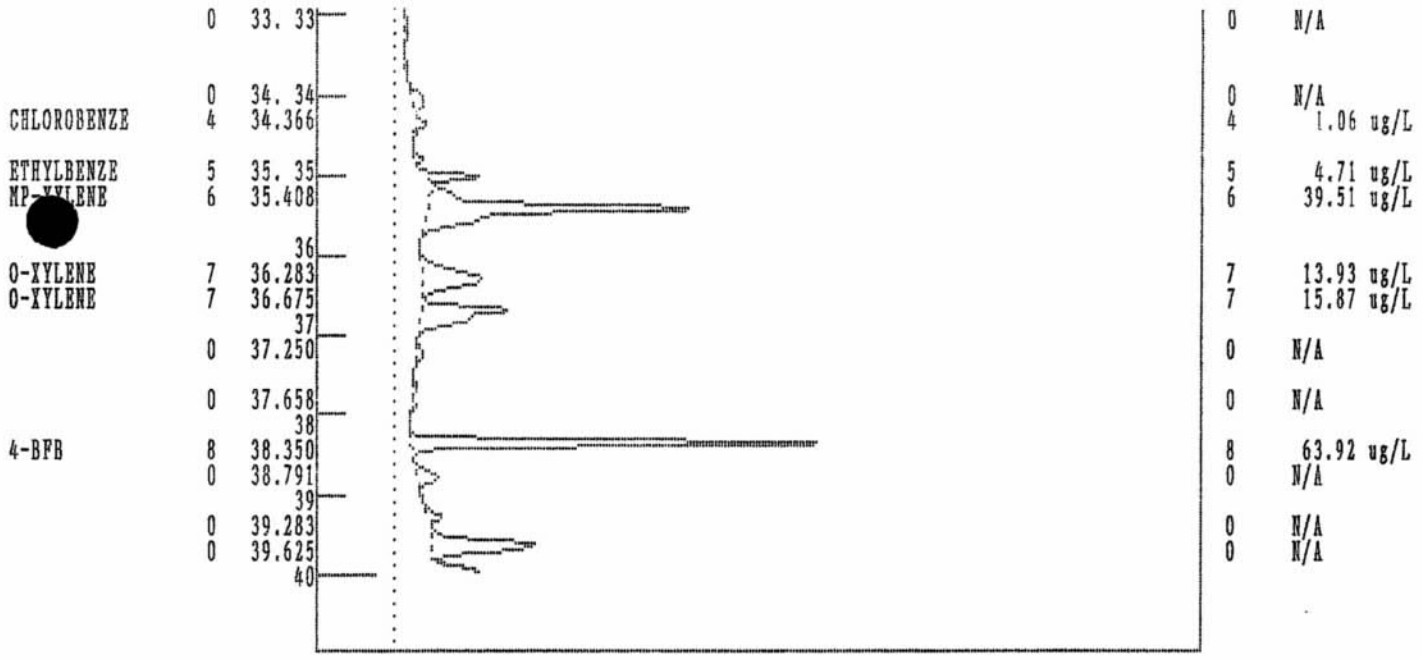
MBTEX 170

ug/L

Client : Broad River BP
Collected : 07/19/12
Analysis date : 11/28/2010 23:28:21
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-32-D
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
	0	19.325	0	N/A	
MTBE	1	20.558	1	2.25	ug/L
BENZENE	2	25. 25	2	70.53	ug/L
	0	27.391	0	N/A	
	0	27.750	0	N/A	
	0	29.266	0	N/A	
	0	30.600	0	N/A	
	0	31. 31	0	N/A	
	0	31.850	0	N/A	



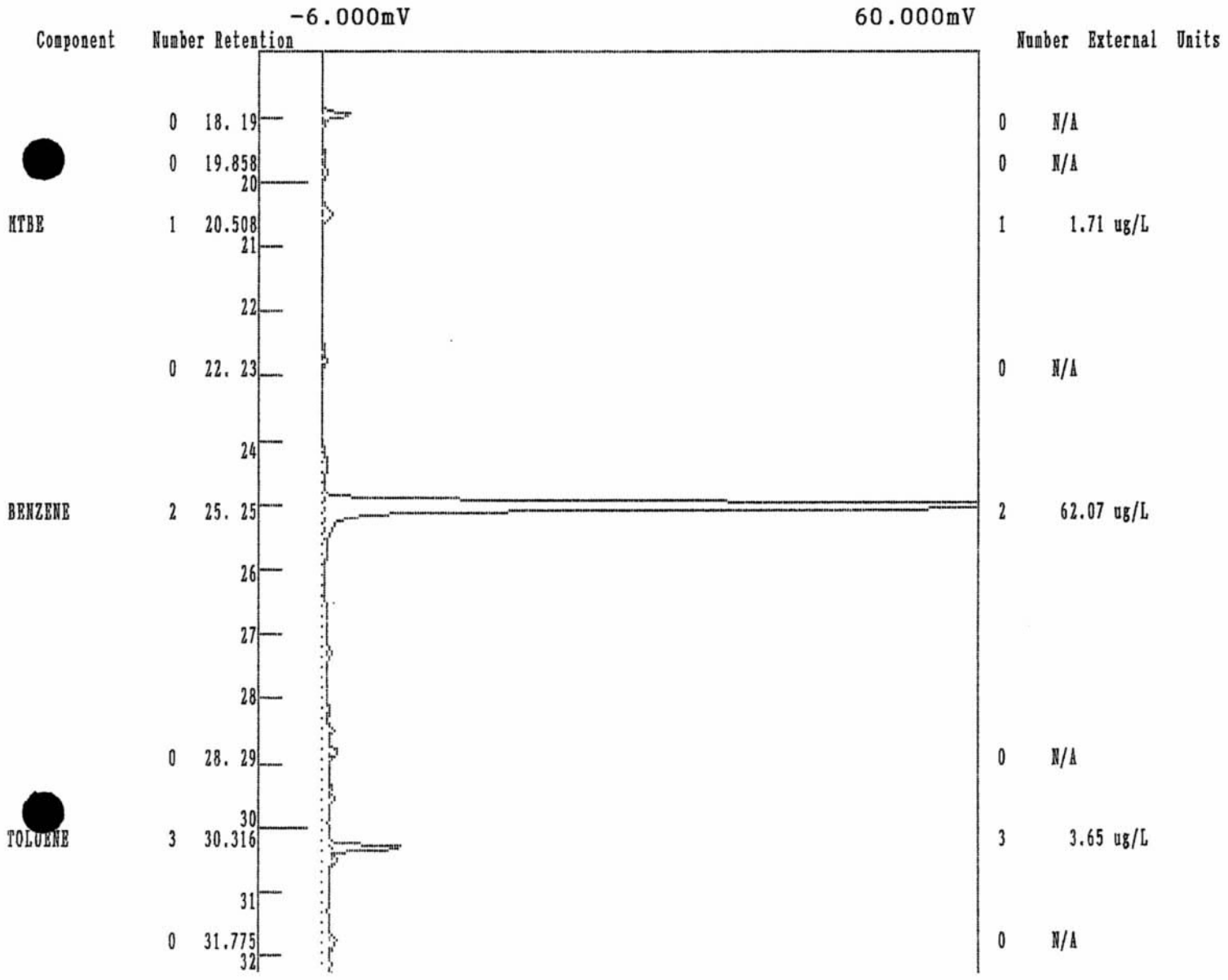
Component	Number	Retention	Area	External	Units
MTBE	1	20.558	17.85	2.25	ug/L
BENZENE	2	25.066	815.74	70.53	ug/L
TOLUENE	3	30.383	211.53	20.94	ug/L
CHLOROBENZE	4	34.366	11.12	1.06	ug/L
ETHYLBENZE	5	34.791	6.79	0.75	ug/L
ETHYLBENZE	5	35.016	42.78	4.71	ug/L
MP-XYLENE	6	35.408	369.94	39.51	ug/L
O-XYLENE	7	36.283	132.50	13.93	ug/L
O-XYLENE	7	36.675	148.04	15.87	ug/L
4-BFB	8	38.350	338.81	63.92	ug/L
	10		2095.10	233.46	

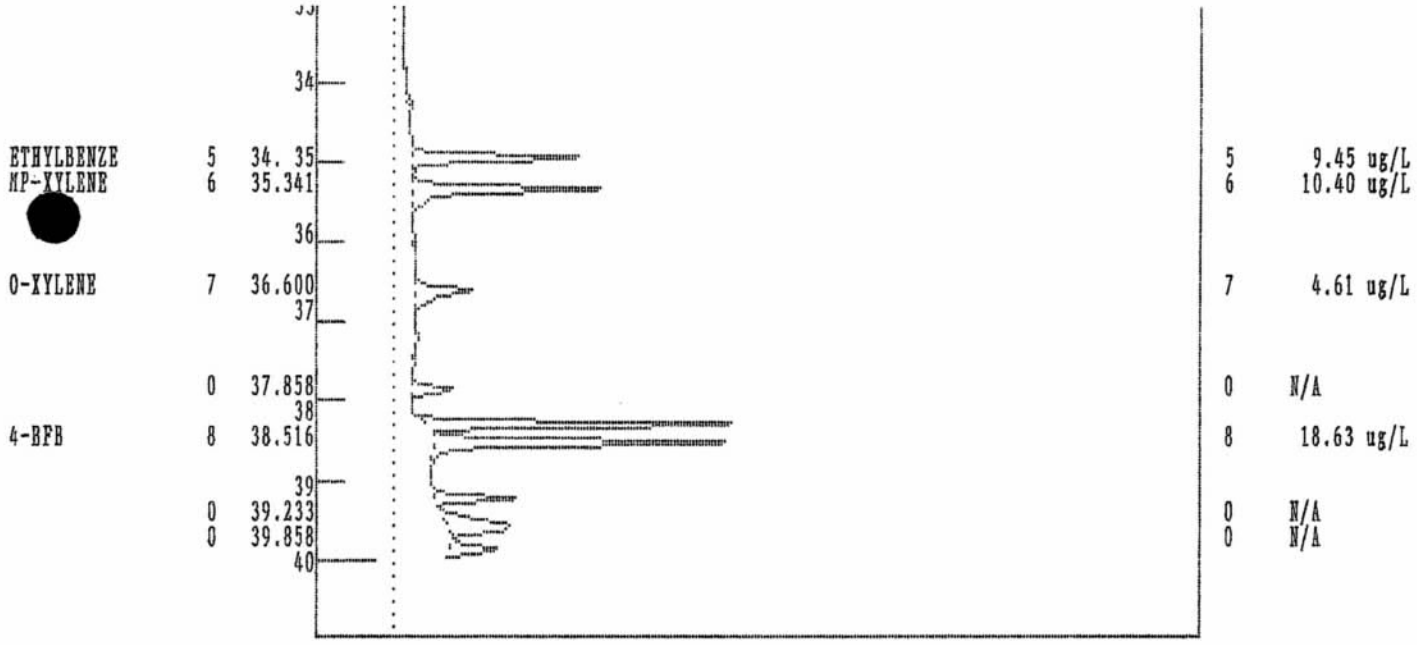
MTBE
1

Benzene
62

MBTEX
108

Client : Broad River BP
Collected : 07/19/12
Analysis date : 11/28/2010 19:21:42
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-37
Operator : TERRY L. TEATE





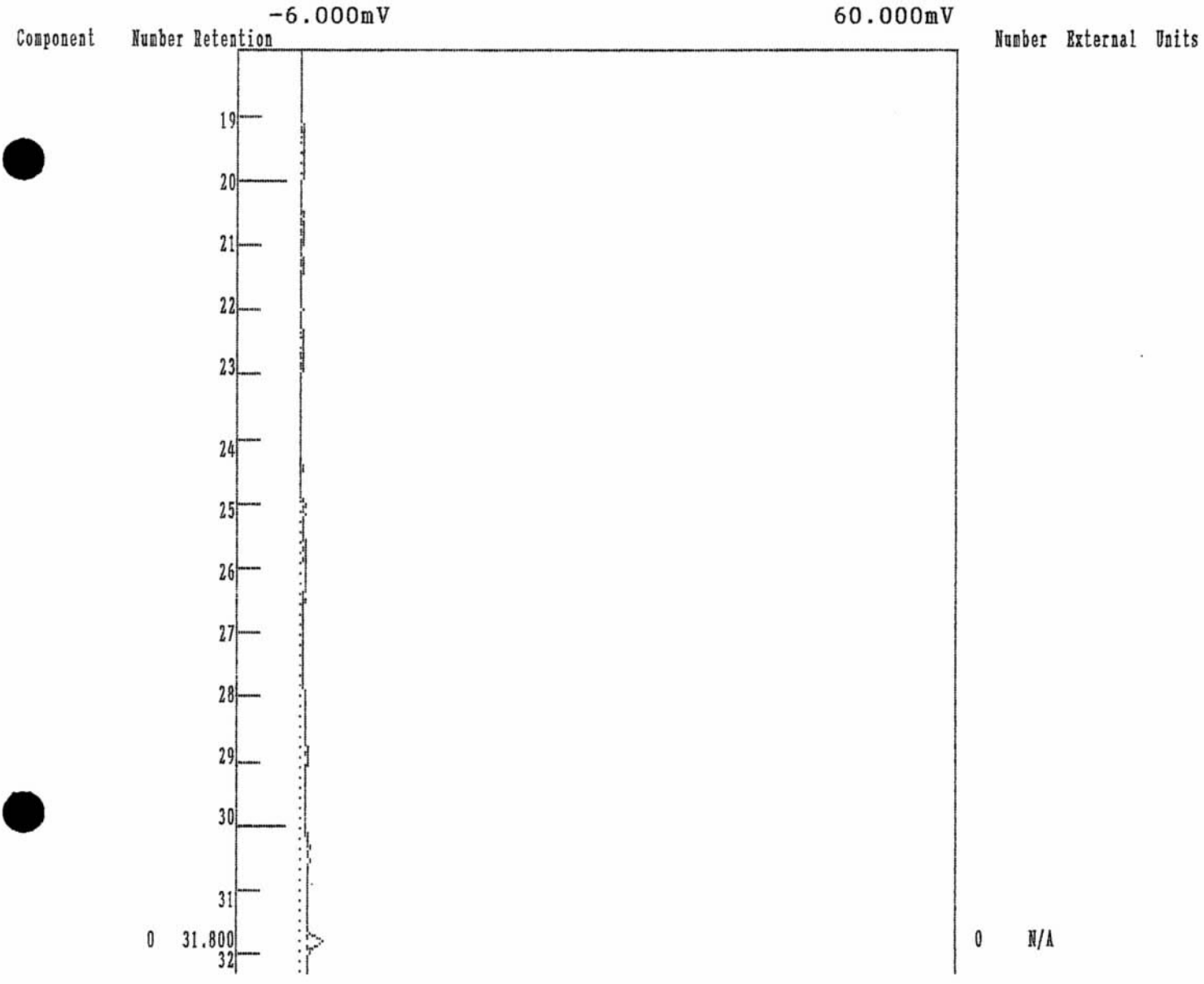
Component	Number	Retention	Area	External	Units
MTBE	1	20.508	13.56	1.71	ug/L
BENZENE	2	25.008	733.24	62.07	ug/L
TOLUENE	3	30.316	38.15	3.65	ug/L
ETHYLBENZE	5	34.958	76.04	9.45	ug/L
MP-XYLENE	6	35.341	92.26	10.40	ug/L
O-XYLENE	7	36.600	37.96	4.61	ug/L
4-BFB	8	38.291	116.25	16.97	ug/L
4-BFB	8	38.516	130.26	18.63	ug/L
	8		1237.71	127.49	

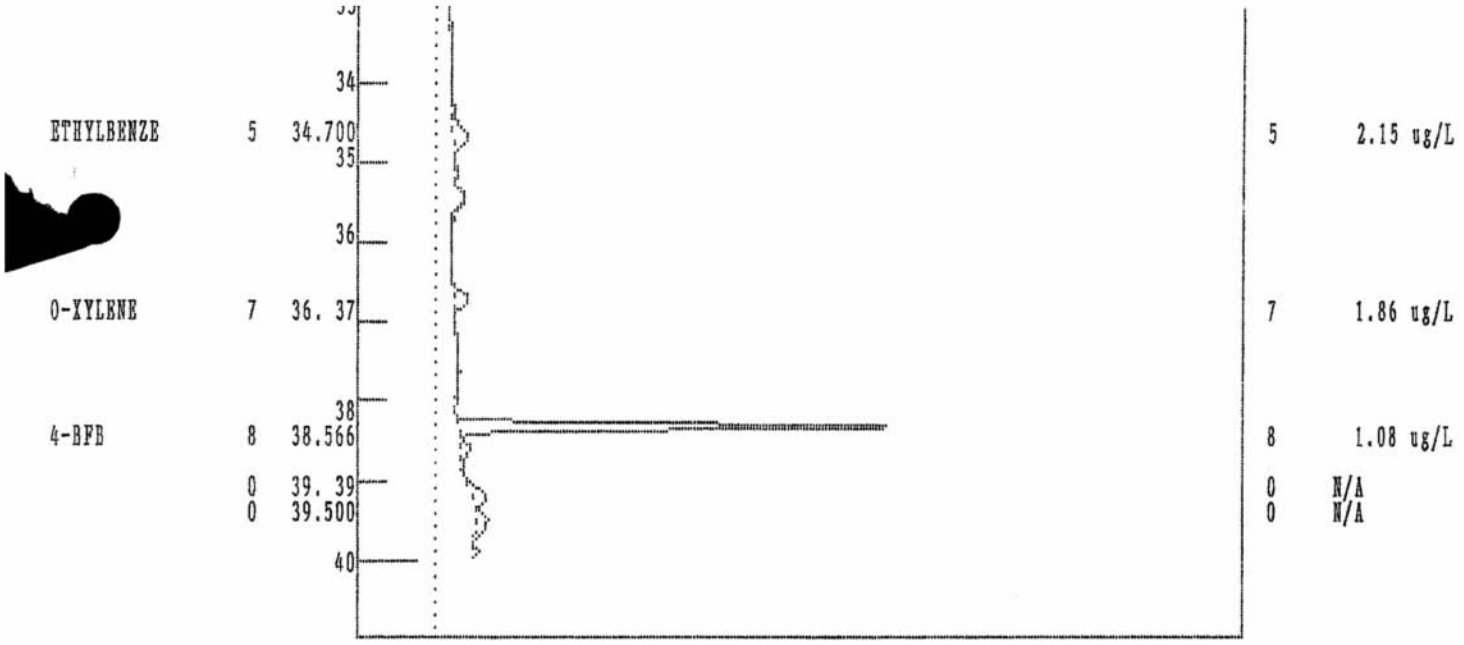
MTBE - 0

Benzene 0

MBBEX 3

Client : Broad River BP
Collected : 07/19/12
Analysis date : 11/28/2010 21:08:40
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-39
Operator : TERRY L. TEATE





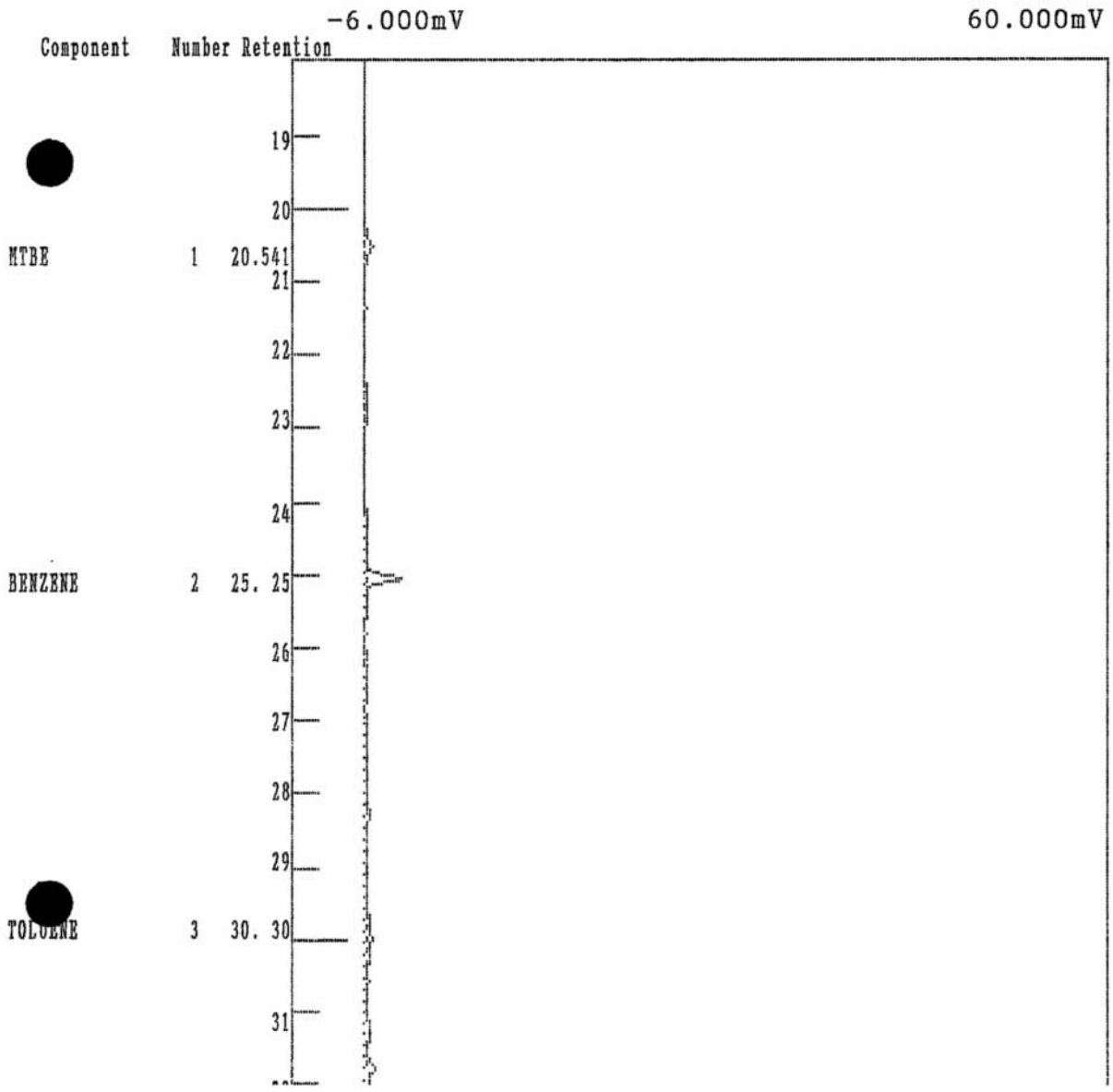
Component	Number	Retention	Area	External	Units
ETHYLBENZE	5	34.700	19.52	2.15	ug/L
O-XYLENE	7	36.733	15.34	1.86	ug/L
4-BFB	8	38.316	173.44	27.05	ug/L
4-BFB	8	38.566	7.36	1.08	ug/L
	4		215.66	32.14	

MTBE 1

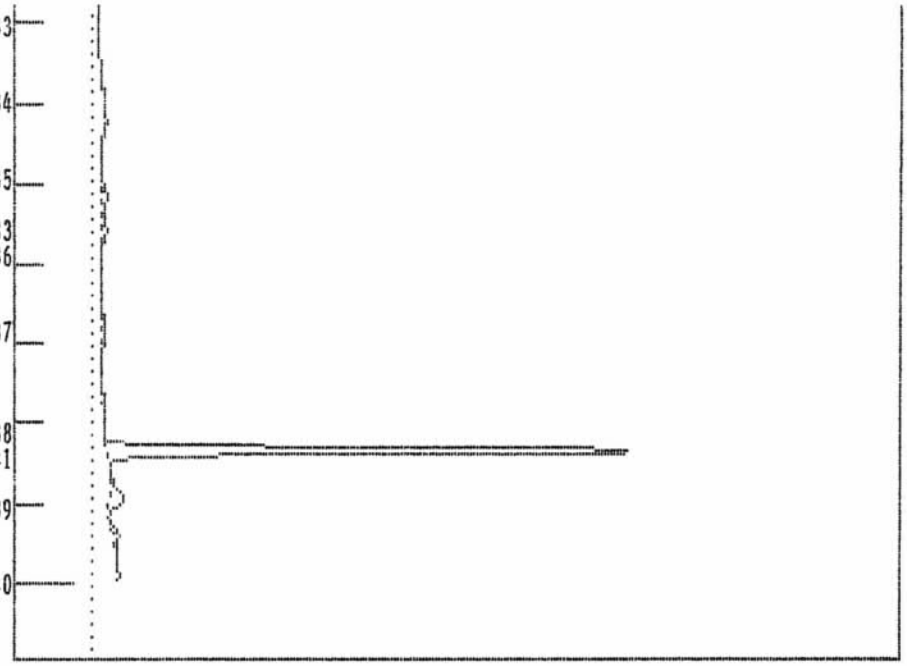
Benzene 2

MBTEX 3

Client : Broad River BP
Collected : 07/23/12
Analysis date : 12/02/2010 16:28:59
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-11-D
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
MTBE	1	20.541	1	1.00	ug/L
BENZENE	2	25. 25	2	1.96	ug/L
TOLUENE	3	30. 30	3	0.67	ug/L



	0	35.583	0	N/A	
4-BFB	8	38.341	8	40.13	ug/L
	0	38. 39	0	N/A	

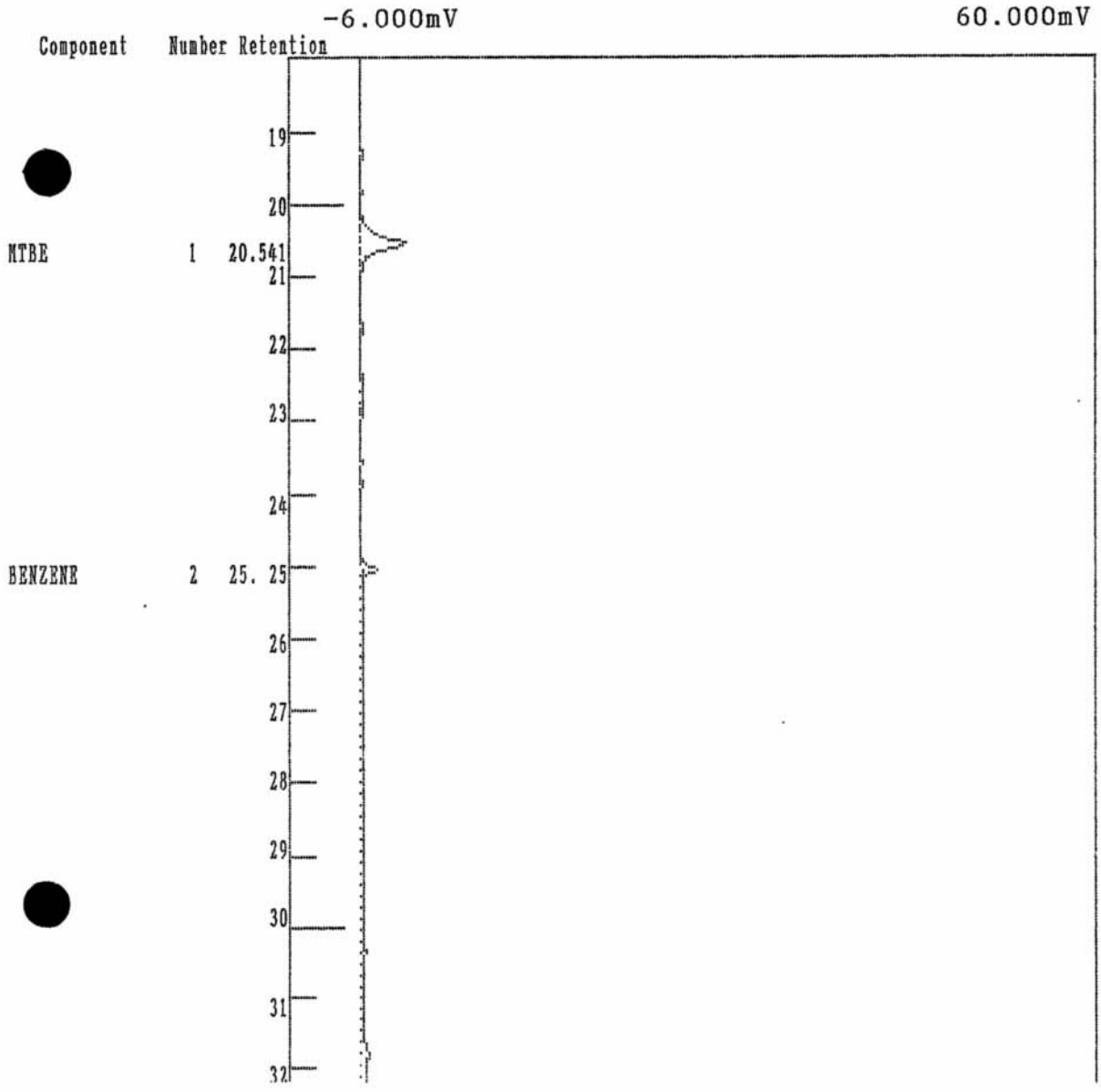
Component	Number	Retention	Area	External	Units
MTBE	1	20.541	7.90	1.00	ug/L
BENZENE	2	25.050	20.93	1.96	ug/L
TOLUENE	3	30.000	7.04	0.67	ug/L
4-BFB	8	38.341	232.14	40.13	ug/L
	4		268.02	43.76	

MTBE 8

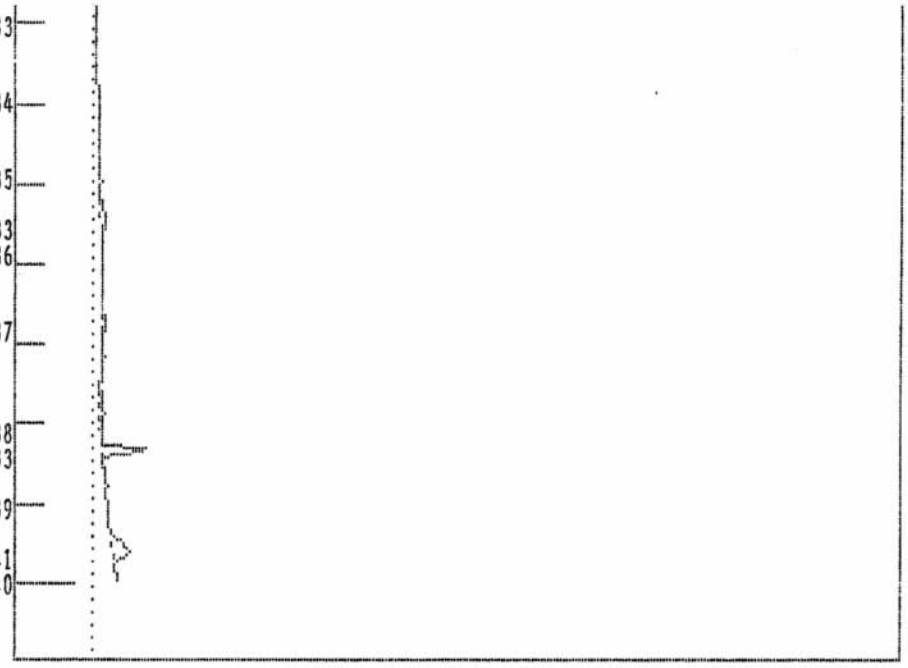
Benzene 1

MBTEX 9

Client : Broad River BP
Collected : 07/25/12
Analysis date : 12/02/2010 17:13:29
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-12-D
Operator : TERRY L. TEATE



Component	Number	Retention	Number	External	Units
MTBE	1	20.541	1	7.90	ug/L
BENZENE	2	25.25	2	0.83	ug/L



	0	35.533	0	N/A	
4-BFB	8	38.333	8	2.76	ug/L
	0	39.641	0	N/A	

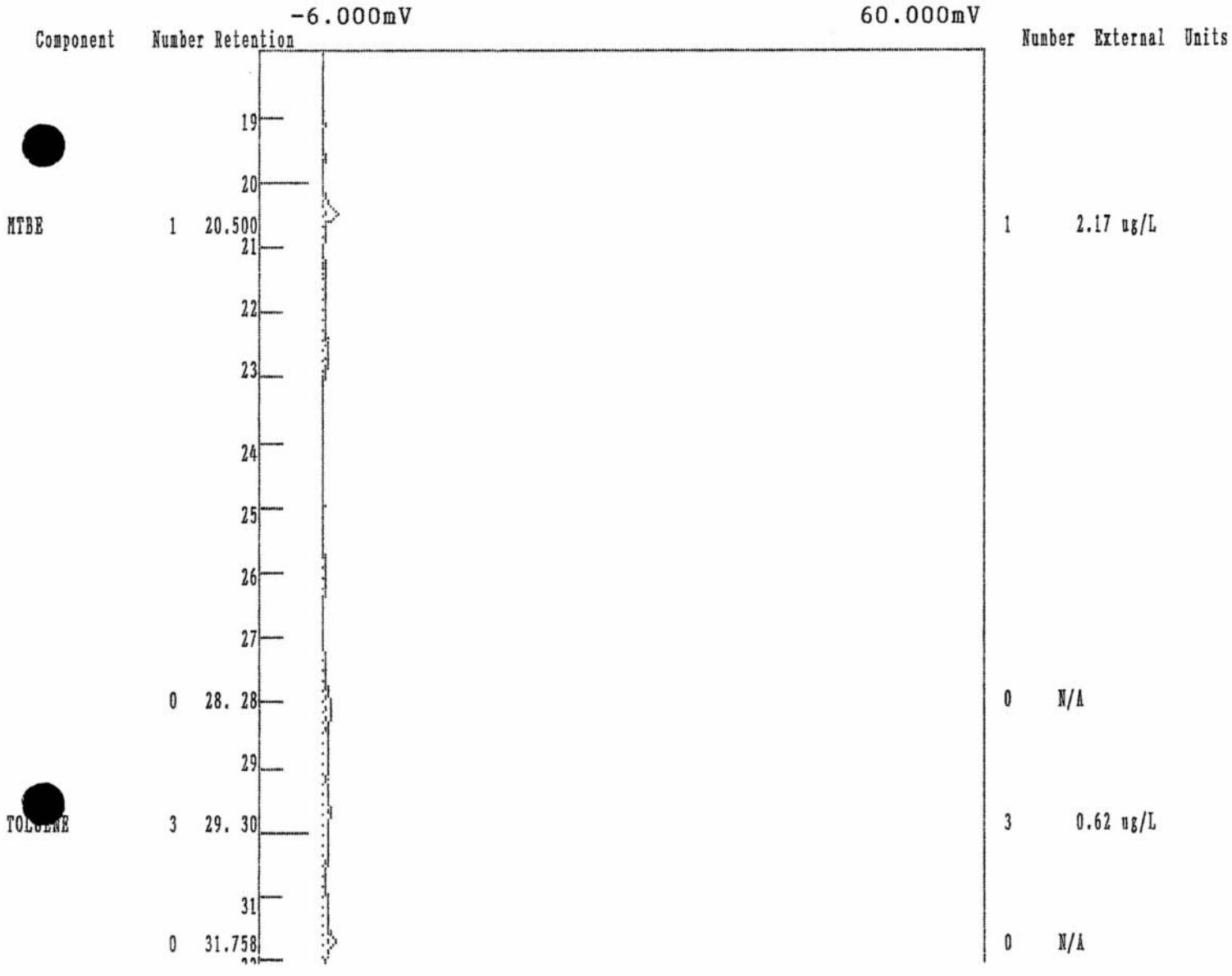
Component	Number	Retention	Area	External	Units
MTBE	1	20.541	52.88	7.90	ug/L
BENZENE	2	25.058	8.84	0.83	ug/L
4-BFB	8	38.333	18.75	2.76	ug/L
	3		80.47	11.49	

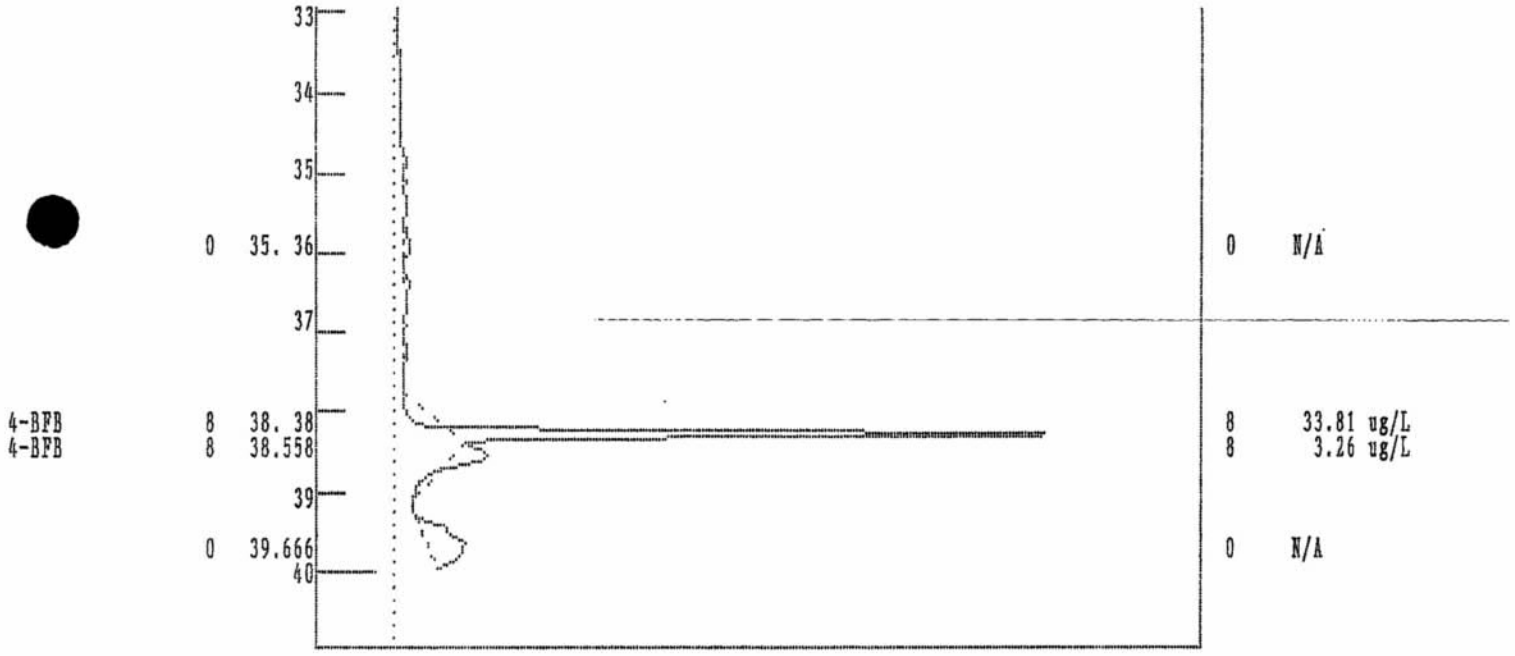
MTBE 2

Benzene 0

MBTEX 3

Client : Broad River BP
Collected : 07/23/12
Analysis date : 12/02/2010 12:24:59
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-14-D
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
MTBE	1	20.500	17.22	2.17	ug/L
TOLUENE	3	29.733	6.50	0.62	ug/L
4-BFB	8	38.266	203.78	33.81	ug/L
4-BFB	8	38.558	22.14	3.26	ug/L
	4		249.63	39.86	

MTBE

113

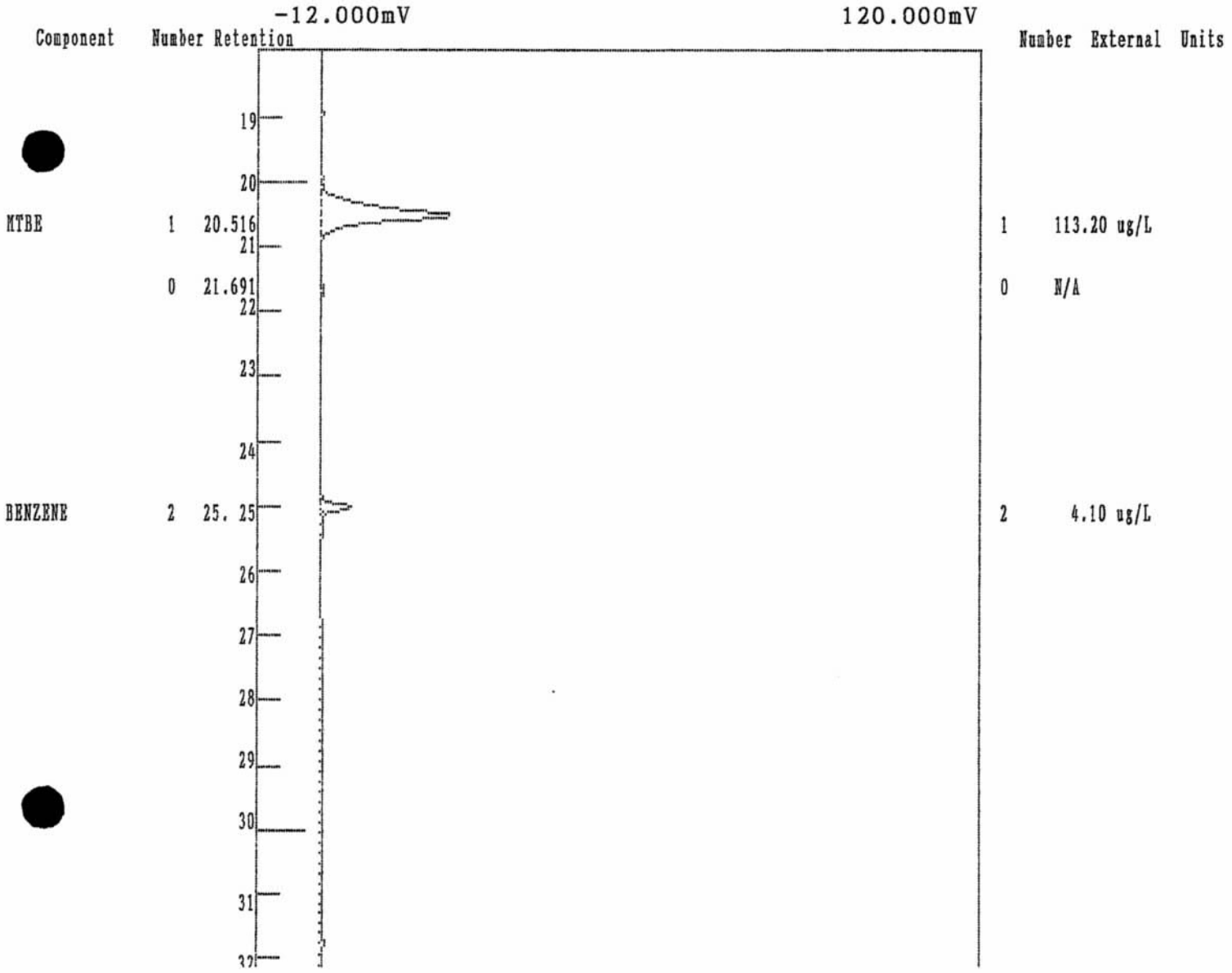
Benzene

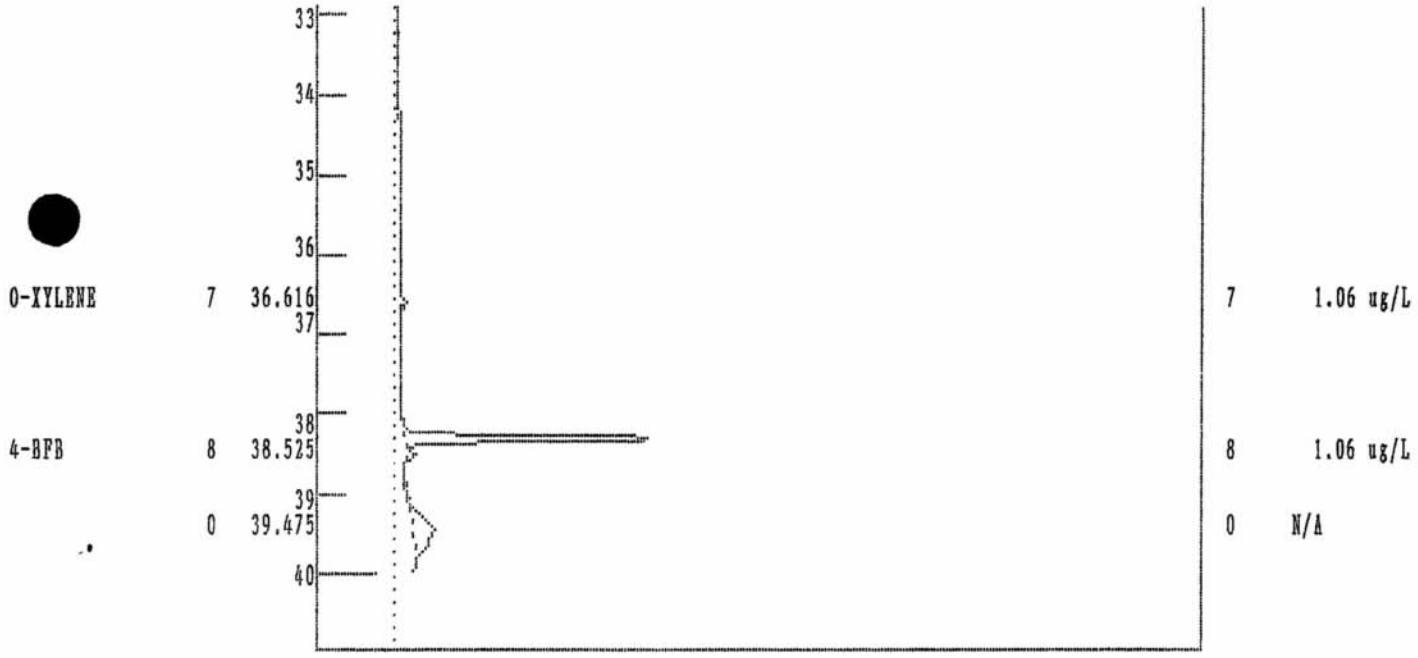
4

MBTEX

118

Client : Broad River BP
Collected : 07/23/12
Analysis date : 12/02/2010 13:27:37
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-16-D
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
MTBE	1	20.516	375.30	113.20	ug/L
BENZENE	2	25.025	43.74	4.10	ug/L
O-XYLENE	7	36.616	8.71	1.06	ug/L
4-BFB	8	38.300	216.06	36.55	ug/L
4-BFB	8	38.525	7.24	1.06	ug/L
	5		651.05	155.96	

MTBE

71 [redacted]

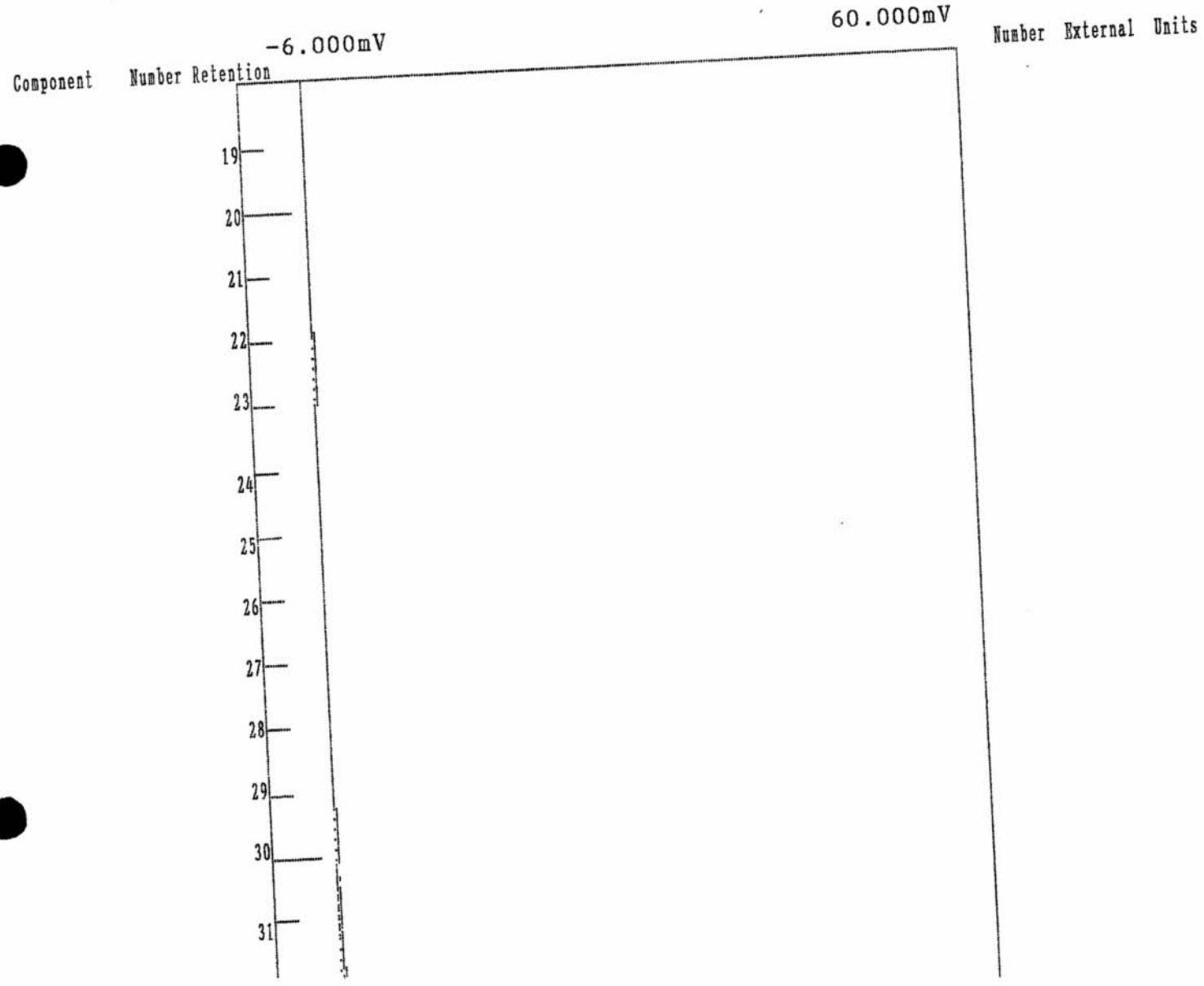
Benzene

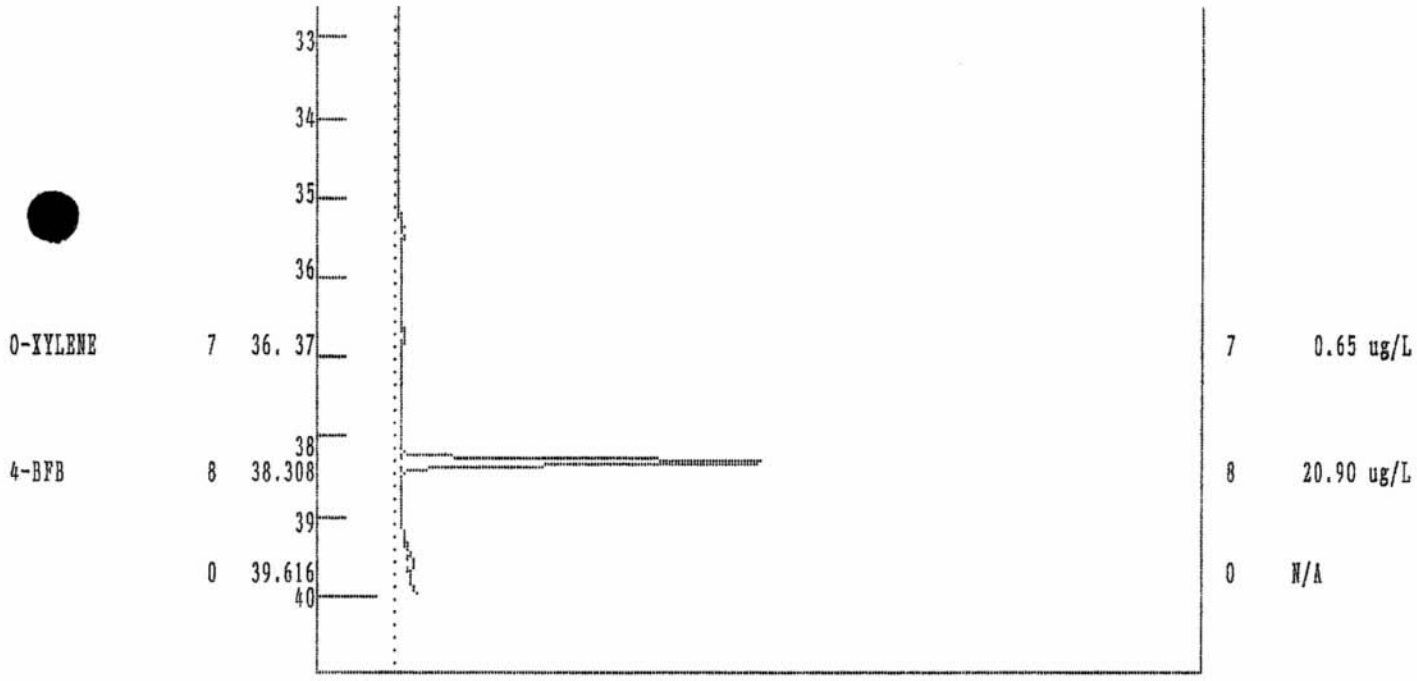
71 [redacted]

MBTEX

71 [redacted]

Client : Broad River BP
Collected : 07/25/12
Analysis date : 12/02/2010 17:58:30
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-33-D
Operator : TERRY L. TEATE





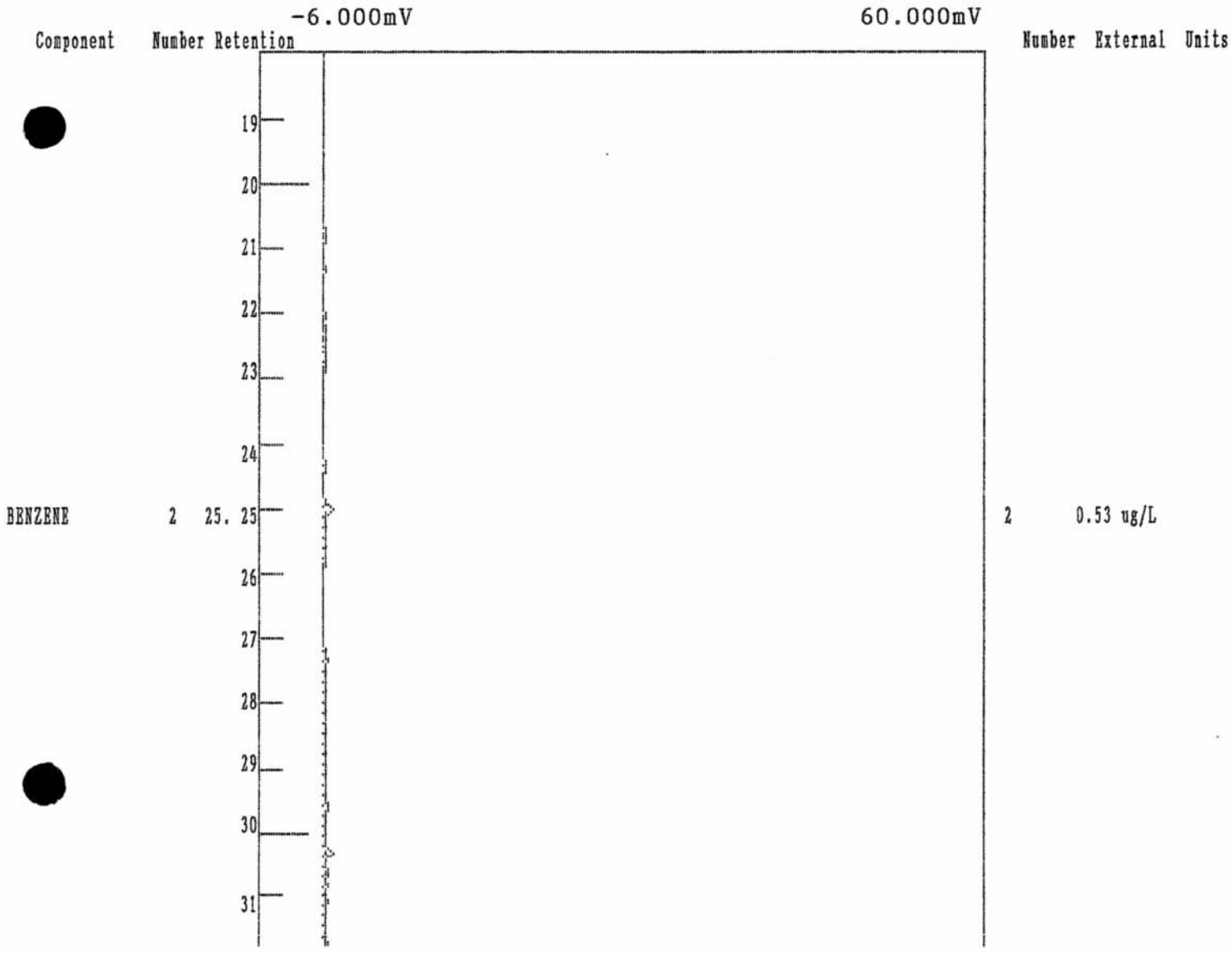
Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.758	5.35	0.65	ug/L
4-BFB	8	38.308	145.88	20.90	ug/L
	2		151.23	21.55	

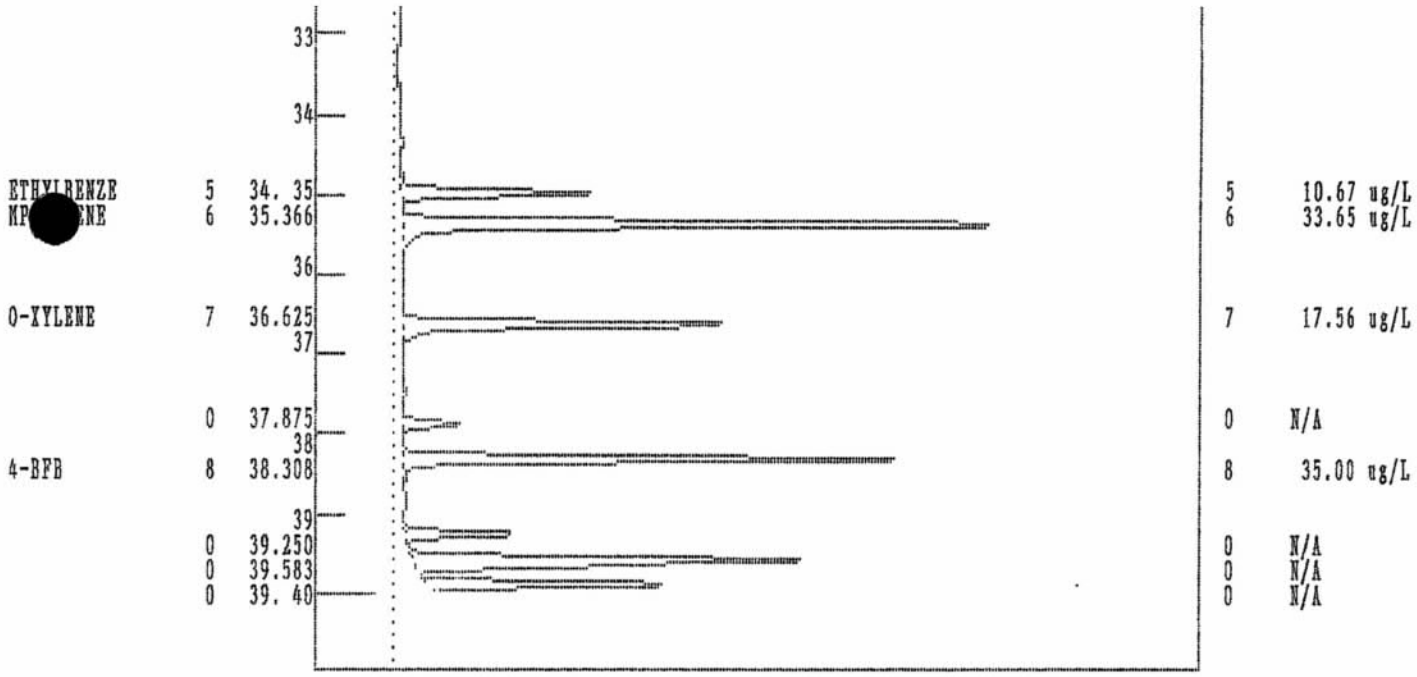
MTBE >1

Benzene >1

MBTEX 62

Client : Broad River BP
Collected : 07/25/12
Analysis date : 12/02/2010 18:46:19
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-40
Operator : TERRY L. TEATE





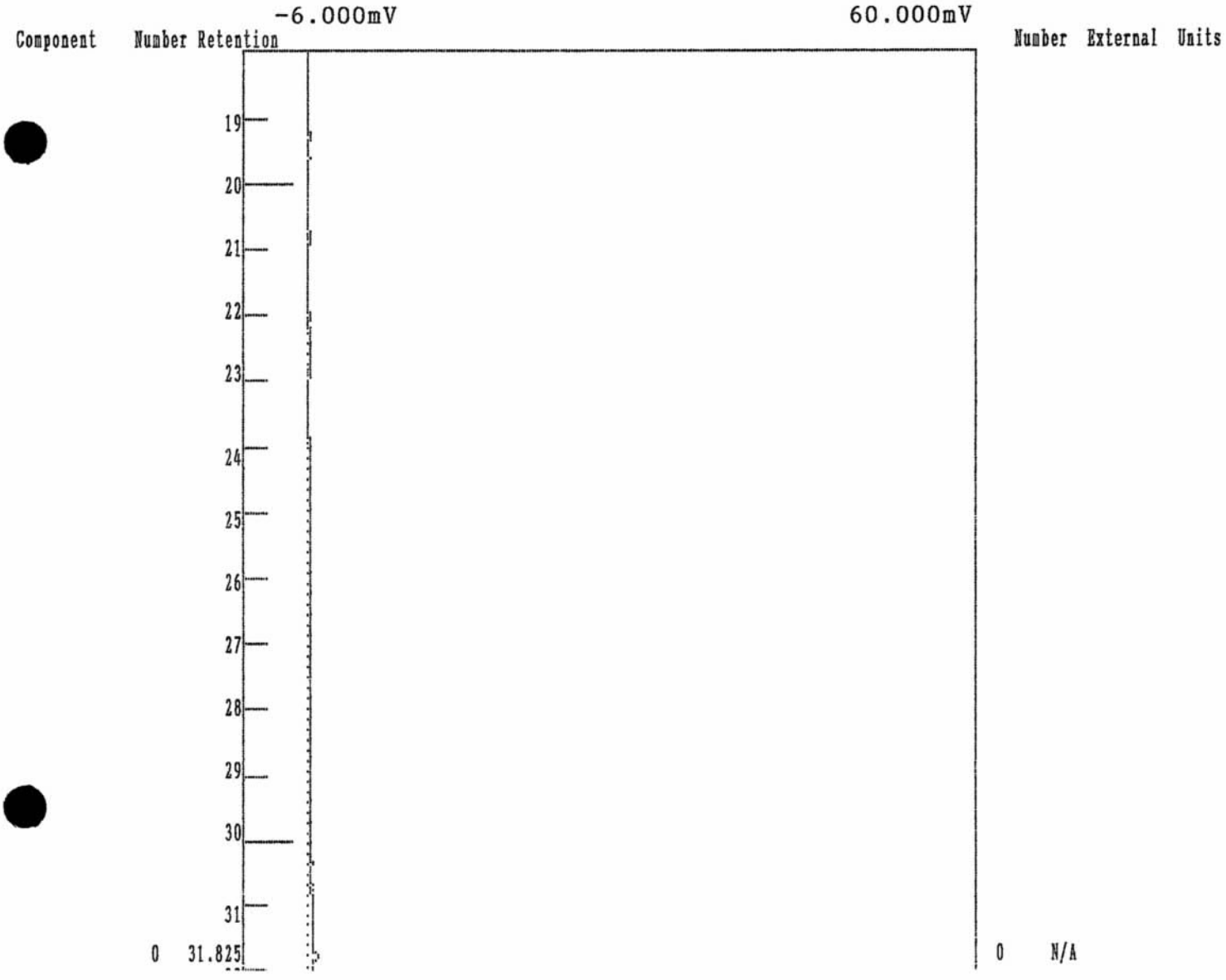
Component	Number	Retention	Area	External	Units
BENZENE	2	25.016	5.64	0.53	ug/L
ETHYLBENZE	5	34.975	85.35	10.67	ug/L
MP-XYLENE	6	35.366	302.15	33.65	ug/L
O-XYLENE	7	36.625	161.58	17.56	ug/L
4-BFB	8	38.308	209.12	35.00	ug/L
[redacted]	5		**763.85**	**97.41**	

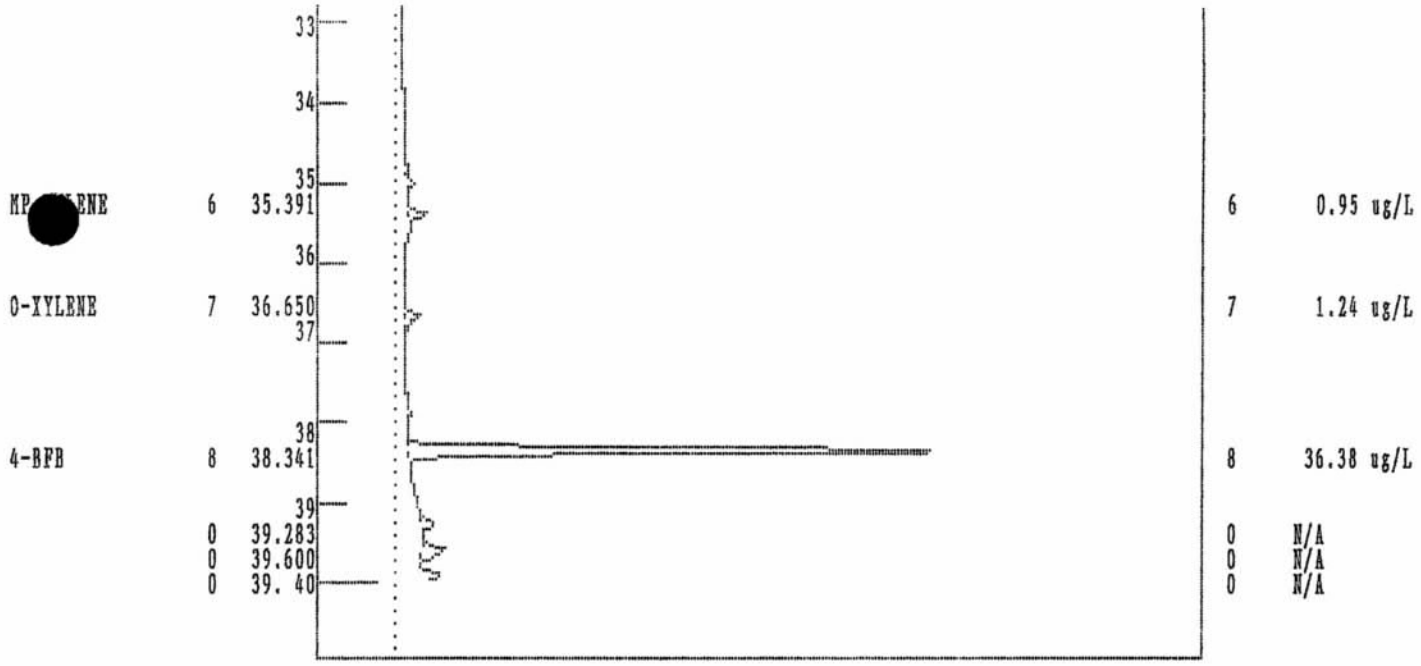
MTBE
71

Benzene
71

MBTEX
2

Client : Broad River BP
Collected : 07/23/12
Analysis date : 12/02/2010 14:57:54
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-40-D
Operator : TERRY L. TEATE





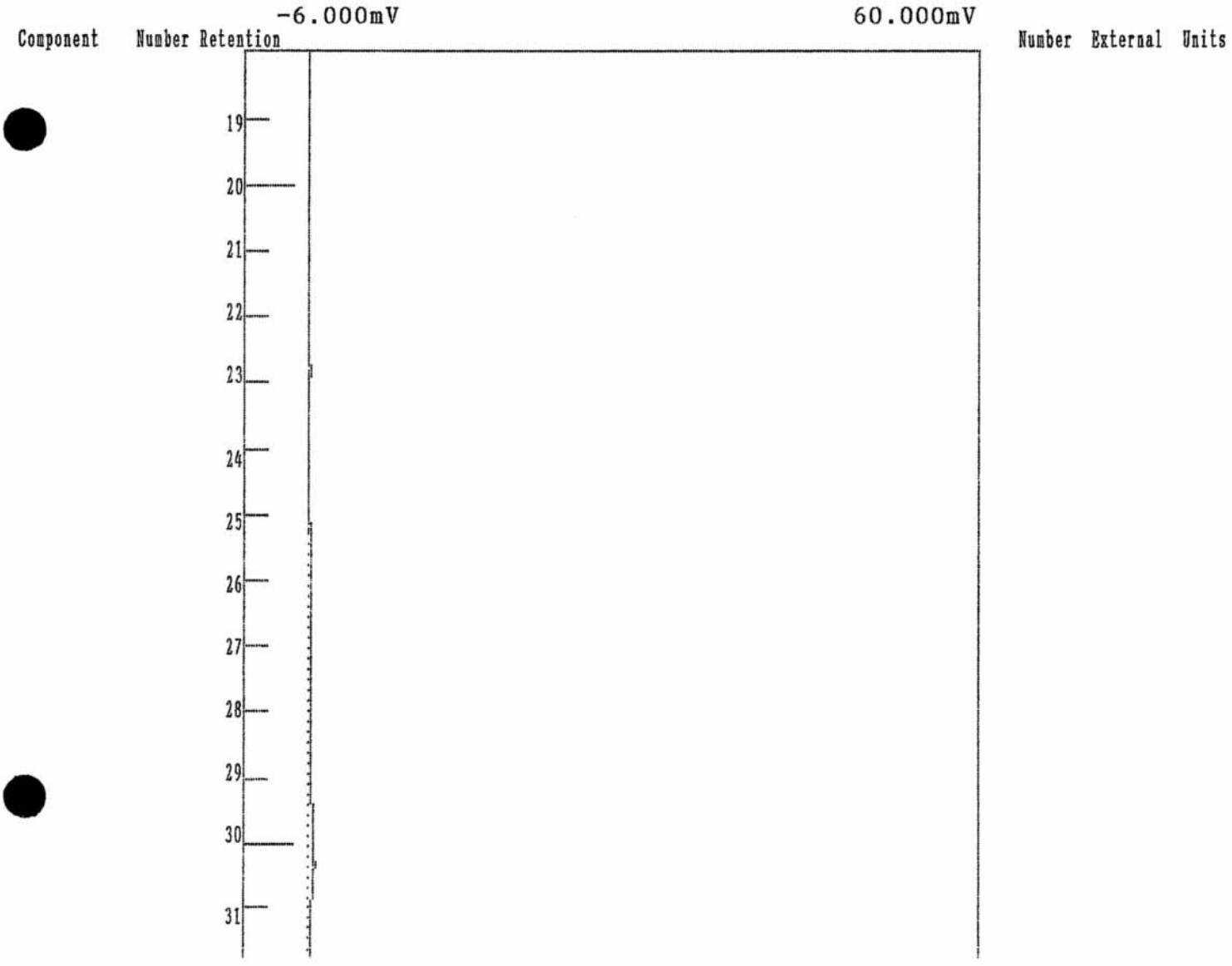
Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.391	8.53	0.95	ug/L
O-XYLENE	7	36.650	10.21	1.24	ug/L
4-BFB	8	38.341	215.30	36.38	ug/L
	3		**234.05**	**38.57**	

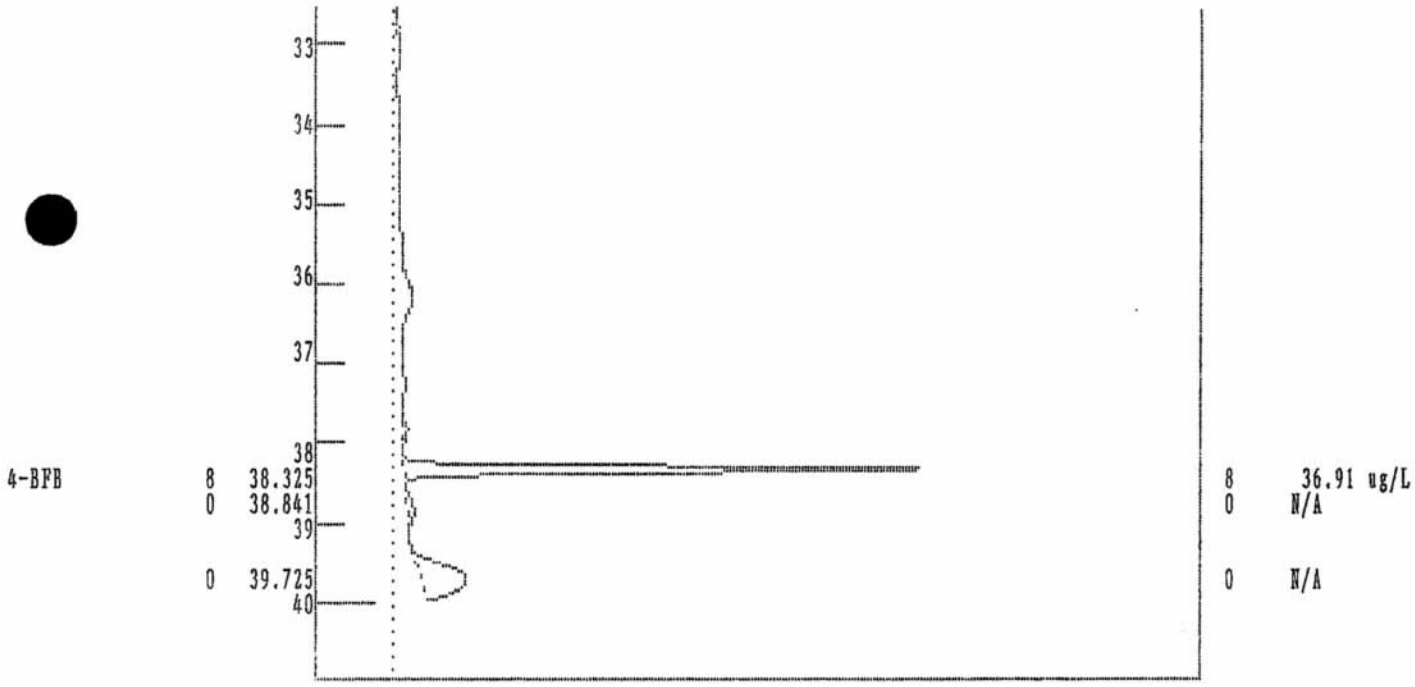
MTBE >1

Benzene >1

MBTEX >1

Client : Broad River BP
Collected : 07/25/2012
Analysis date : 12/03/2010 13:58:46
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-41
Operator : TERRY L. TEATE





Component	Number	Retention	Area	External	Units
4-BFB	8	38.325	217.69	36.91	ug/L
	1		**217.69**	**36.91**	

MTBE

>1

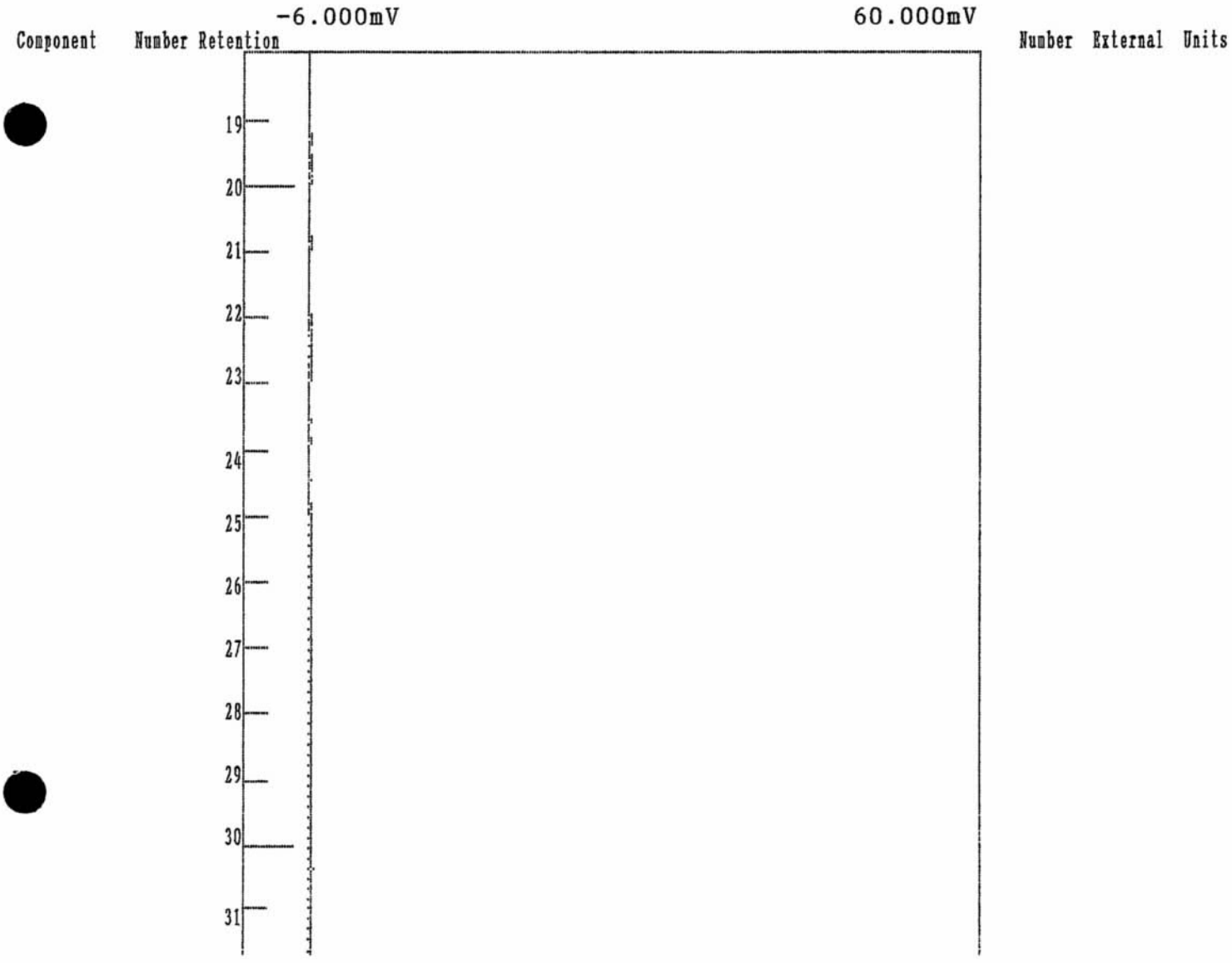
Benzene

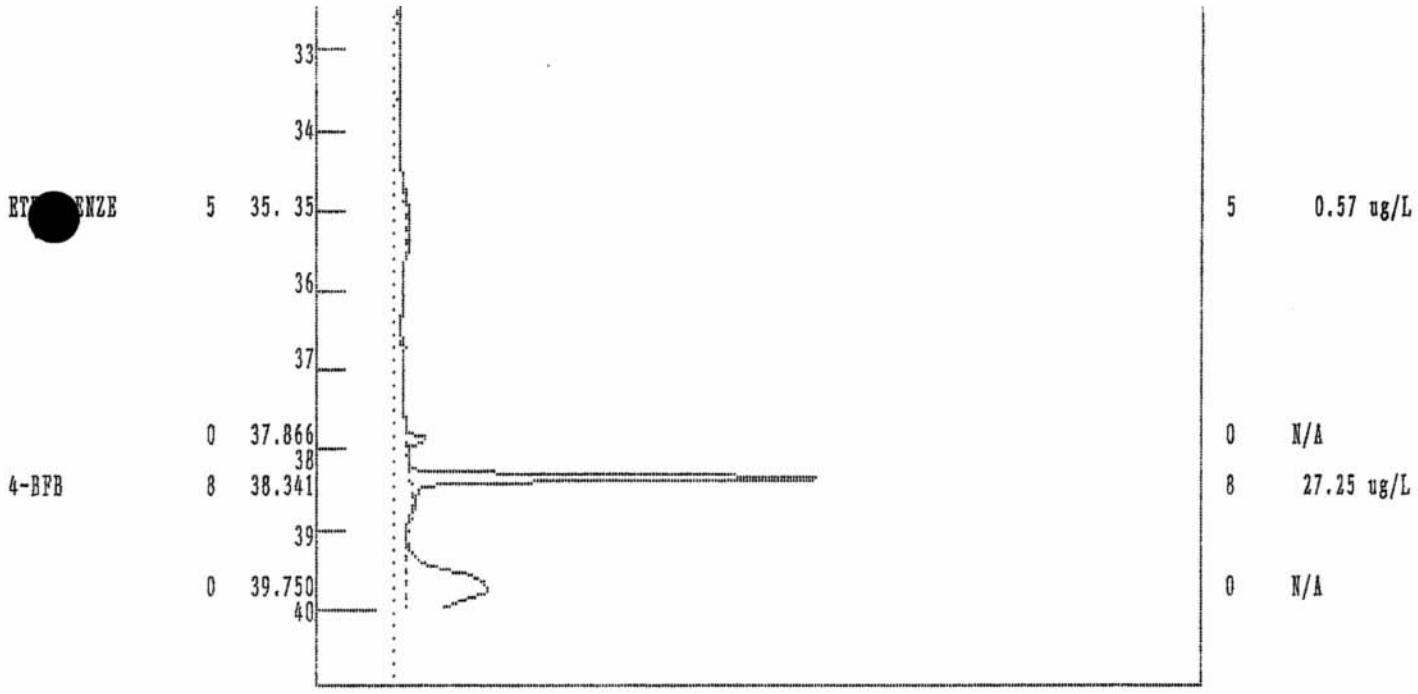
1

MBTEX

1

Client : Broad River BP
Collected : 07/26/2012
Analysis date : 12/03/2010 16:33:59
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-43
Operator : TERRY L. TEATE





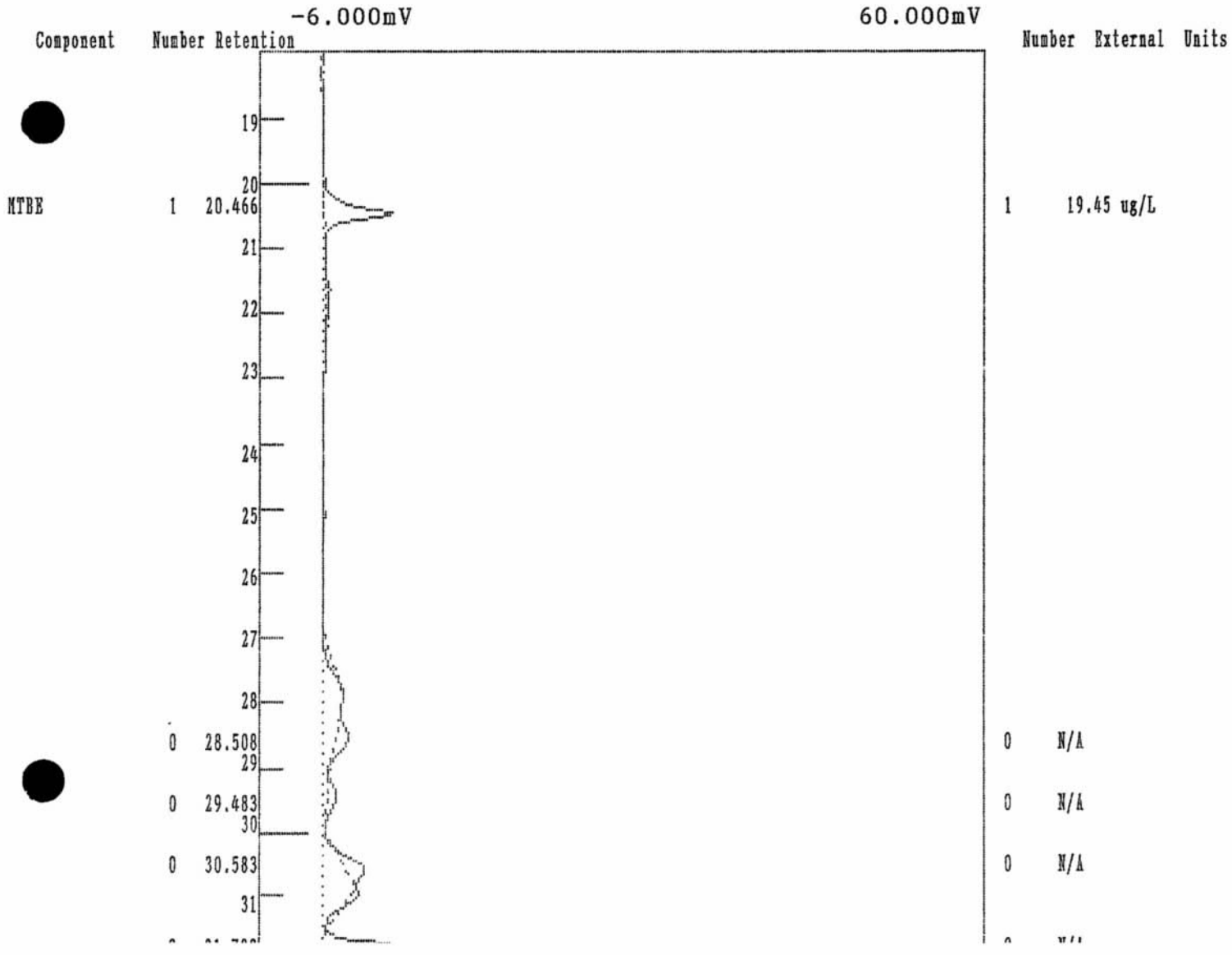
Component	Number	Retention	Area	External	Units
ETHYLBENZE	5	35.058	5.15	0.57	ug/L
4-BFB	8	38.341	174.38	27.25	ug/L
	2		179.53	27.82	

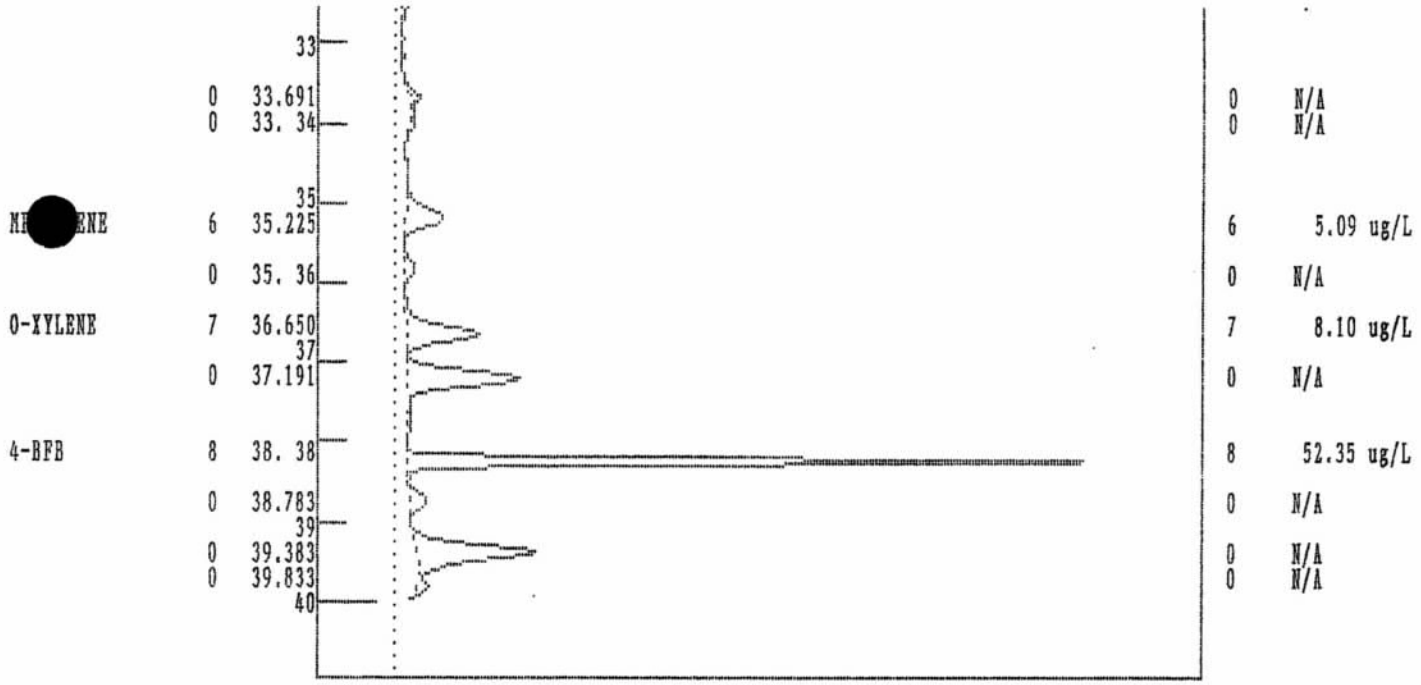
MTBE 19

Benzene 71

MBTEX 32

Client : Broad River BP
Collected : 07/25/2012
Analysis date : 12/03/2010 12:17:27
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-48
Operator : TERRY L. TEATE





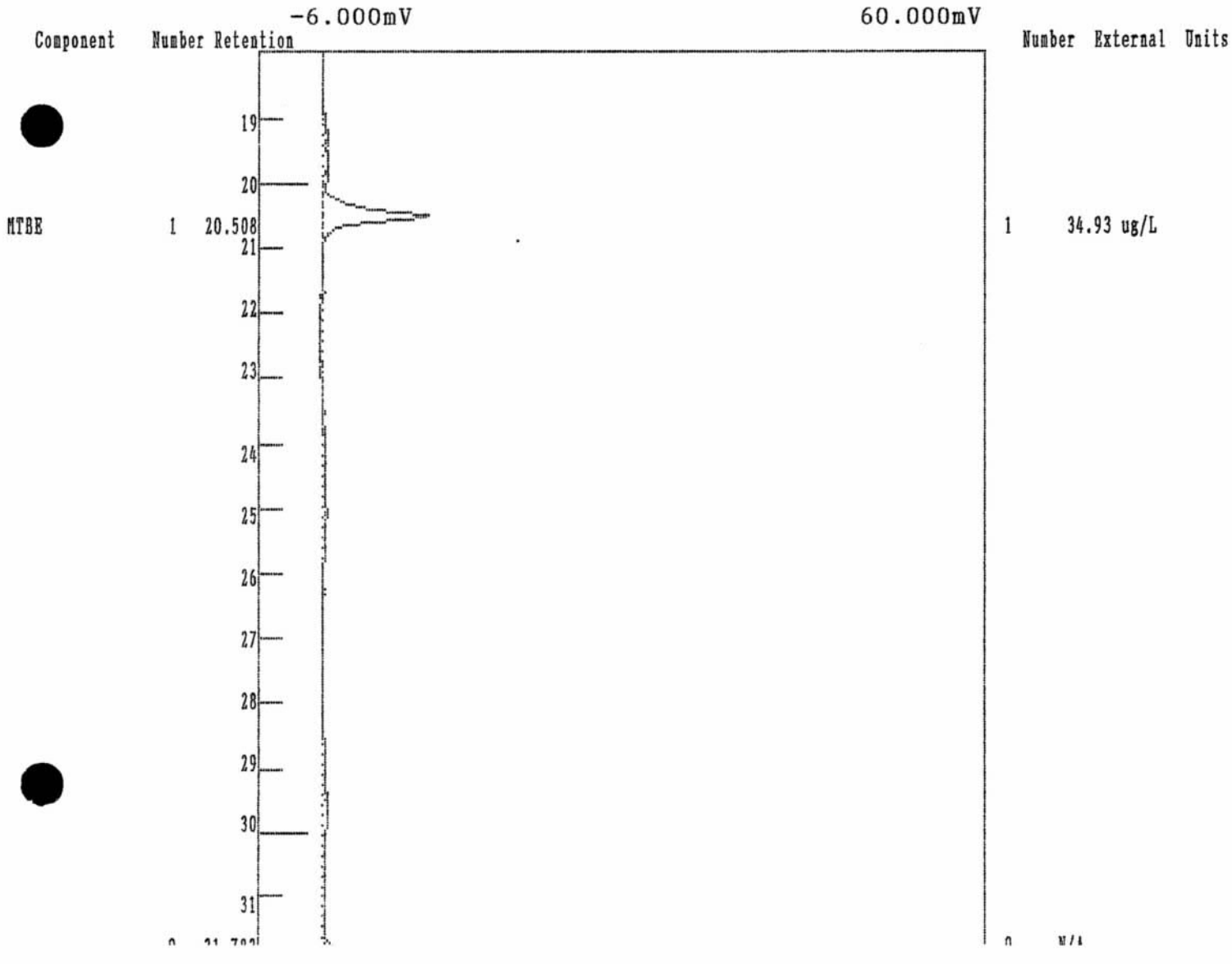
Component	Number	Retention	Area	External	Units
MTBE	1	20.466	91.60	19.45	ug/L
MP-XYLENE	6	35.225	45.84	5.09	ug/L
O-XYLENE	7	36.650	78.28	8.10	ug/L
4-BFB	8	38.241	286.95	52.35	ug/L
	4		502.68	84.99	

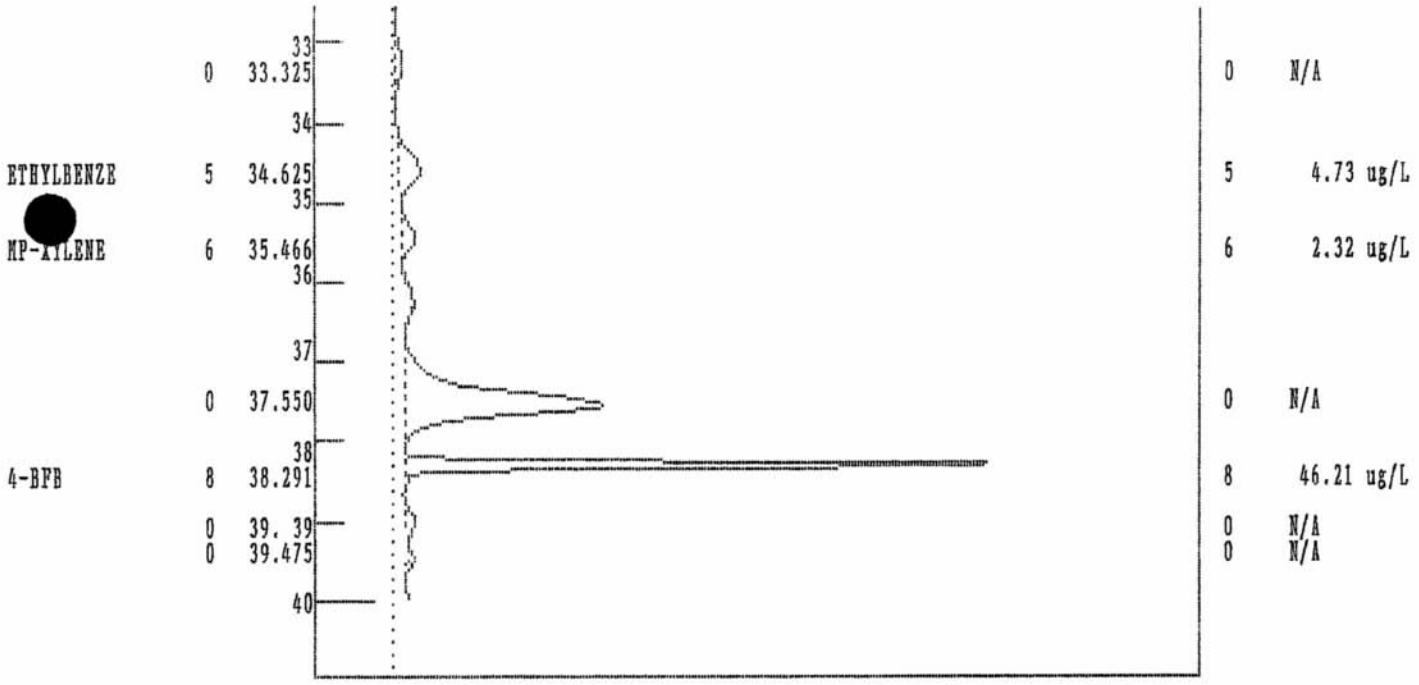
MTBE 35

Benzene 71

MBTEX 42

Client : Broad River BP
Collected : 07/25/2012
Analysis date : 12/03/2010 13:06:06
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-48-D
Operator : TERRY L. TEATE





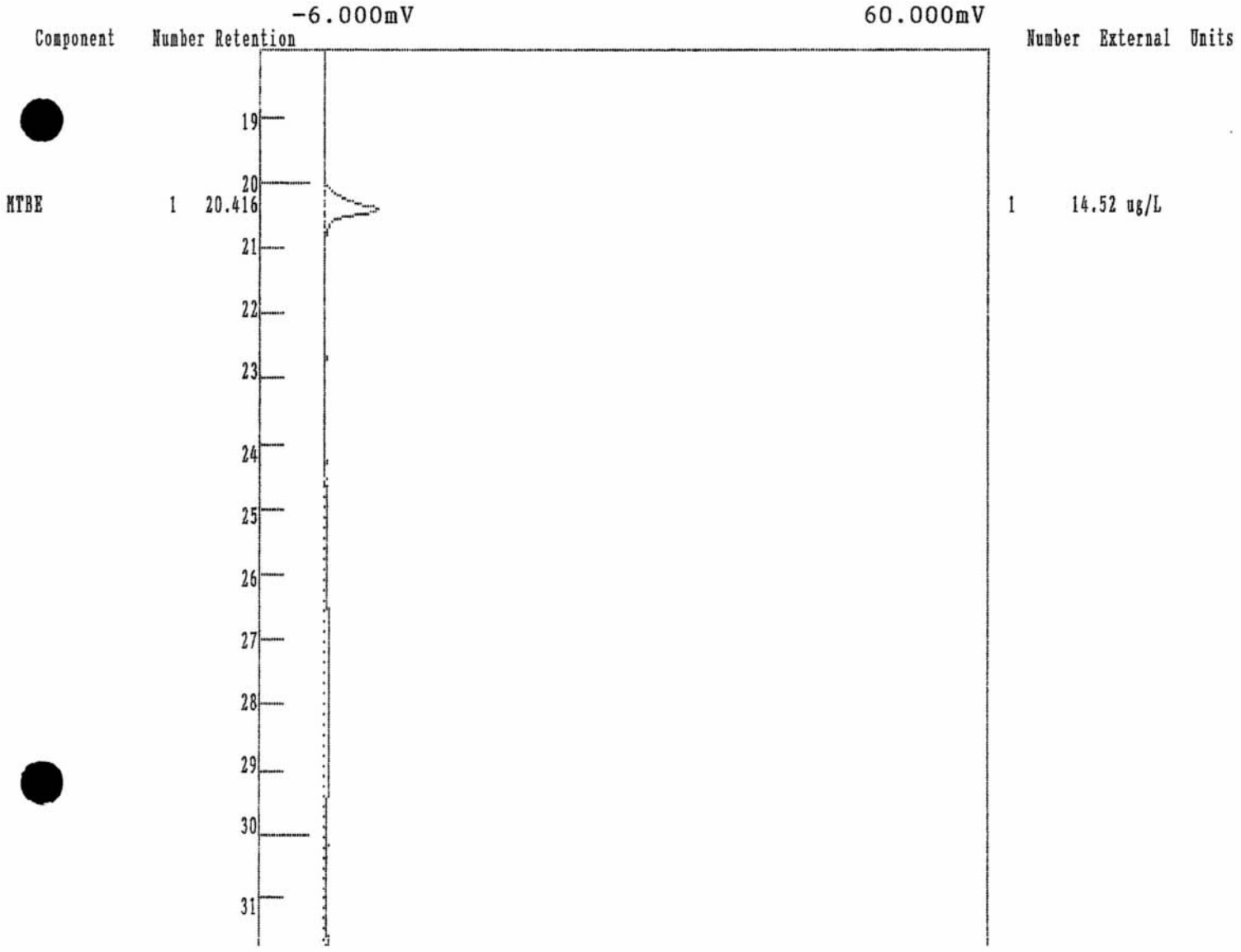
Component	Number	Retention	Area	External	Units
MTBE	1	20.508	139.38	34.93	ug/L
ETHYLBENZE	5	34.625	42.98	4.73	ug/L
MP-XYLENE	6	35.466	20.87	2.32	ug/L
4-BFB	8	38.291	259.39	46.21	ug/L
	4		462.62	88.19	

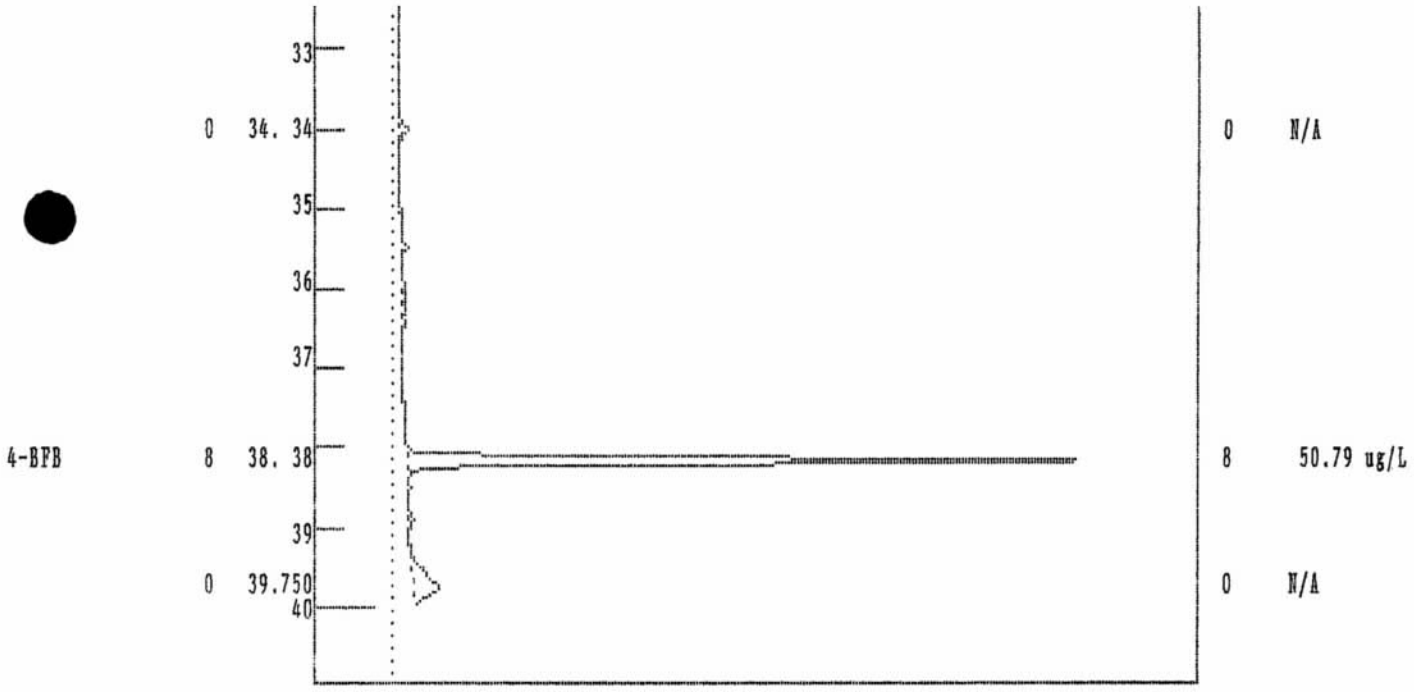
MTBE 15

Benzene 71

MBTEX 15

Client : Broad River BP
Collected : 07/27/2012
Analysis date : 12/04/2010 07:29:56
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-49
Operator : TERRY L. TEATE





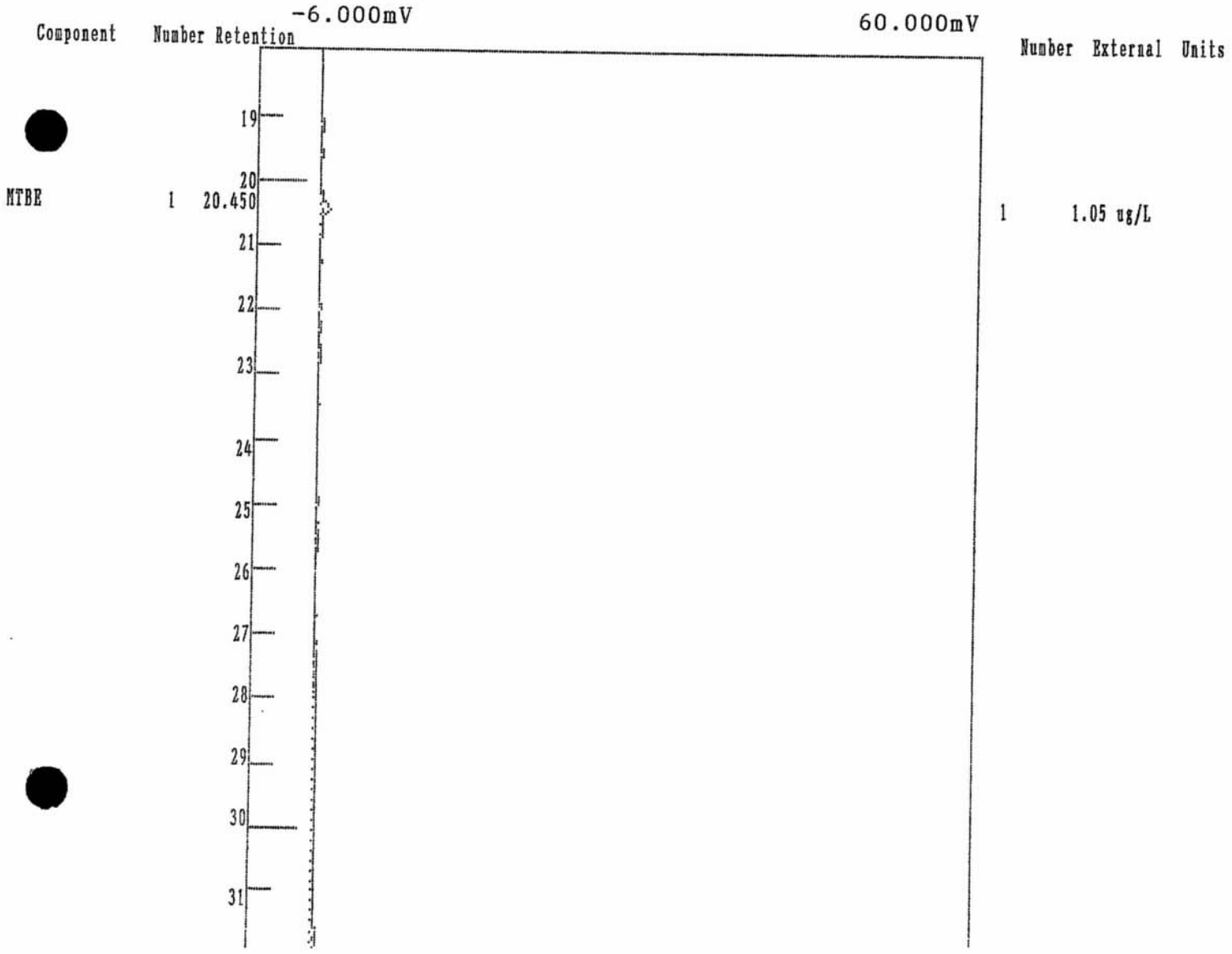
Component	Number	Retention	Area	External	Units
MTBE	1	20.416	76.40	14.52	ug/L
4-BFB	8	38.158	279.94	50.79	ug/L
	2		356.34	65.31	

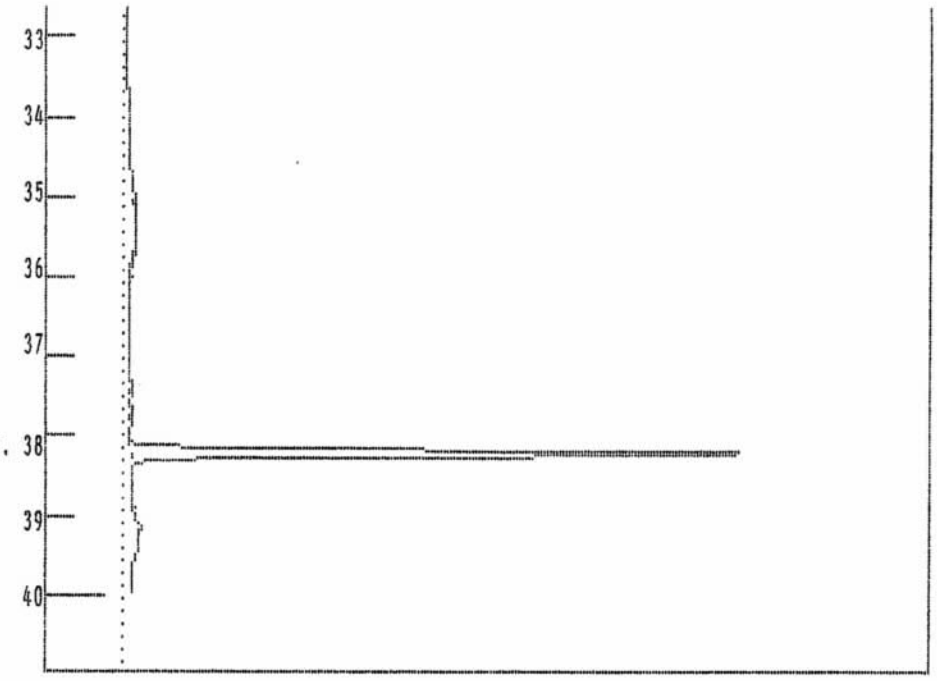
MTBE 1

Benzene >1

MBTEX 1

Client : Broad River BP
Collected : 07/27/2012
Analysis date : 12/04/2010 08:14:10
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-49-D
Operator : TERRY L. TEATE





4-BFB 8 38. 8 46.05 ug/L

Component	Number	Retention	Area	External	Units
MTBE	1	20.450	8.29	1.05	ug/L
4-BFB	8	38.208	258.68	46.05	ug/L
	2		266.97	47.10	

MTBE

71

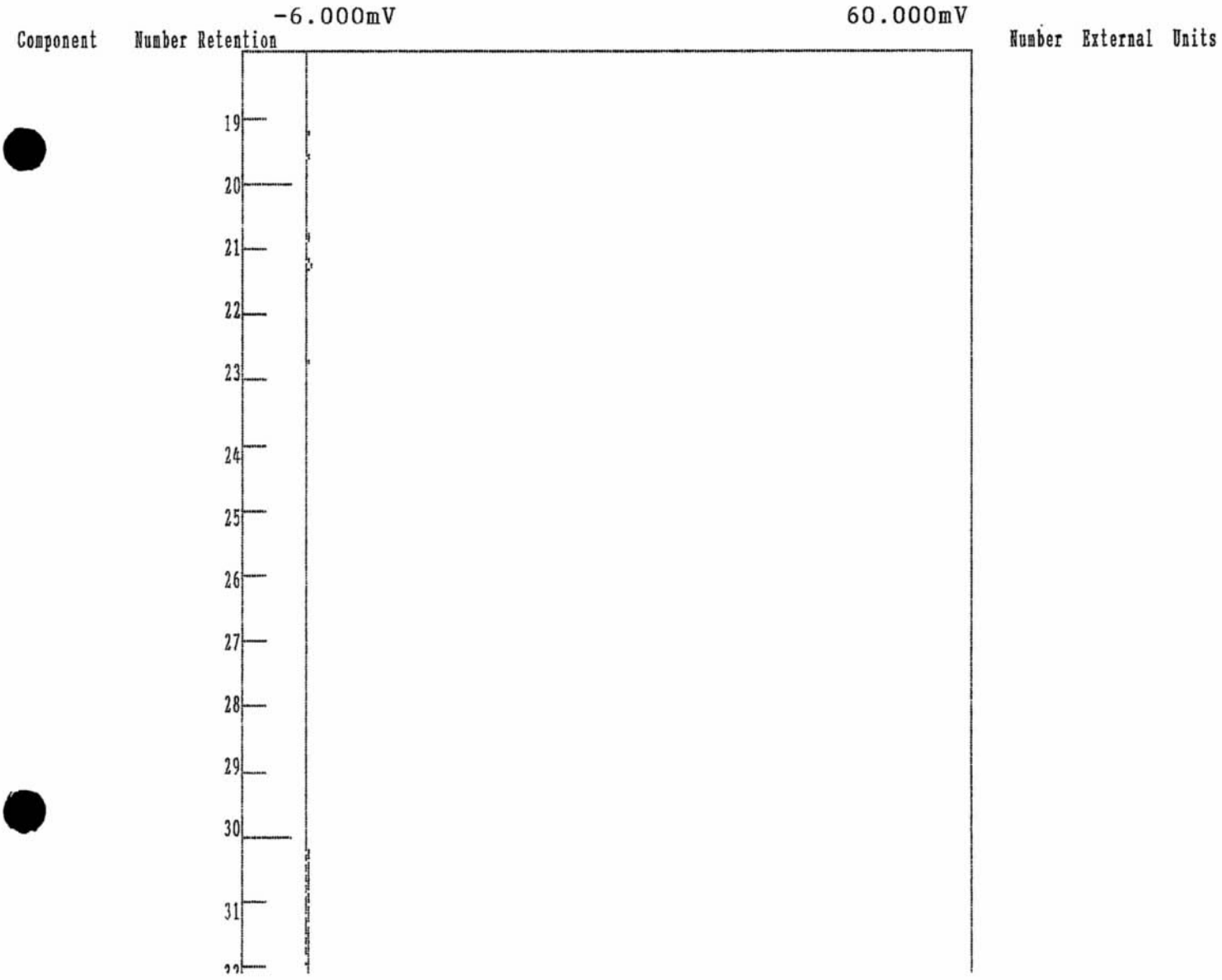
Benzene

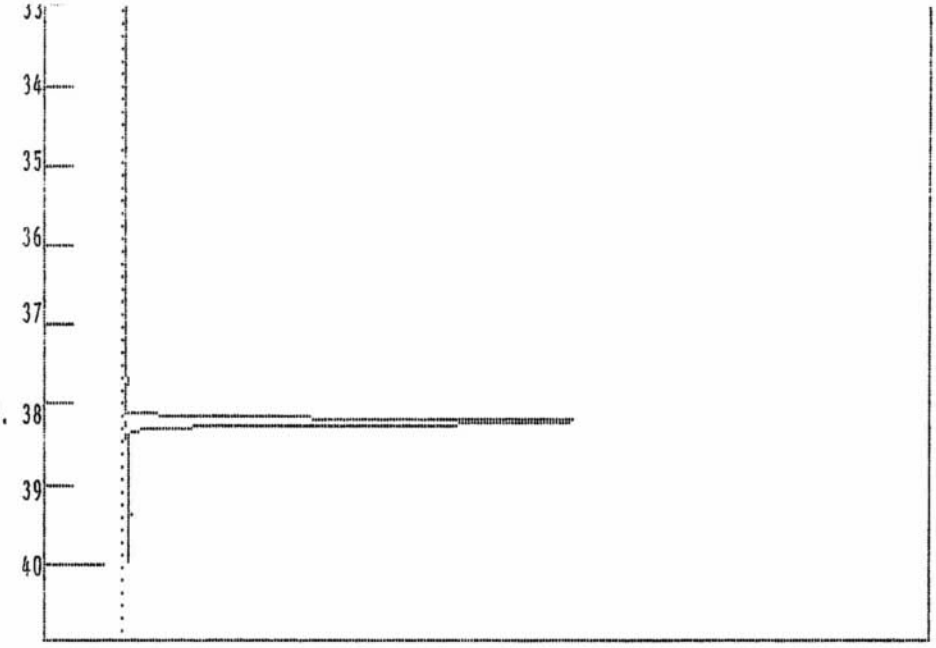
71

MBTEX

71

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 21:22:23
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-43D SLED
Operator : TERRY L. TEATE





4-BFB 8 38.38 8 30.77 ug/L

Component	Number	Retention	Area	External	Units
4-BFB	8	38.208	190.16	30.77	ug/L
	1		**190.16**	**30.77**	

MTBE

>1

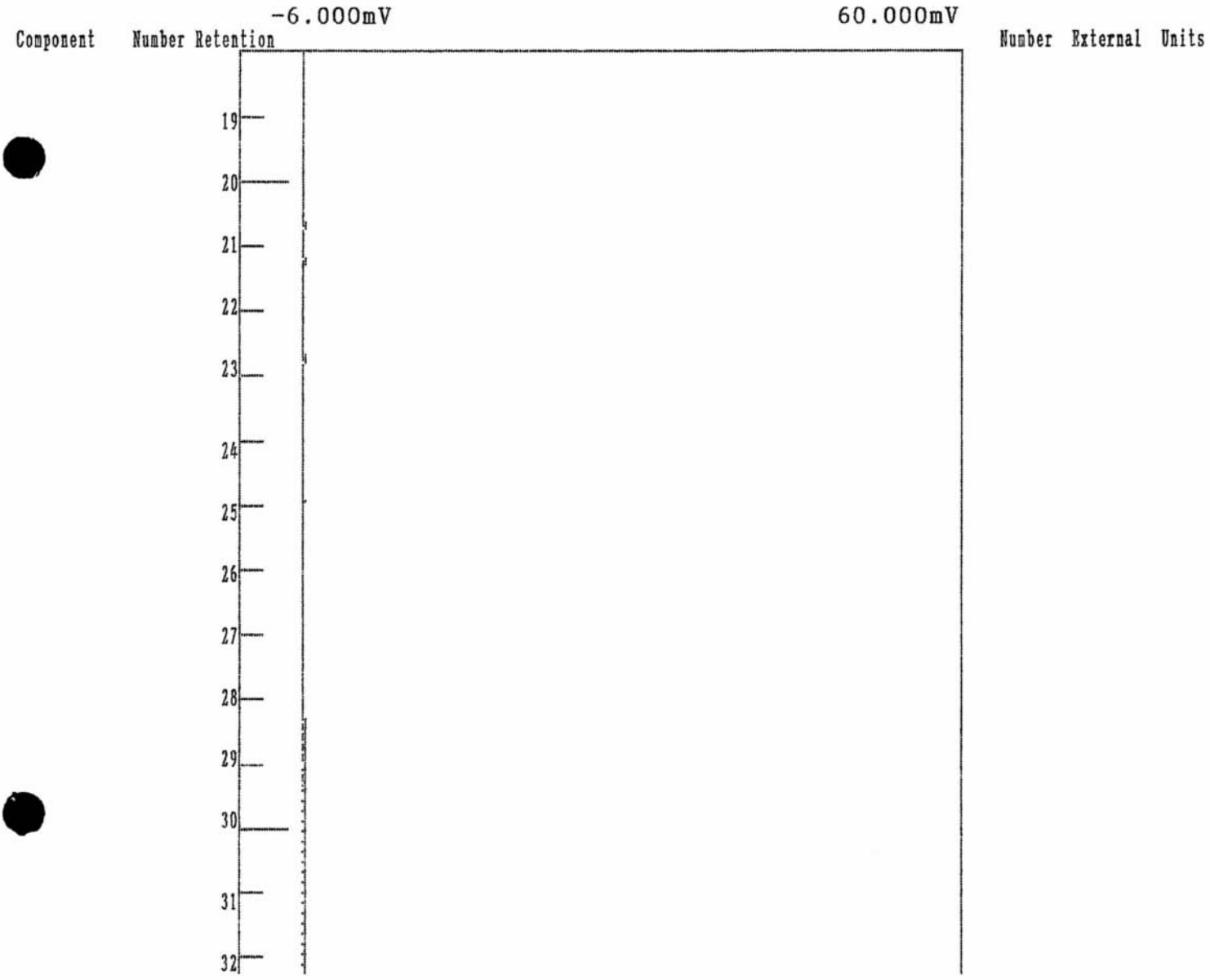
Benzene

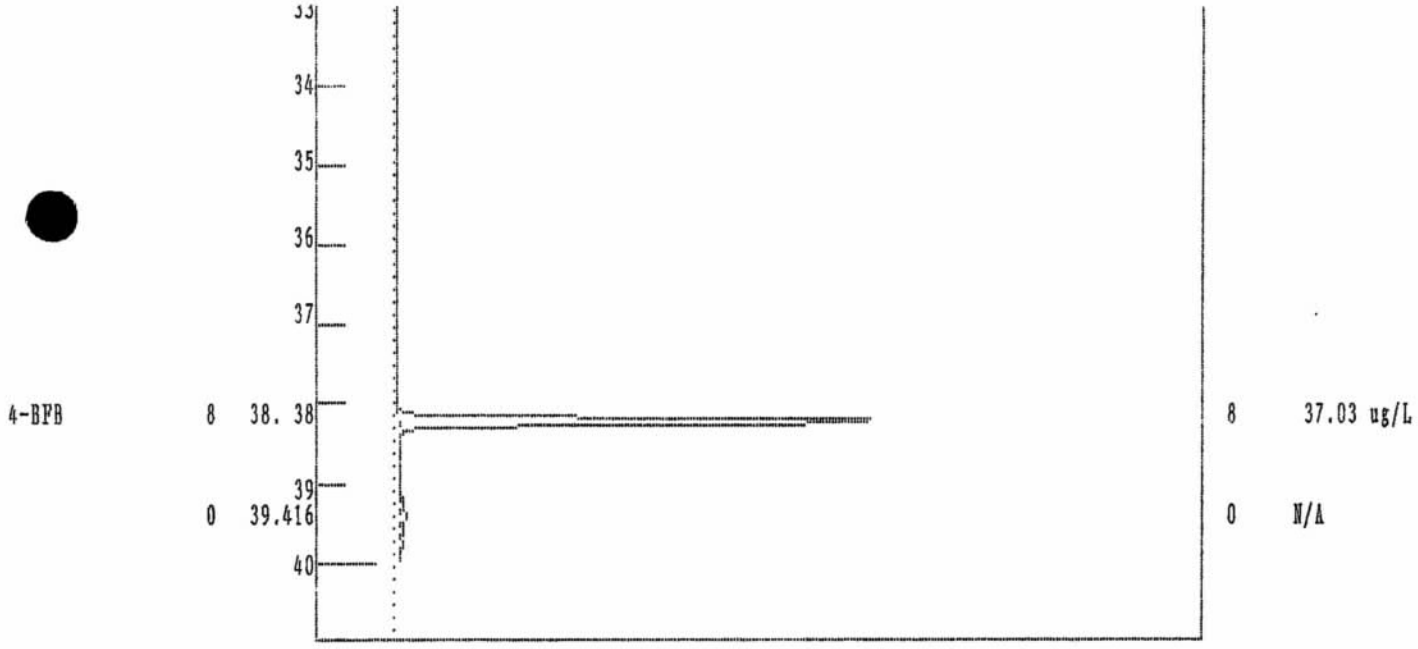
>1

MBTEX

>1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 08:05:03
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-44 SLED
Operator : TERRY L. TEATE





Component		Number	Retention	Area	External	Units
4-BFB		8	38.216	218.20	37.03	ug/L
	1			**218.20**	**37.03**	

MTBE

>1

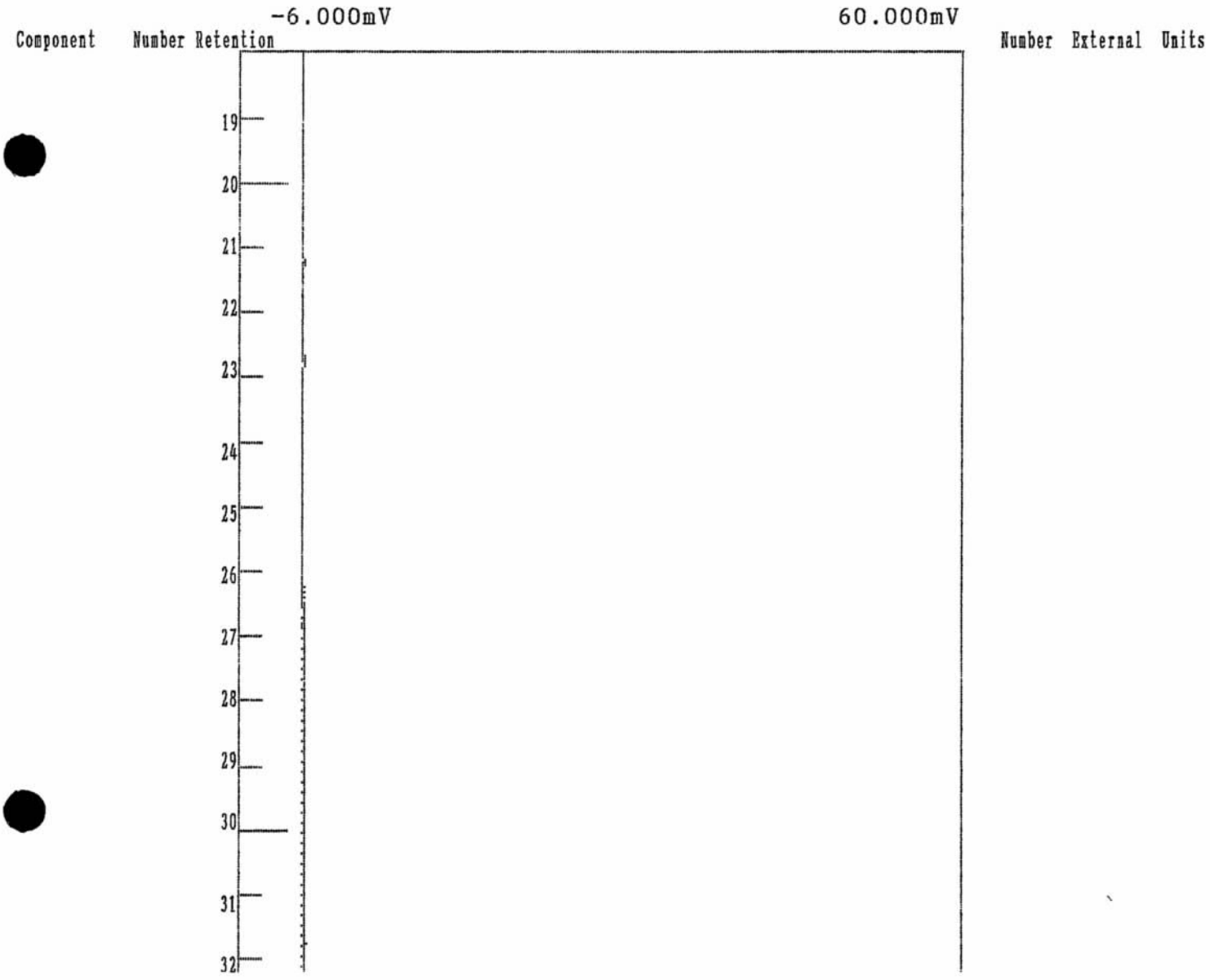
Benzene

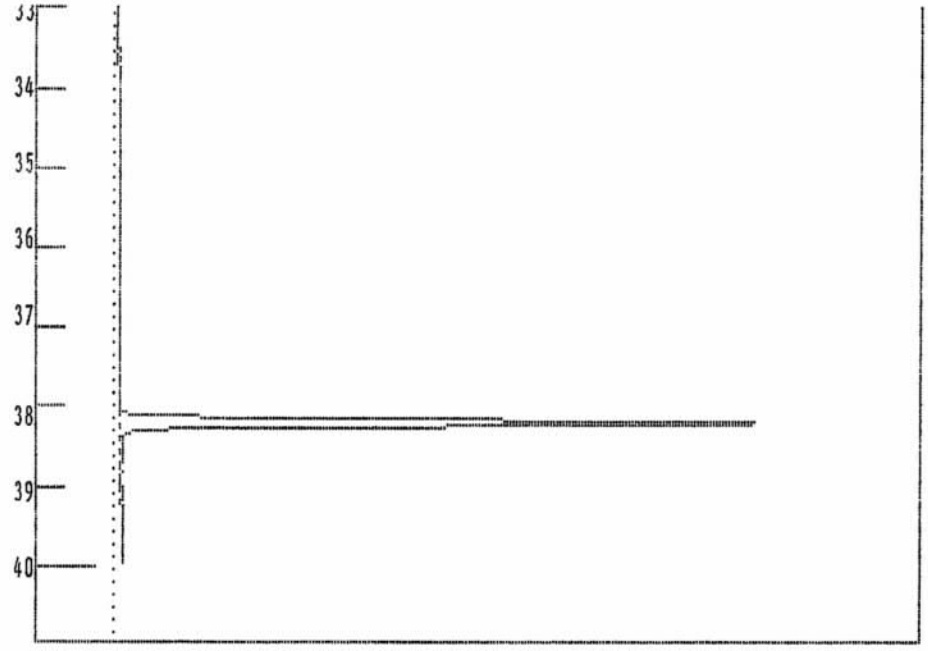
>1

MBTEx

>1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 19:18:28
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-44D SLED
Operator : TERRY L. TEATE





4-BFB 8 38.38 8 46.53 ug/L

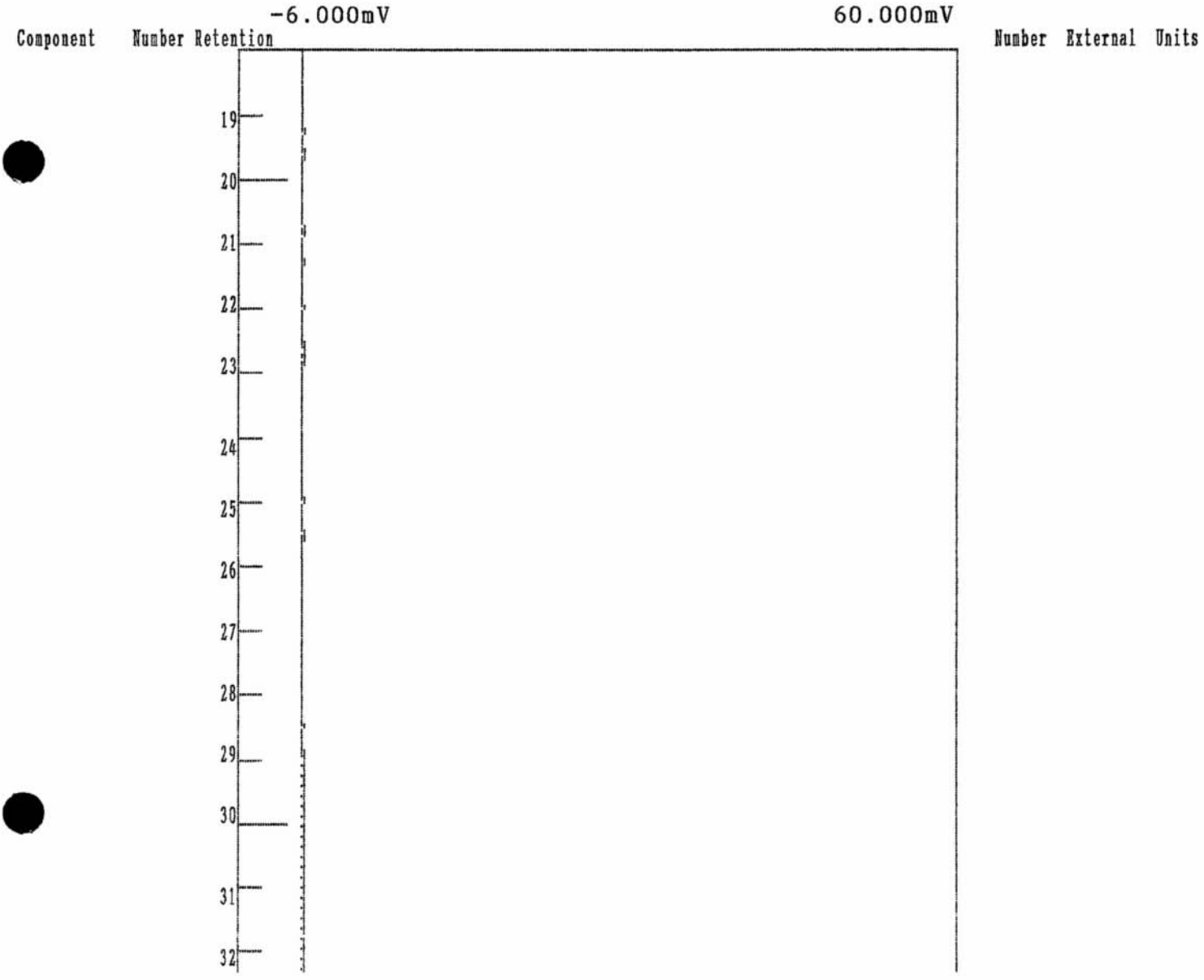
Component	Number	Retention	Area	External	Units
4-BFB	8	38.200	260.83	46.53	ug/L
	1		**260.83**	**46.53**	

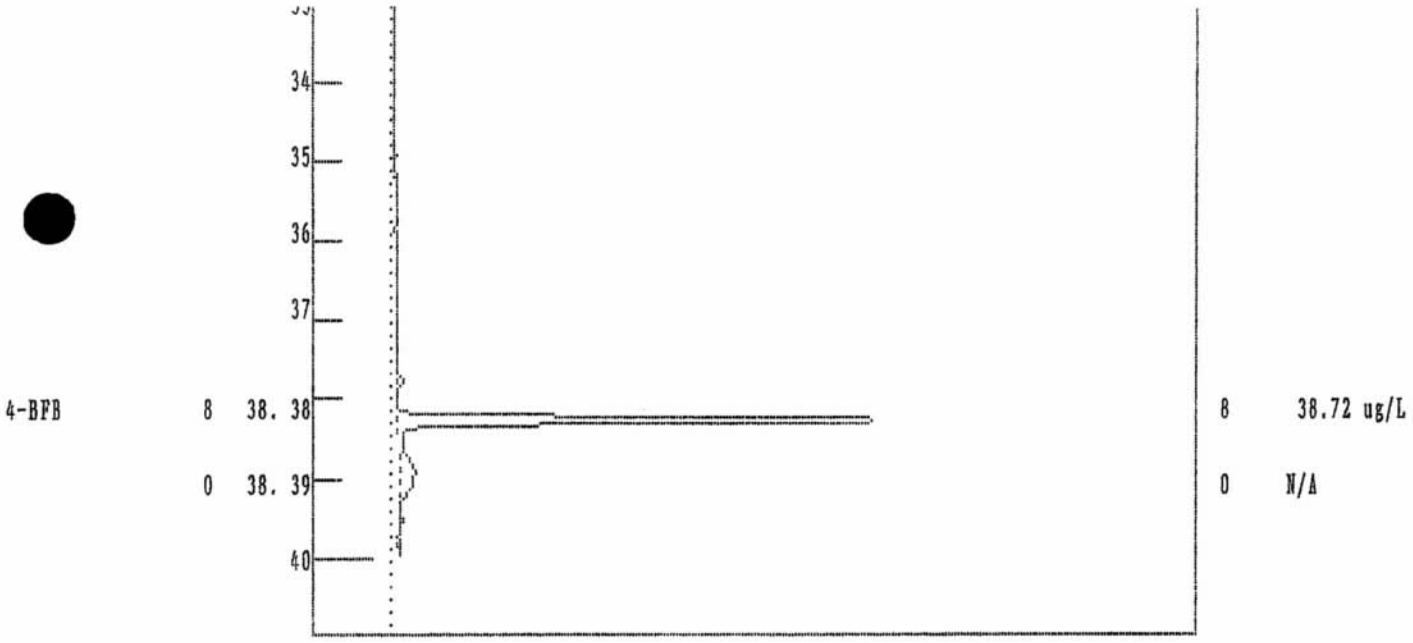
MTBE >1

benzene >1

MBTEX >1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 05:57:50
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-45 SLED
Operator : TERRY L. TEATE





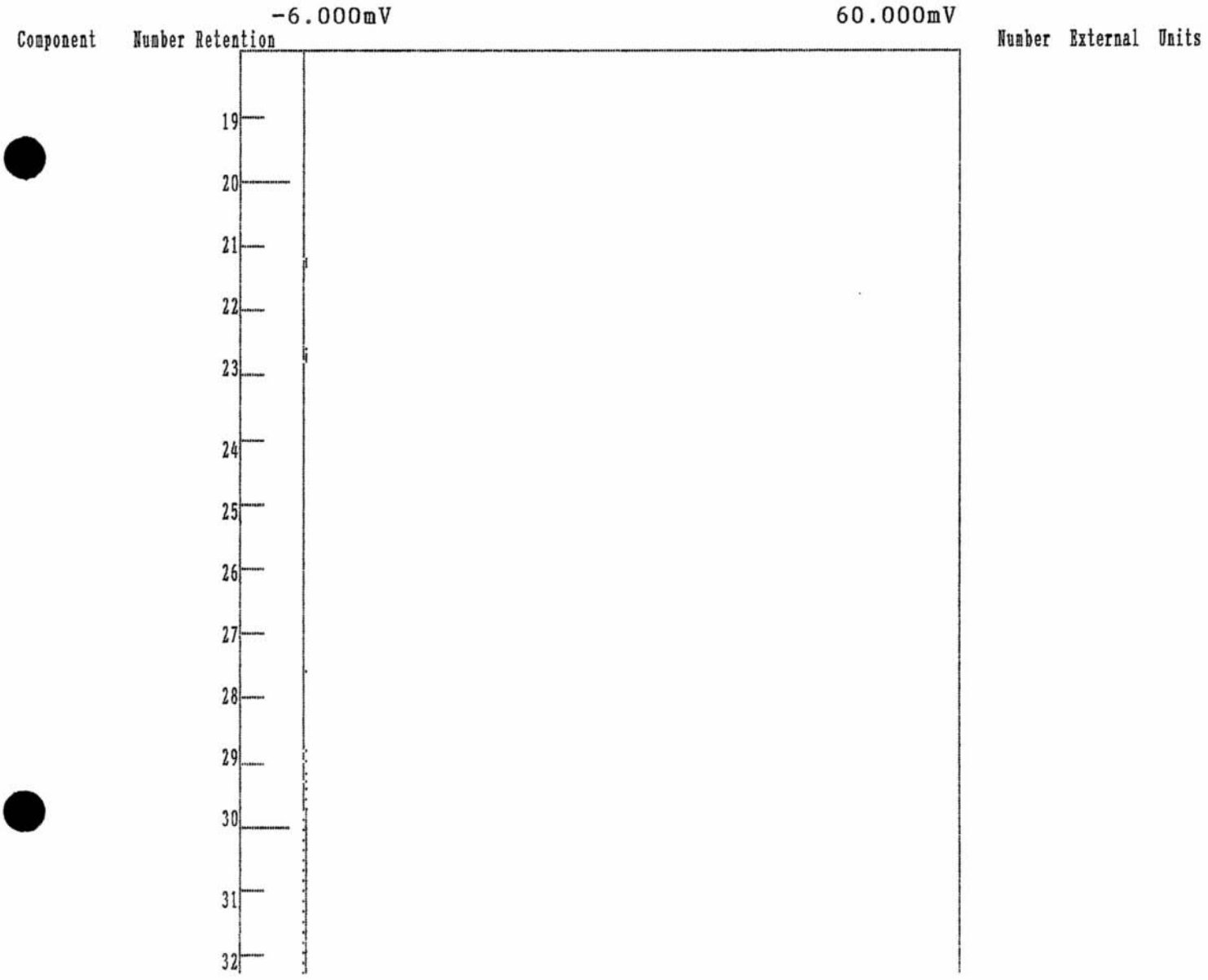
Component		Number	Retention	Area	External	Units
4-BFB		8	38.258	225.79	38.72	ug/L
	1			**225.79**	**38.72**	

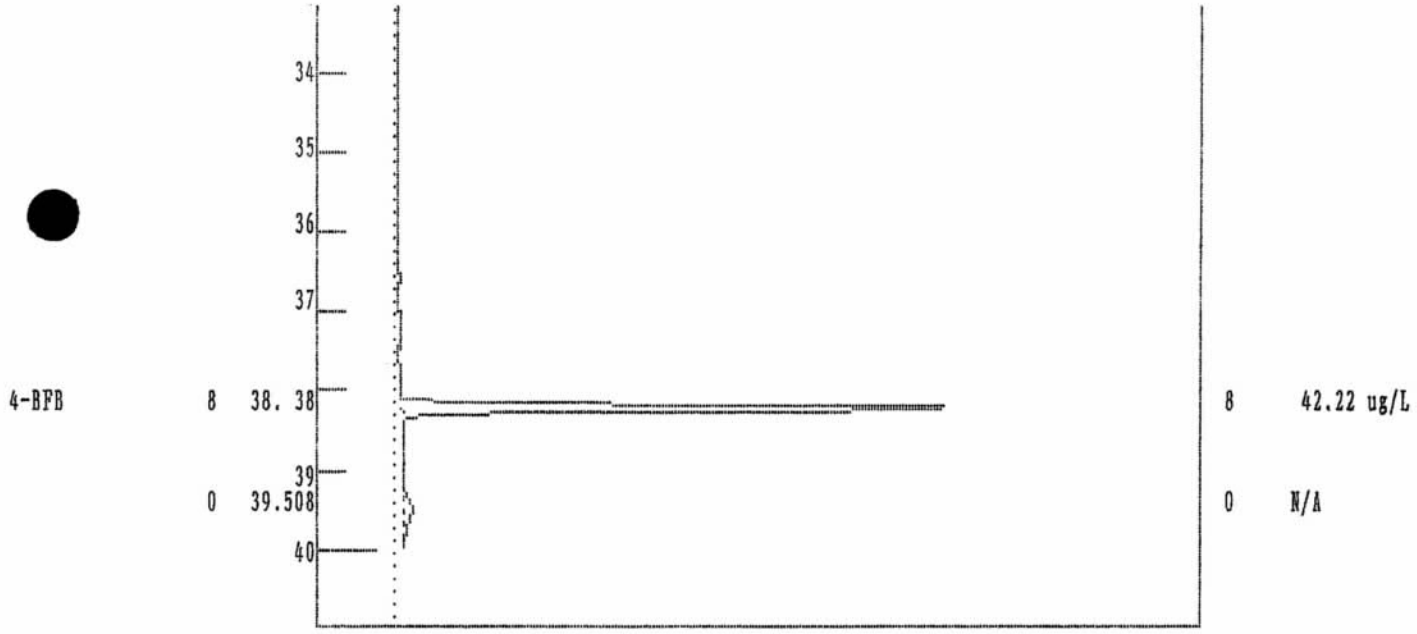
MTBE >1

Benzene >1

MBTEX >1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 07:13:17
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-45D SLED
Operator : TERRY L. TEATE





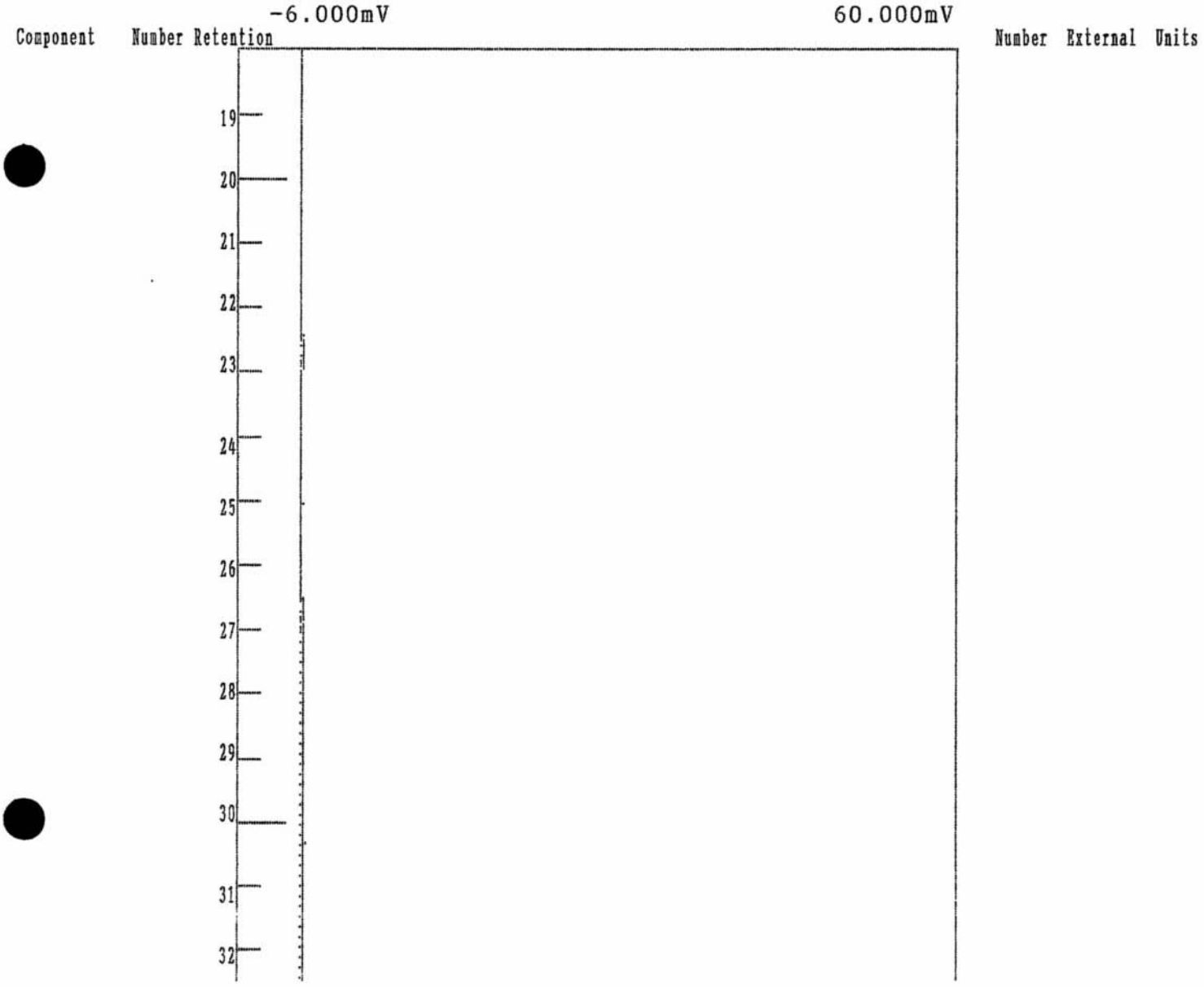
Component	Number	Retention	Area	External	Units
4-BFB	8	38.216	241.50	42.22	ug/L
	1		**241.50**	**42.22**	

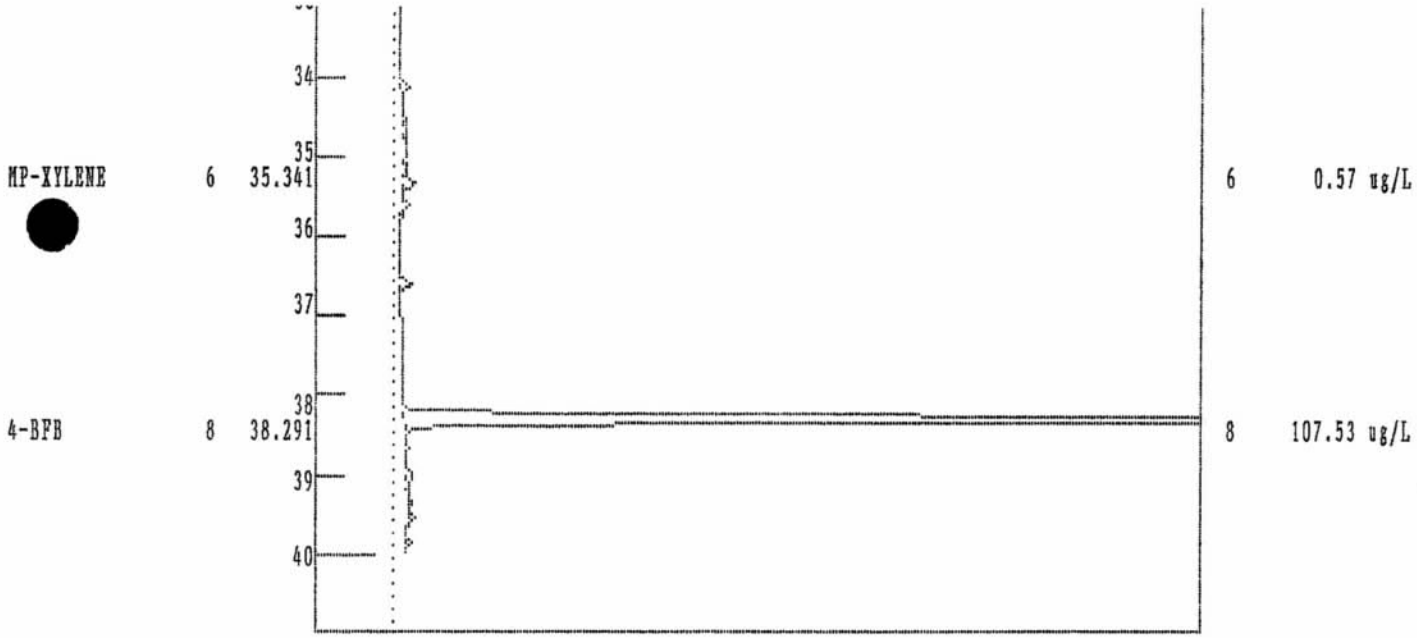
MTBE >1

benzene >1

MBTEX >1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 03:21:56
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-46 SLED
Operator : TERRY L. TEATE





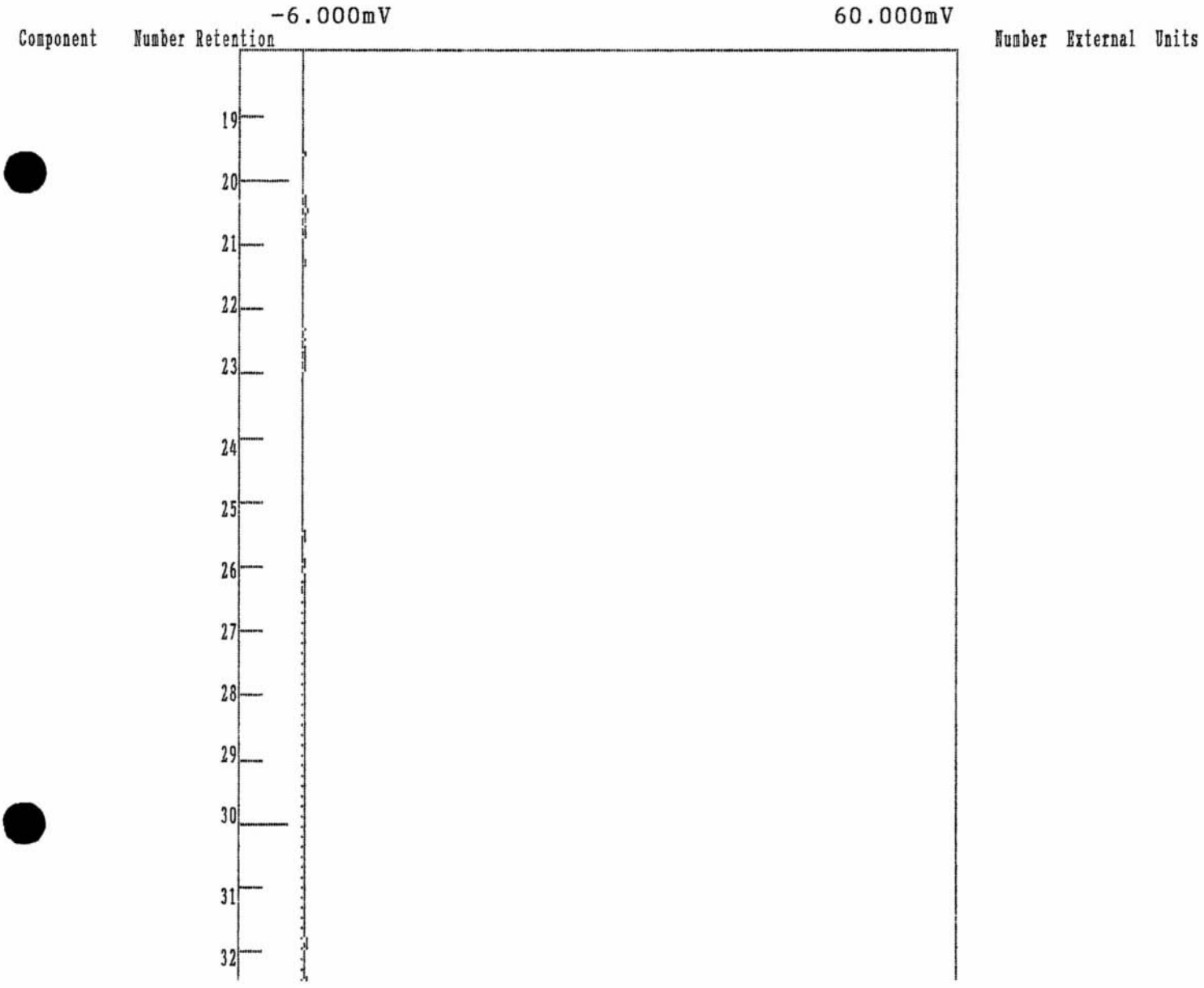
Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.341	5.11	0.57	ug/L
4-BFB	8	38.291	534.42	107.53	ug/L
	2		539.53	108.10	

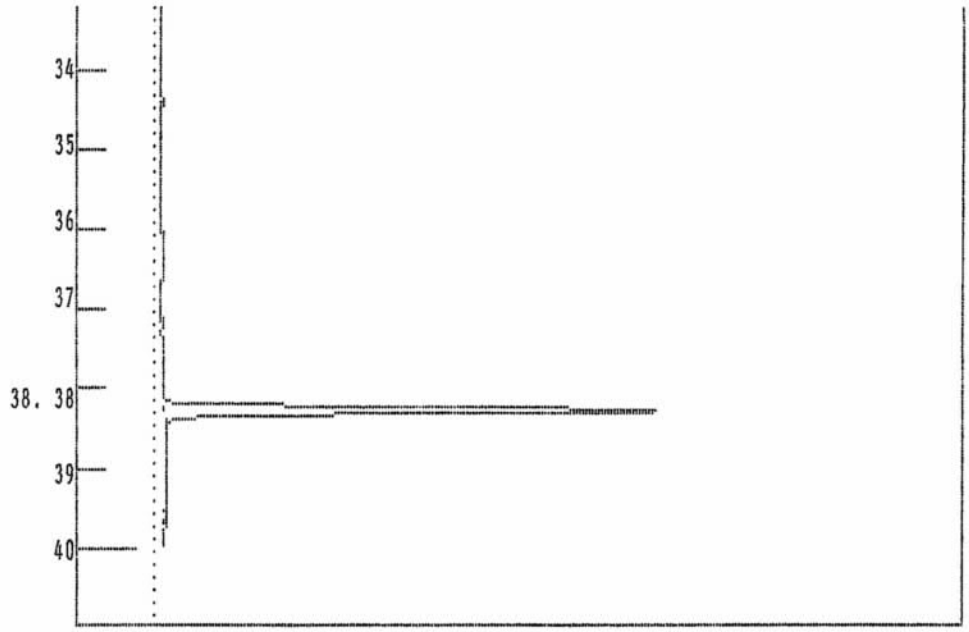
MTBE >1

Benzene >1

MBTEX >1

Client : Broad Rover Rd
Collected : 08/09/12
Analysis date : 12/12/2010 05:13:36
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-46D SLED
Operator : TERRY L. TEATE





4-BFB 8 38. 38 8 36.72 ug/L

Component	Number	Retention	Area	External	Units
4-BFB	8	38.266	216.82	36.72	ug/L
	1		**216.82**	**36.72**	

MTBE

Benzene

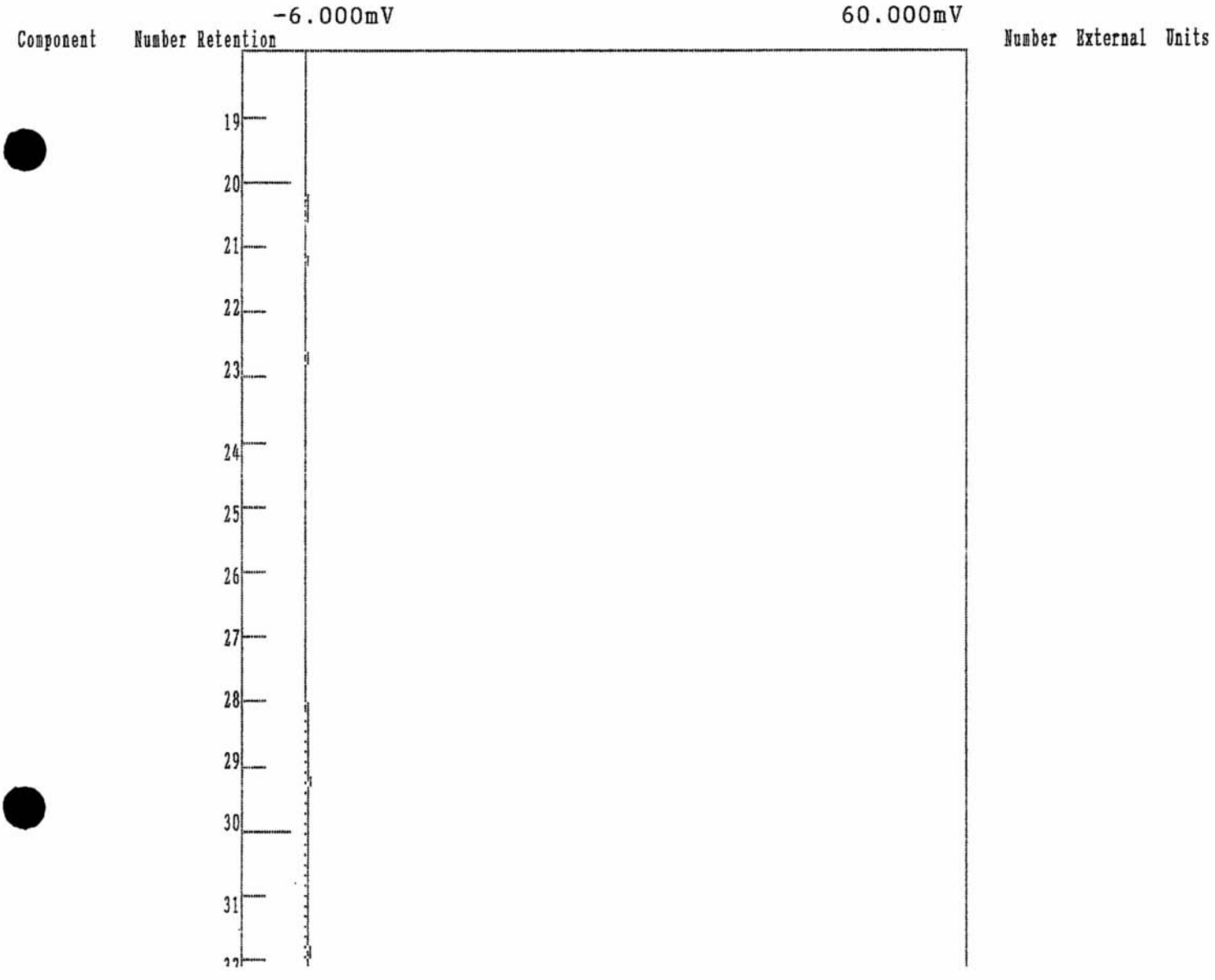
MBTEX

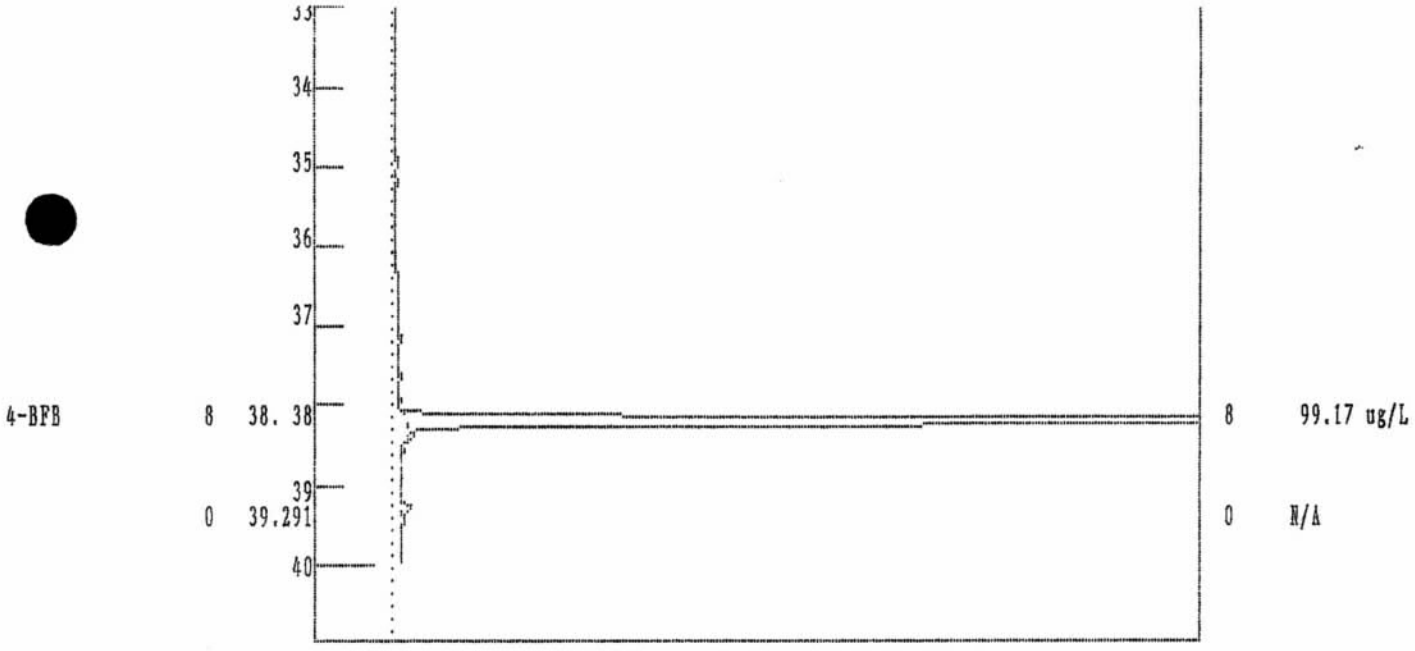
>1

>1

>1

Client : Broad River BP
Collected : 08/13/12
Analysis date : 12/15/2010 20:54:24
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-47
Operator : TERRY L. TEATE





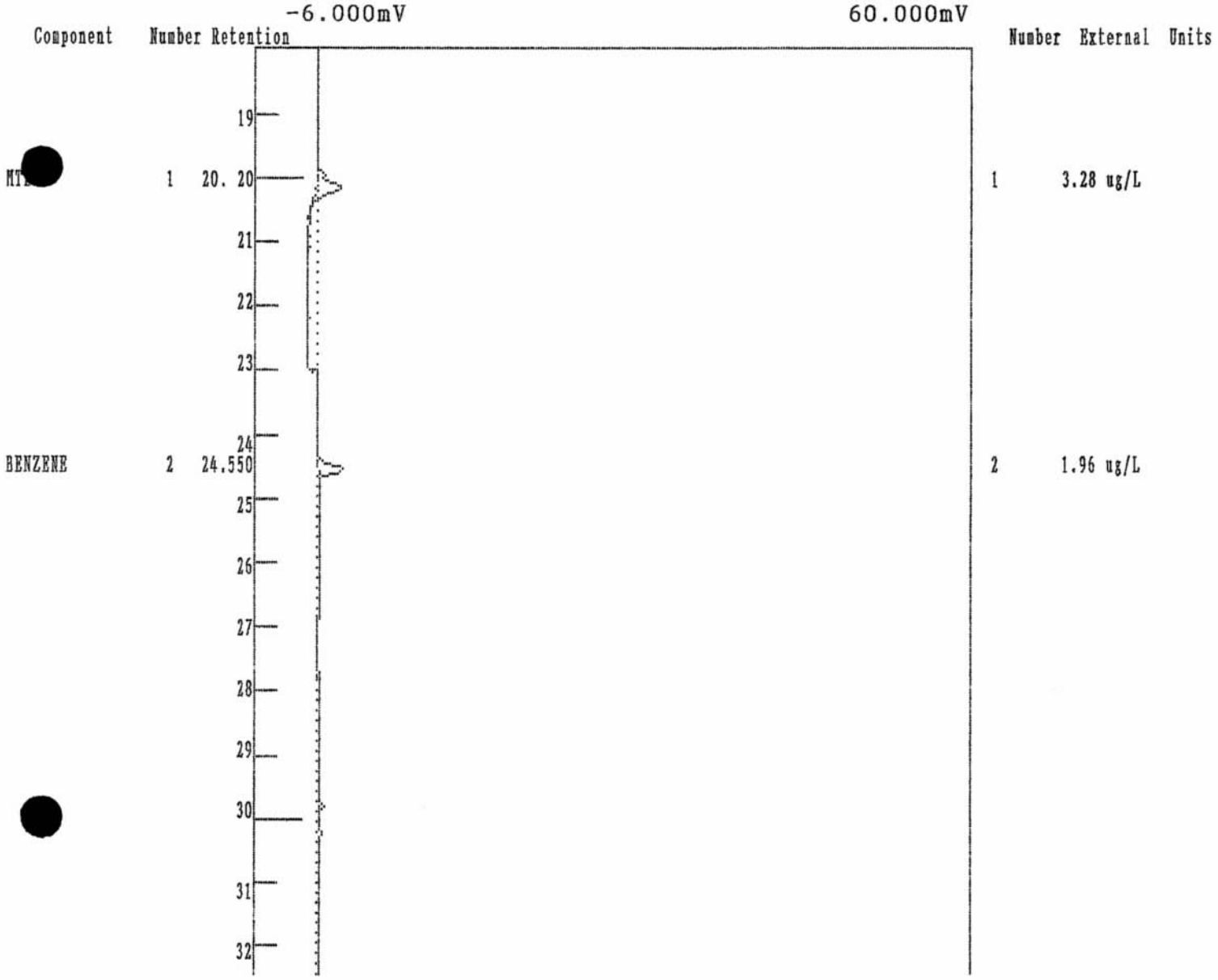
Component	Number	Retention	Area	External	Units
4-BFB	8	38.191	496.92	99.17	ug/L
	1		**496.92**	**99.17**	

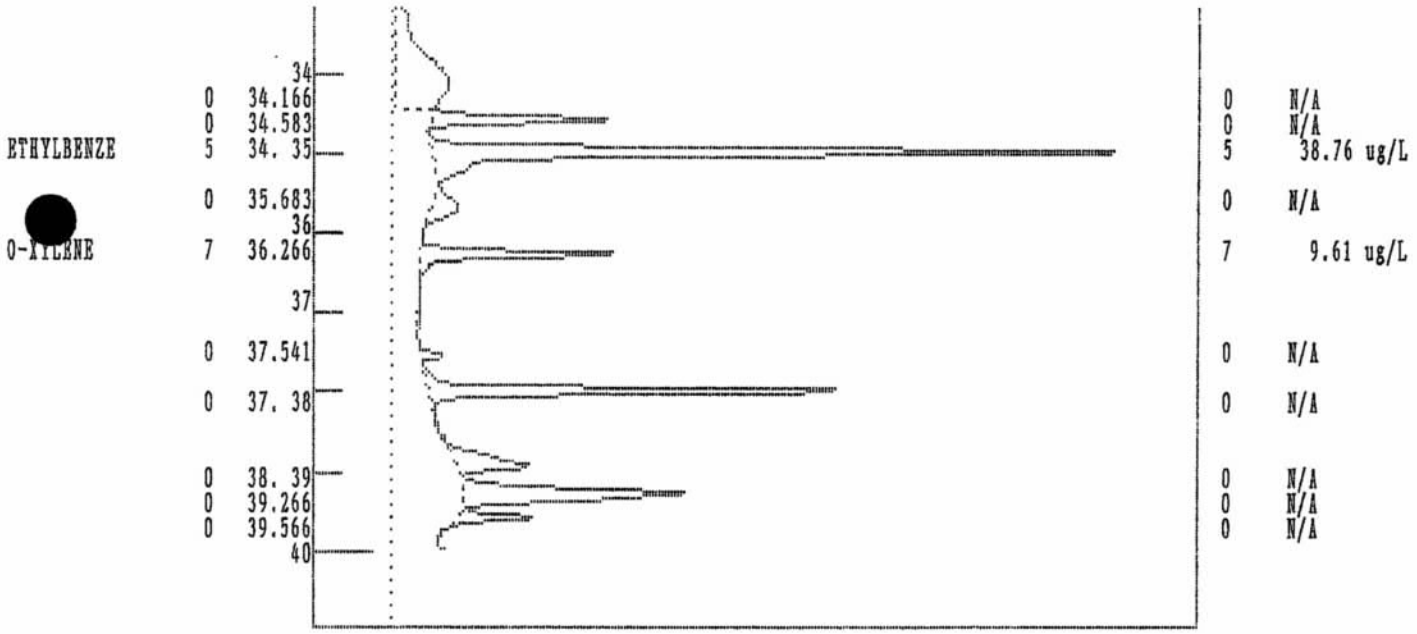
MTBE Benzene MBTEX

3 2 54

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/25/2010 18:18:28
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-26D
Operator : TERRY L. TEATE

TW-26D





Component	Number	Retention	Area	External	Units
MTBE	1	20.166	26.00	3.28	ug/L
BENZENE	2	24.550	20.95	1.96	ug/L
ETHYLBENZE	5	34.983	362.68	38.76	ug/L
O-XYLENE	7	36.266	96.30	9.61	ug/L
	4		505.93	53.61	

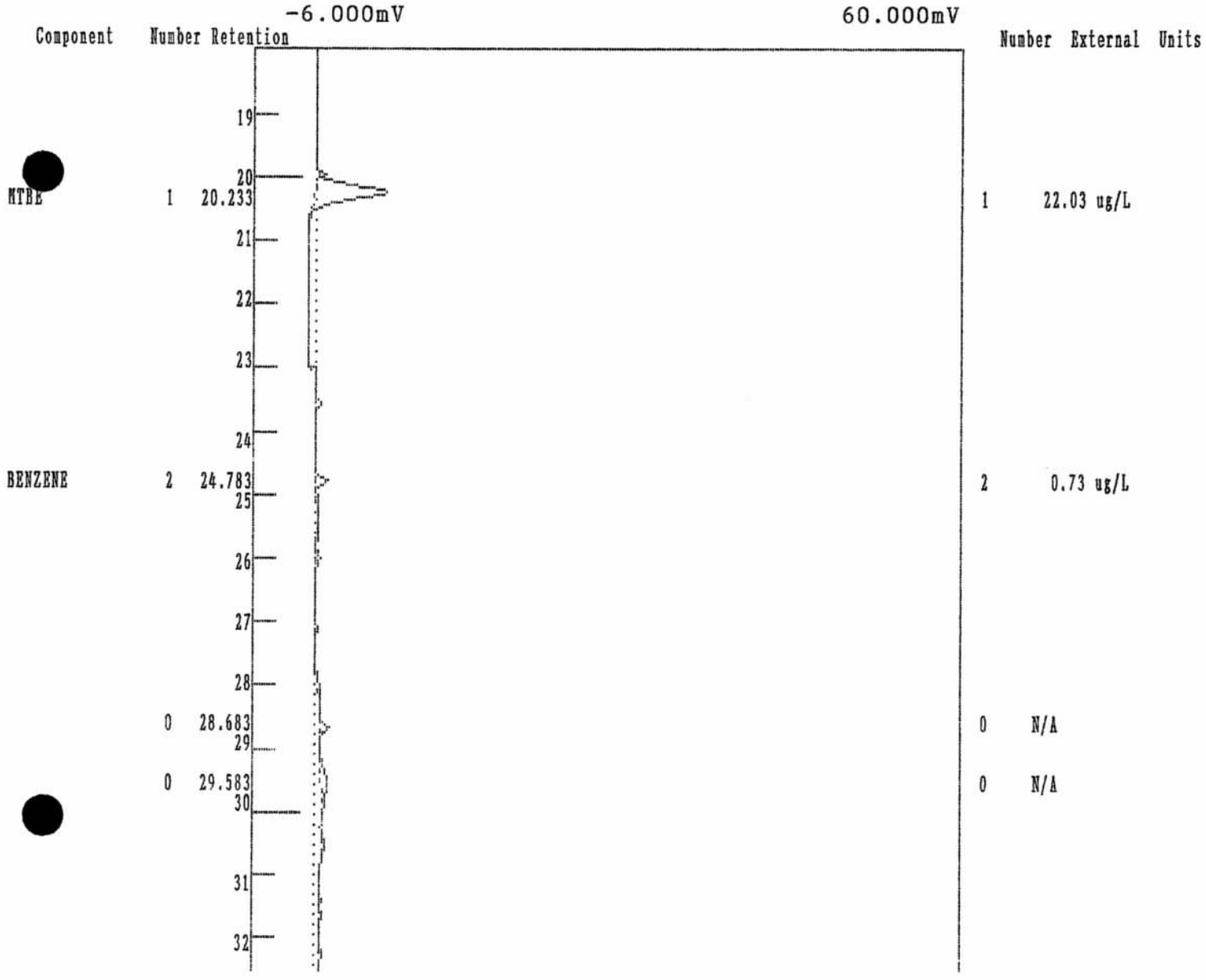
MTBE 22

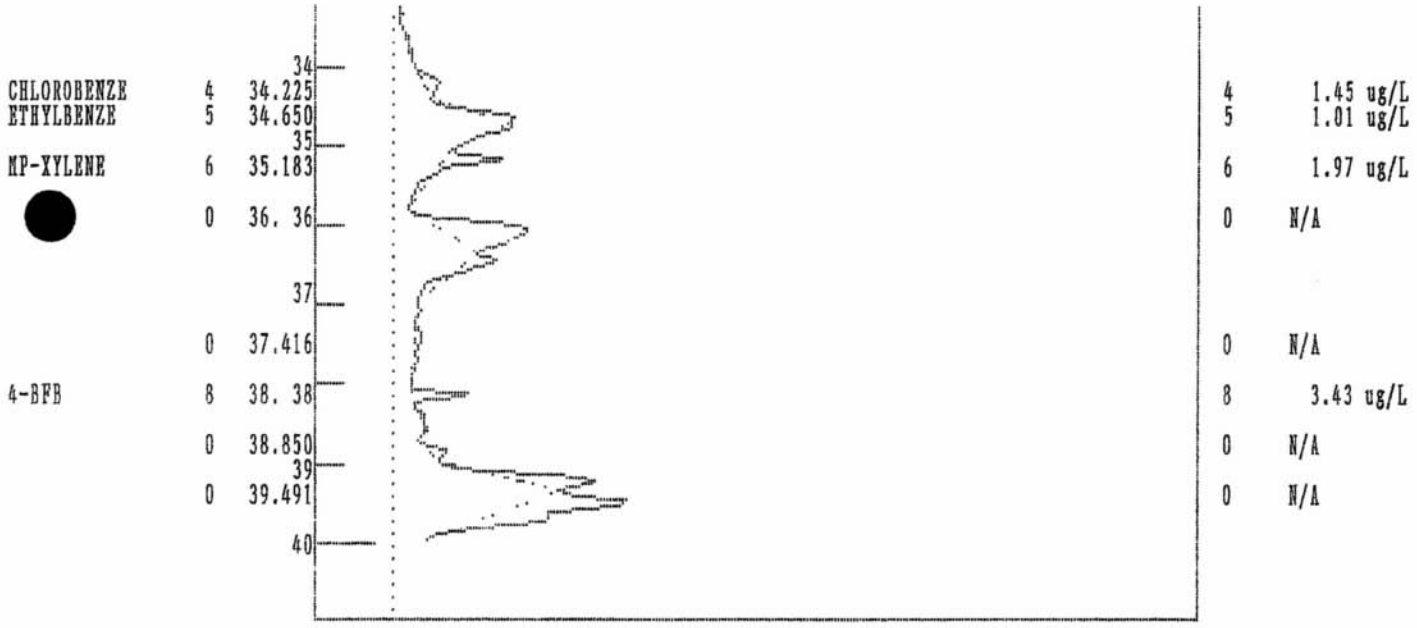
Benzene 1

MBTEX 27

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/25/2010 17:12:48
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-26
Operator : TERRY L. TEATE

TW-26





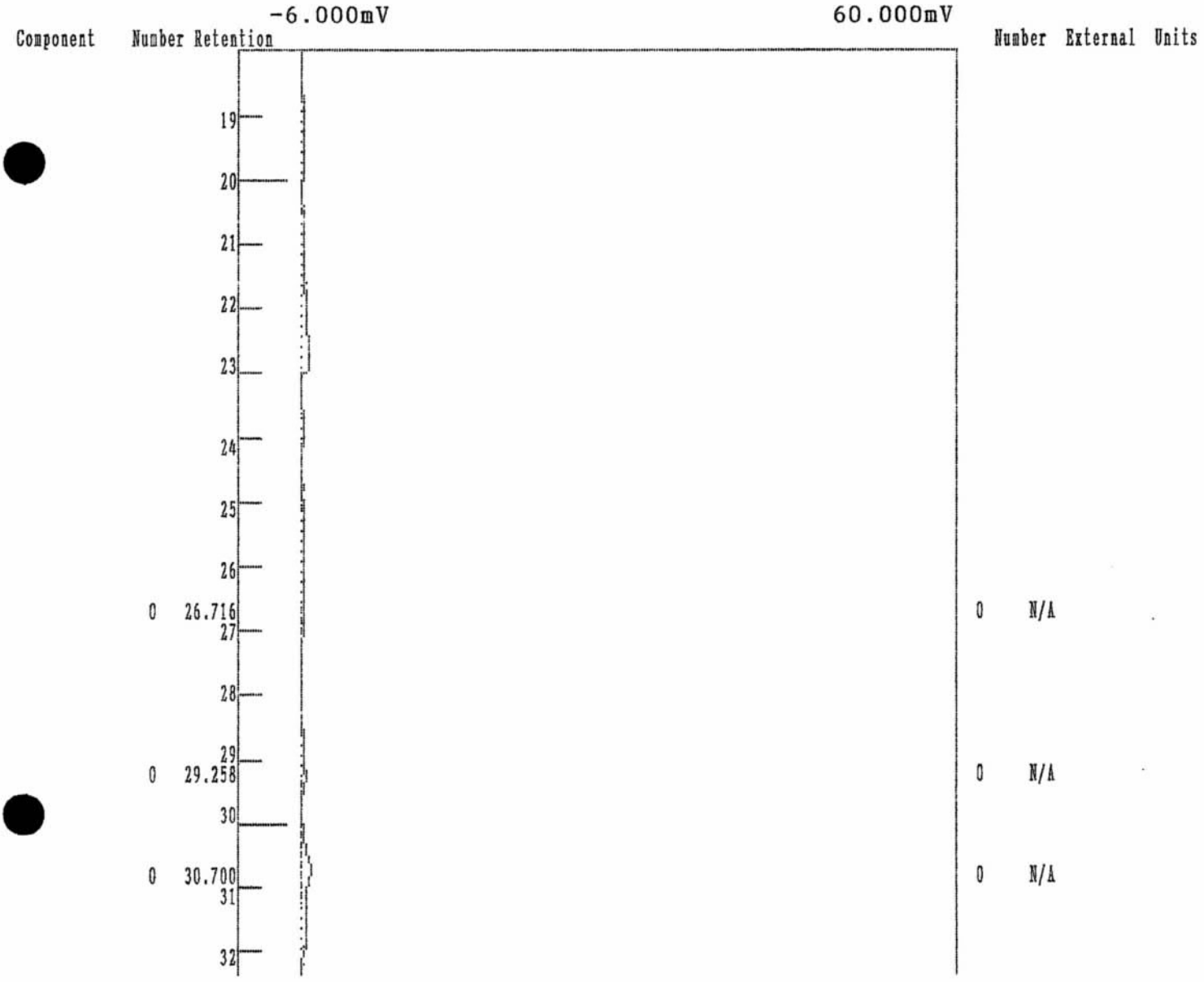
Component	Number	Retention	Area	External	Units
MTBE	1	20.233	99.58	22.03	ug/L
BENZENE	2	24.783	7.78	0.73	ug/L
CHLOROBENZE	4	34.225	15.28	1.45	ug/L
ETHYLBENZE	5	34.650	9.17	1.01	ug/L
MP-XYLENE	6	35.183	17.72	1.97	ug/L
4-BFB	8	38.125	23.30	3.43	ug/L
	6		172.83	30.62	

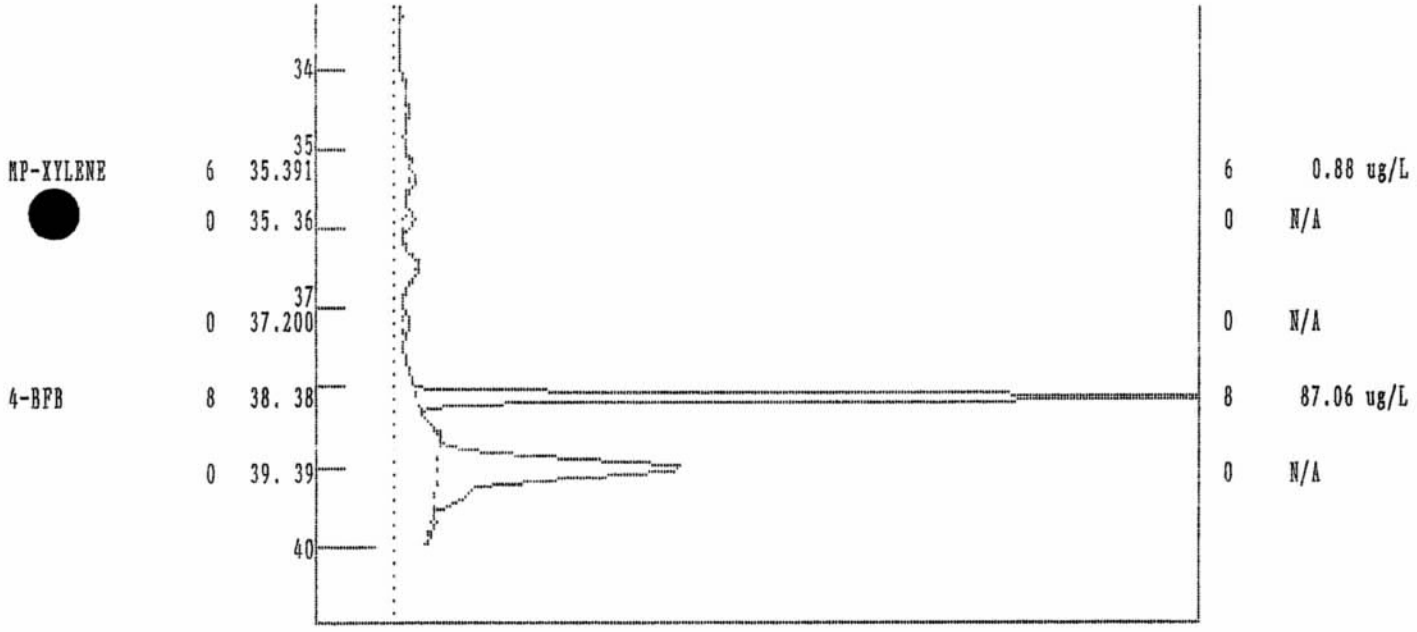
MTBE Benzene MBTEX

>1 >1 >1

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/25/2010 19:17:33
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-50-D
Operator : TERRY L. TEATE

TW-50-D





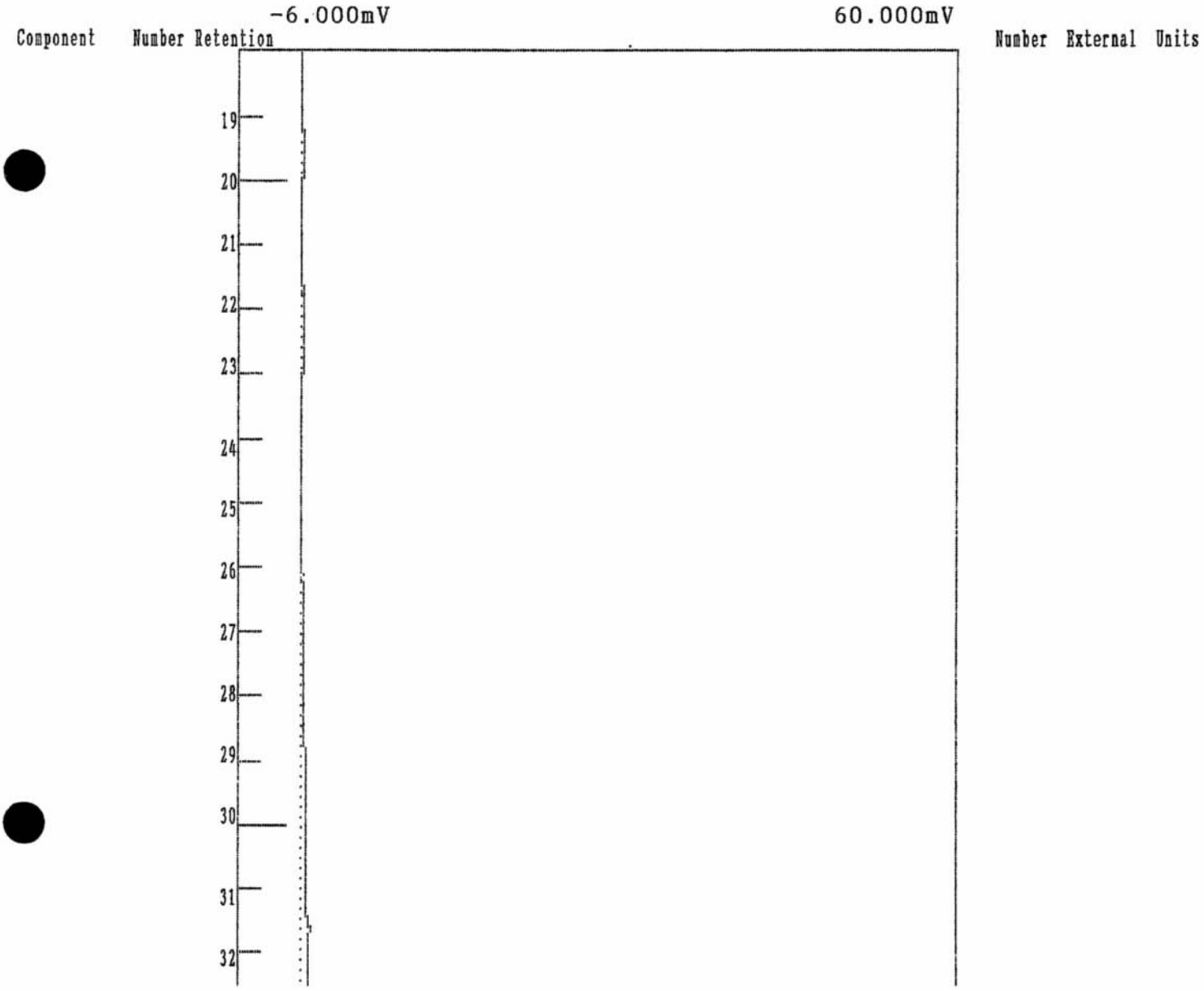
Component	Number	Retention	Area	External	Units
MP-XYLENE	6	35.391	7.89	0.88	ug/L
4-BFB	8	38.116	442.62	87.06	ug/L
	2		**450.51**	**87.94**	

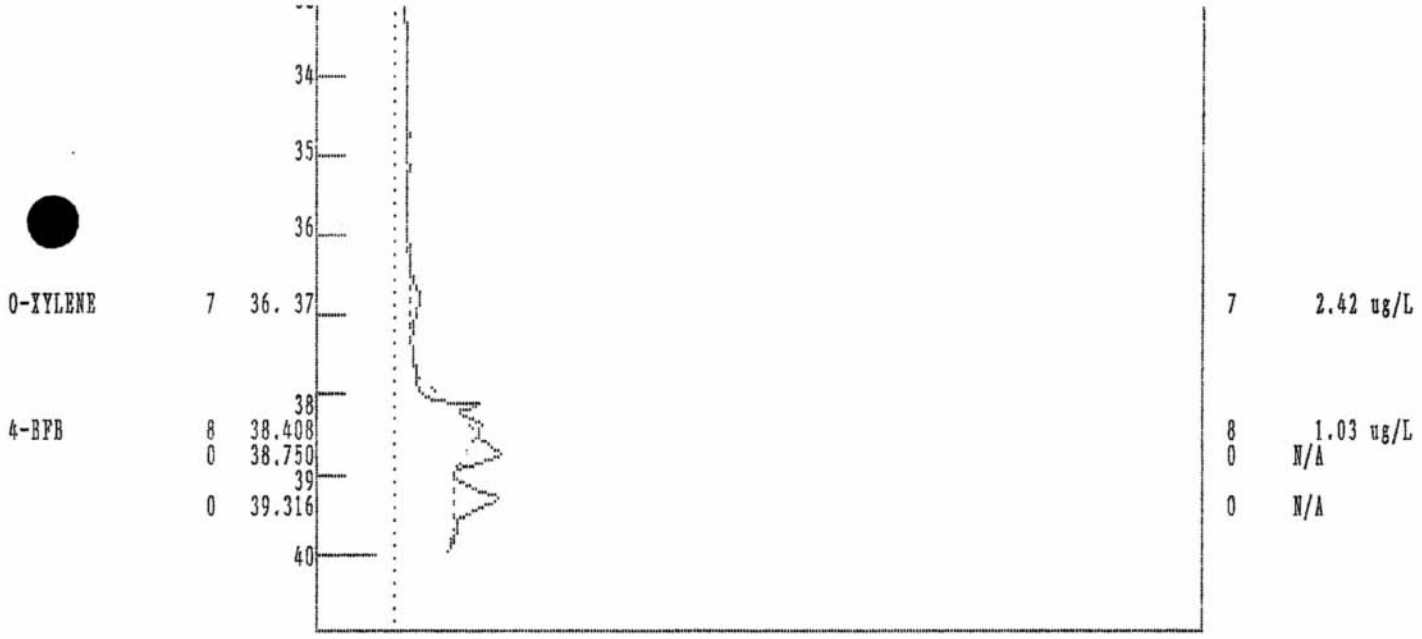
MTBE Benzene MBTEX

71 71 2

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/25/2010 20:45:37
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-51-D
Operator : TERRY L. TEATE

TW-51-D





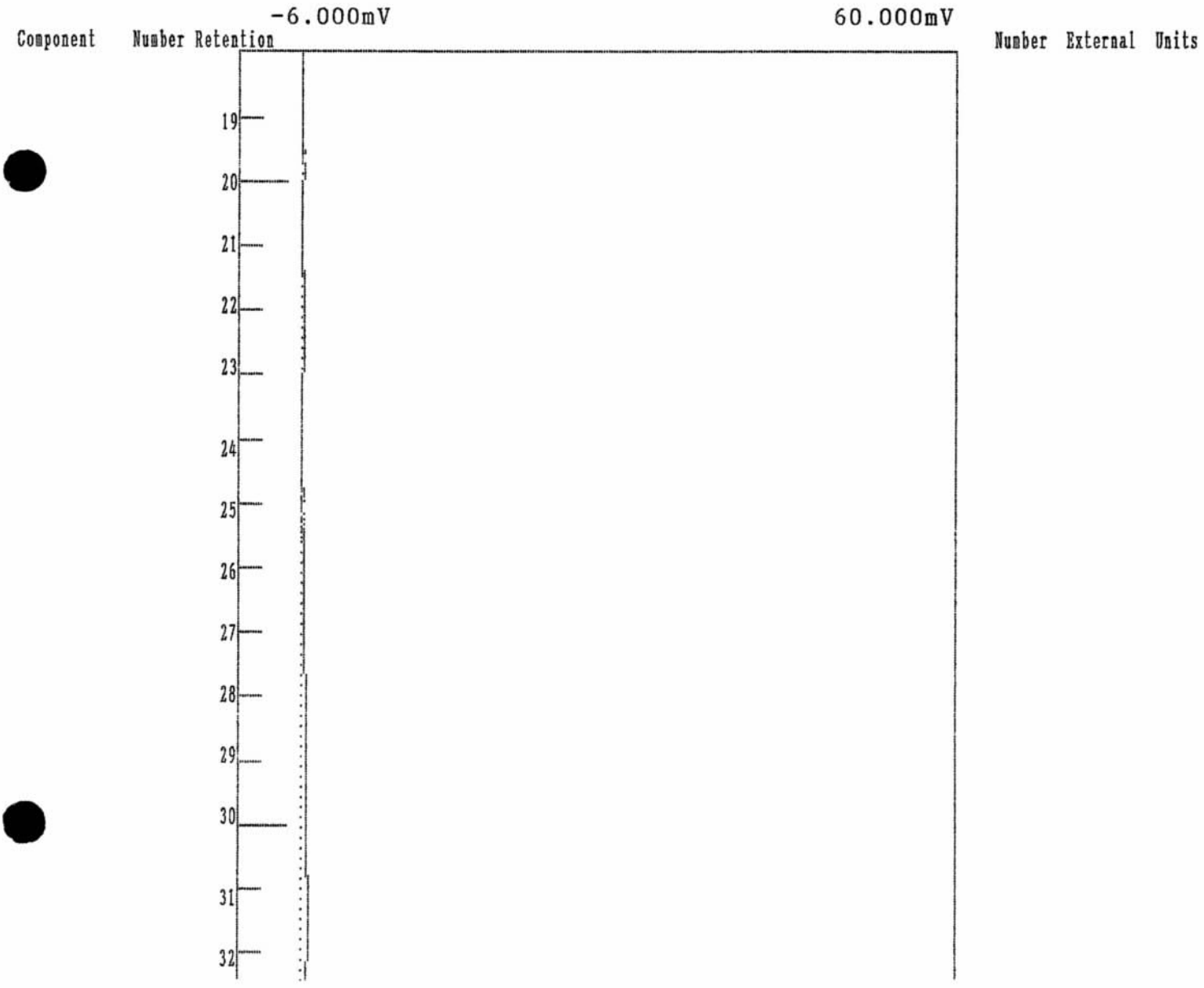
Component	Number	Retention	Area	External	Units
O-XYLENE	7	36.800	19.97	2.42	ug/L
4-BFB	8	38.408	7.02	1.03	ug/L
	2		**26.99**	**3.46**	

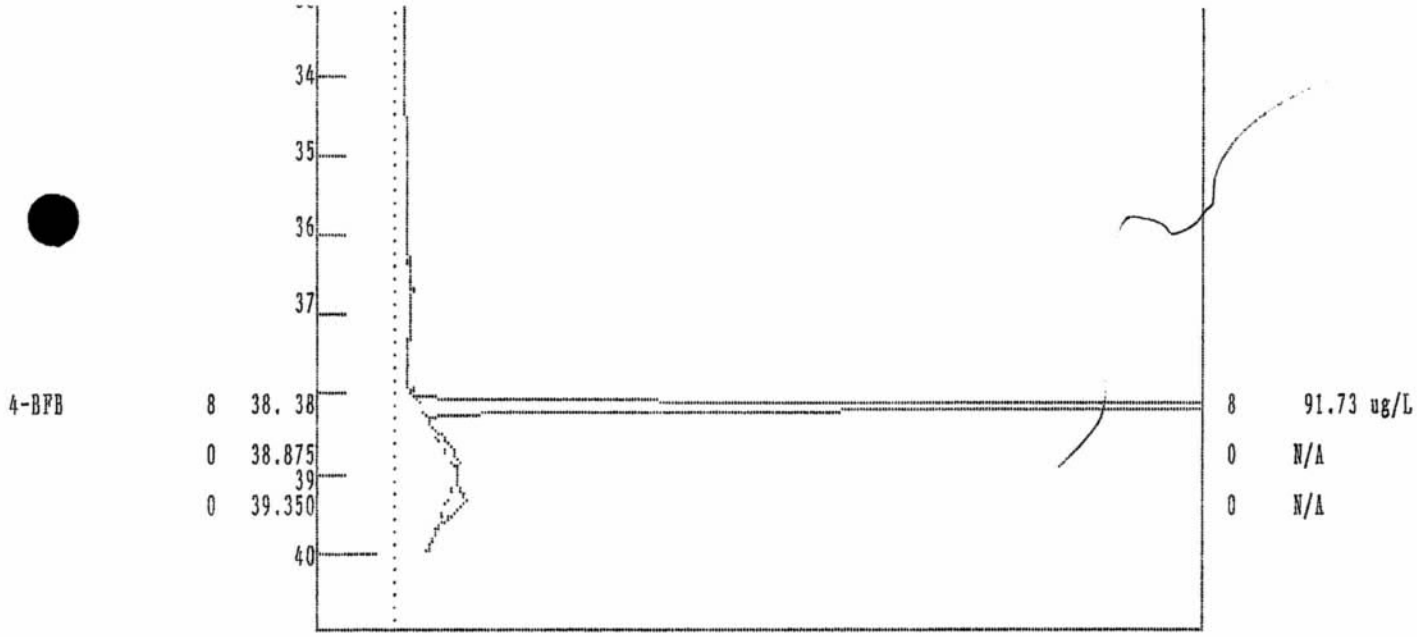
MTBE Benzene MBTEX

71 71 71

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/25/2010 21:40:12
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-52-D
Operator : TERRY L. TEATE

TW-52-D





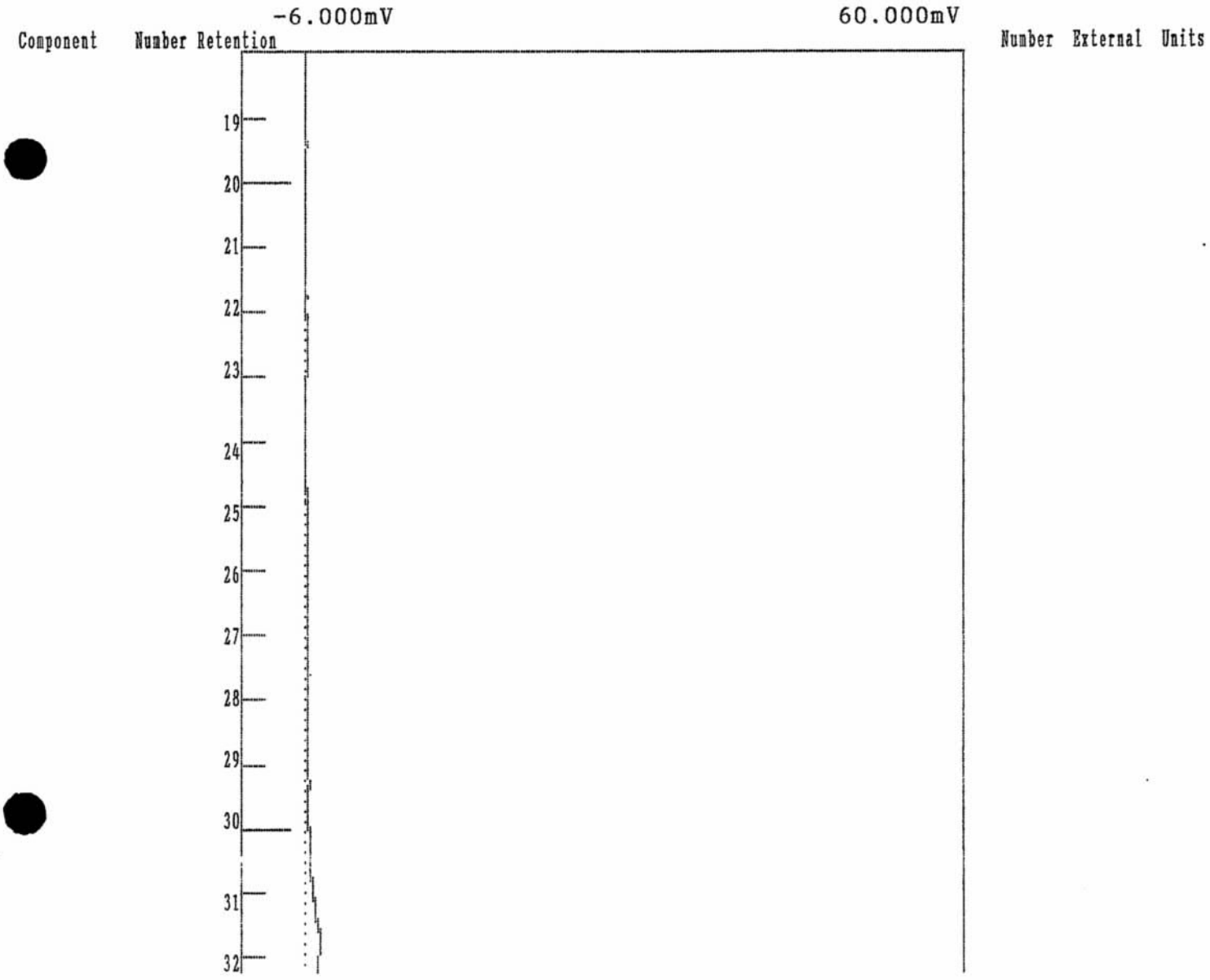
Component	Number	Retention	Area	External	Units
4-BFB	8	38.150	463.58	91.73	ug/L
	1		**463.58**	**91.73**	

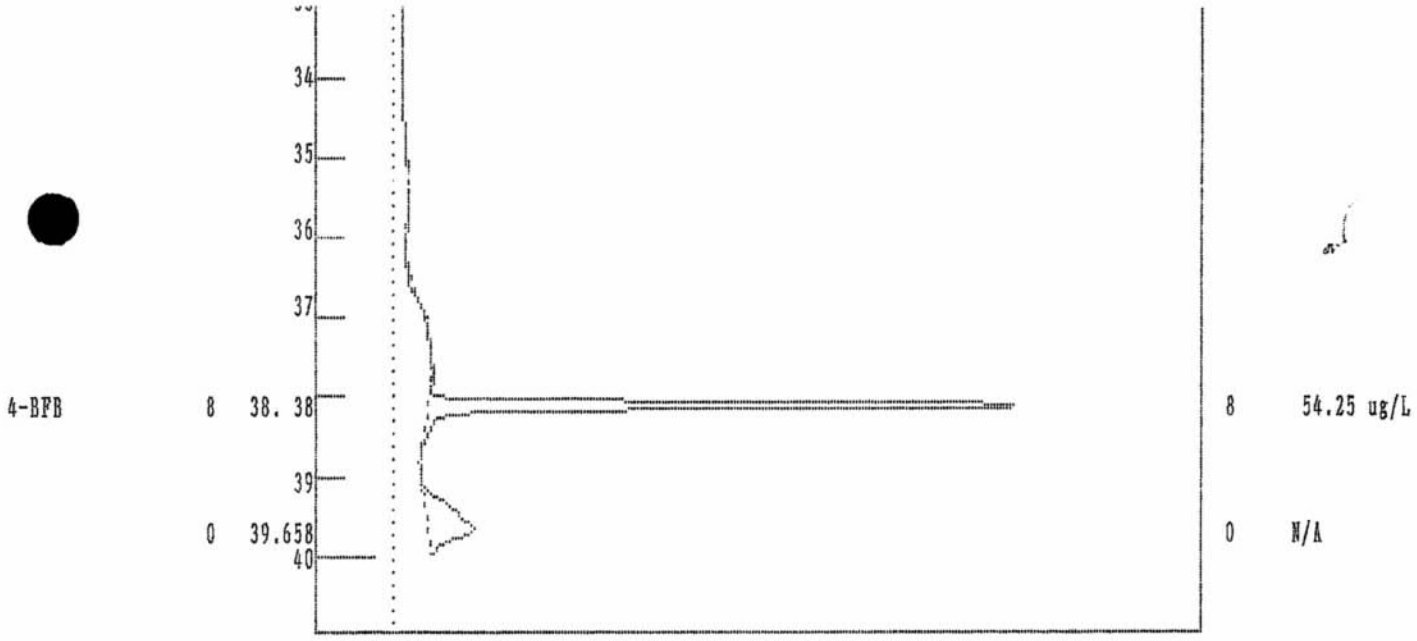
MTBE Benzene MBTEX

71 71 71

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/26/2010 00:28:41
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-53-D
Operator : TERRY L. TEATE

TW-53-D





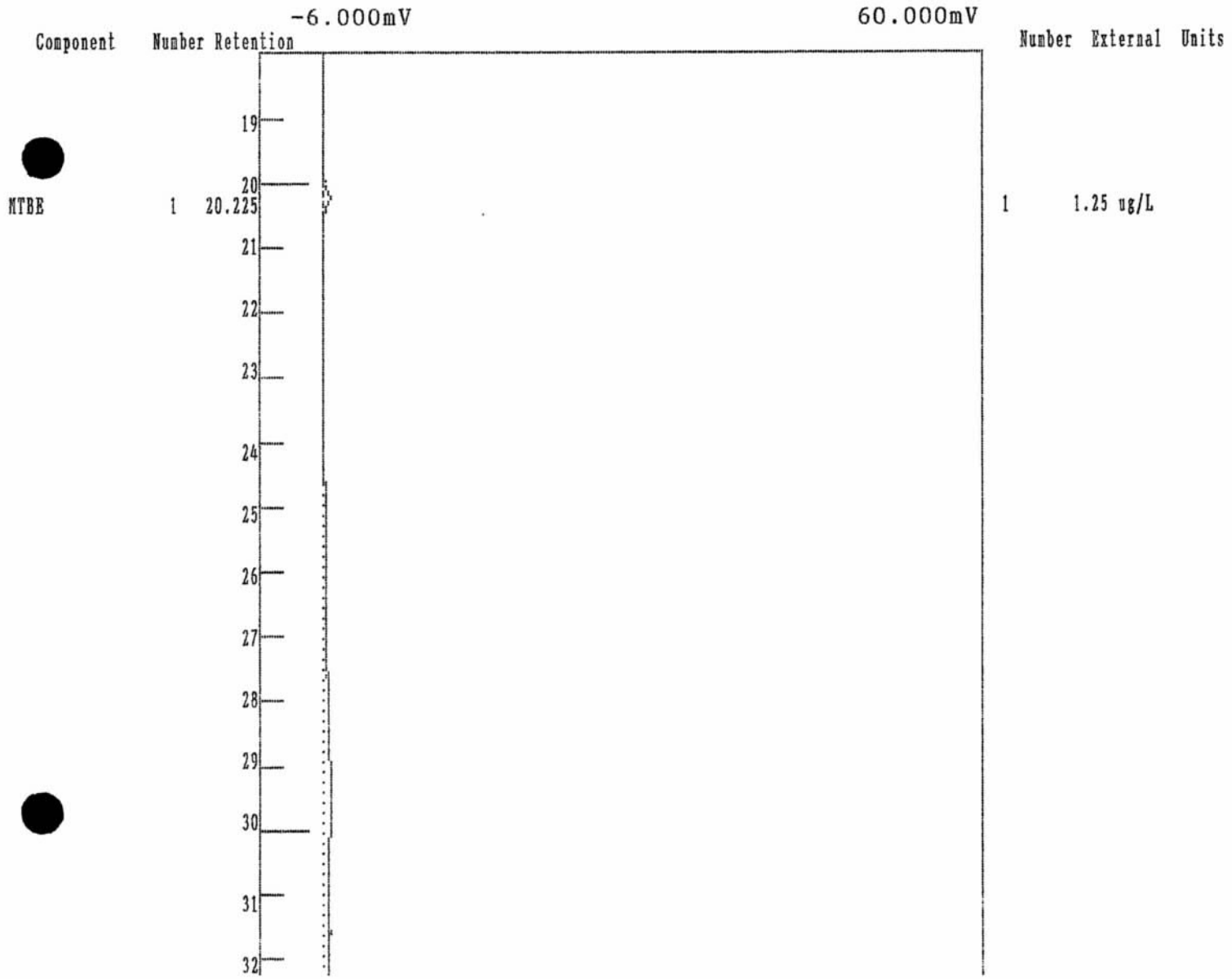
Component	Number	Retention	Area	External	Units
4-BFB	8	38.100	295.47	54.25	ug/L
	1		**295.47**	**54.25**	

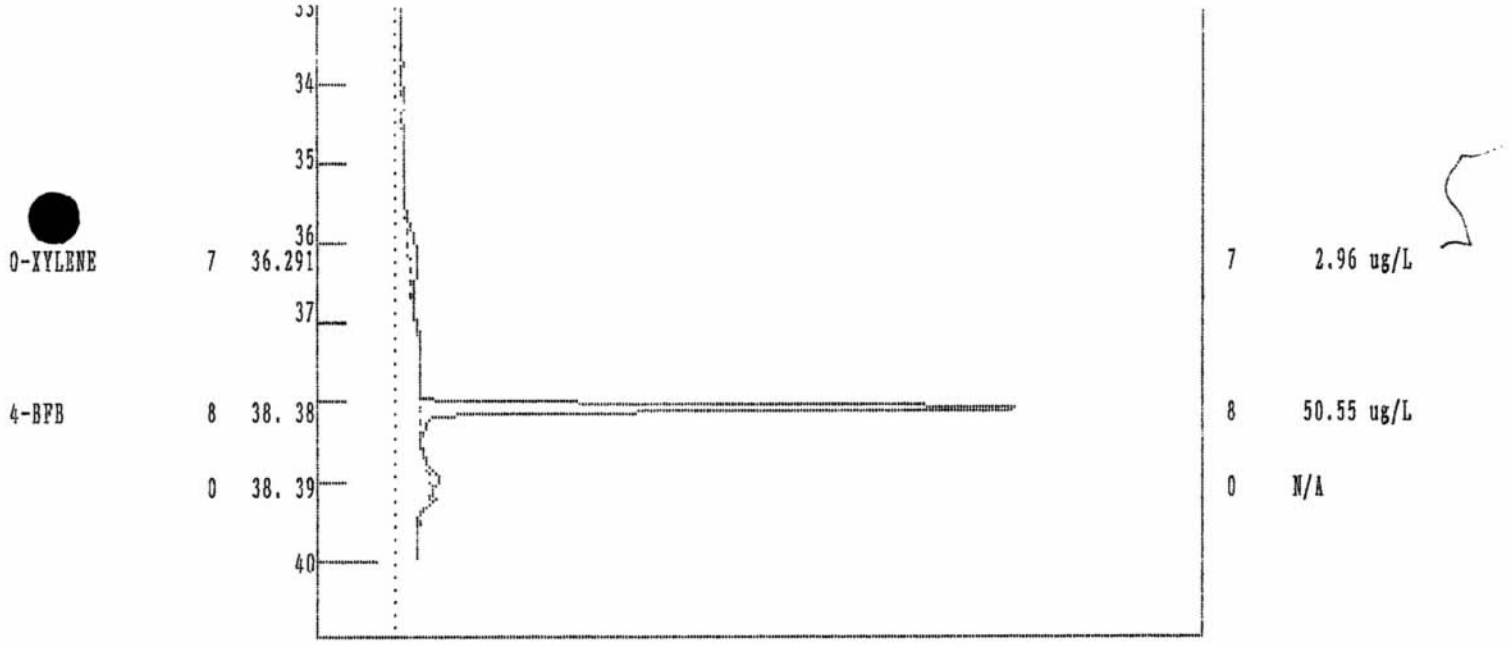
MTBE Benzene MBTEX

1 71 4

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/26/2010 02:40:30
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-54-D
Operator : TERRY L. TEATE

TW-54-D





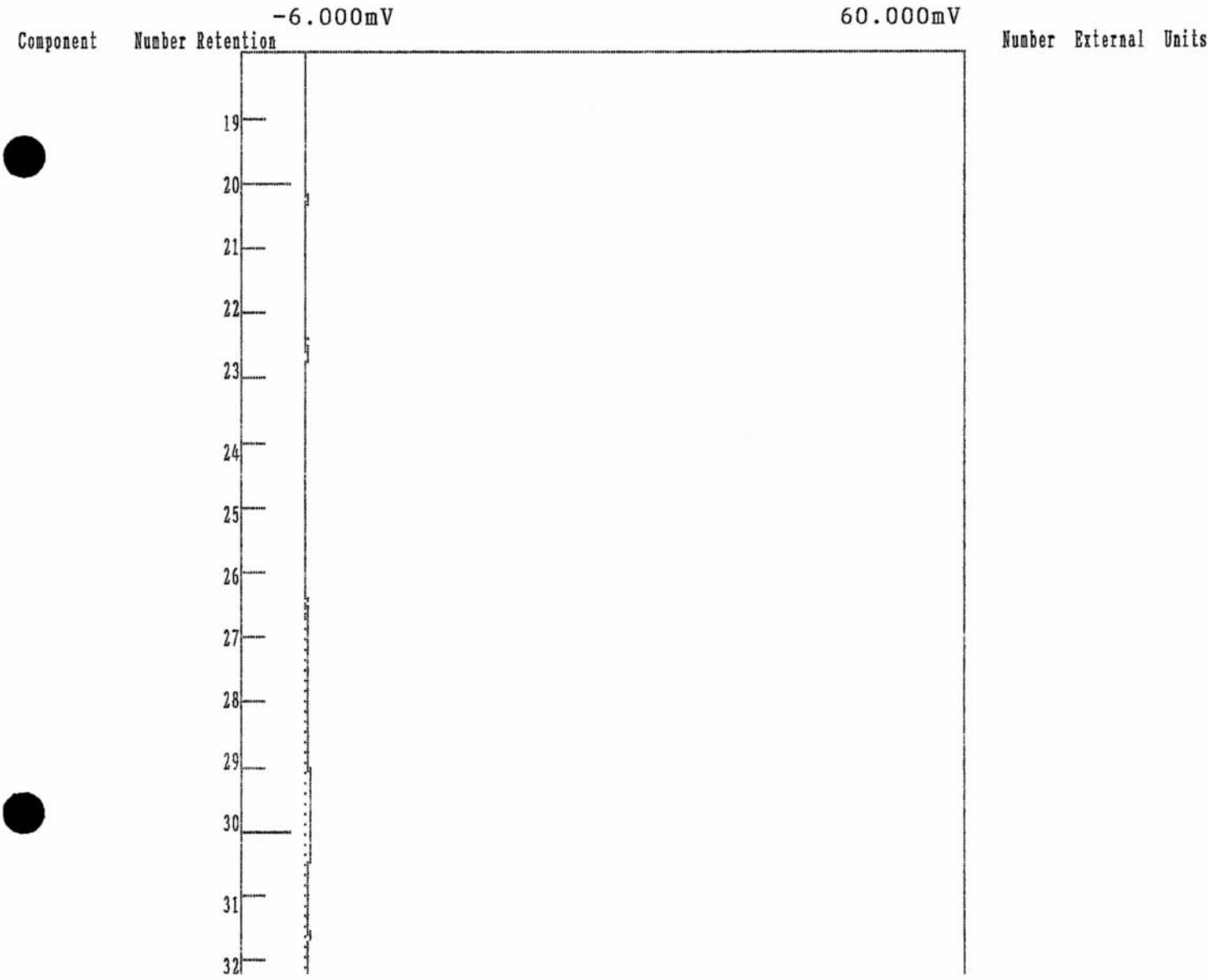
Component	Number	Retention	Area	External	Units
MTBE	1	20.225	9.90	1.25	ug/L
O-XYLENE	7	36.291	24.37	2.96	ug/L
4-BFB	8	38.066	278.85	50.55	ug/L
	3		313.12	54.75	

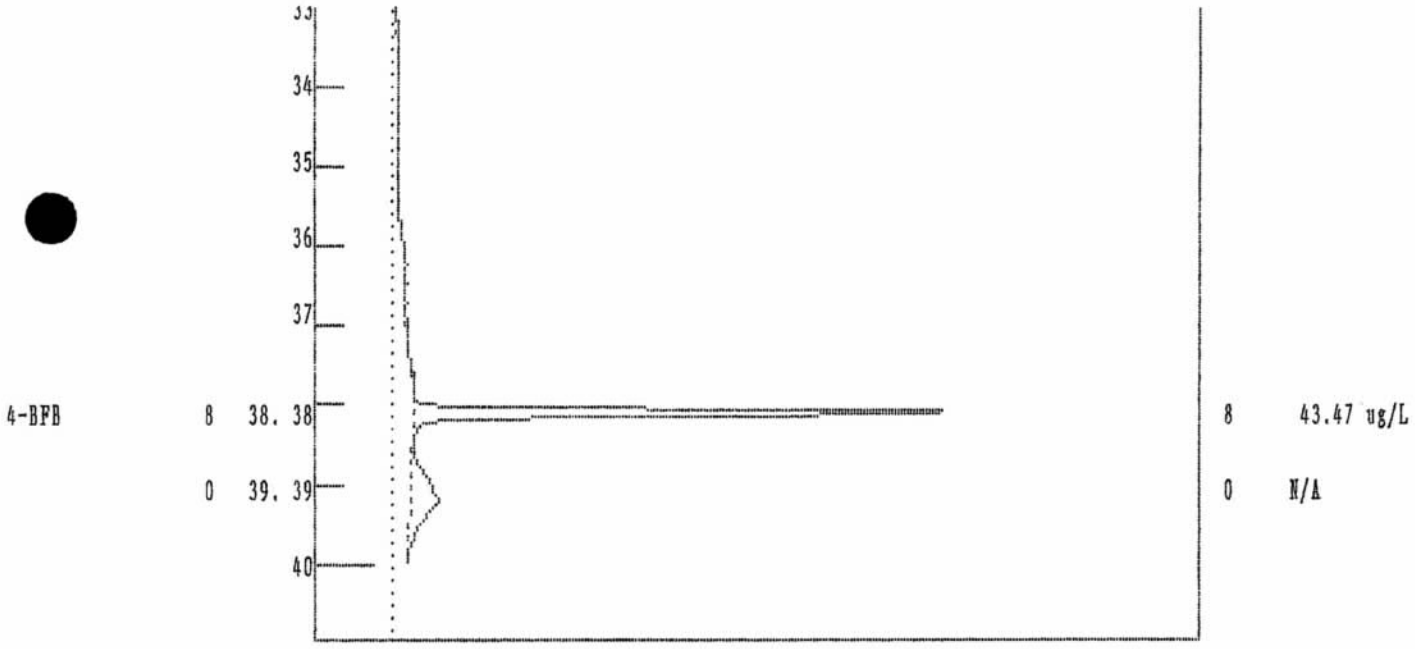
MTBE Benzene MBTEx

71 71 71

Client : Broad River BP
Collected : 09/14/12
Analysis date : 12/26/2010 03:24:24
Method : E P A 8020
Lab ID : FL-312
Description : PID DETECTOR
Column : J&W 624 75 METER
Components : 602.CPT
Data file : 602.CHR ()
Sample : TW-55-D
Operator : TERRY L. TEATE

TW-55-D





Component	Number	Retention	Area	External	Units
4-BFB	8	38.091	247.09	43.47	ug/L
	1		**247.09**	**43.47**	

APPENDIX E
WELL COMPLETION LOGS &
SCDHEC 1903 FORMS

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

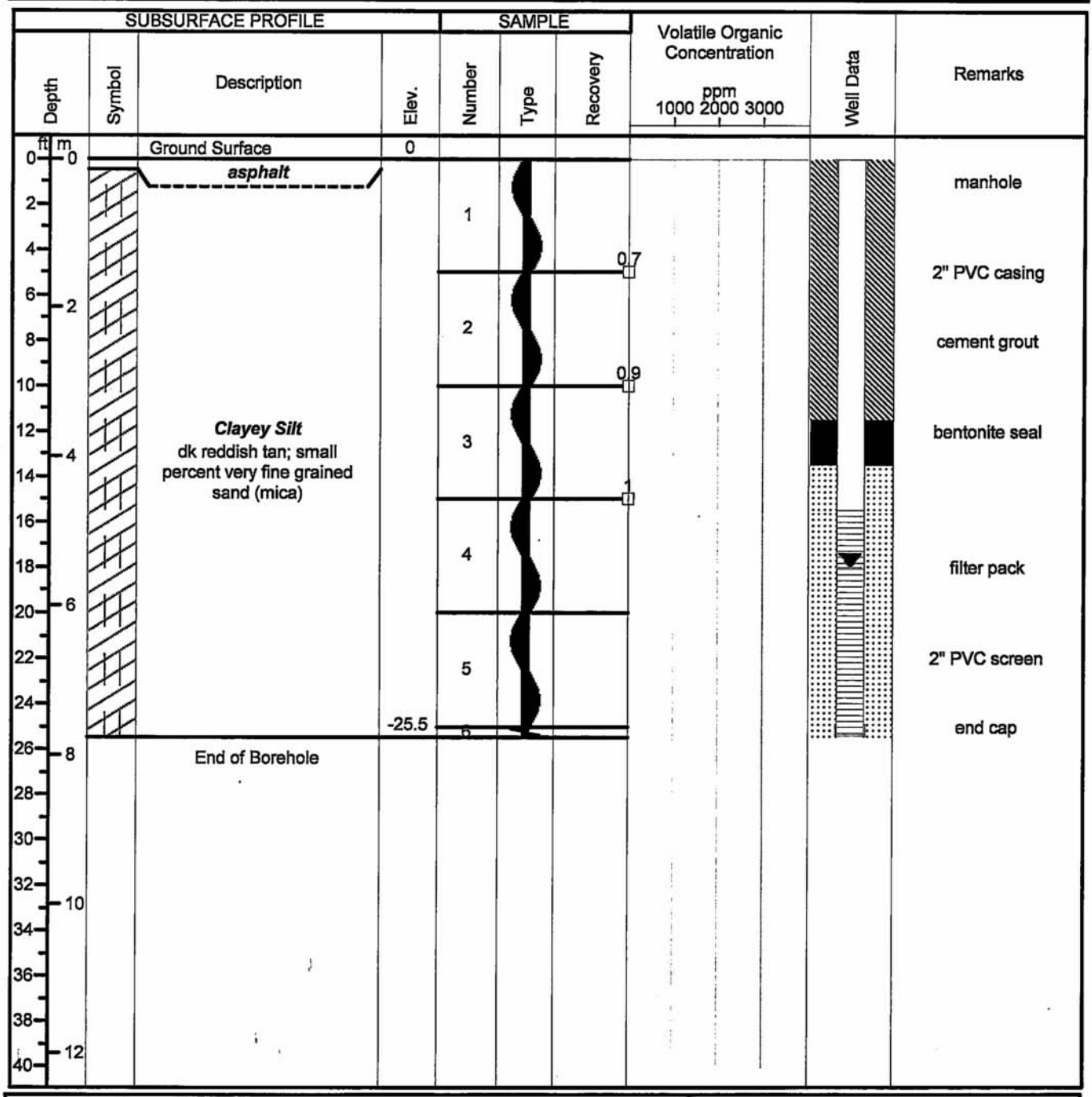
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-6A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/16/12

Casing Diameter: 2.0"

Total Depth of Well: 25.5

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.00'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

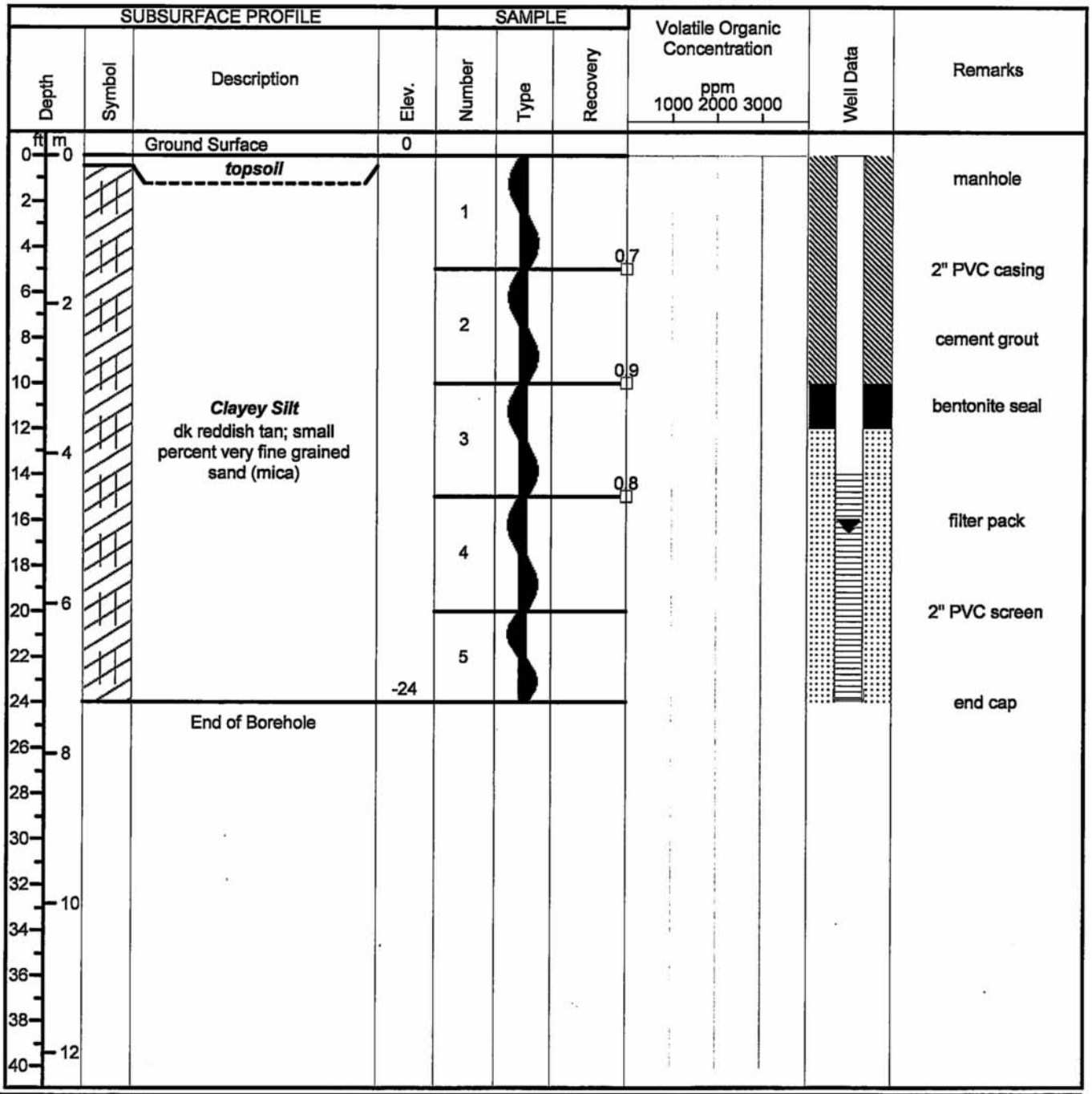
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-7A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/16/12

Casing Diameter: 2.0"

Total Depth of Well: 24.0

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.60'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

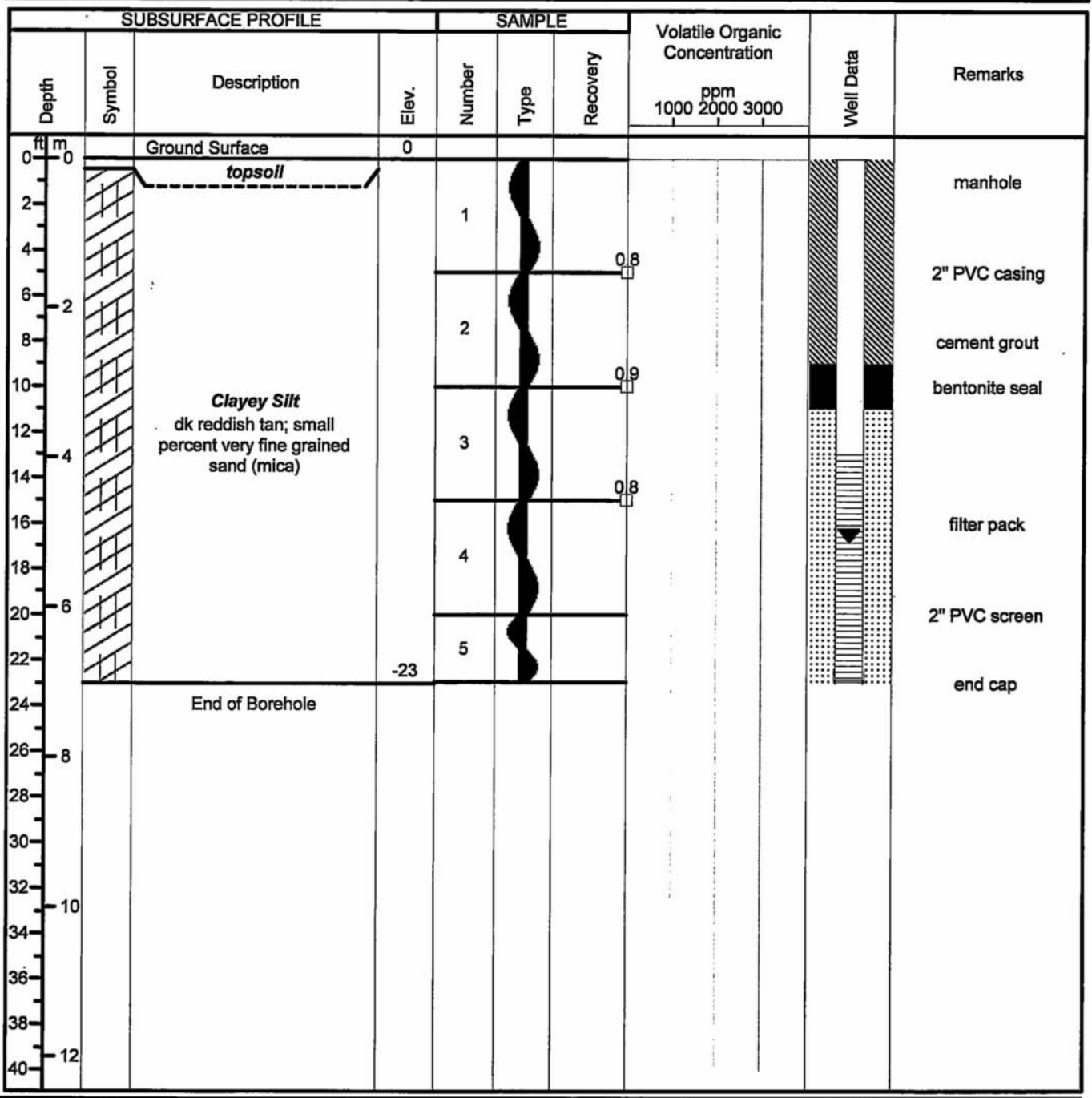
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-8A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/15/12

Casing Diameter: 2.0"

Total Depth of Well: 23.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.84'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

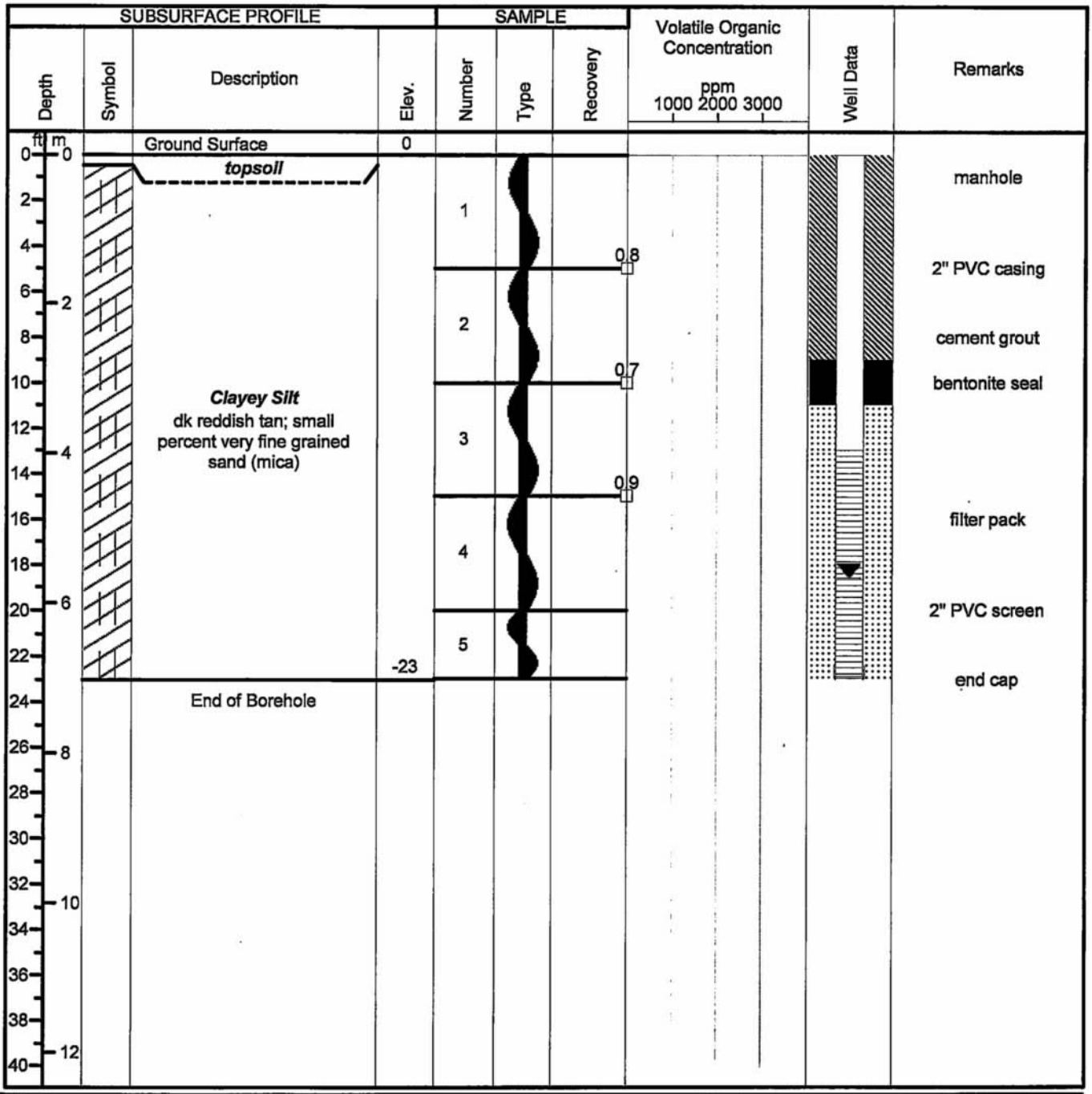
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-9A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/15/12

Casing Diameter: 2.0"

Total Depth of Well: 23.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.61'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

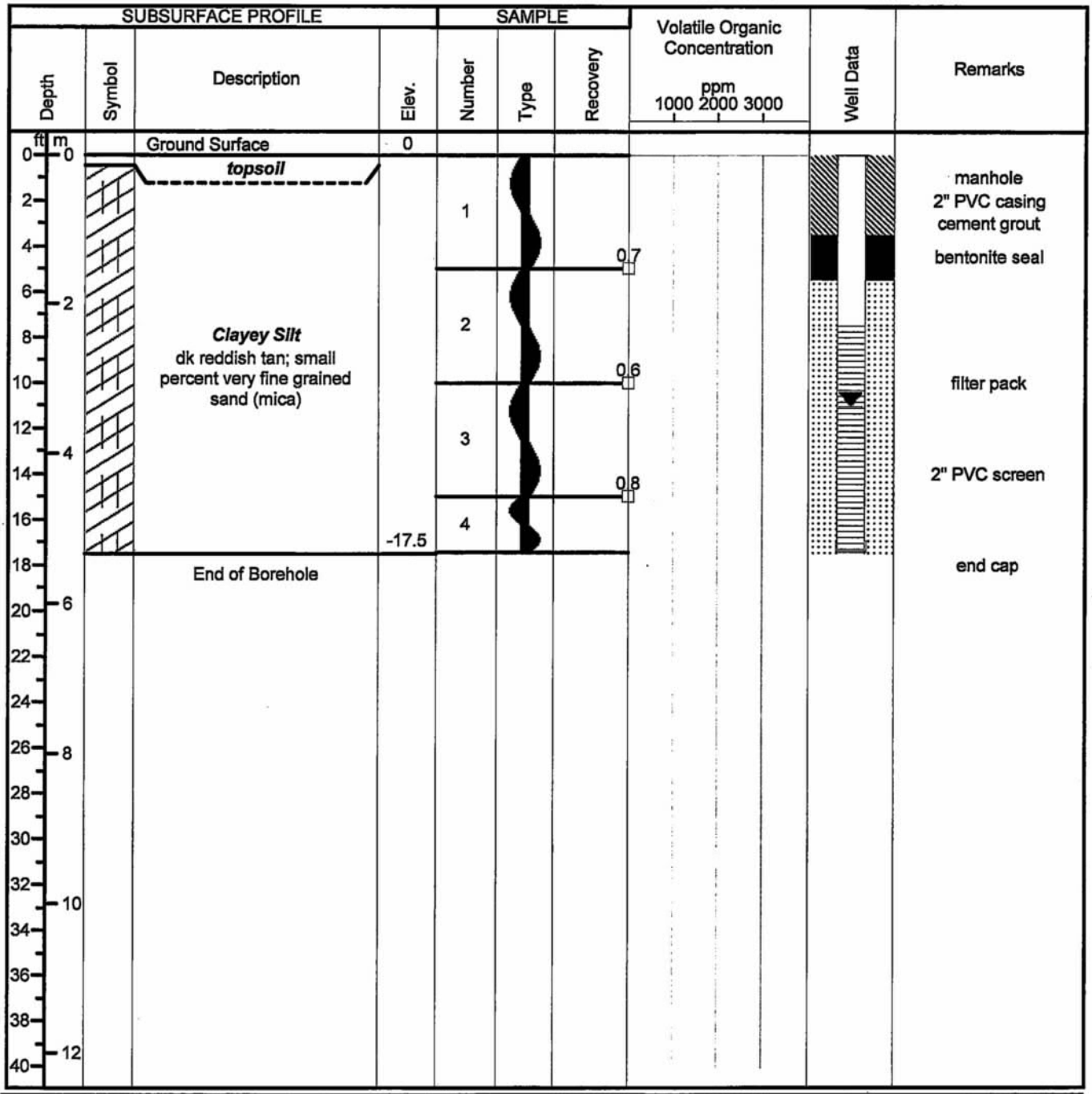
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-10A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 17.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 11.05'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

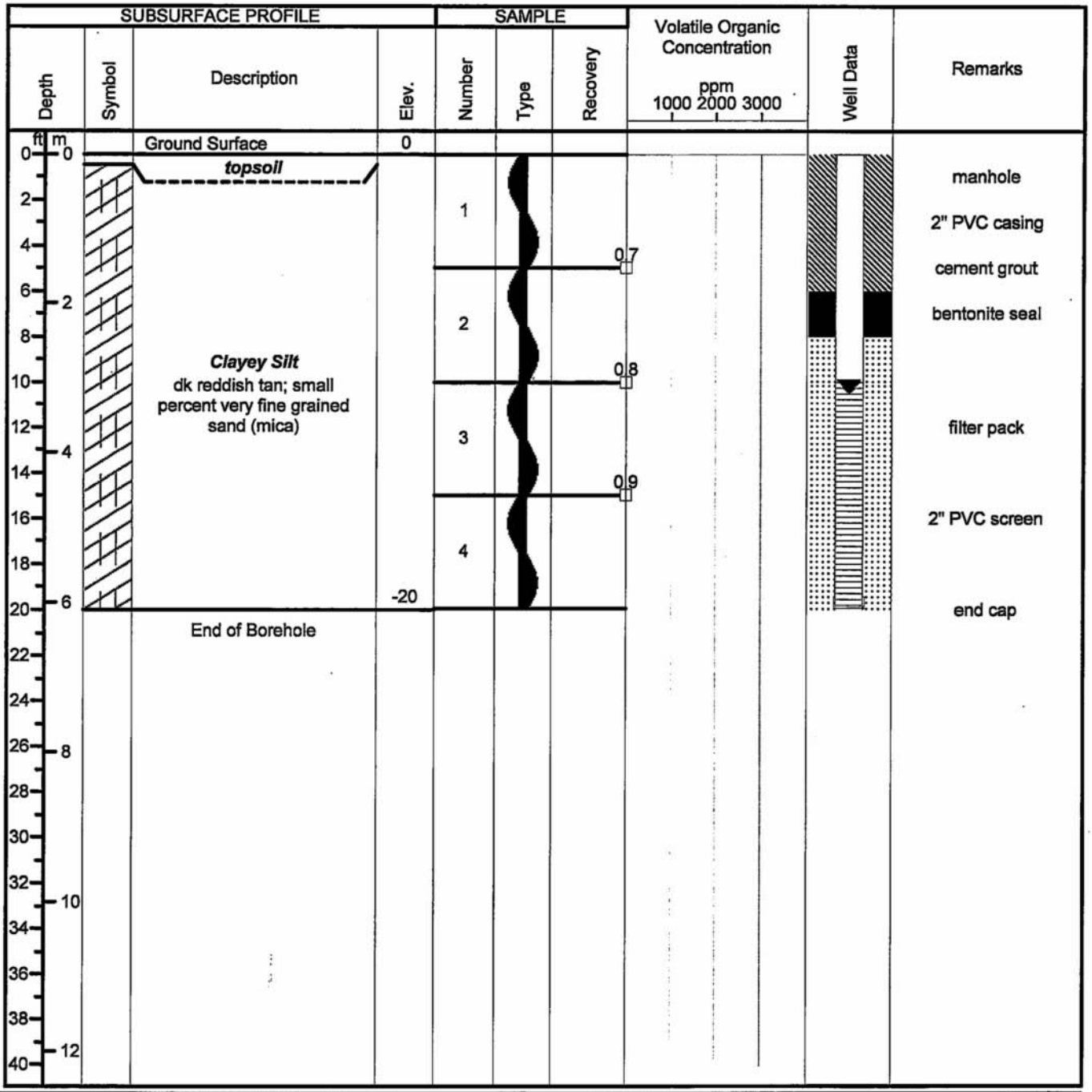
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-11A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 20.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 10.52'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

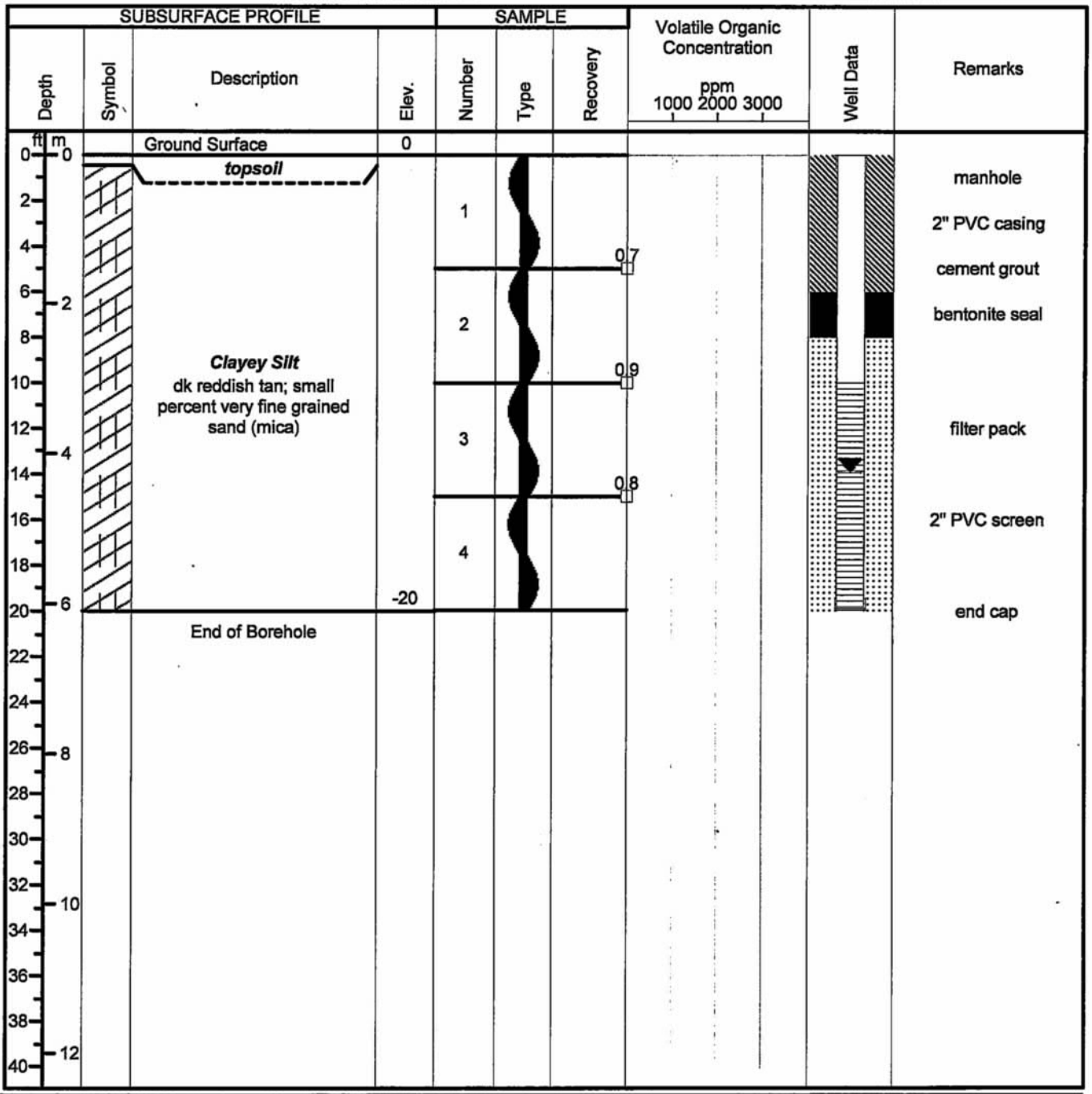
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-12A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 20.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.95'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

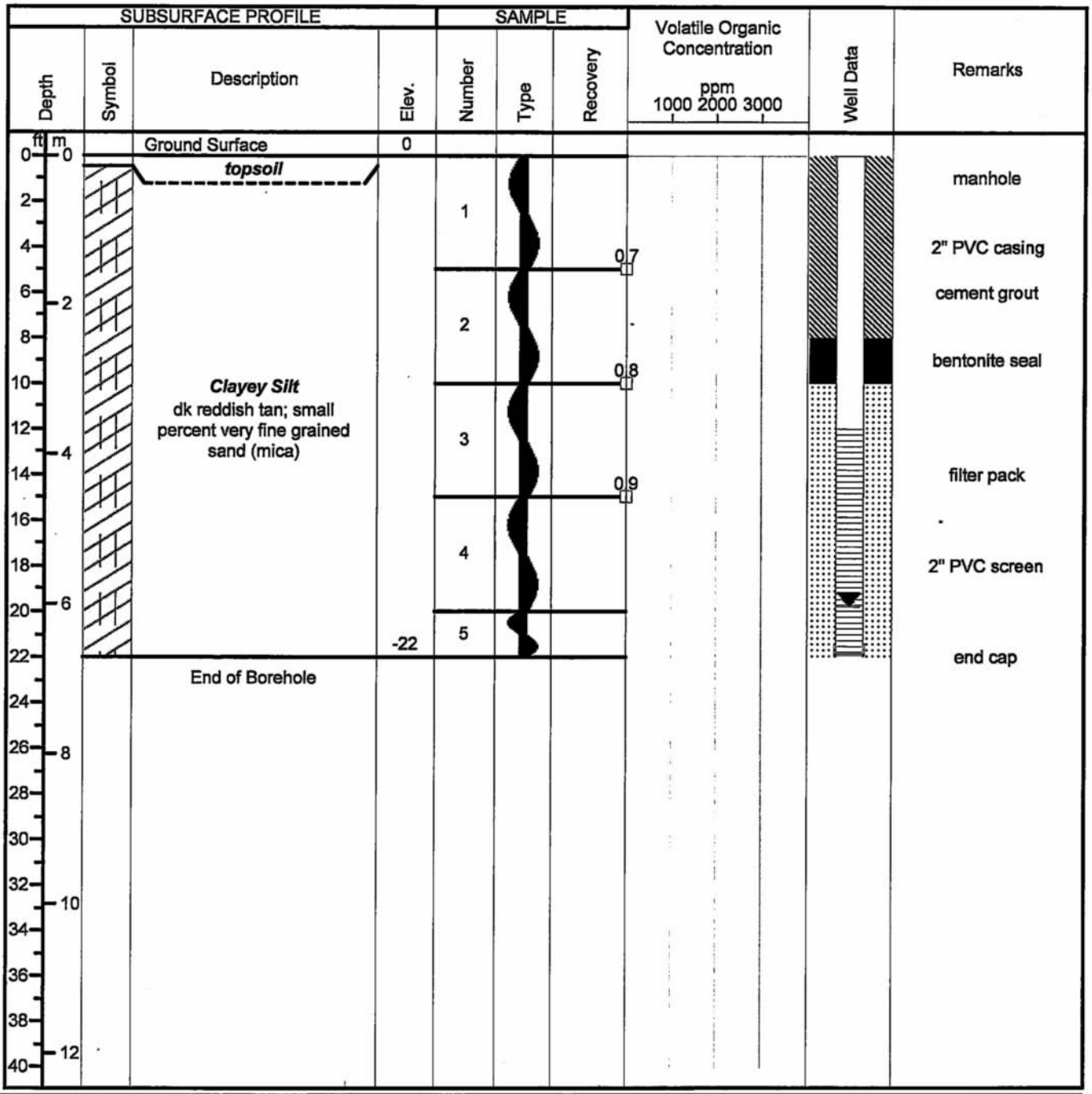
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-13A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/28/12

Casing Diameter: 2.0"

Total Depth of Well: 22.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.80'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

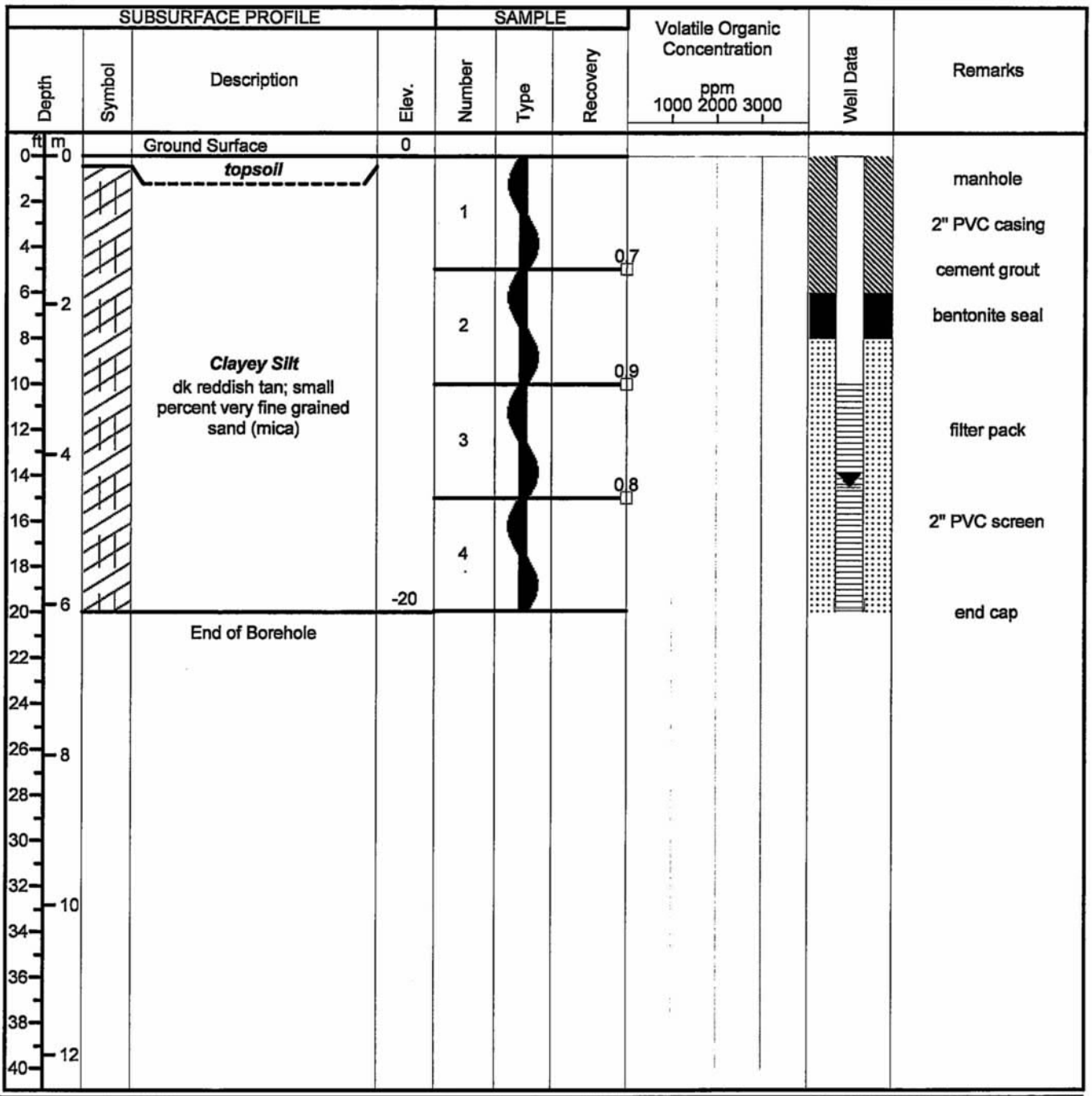
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-14A

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/28/12

Casing Diameter: 2.0"

Total Depth of Well: 20.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 14.52'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-15A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE			Volatile Organic Concentration ppm 1000 2000 3000	Well Data	Remarks
Depth ft / m	Symbol	Description	Elev.	Number	Type	Recovery			
0 / 0		Ground Surface	0						
		topsoil							manhole 2" PVC casing cement grout bentonite seal
				1		0.7			
2 /									
4 /									
6 / 2		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica)		2		0.8			filter pack
8 /									
10 /									
12 / 4				3		0.8			2" PVC screen
14 /									
16 /			-17	4					end cap
18 /		End of Borehole							
20 / 6									
22 /									
24 /									
26 / 8									
28 /									
30 /									
32 / 10									
34 /									
36 /									
38 /									
40 / 12									

Drill Method: auger rig

Drill Date: 2/18/13

Casing Diameter: 2.0"

Total Depth of Well: 17.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.01'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

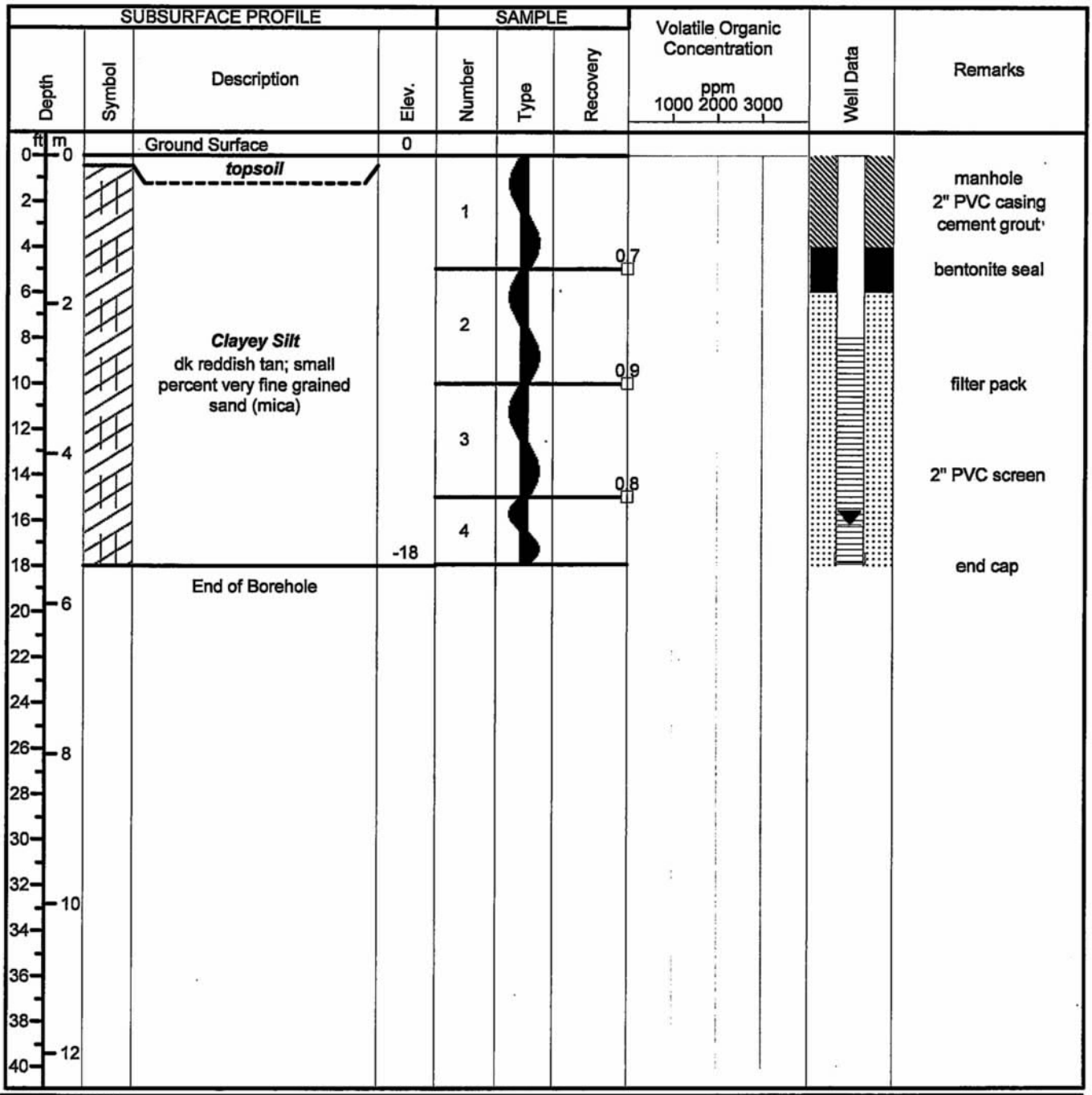
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-16A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/19/13

Casing Diameter: 2.0"

Total Depth of Well: 18.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.21'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

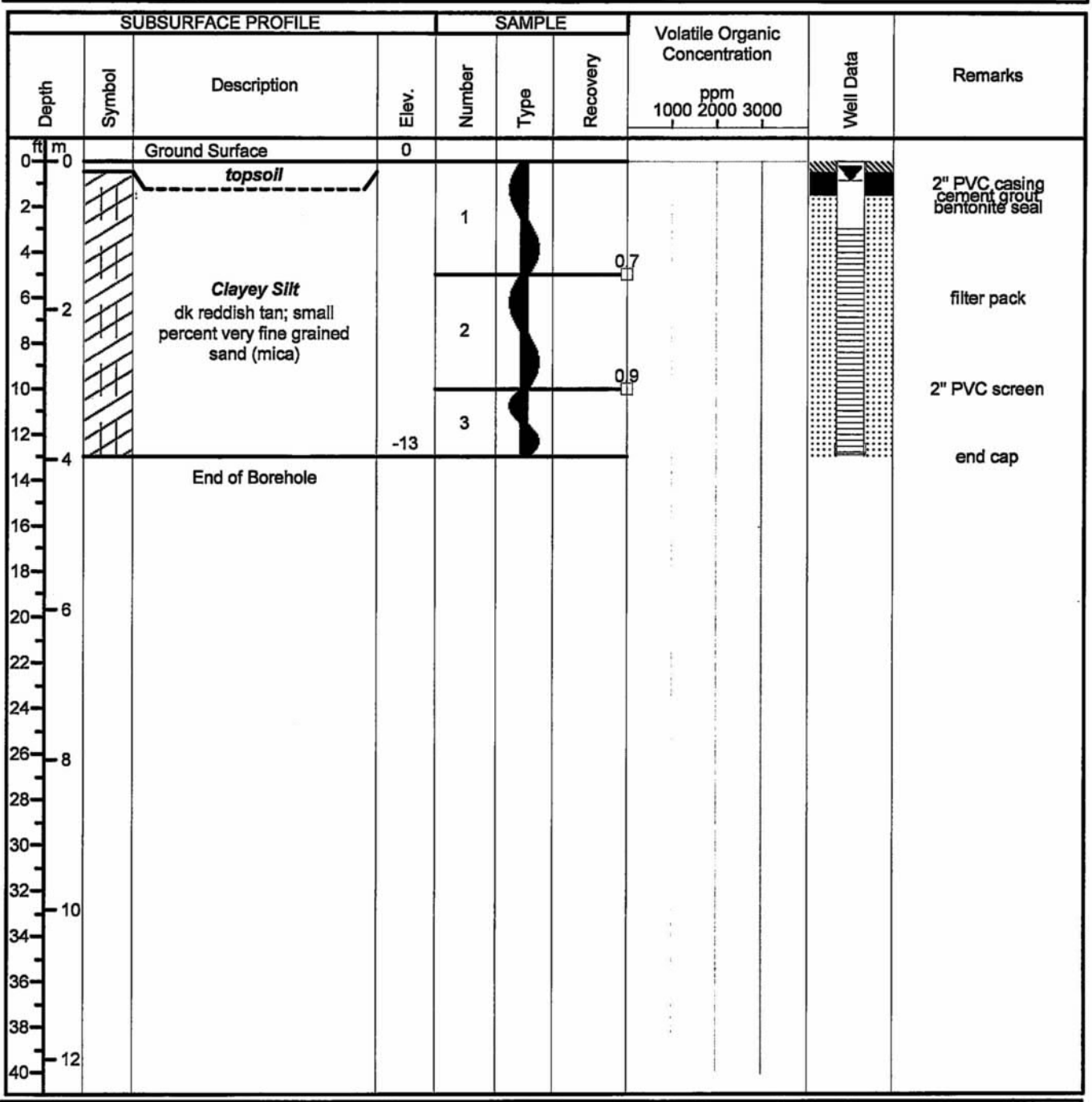
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-18A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/26/13

Casing Diameter: 2.0"

Total Depth of Well: 13.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 0.85'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

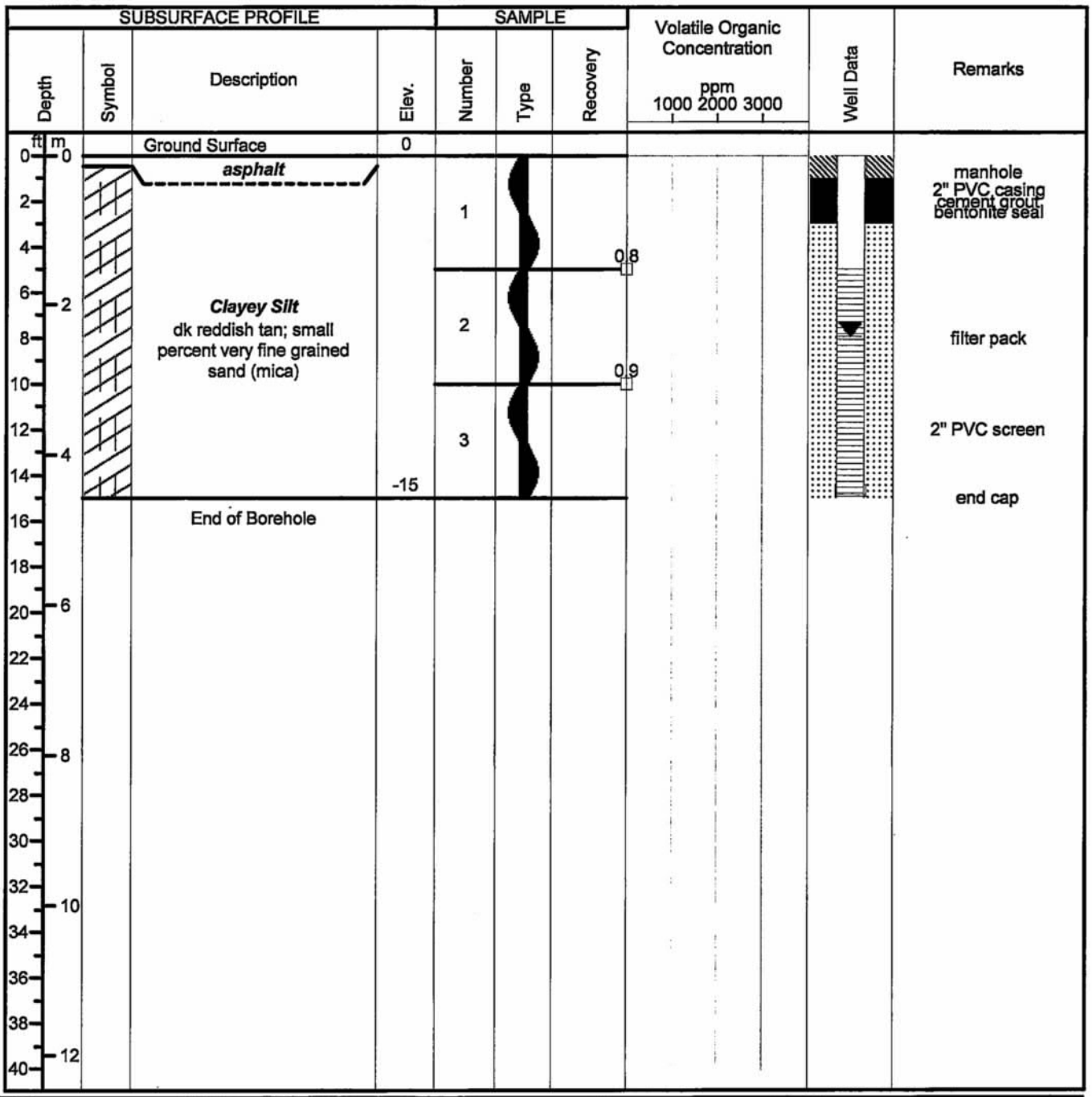
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-19A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/20/13

Casing Diameter: 2.0"

Total Depth of Well: 15.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 7.95'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

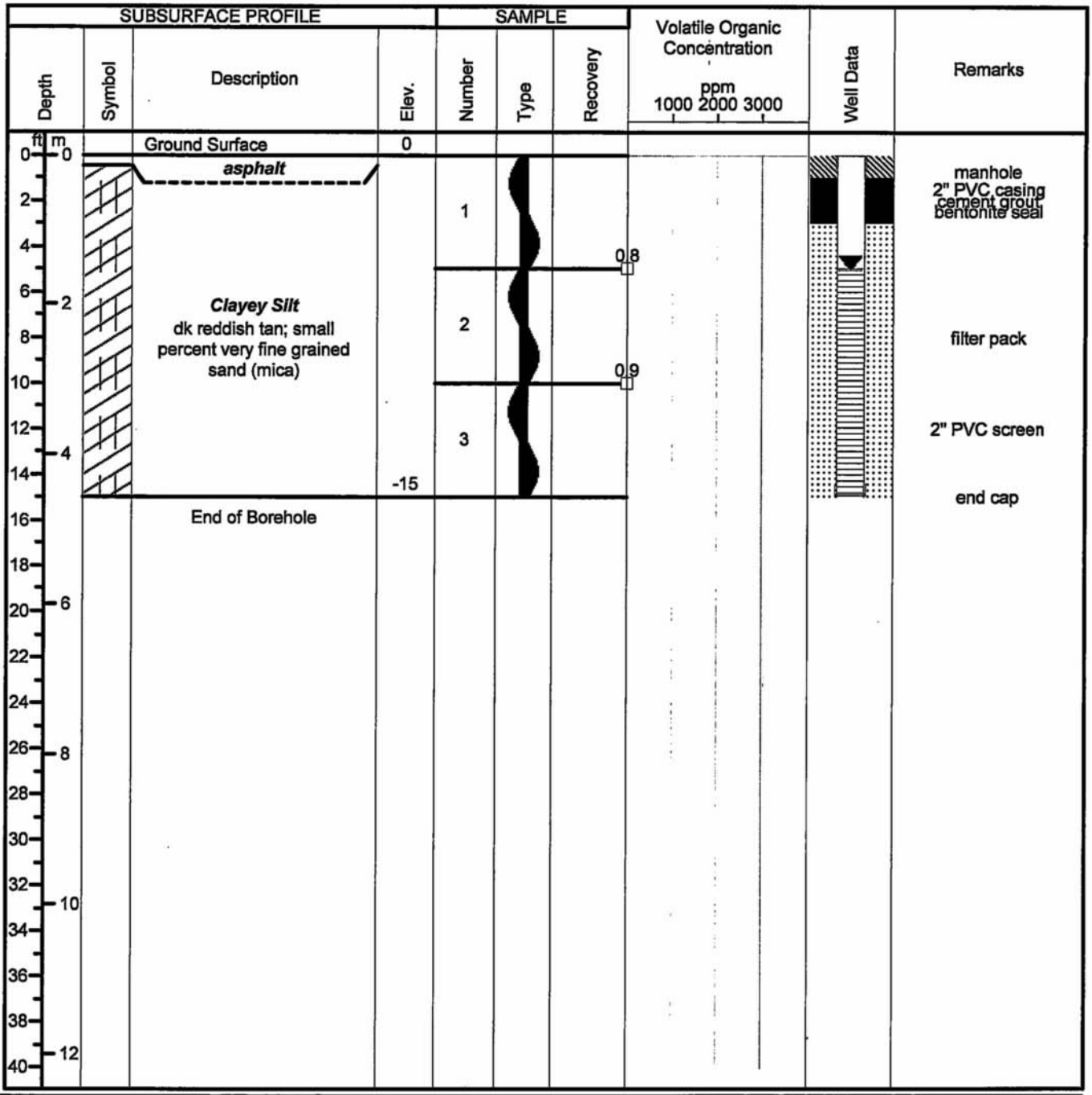
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-20A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/21/13

Casing Diameter: 2.0"

Total Depth of Well: 15.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 5.05'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

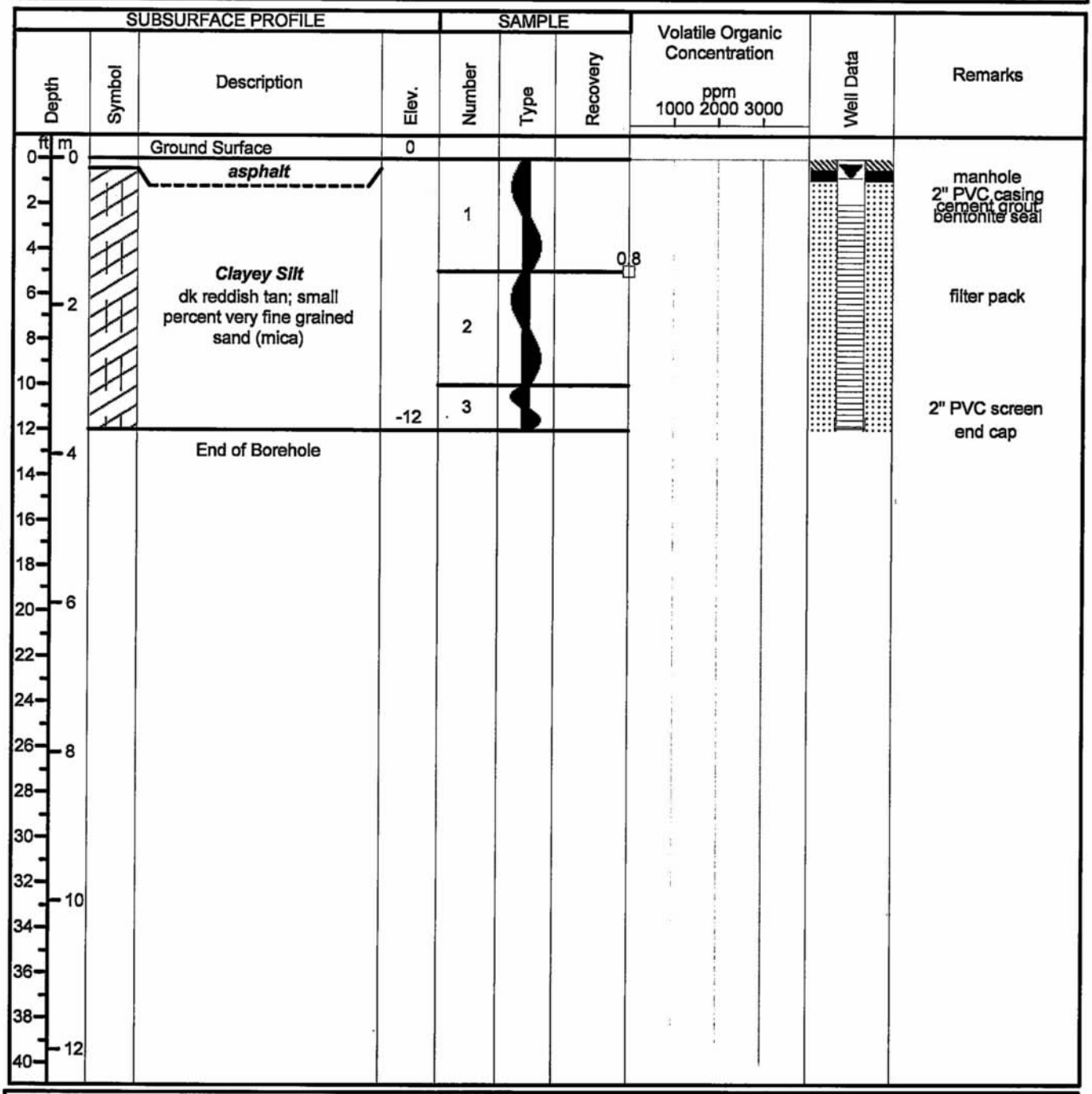
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-21A

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 3/2/13

Casing Diameter: 2.0"

Total Depth of Well: 12.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 0.85'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-6B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris

SUBSURFACE PROFILE				SAMPLE					
Depth (ft / m)	Symbol	Description	Elev.	Number	Type	Recovery	Volatile Organic Concentration (ppm, 1000 2000 3000)	Well Data	Remarks
0 / 0		Ground Surface	0						
		asphalt		1					manhole
2									
4									
6 / 2				2					2" PVC casing
8									
10		***Clayey Silt*** dk reddish tan; small percent very fine grained sand (mica); wet at approx. 18.0		3					
12 / 4									
14									
16				4					cement grout
18									
20 / 6				5					
22									
24			-25						bentonite seal
26 / 8		***silty clay*** tan, a little fine to coarse grained sand, moist		6					
28									
30			-30						filter pack
32				7					
34 / 10		***clayey silt*** brown, some fine grained sand, a few very coarse angular sand grains; dry then becomes saturated at 36.0'							
36				8					2" PVC screen
38			-38.5						
40 / 12		End of Borehole							end cap

Drill Method: auger rig

Drill Date: 8/16/12

Casing Diameter: 2.0"

Total Depth of Well: 38.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.05'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

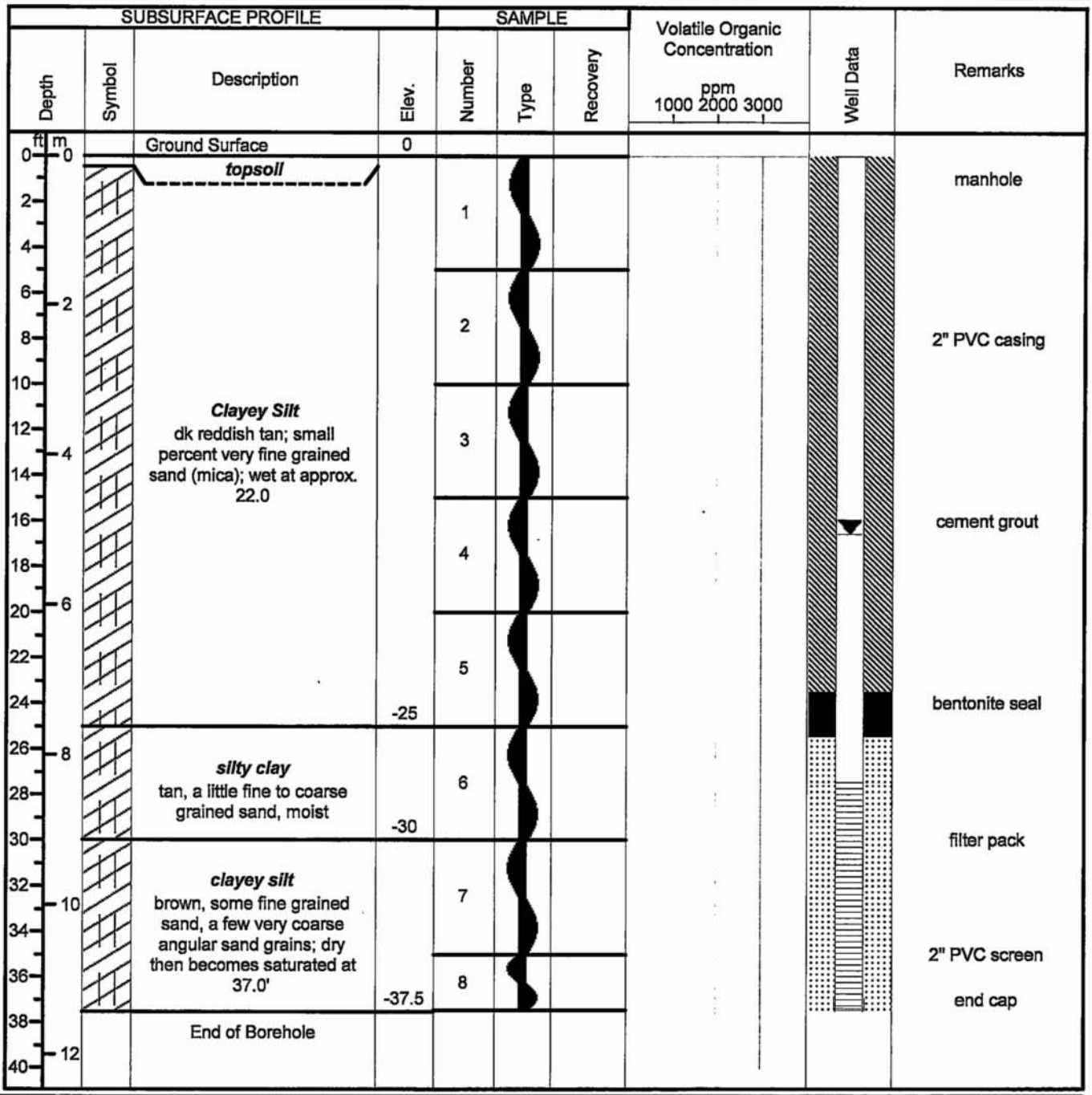
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-8B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/15/12

Casing Diameter: 2.0"

Total Depth of Well: 37.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.60'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

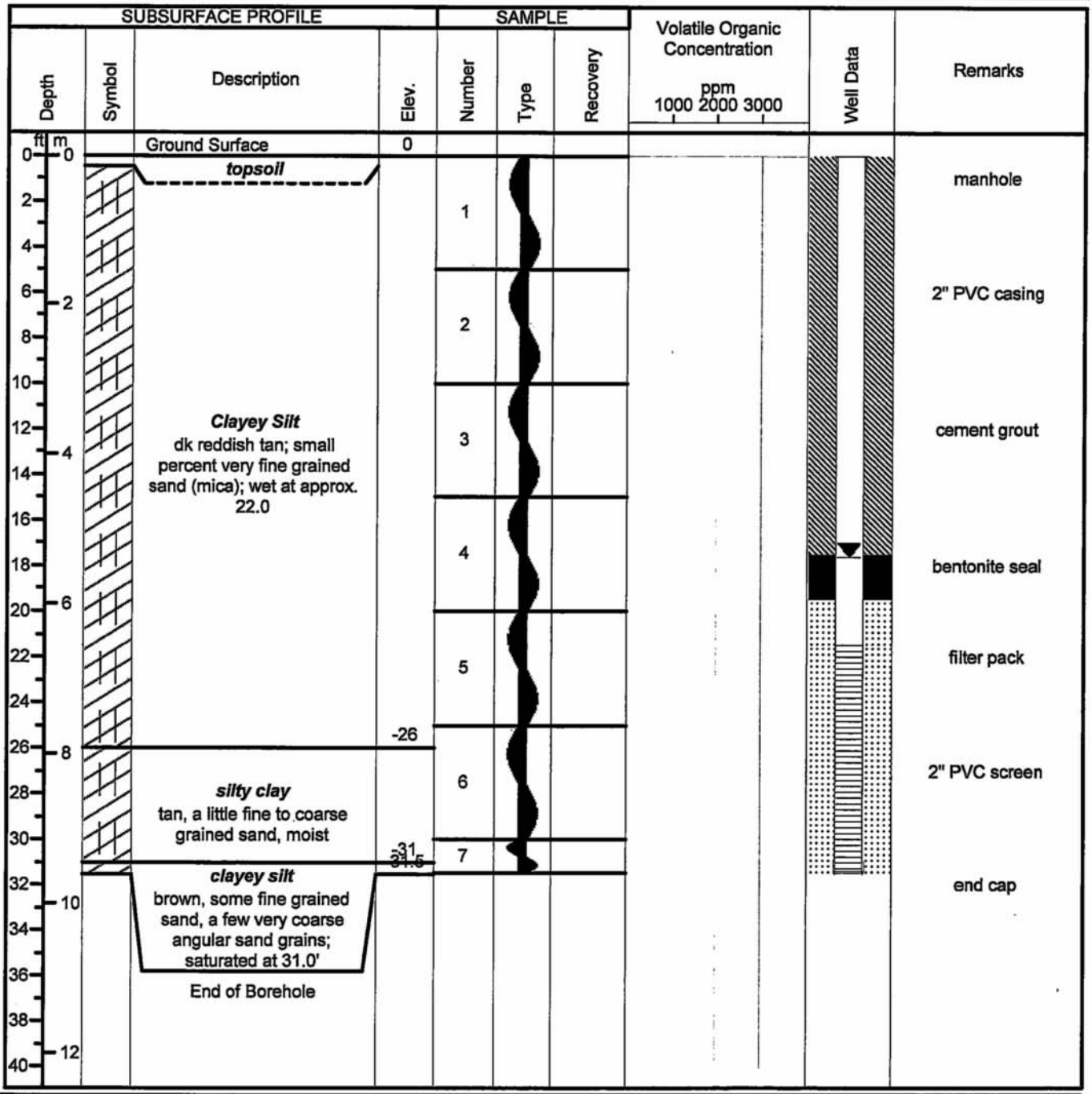
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-9B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/15/12

Casing Diameter: 2.0"

Total Depth of Well: 31.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.60'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

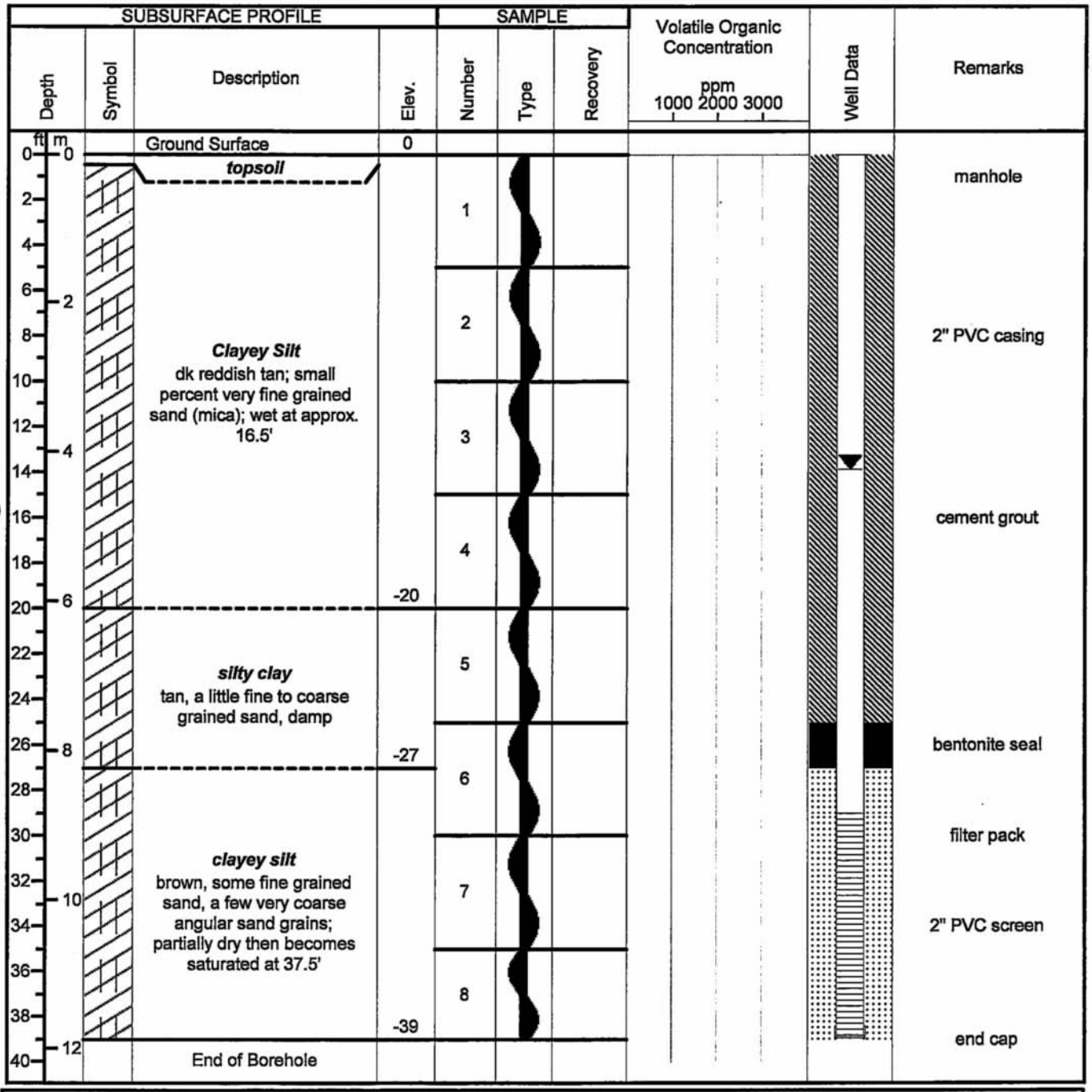
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-10B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 39.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 13.87'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

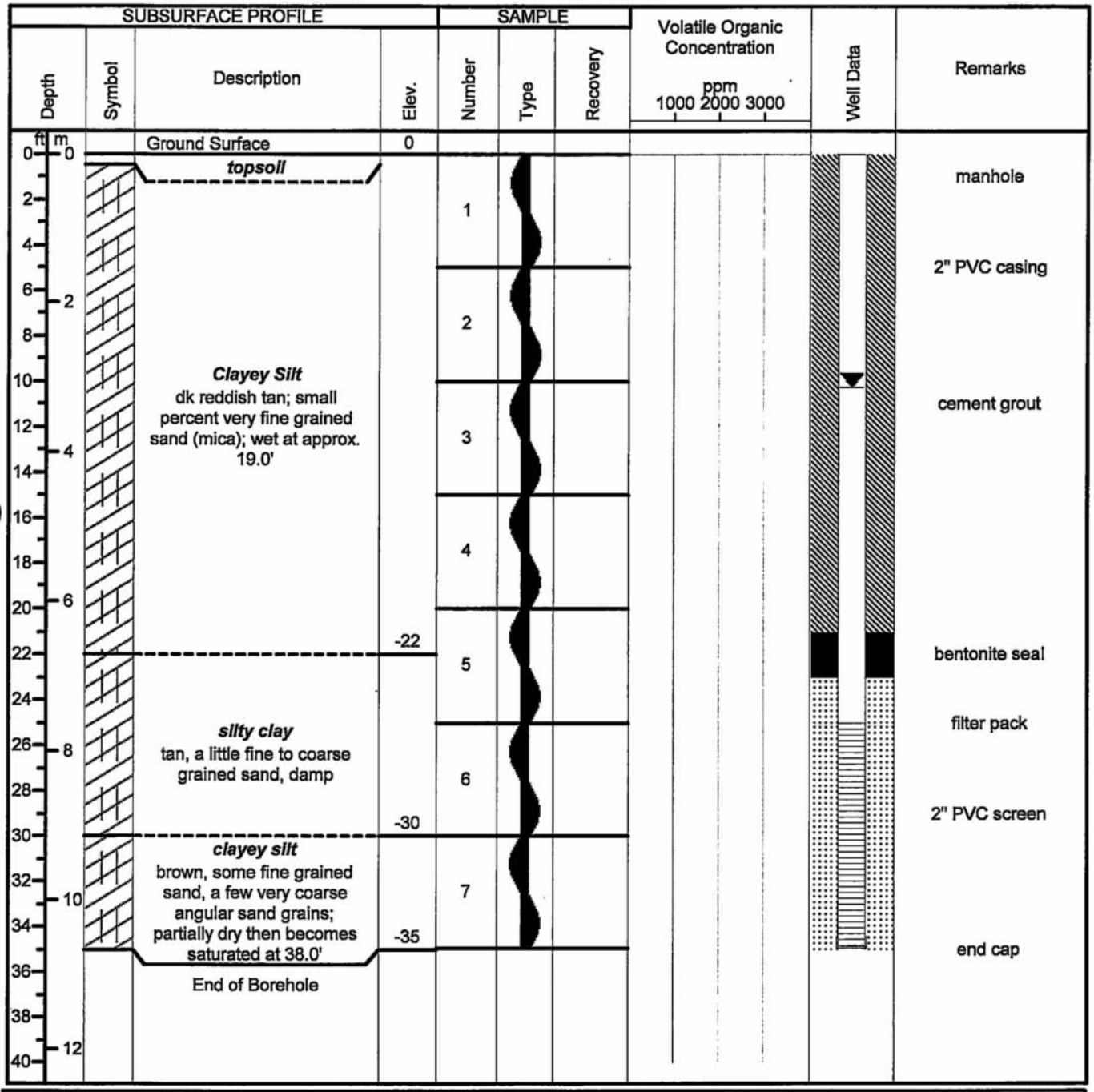
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-11B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 10.30'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

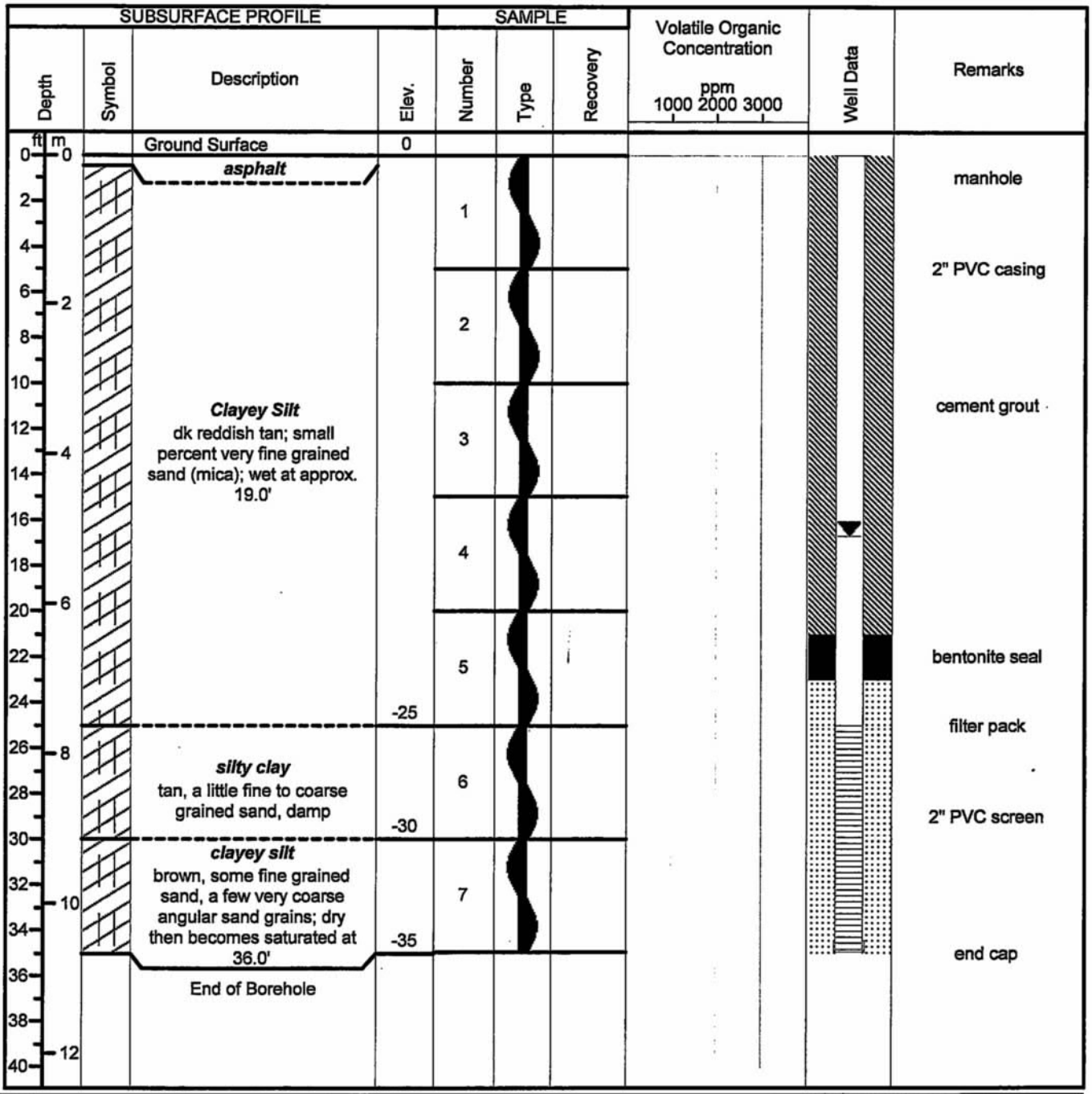
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-12B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/27/12

Casing Diameter: 2.0"

Total Depth of Well: 36.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.72'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

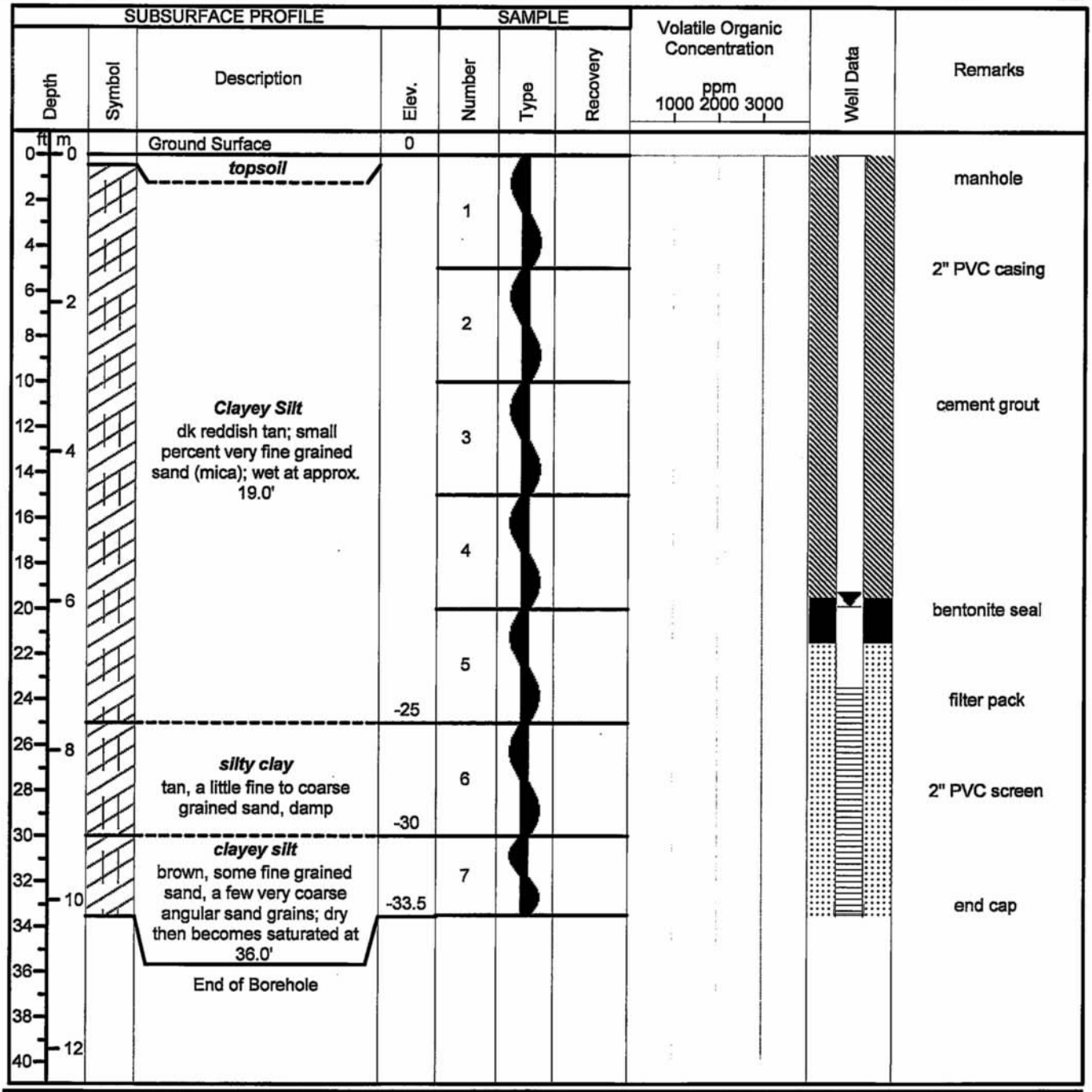
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-13B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/28/12

Casing Diameter: 2.0"

Total Depth of Well: 33.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 19.88'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

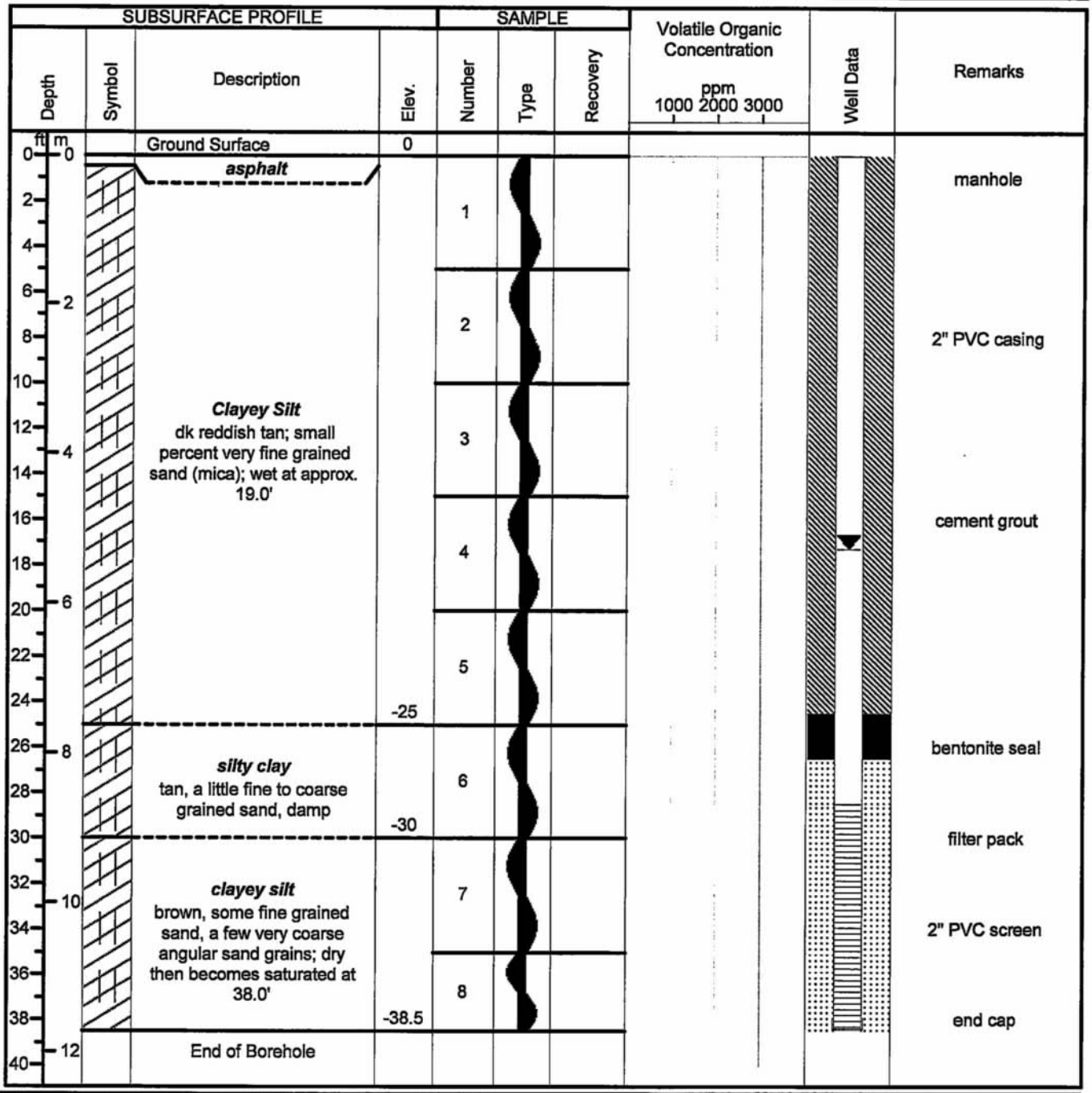
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-14B

Driller: Michael Carey, cert. #1920

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 8/28/12

Casing Diameter: 2.0"

Total Depth of Well: 38.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.27'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

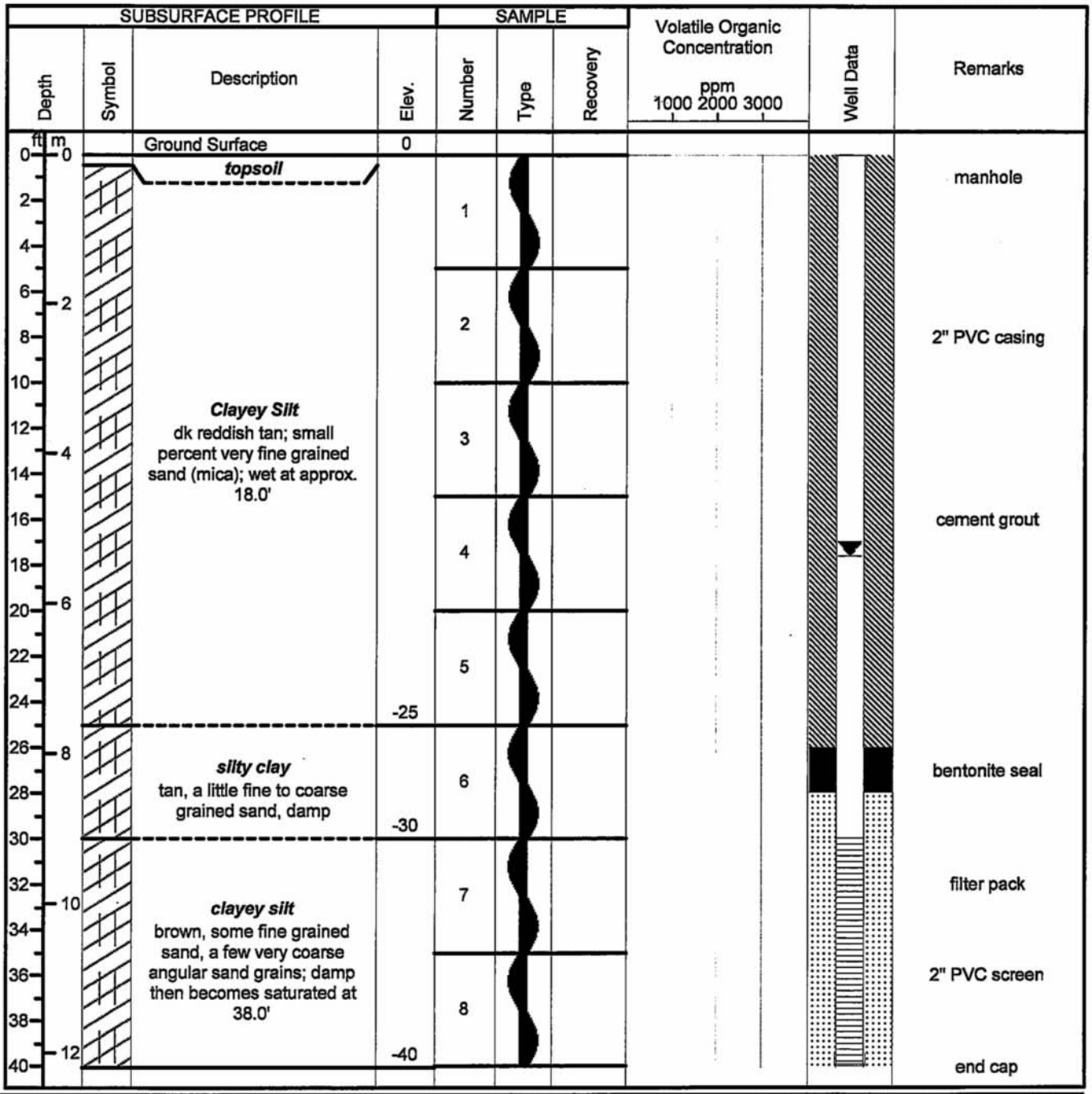
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-15B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/18/13

Casing Diameter: 2.0"

Total Depth of Well: 40.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.60'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

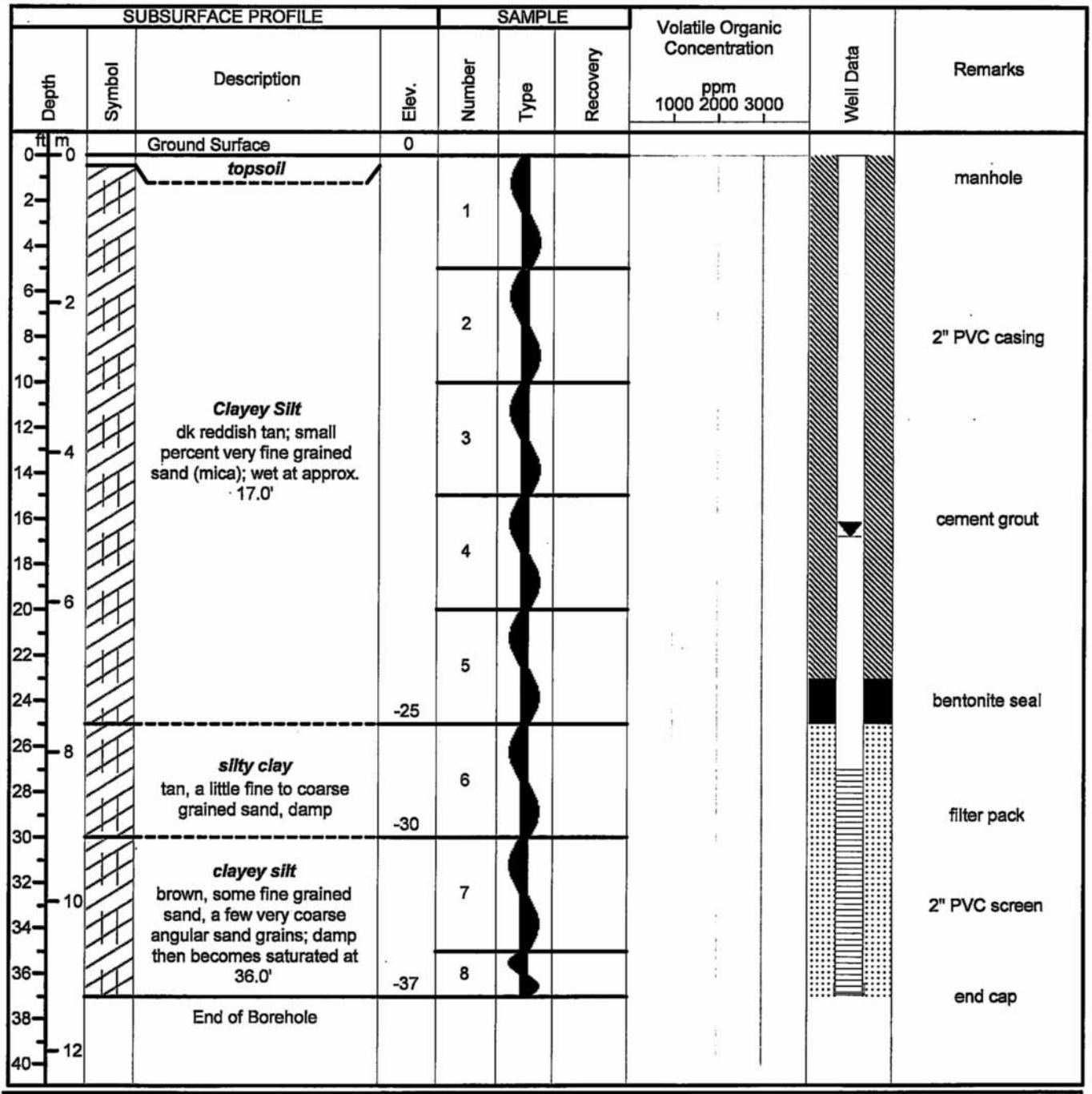
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-16B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/19/13

Casing Diameter: 2.0"

Total Depth of Well: 37.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.75'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

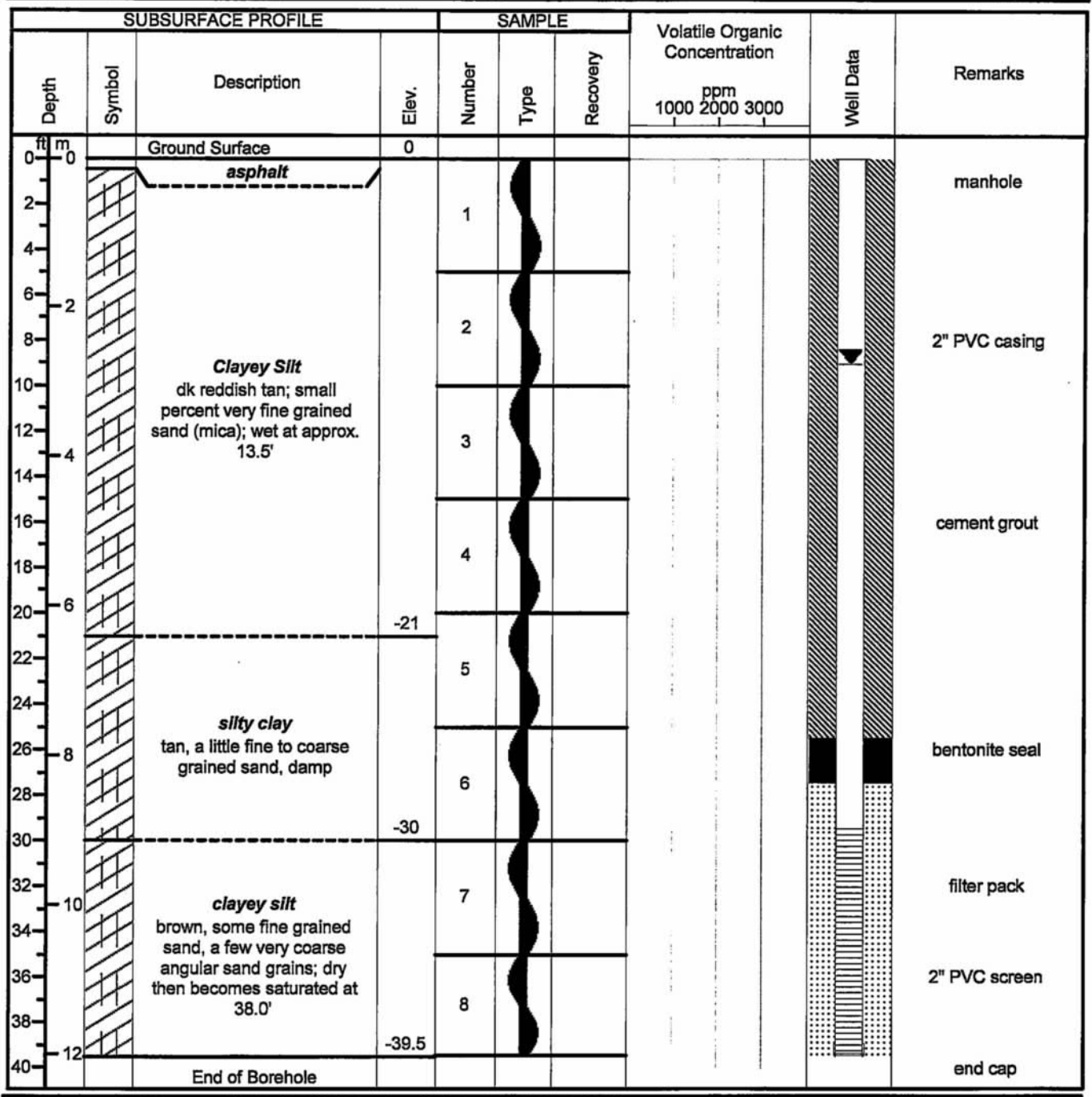
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-17B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/14/13

Casing Diameter: 2.0"

Total Depth of Well: 39.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 9.05'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

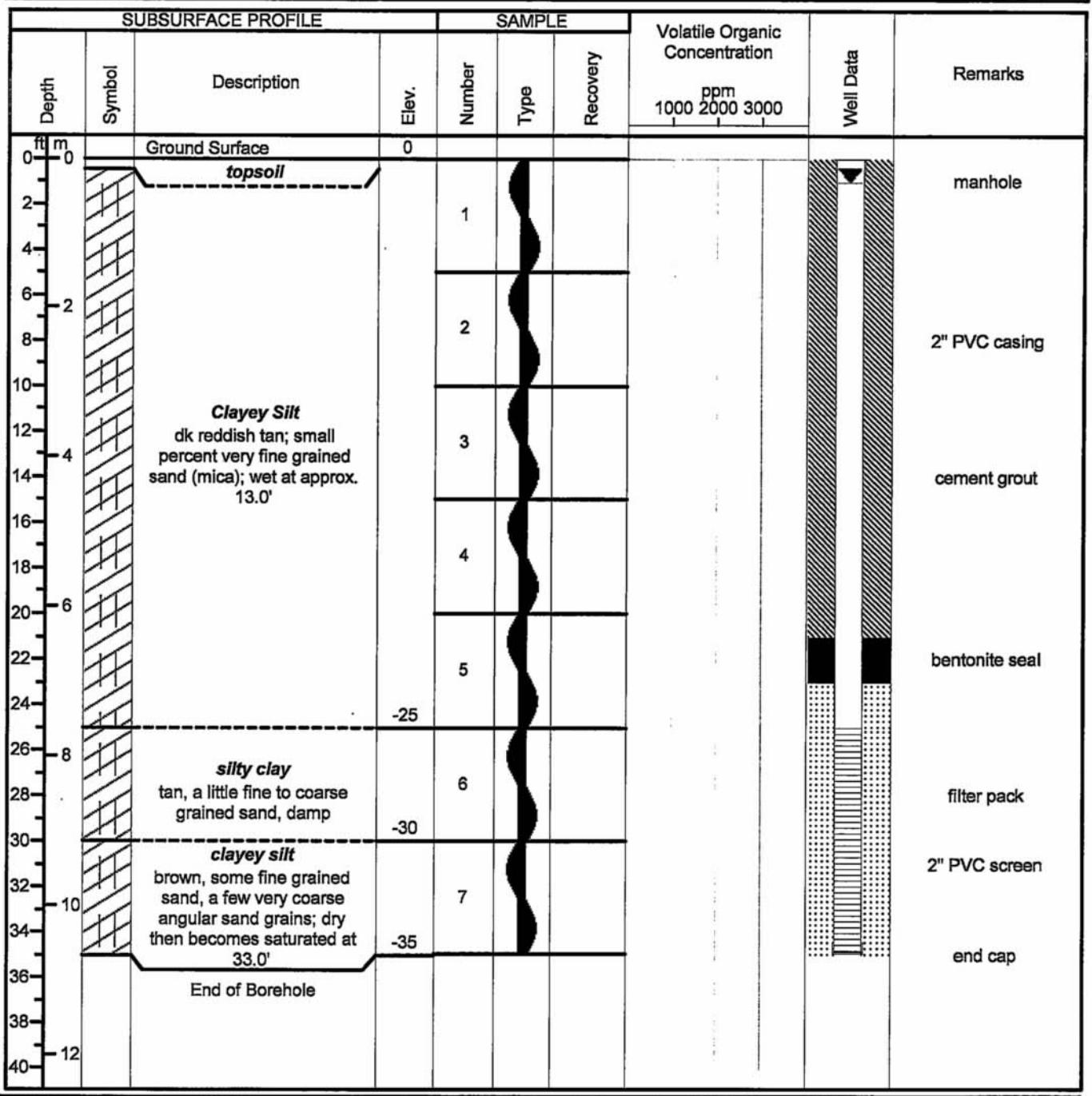
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-18B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/26/13

Casing Diameter: 2.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 1.05'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

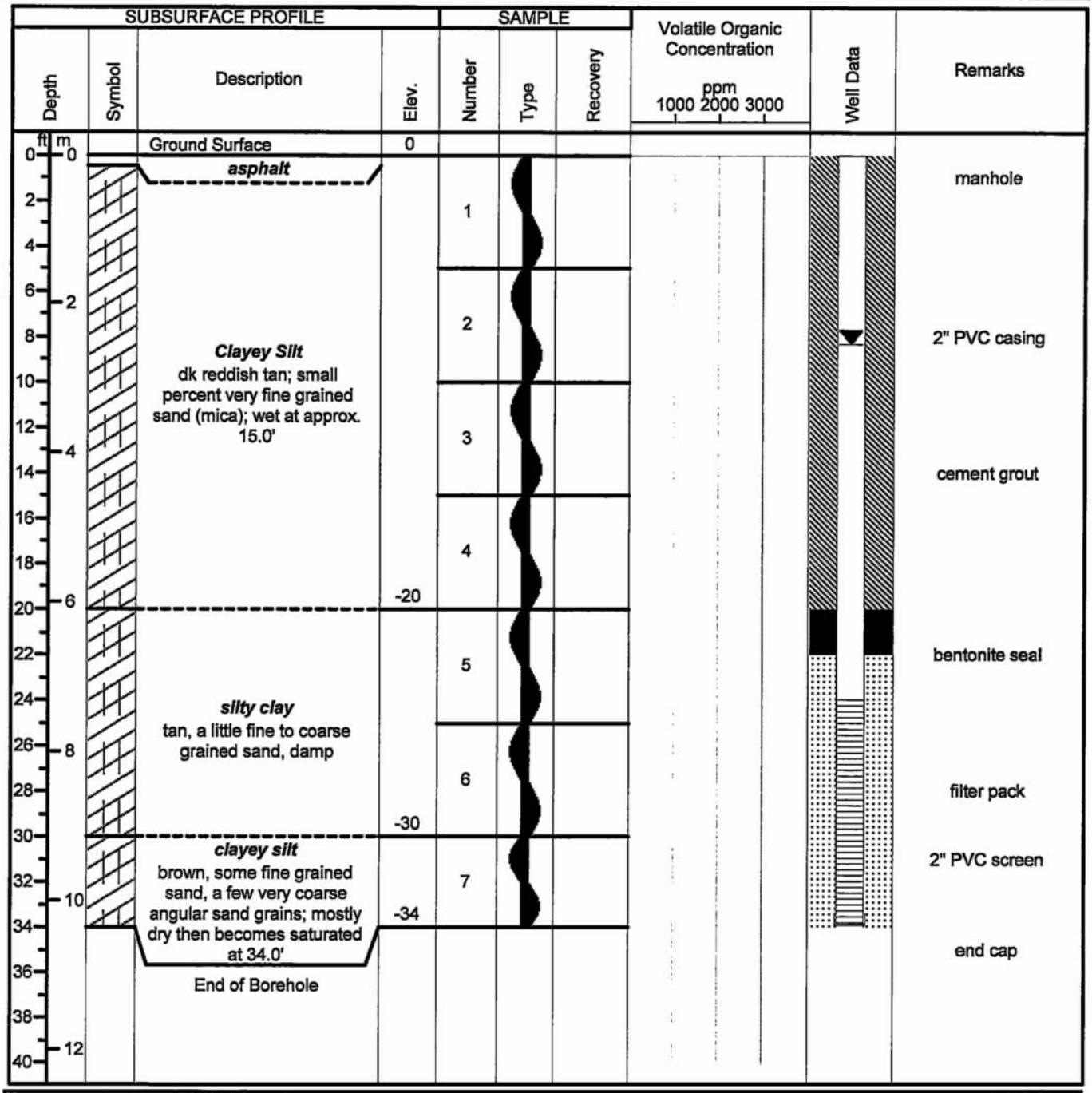
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-19B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/06/13

Casing Diameter: 2.0"

Total Depth of Well: 34.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 8.35'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

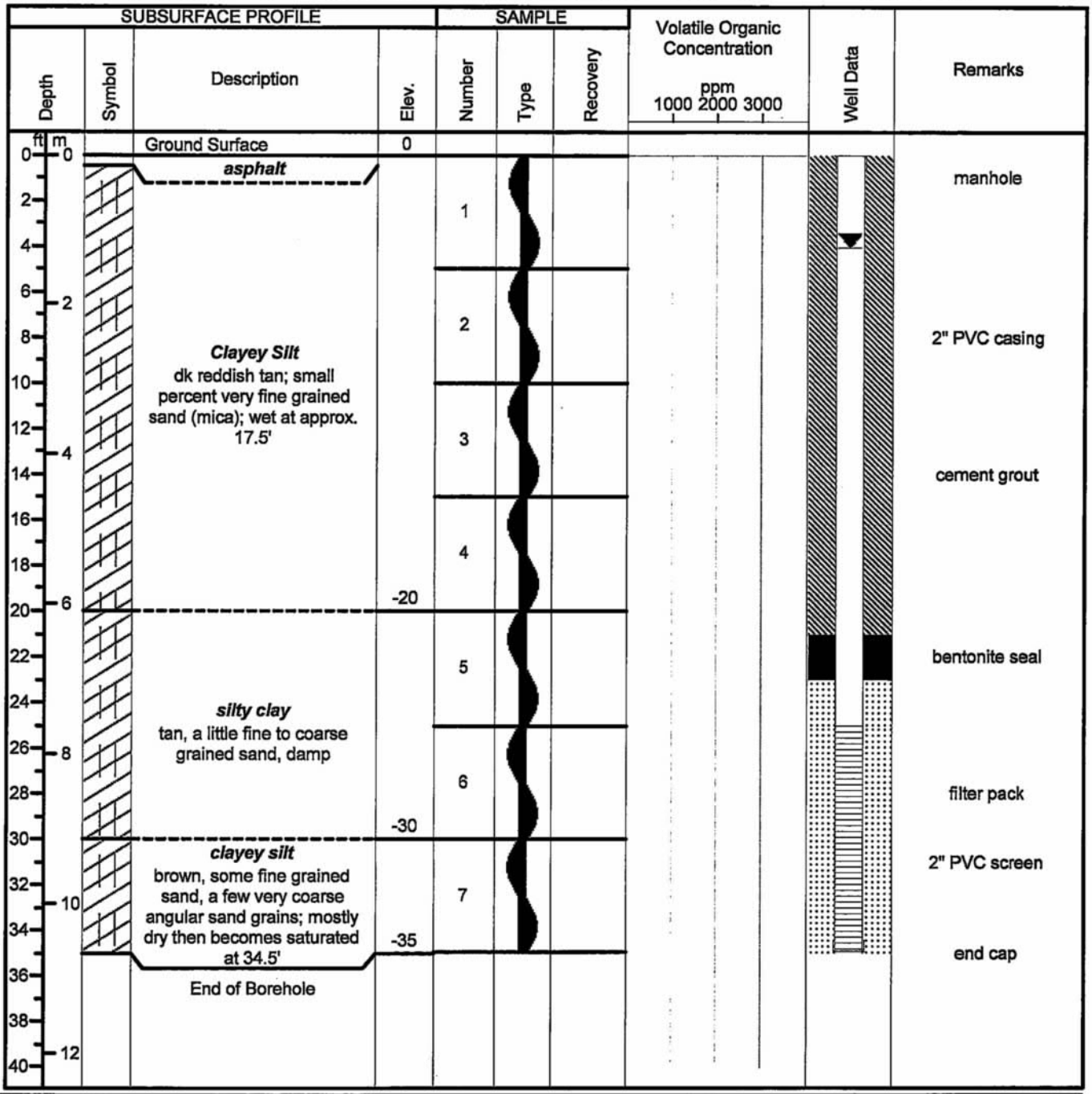
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-20B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/21/13

Casing Diameter: 2.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 4.11'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

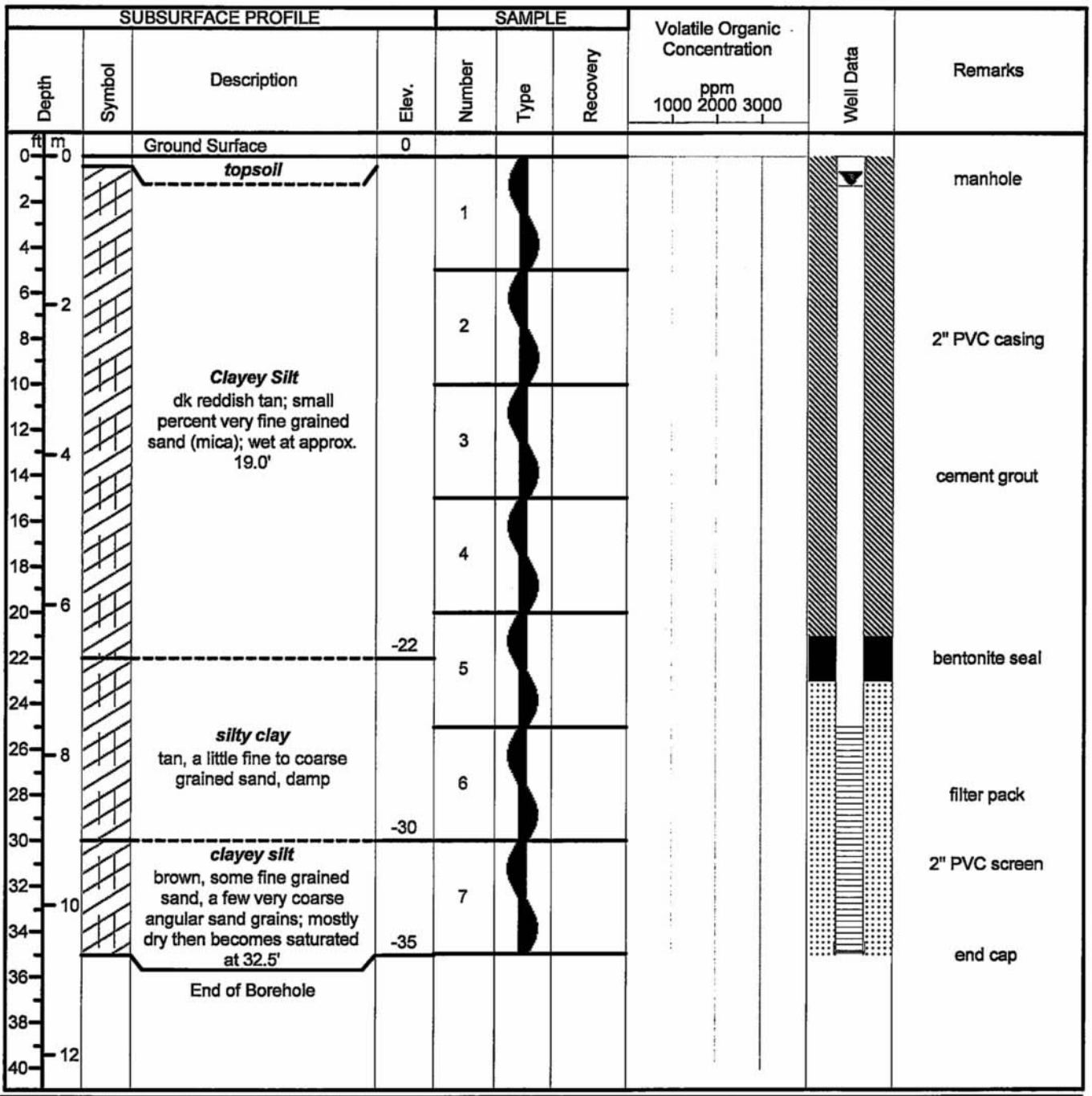
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-21B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 3/2/13

Casing Diameter: 2.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 1.35'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

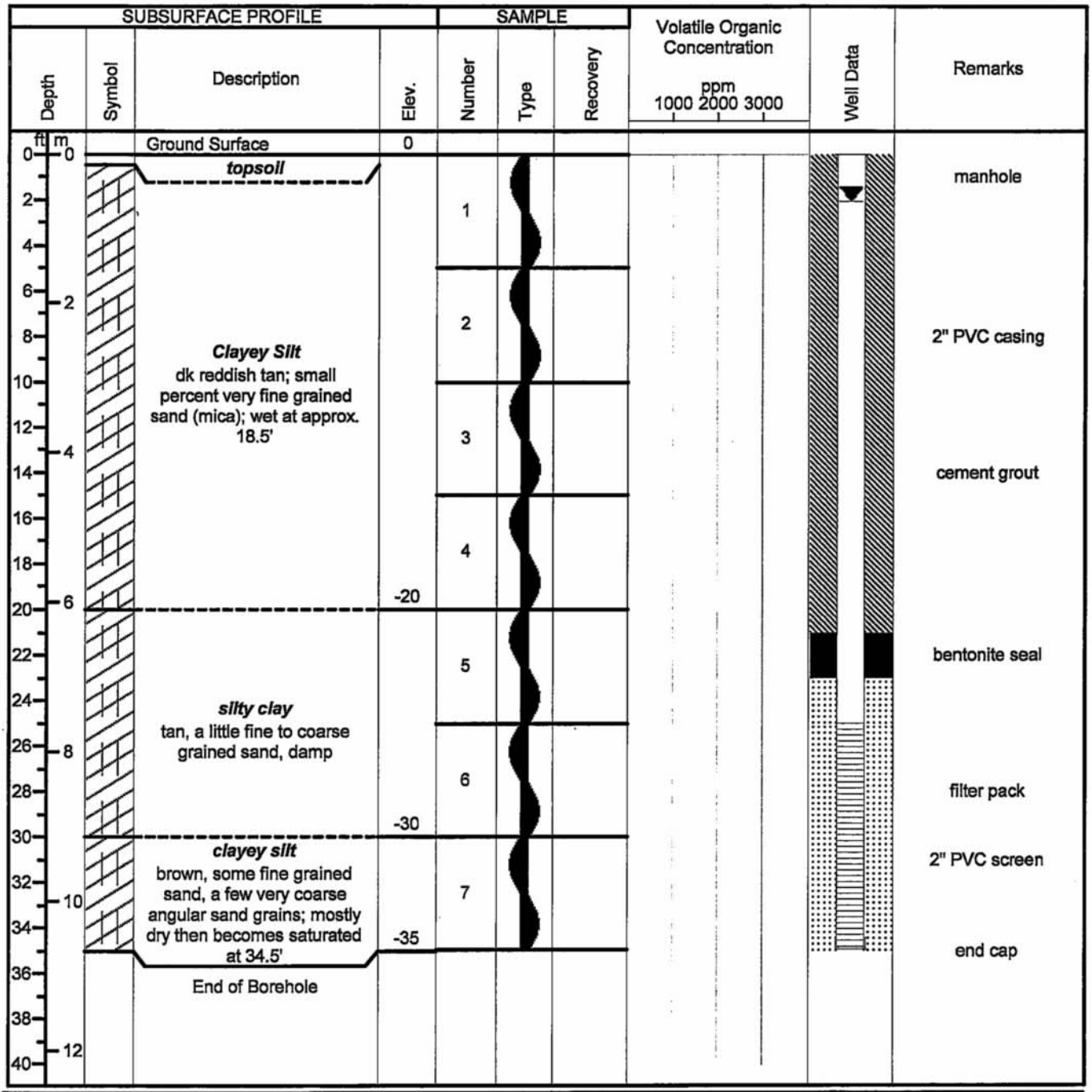
Client: Cecchini

Location: Columbia, SC

Log of Borehole: MW-22B

Driller: Todd Allred, cert. #1446

Inspector: Michael Faris



Drill Method: auger rig

Drill Date: 2/14/13

Casing Diameter: 2.0"

Total Depth of Well: 35.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 2.10'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

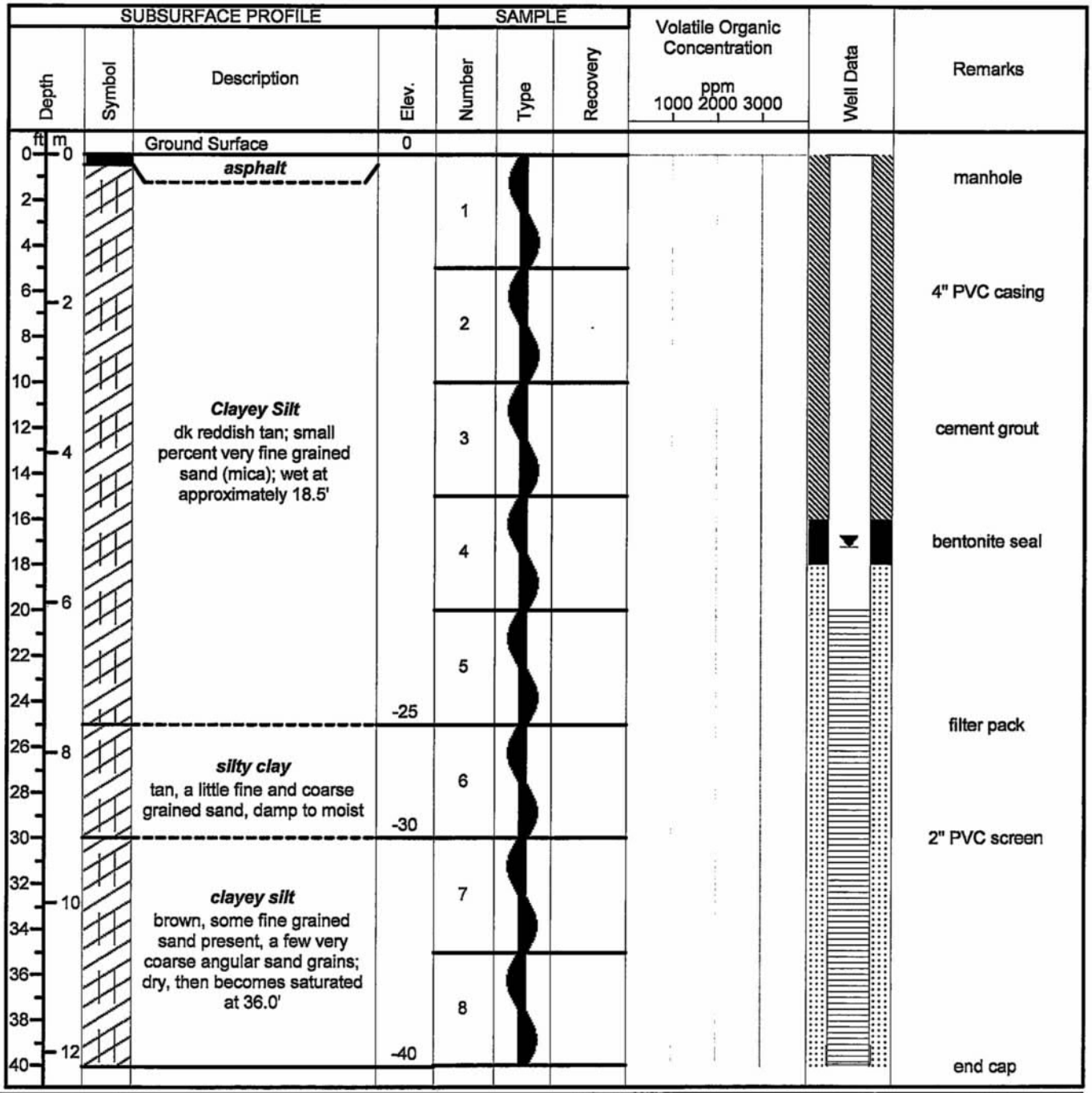
Client: Cecchini

Location: Columbia, SC

Log of Borehole: RW-1

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 2/28/12

Casing Diameter: 4"

Total Depth of Well: 40.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.26'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

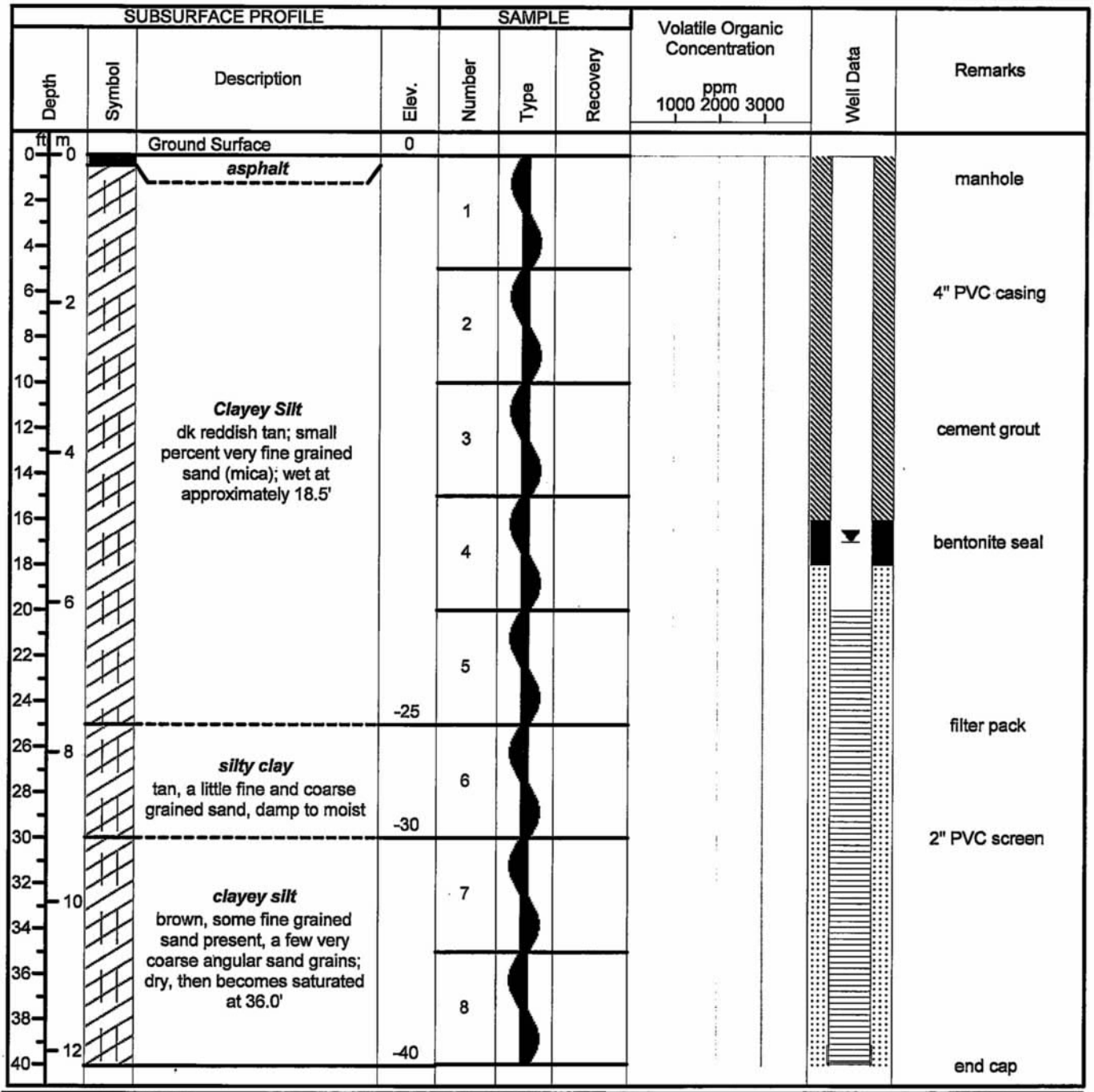
Client: Cecchini

Location: Columbia, SC

Log of Borehole: RW-2

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 2/28/12

Casing Diameter: 4"

Total Depth of Well: 40.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.96'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

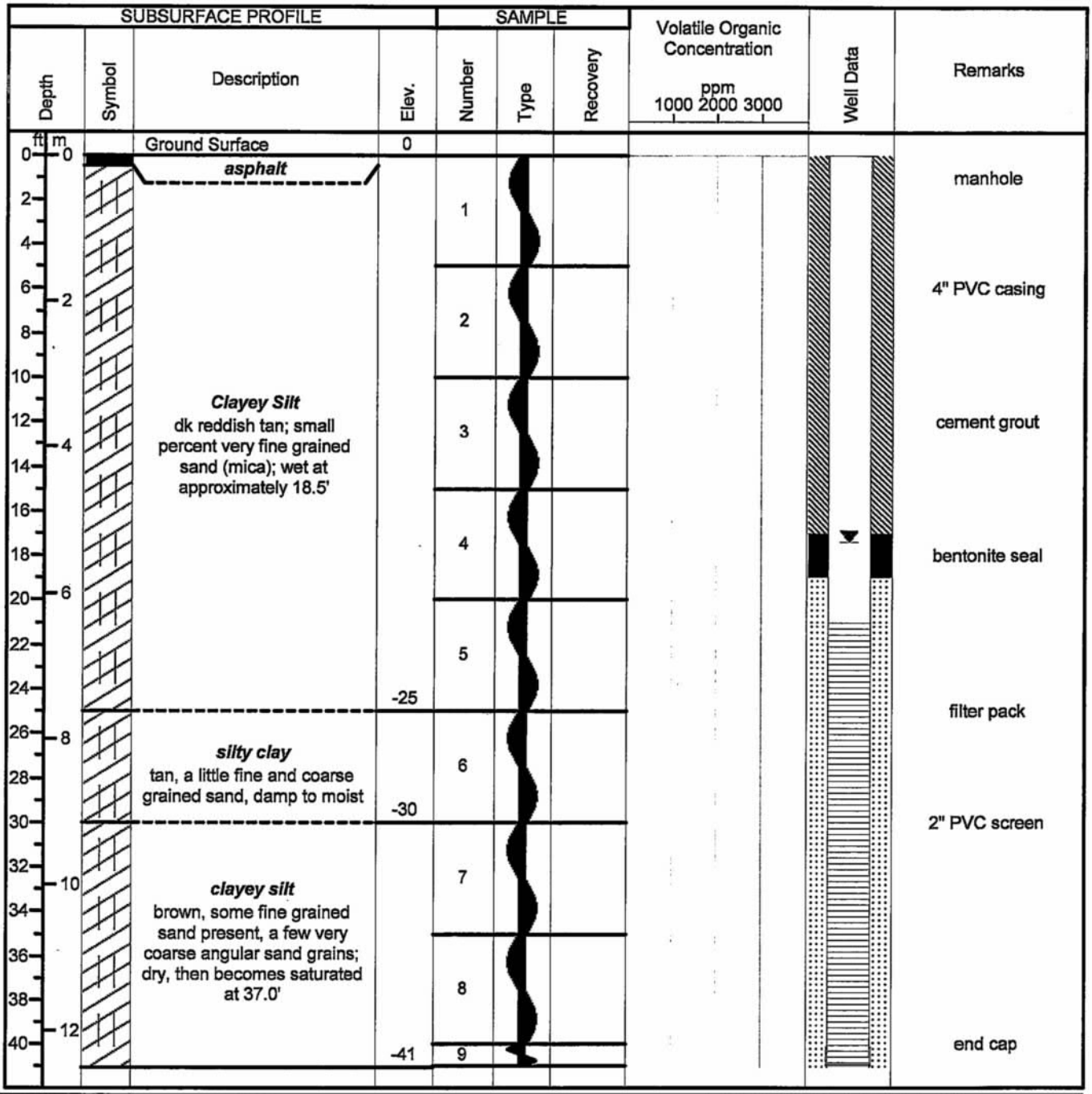
Client: Cecchini

Location: Columbia, SC

Log of Borehole: RW-3

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 3/1/12

Casing Diameter: 4"

Total Depth of Well: 41.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.41'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

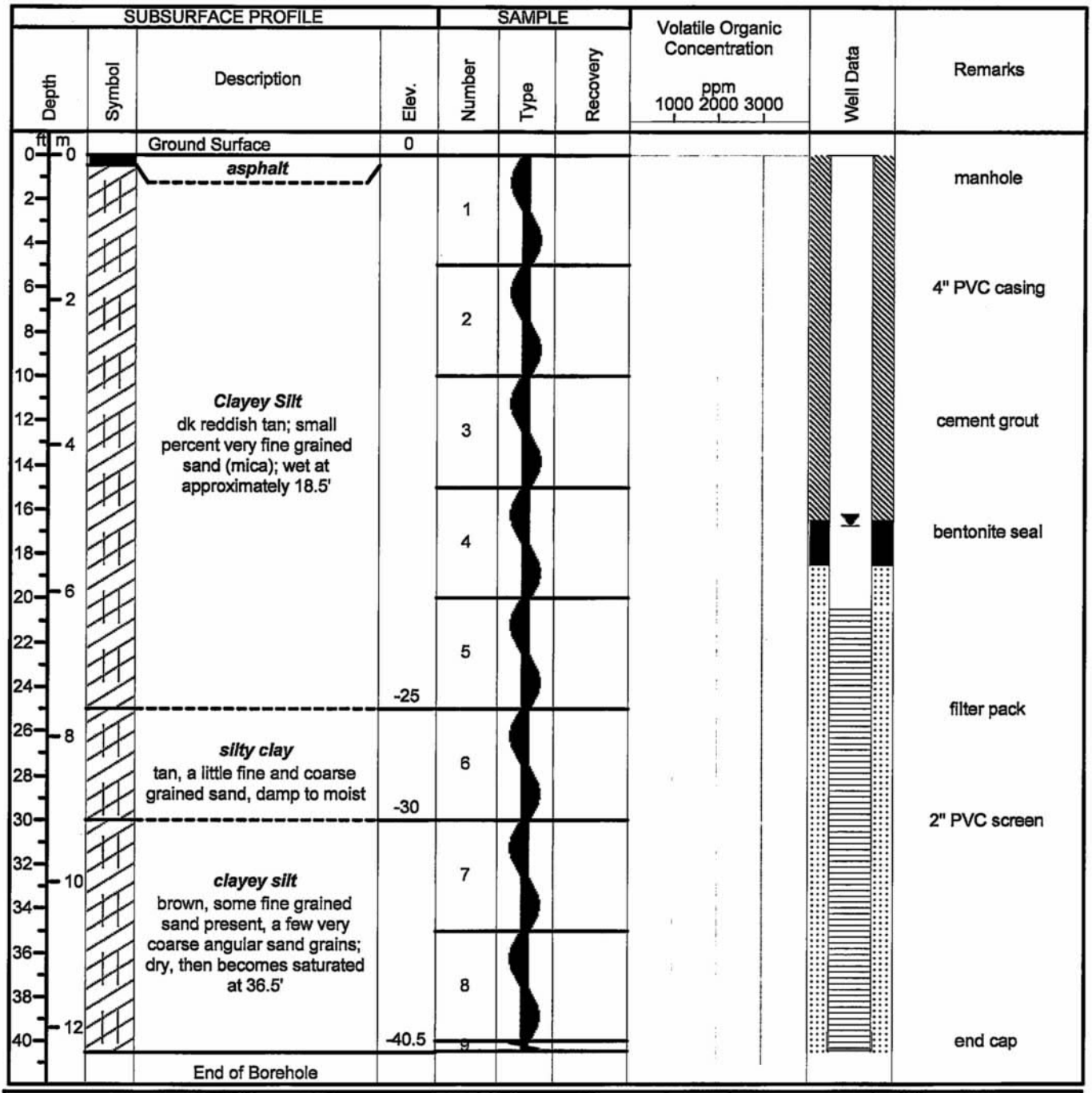
Client: Cecchini

Location: Columbia, SC

Log of Borehole: RW-4

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 3/1/12

Casing Diameter: 4"

Total Depth of Well: 40.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 16.73'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

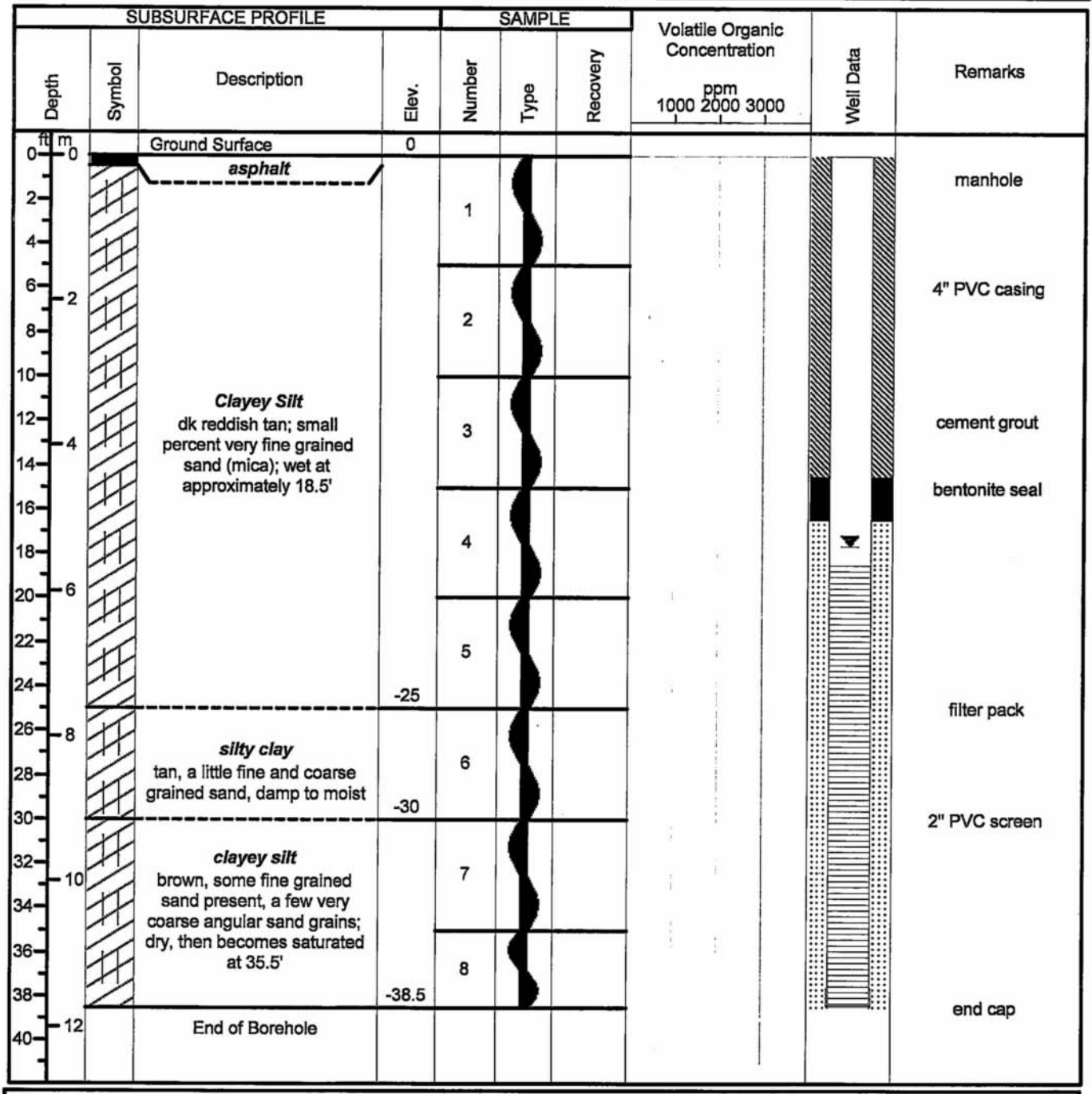
Client: Cecchini

Location: Columbia, SC

Log of Borehole: RW-5

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 3/4/12

Casing Diameter: 4"

Total Depth of Well: 38.5'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 17.64'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

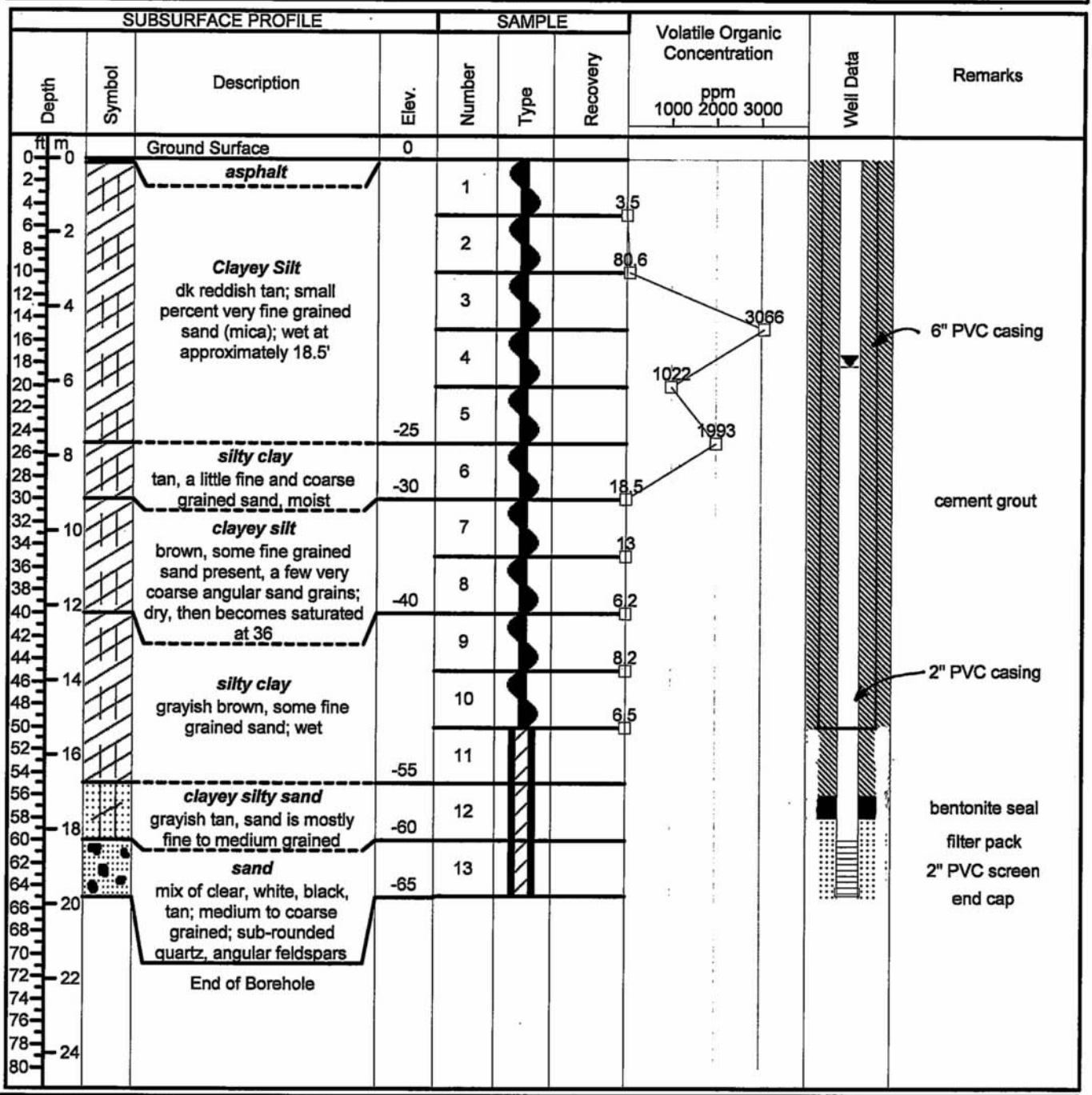
Client: Cecchini

Location: Columbia, SC

Log of Borehole: DMW-1

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 9/11/12

Casing Diameter: 2", 6"

Total Depth of Well: 65.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 18.21'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

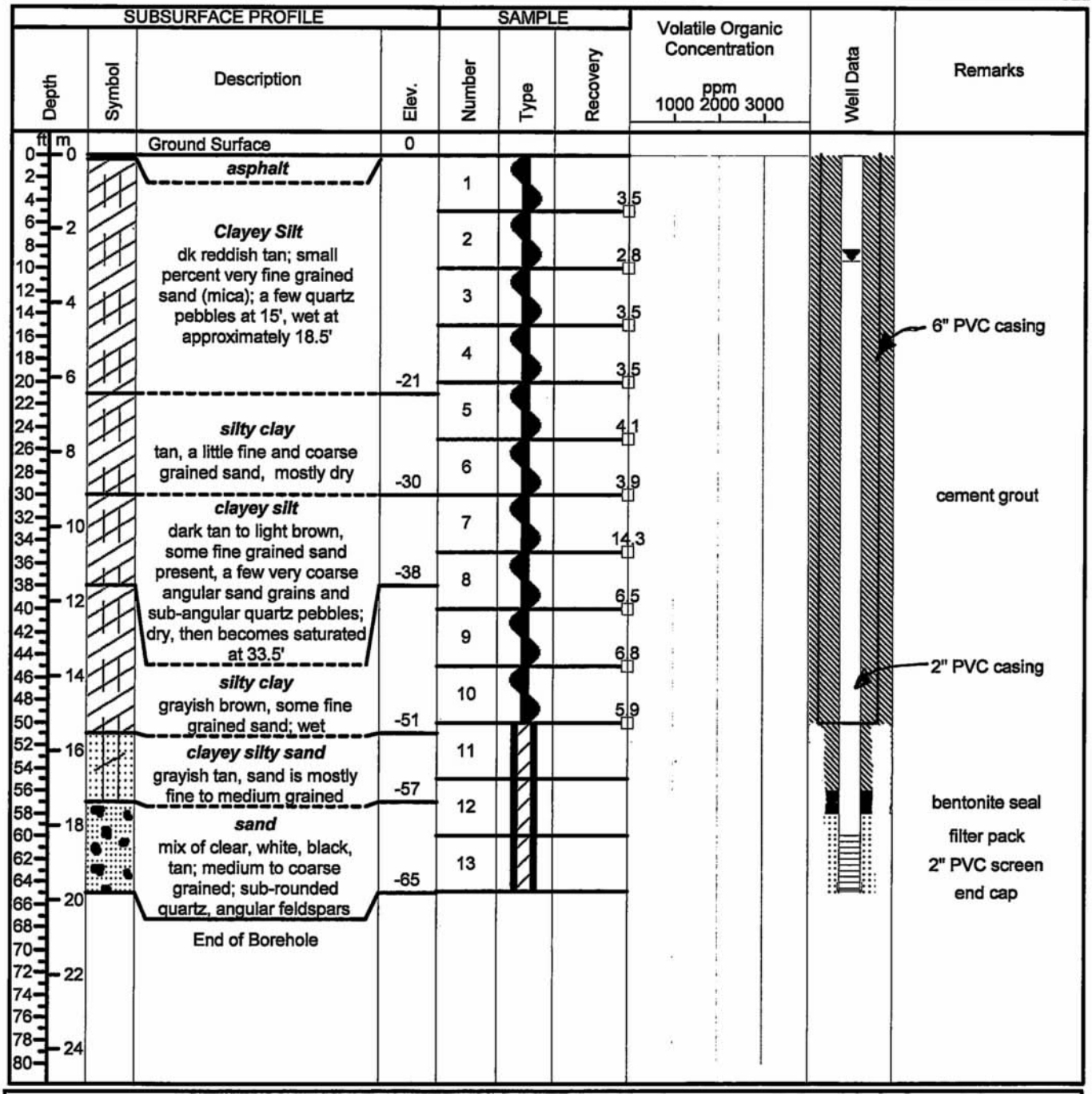
Client: Cecchini

Location: Columbia, SC

Log of Borehole: DMW-2

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 12/21/12

Casing Diameter: 2", 6"

Total Depth of Well: 65.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 9.40'

Latitude: N34d03.910'

Longitude: W81d07.012'

Project No: 06-414.1-12 **UST Permit #** 11946

Project: Broad River Amoco

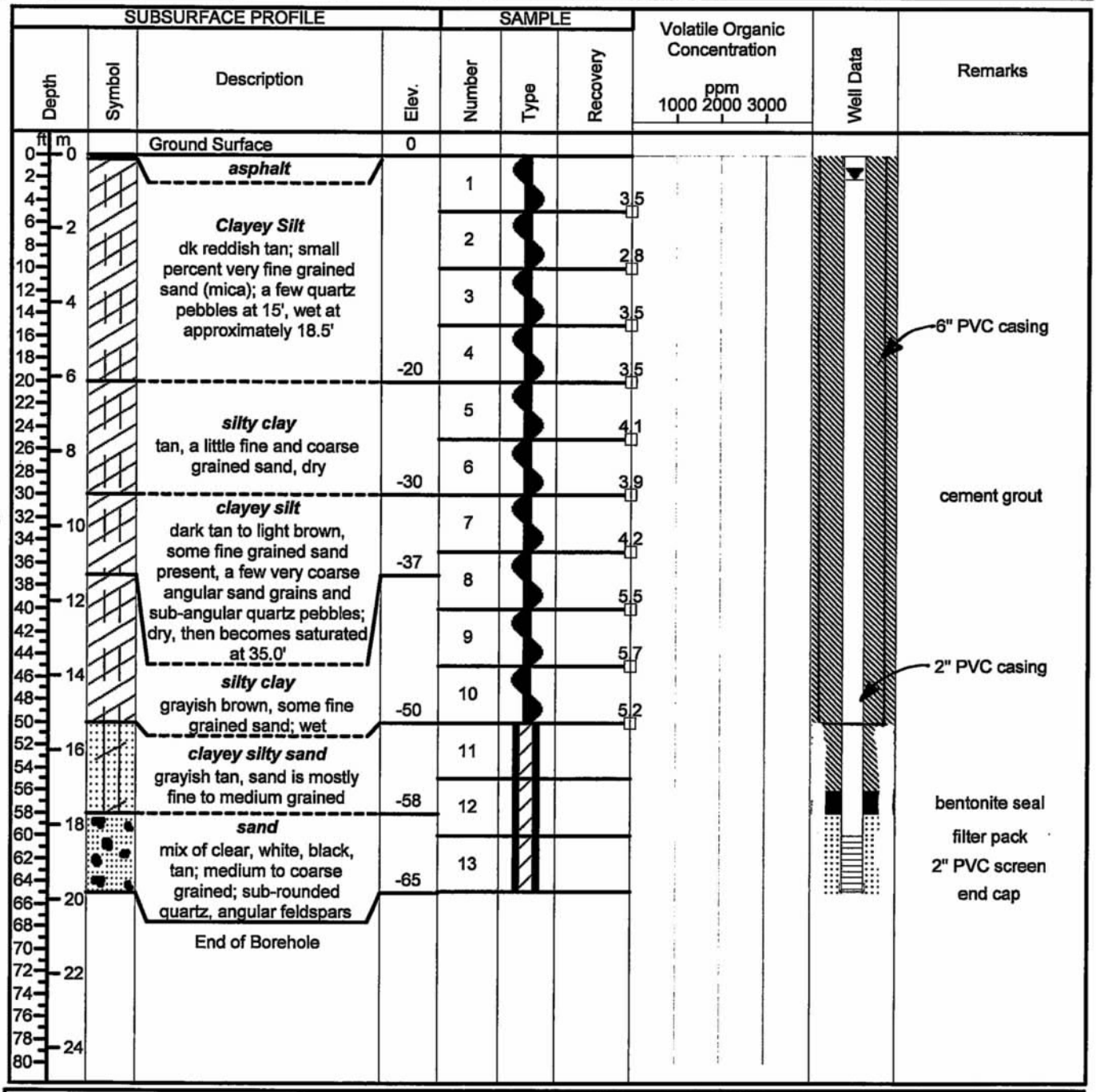
Client: Cecchini

Location: Columbia, SC

Log of Borehole: DMW-3

Driller: Todd Allred, cert. #1446

Inspector: Todd Allred



Drill Method: auger rig

Drill Date: 1/14/13

Casing Diameter: 2", 6"

Total Depth of Well: 65.0'

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water: 2.10'

Latitude: N34d03.910'

Longitude: W81d07.012'

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/17/12 Date Completed: 5/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 15 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C ✓ D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Link #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/17/12
15.0 ft. Date Completed: 5/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/31/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/17/12
15.0 ft. Date Completed: 5/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archer Well #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-4

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/17/12
15.0 ft. Date Completed: 5/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 for Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/17/12
15.0 ft. Date Completed: 5/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1358 (for) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-6

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/18/12 Date Completed: 5/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Wilson #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-7

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/18/12 Date Completed: 5/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-8

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/18/12 Date Completed: 5/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-9

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/18/12 Date Completed: 5/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Miller #1356 (Trainee) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-10

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/18/12 Date Completed: 5/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C ✓ D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archer Mill. #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-11

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/24/12 Date Completed: 5/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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 Andrew Miller #1358 for Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-12

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/24/12 Date Completed: 5/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C ✓ D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1358 for Date: 5/3/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-13

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/24/12 Date Completed: 5/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Wilson #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-14

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/24/12 Date Completed: 5/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 12.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-15

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 5/25/12
15.0 ft. Date Completed: 5/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-16

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/25/12 Date Completed: 5/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (jm) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 15.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-17

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 15.0 ft. Date Started: 5/25/12 Date Completed: 5/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 10.0 ft. and 15.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 15.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: #1356 Well Driller Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-18

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 6/13/12 Date Completed: 6/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 for Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-19

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 6/13/12 Date Completed: 6/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1356 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-20

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/13/12
19.0 ft. Date Completed: 6/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1358 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-21

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 6/13/12 Date Completed: 6/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Well #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-22

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 6/13/12 Date Completed: 6/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1358 (JR) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-23

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 6/19/12 Date Completed: 6/19/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mil #1356 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-24

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 6/19/12 Date Completed: 6/19/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mil #1396 (for) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-25

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/5/12
19.0 ft. Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mill #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-27

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 6/20/12
20.0 ft. Date Completed: 6/20/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1356 Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-28

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 6/20/12 Date Completed: 6/20/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: #1357 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-29

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/5/12 Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 _____ ft. to _____ ft
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: A Register #1356 (D) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-30

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/5/12 Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1358 (Jr) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-31

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/5/12
20.0 ft. Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1352 Well Driller Date: 5/7/12

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-32

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 19.0 ft. Date Started: 7/5/12 Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Joshua Register #1356 (Fax) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-33

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/5/12 Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Joshua Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Miel #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-34

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/12/12
20.0 ft. Date Completed: 7/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Ardenhail #1356 (Fm) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-35

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/12/12 Date Completed: 7/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mich #1357 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-36

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/12/12 Date Completed: 7/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 23.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-37

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 23.0 ft. Date Started: 7/17/12 Date Completed: 7/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 18.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 18.0 ft. and 23.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 23.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (D) Date: 5/3/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 25.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-38

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 25.0 ft. Date Started: 7/13/12 Date Completed: 7/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 20.0 ft. and 25.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 23.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 25.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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 Andrew Mil #1356 (fa) Date: 5/7/12
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 25.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-39

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 25.0 ft. Date Started: 7/17/12 Date Completed: 7/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 20.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 20.0 ft. and 25.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 25.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 25.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-40

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 25.0 ft. Date Started: 7/23/12 Date Completed: 7/23/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 20.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 20.0 ft. and 25.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 23.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 25.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 24.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-41

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 24.0 ft. Date Started: 7/26/12 Date Completed: 7/26/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 19.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 19.0 ft. and 24.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 24.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-42

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/26/12 Date Completed: 7/26/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1336 (Jr) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 26.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-43

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 26.0 ft. Date Started: 7/26/12 Date Completed: 7/26/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 21.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 21.0 ft. and 26.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 24.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 26.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/2/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 24.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-44

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 24.0 ft. Date Started: 8/6/12 Date Completed: 8/6/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 19.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 19.0 ft. and 24.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 24.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1352 (Fm) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 24.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-45

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/7/12
24.0 ft. Date Completed: 8/7/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 19.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 19.0 ft. and 24.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 24.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mil #1356 (B) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 24.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-46

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 24.0 ft. Date Started: 8/7/12 Date Completed: 8/7/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 19.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 19.0 ft. and 24.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 22.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 24.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (fa) Well Driller Date: 5/7/13

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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 23.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-47

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 23.0 ft. Date Started: 7/27/12 Date Completed: 7/27/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 18.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 18.0 ft. and 23.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 21.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: A Leechil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-48

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 7/25/12 Date Completed: 7/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 15.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (Well Driller) Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 19.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-49

TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/26/12
19.0 ft. Date Completed: 7/26/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 14.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 14.0 ft. and 19.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 34.5 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-11D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 34.5 ft. Date Started: 7/24/12 Date Completed: 7/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 29.5 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 29.5 ft. and 34.5 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 33.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 34.5 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 34.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-12D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 34.0 ft. Date Started: 7/25/12 Date Completed: 7/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 29.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 29.0 ft. and 34.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 33.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 34.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1352 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-14D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 7/20/12 Date Completed: 7/20/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.5 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-16D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/24/12
39.5 ft. Date Completed: 7/24/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.5 ft. and 39.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.5 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-19D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 7/17/12 Date Completed: 7/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 42.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-23D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 42.0 ft. Date Started: 6/19/12 Date Completed: 6/19/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 37.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 37.0 ft. and 42.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 40.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 42.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Josh Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-25D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 7/19/12 Date Completed: 7/19/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1358 (Well Driller) Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-27D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 7/5/12 Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Josh Register **CERT. NO.:** 1921
Address: (Print) Level: A B C ✓ D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-28D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 6/20/12 Date Completed: 6/20/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Josh Register CERT. NO.: 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Miller #1358 (fn) Well Driller Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: TMW-29D		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 7/16/12 Date Completed: 7/16/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.5 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-30D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/17/12
40.0 ft. Date Completed: 7/17/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (D) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 37.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-31D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/5/12
37.0 ft. Date Completed: 7/5/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 32.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 32.0 ft. and 37.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 36.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 37.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Josh Register **CERT. NO.:** 1921
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1358 (Well Driller) Date: 5/7/13

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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-32D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/19/12
40.0 ft. Date Completed: 7/19/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-33D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/25/12
39.0 ft. Date Completed: 7/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1358 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.5 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-40D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/23/12
39.5 ft. Date Completed: 7/23/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.5 ft. and 39.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 38.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.5 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Lee #1356 (for) Date: 5/17/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-43D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/6/12
39.0 ft. Date Completed: 8/6/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1358 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-44D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 8/6/12 Date Completed: 8/6/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1350 Well Driller Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-45D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 8/7/12 Date Completed: 8/7/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 34.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Cecil #1358 (for) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 35.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-46D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/7/12
35.0 ft. Date Completed: 8/7/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 30.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 30.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 33.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 35.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 34.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-48D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/25/12
34.0 ft. Date Completed: 7/25/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 29.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 29.0 ft. and 34.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 32.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 34.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1358 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 34.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-49D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 7/26/12
34.0 ft. Date Completed: 7/26/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 29.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 29.0 ft. and 34.0 ft. **NOTE: MULTIPLE SCREENS**
ft. and ft. **USE SECOND SHEET**
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 32.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 34.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1358 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 40.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-50D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/13/12
40.0 ft. Date Completed: 9/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 35.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.5 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 40.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: M. Carey #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 39.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: TMW-51D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 9/13/12 Date Completed: 9/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 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: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 34.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 37.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 39.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 38.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-52D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 38.0 ft. Date Started: 9/13/12 Date Completed: 9/13/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 33.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 33.0 ft. and 38.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 36.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 38.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (D) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 38.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-53D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/14/12
38.0 ft. Date Completed: 9/14/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 33.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 33.0 ft. and 38.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 36.0 (enc.) 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 38.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (for) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 38.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-54D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 38.0 ft. Date Started: 9/14/12 Date Completed: 9/14/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 33.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 33.0 ft. and 38.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 36.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 38.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 38.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
TMW-55D

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/14/12
38.0 ft. Date Completed: 9/14/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 33.0 ft. depth
in. to ft. depth
Height: Above /Below Surface 0.0' ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 33.0 ft. and 38.0 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 36.0 (enc.) 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 ft. to ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Depth: From 38.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one) ✓
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/25/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.88 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/25/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 14.30 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/25/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 14.32 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (Well Driller) Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-4

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/25/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 14.32 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Lail #1352 (for) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/25/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.08 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-6

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/25/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.30 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (D) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-7

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/26/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.58 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archer Weil #1336 (Well Driller) Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-8

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/26/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.38 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: T. Allred #1336 (for) Date: 5/2/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-9

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/26/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.98 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-10

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/26/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.35 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-11

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/26/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.30 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (Driller) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: FP-12		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/27/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 14.43 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1358 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-13

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/27/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.98 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (for) Date: 5/7/13
Well Driller

If D Level Driller, provide supervising driller's name:

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-14

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 9/27/12
20.0 ft. Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.07 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Lick #1356 (B3) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: FP-15

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/27/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.17 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A PUBLIC SYSTEM NUMBER:

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from 20.0 ft. to 0.0 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
FP-16

TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 9/27/12 Date Completed: 10/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 1.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
1.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 1.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 15.26 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 _____ ft. to _____ ft.
Effective size _____ Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 20.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (FR) Date: 5/7/13
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)

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-6A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 25.5 ft. Date Started: 8/16/12 Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 15.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 15.5 ft. and 25.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.00 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 25.5 ft. to 13.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 13.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (Well Driller) Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-6B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/16/12
38.5 ft. Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 28.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 28.5 ft. and 38.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.05 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 38.5 ft. to 26.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 26.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1358 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-7A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 24.0 ft. Date Started: 8/16/12 Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 14.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 14.0 ft. and 24.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.60 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 24.0 ft. to 12.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 12.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archer Weil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-8A		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/15/12
23.0 ft. Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 13.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 13.0 ft. and 23.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.84 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 23.0 ft. to 11.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 11.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-8B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 37.5 ft. Date Started: 8/15/12 Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 27.5.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 27.5 ft. and 37.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.60 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 37.5 ft. to 25.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 25.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: M. Carey #1356 (fm) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-9A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/15/12
23.0 ft. Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 13.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 13.0 ft. and 23.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.61 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 23.0 ft. to 11.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 11.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (Well Driller) Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-9B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 31.5 ft. Date Started: 8/15/12 Date Completed: 8/18/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 21.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 21.5 ft. and 31.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.60 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 31.5 ft. to 19.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 19.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) P.O. Box 50285 Columbia, SC 29250
Level: A B C D ✓ (circle one)
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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 Andrew Mitchell #1356 (Bor) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-10A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 17.5 ft. Date Started: 8/2712 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 7.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 7.5 ft. and 17.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 11.05 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 17.5 ft. to 5.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 5.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Miel #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-10B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.0 ft. Date Started: 8/2712 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 29.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 29.0 ft. and 39.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.87 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 39.0 ft. to 27.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 27.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archie Neil #1356 (for) Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-11A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/2712
20.0 ft. Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 10.52 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 20.0 ft. to 8.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 8.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-11B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35.0 ft. Date Started: 8/2712 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface U.U' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 25.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 10.30 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 35.0 ft. to 23.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey **CERT. NO.:** 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mil #1356 (trainee) Well Driller Date: 5/7/13

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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-12A		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/2712
20.0 ft. Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 13.95 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 20.0 ft. to 8.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 8.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1358 for Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-12B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/27/12
36.5 ft. Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 26.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 26.5 ft. and 36.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.72 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 36.5 ft. to 24.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 24.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael Carey #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-13A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 8/2812
22.0 ft. Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 12.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 12.0 ft. and 22.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.80 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 22.0 ft. to 10.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 10.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-13B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 33.5 ft. Date Started: 8/28/12 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 23.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 23.5 ft. and 33.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 19.88 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 33.5 ft. to 21.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 21.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Lail #1356 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-14A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 20.0 ft. Date Started: 8/2812 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 10.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 10.0 ft. and 20.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 14.52 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 20.0 ft. to 8.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 8.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Michael #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-14B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 38.5 ft. Date Started: 8/28/12 Date Completed: 8/29/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 28.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 28.5 ft. and 38.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.27 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 38.5 ft. to 26.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 26.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Michael Carey CERT. NO.: 1920
Address: (Print) Level: A B C D ✓ (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1350 (Well Driller) Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-15A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 17.0 ft. Date Started: 2/18/13 Date Completed: 2/20/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 7.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 7.0 ft. and 17.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.01 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 17.0 ft. to 5.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 5.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archenbil #1356 (Well Driller) Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-15B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/18/13
40.0 ft. Date Completed: 2/20/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 30.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 30.0 ft. and 40.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.60 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 40.0 ft. to 28.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 28.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Weil #1356 Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-16A

TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 18.0 ft. Date Started: 2/19/13 Date Completed: 2/20/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 8.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 8.0 ft. and 18.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.21 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 6.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 6.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1336 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☑ Yes ☐ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-16B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 37.0 ft. Date Started: 2/19/13 Date Completed: 2/20/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 27.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 27.0 ft. and 37.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.75 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 37.0 ft. to 25.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 25.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Mull #1356 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-17B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 39.5 ft. Date Started: 2/14/13 Date Completed: 2/15/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 29.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 29.5 ft. and 39.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 9.05 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 39.5 ft. to 27.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 27.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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 Todd Allred #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-18A		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 13.0 ft. Date Started: 2/26/13 Date Completed: 2/27/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 3.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 3.0 ft. and 13.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 0.85 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 1.5 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 1.5 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Wilkie #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-18B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE: ☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 35.0 ft. Date Started: 2/26/13 Date Completed: 2/27/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 25.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 1.05 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 35.0 ft. to 23.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 (for) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-19A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/20/13
15.0 ft. Date Completed: 2/22/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 5.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 5.0 ft. and 15.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 7.95 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 15.0 ft. to 3.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 3.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1350 (Jr.) Well Driller Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS: MW-19B		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/20/13
34.0 ft. Date Completed: 2/22/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 24.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 24.0 ft. and 34.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 8.35 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 34.0 ft. to 22.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 22.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 Well Driller Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-20A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/21/13
15.0 ft. Date Completed: 2/22/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 5.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 5.0 ft. and 15.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 5.05 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 15.0 ft. to 3.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 3.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (Well Driller) Date: 5/7/13

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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-20B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/21/13
35.0 ft. Date Completed: 2/22/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 25.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 4.11 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 35.0 ft. to 23.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: MW-21A

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 12.0 ft. Date Started: 3/2/13 Date Completed: 3/2/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 2.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 2.0 ft. and 12.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 0.85 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 12.0 ft. to 1.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 1.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 Date: 5/7/13
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)**

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: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-21B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 3/2/13
35.0 ft. Date Completed: 3/2/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 25.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 1.35 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 35.0 ft. to 23.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1358 Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
MW-22B

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 2/14/13
35.0 ft. Date Completed: 2/15/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 25.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 10.0'
Set Between: 25.0 ft. and 35.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 2.10 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 35.0 ft. to 23.0 ft.
Effective size #2 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 23.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1446 (for) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
RW-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 2/28/13 Date Completed: 2/28/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 4.0"
Slot/Gauge: 0.010' Length: 20.0'
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 17.26 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 40.0 ft. to 18.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 18.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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 Andrew Lail #1356 (trainee) Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
RW-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 2/28/13 Date Completed: 2/28/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 4.0"
Slot/Gauge: 0.010' Length: 20.0'
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 16.96 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 40.0 ft. to 18.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 18.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Lee #1356 for Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: RW-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 3/1/13
41.0 ft. Date Completed: 3/1/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 21.0 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 4.0"
Slot/Gauge: 0.010' Length: 20.0'
Set Between: 21.0 ft. and 41.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.41 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 41.0 ft. to 19.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 19.0 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Archer Allred #1356 Date: 5/7/13
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**
N/A

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
RW-4

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 3/1/13
40.5 ft. Date Completed: 3/1/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 20.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 4.0"
Slot/Gauge: 0.010' Length: 20.0'
Set Between: 20.5 ft. and 40.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 16.73 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 40.5 ft. to 18.5 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 18.5 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A B ✓ C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Andrew Neil #1356 (for) Date: _____
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)**

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: RW-5

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 38.5 ft. Date Started: 3/4/13 Date Completed: 3/4/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 4.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
4.0 in. to 18.5 ft. depth
_____ in. to _____ ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 4.0"
Slot/Gauge: 0.010' Length: 20.0'
Set Between: 18.5 ft. and 38.5 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.64 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 38.5 ft. to 16.5 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 16.5 ft. to 0.0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1356 Well Driller Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: DMW-1

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 65.0 ft. Date Started: 9/11/12 Date Completed: 9/12/12

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0", 6.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 60.0 ft. depth
6.0 in. to 50.0 ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 60.0 ft. and 65.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.21 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 65.0 ft. to 58.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 58.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1356 (Trainee) Date: 5/7/13
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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: DMW-2

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 65.0 ft. Date Started: 12/21/12 Date Completed: 1/10/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0", 6.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 60.0 ft. depth
6.0 in. to 50.0 ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 60.0 ft. and 65.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 9.40 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.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 65.0 ft. to 58.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 58.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred CERT. NO.: 1446
Address: (Print) P.O. Box 50285 Columbia, SC 29250
Level: A B ✓ C D (circle one)
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: [signature] #1358 (Well Driller) Date: 5/7/13

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)

Water Well Record
Bureau of Water
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Fredrick Cecchini (last) (first)
Address: 4335 Broad River Rd.
City: Columbia State: SC Zip: 29210
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River Amoco
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29210
Latitude: N34d03.910' Longitude: W81d07.012'

3. PUBLIC SYSTEM NAME: N/A **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
See attached log		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS: DMW-3

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24502

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) Date Started: 1/14/13
65.0 ft. Date Completed: 1/21/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2.0", 6.0"
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2.0 in. to 60.0 ft. depth
6.0 in. to 50.0 ft. depth
Height: Above /Below Surface 0.0' ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2.0"
Slot/Gauge: 0.010' Length: 5.0'
Set Between: 60.0 ft. and 65.0 ft.
_____ ft. and _____ ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 2.10 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 65.0 ft. to 58.0 ft.
Effective size #3 Uniformity Coefficient ~1

16. WELL GROUTED? ☑ Yes ☐ No
☑ Neat Cement ☑ Bentonite ☐ Bentonite/Cement ☐ Other _____
Depth: From 58.0 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: site 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: Todd Allred **CERT. NO.:** 1446
Address: (Print) Level: A B C D (circle one)
P.O. Box 50285
Columbia, SC 29250
Telephone No.: 803-783-3314 Fax No.: 803-783-2587

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: Todd Allred #1346 (TA) Date: 5/2/13
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 F
AQUIFER EVALUATION RESULTS

SUMMARY of SLUG TEST

SOUTH CAROLINA
Department of Health and Environmental Control (DHEC)

Site Data

SITE ID: # 11946 COUNTY Richland

FACILITY NAME Broad River Amoco

Slug Data

See Appendix F 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/ water 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-17B	DMW-2		
Initial Rise/Drawdown in well (feet)	23.59	26.90		
Radius of Well Casing (feet)	0.08	0.08		
Effective Radius of Well (feet)	0.25	0.19		
Static Saturated Aquifer Thickness (feet)	50.00	50.00		
Length of Well Screen (feet)	10.00	5.00		
Static Height of Water Column in Well (ft) (bottom of screen to semi-confining unit @ top)	9.00	35.00		

Calculations

See Appendix F 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-17B	DMW-2	
Hydraulic Conductivity (ft/sec.)	2.72E-7	1.01E-7	

Thickness of the aquifer used to calculate hydraulic conductivity was _____ feet.

The aquifer is _____ confined ✓ semi-confined _____ water table (Check as appropriate).

The estimated seepage velocity is 1.07 feet per year based on a hydraulic conductivity of 1.87E-7 ft./sec. a hydraulic gradient of 3.98E-2 ft/ft., and a porosity of 37 per cent for clayey silt / clayey sand soil (list type i.e., silty sand ,clay, etc).
effective

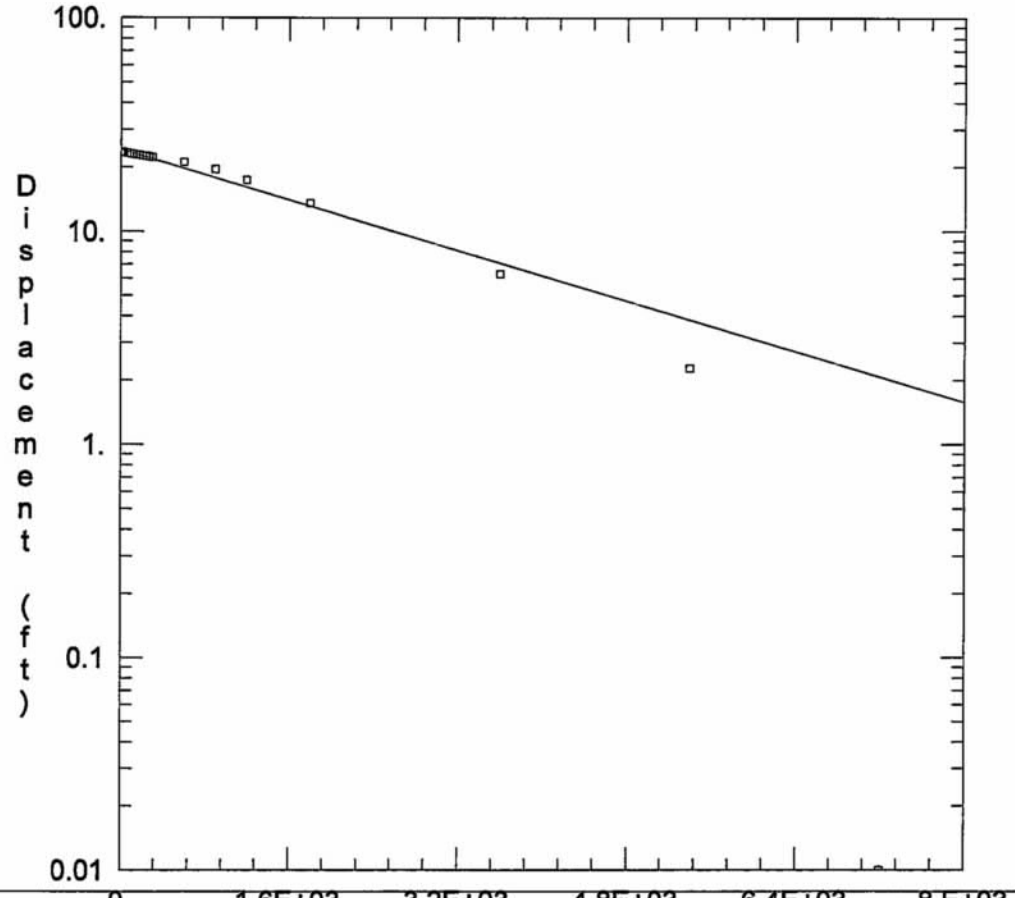
SUMMARY of SLUG TEST

Slug Test Data for AQTESOLV

Broad River Amoco (UST Permit #11946)
Performed in Monitoring Well MW-17B
March 8, 2013

Static Depth to Water (ft.) = 9.05
Total Depth (ft.) = 39.5

Elapsed Time (sec)	Depth to Water (feet)	Displacement (feet)
0	32.64	23.59
5	32.63	23.58
10	32.58	23.53
15	32.56	23.51
20	32.54	23.49
30	32.52	23.47
60	32.35	23.30
90	32.21	23.16
120	32.10	23.05
150	31.94	22.89
180	31.81	22.76
210	31.70	22.65
240	31.60	22.55
270	31.45	22.40
300	31.30	22.25
600	30.10	21.05
900	28.60	19.55
1200	26.43	17.38
1800	22.59	13.54
3600	15.35	6.30
5400	11.32	2.27
7200	9.06	0.01



WELL TEST ANALYSIS

PROJECT INFORMATION

Company: ARM Environmental Services
Client: Cecchini
Project: 06-414.1-12
Test Location: Broad River Amoco

AQUIFER DATA

Saturated Thickness: 50. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-17B)

Initial Displacement: 23.59 ft
Wellbore Radius: 0.25 ft
Screen Length: 10. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.083 ft
Well Skin Radius: 0.25 ft
Total Well Penetration Depth: 9. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 2.716E-07 ft/sec
y0 = 24.21 ft

2nd ZONE AQUIFER CALCULATIONS

HYDRAULIC GRADIENT

The top of casing elevations of each of the permanent groundwater monitoring wells were established by direct survey. The elevation of the aquifer was then calculated and utilized to evaluate the primary direction of groundwater flow and the hydraulic gradient in the water bearing formation at the site

Calculations

Based on water elevation change per unit distance as measured from MW-18B to MW-15B as presented on Figure 5B:

I = Hydraulic Gradient = **3.98 E-2 ft/ft**
(8.03 ft / 201.84 ft)

SEEPAGE VELOCITY

Vs = Seepage Velocity
K = Hydraulic Conductivity **= 2.72 E-7 ft/sec**
Hydraulic conductivity calculated from slug test conducted in MW-17B.
n = Effective Porosity (assumed) = **0.32** (clayey silt to clayey sand)

$$Vs = \frac{I \times K}{n}$$

$$Vs = \frac{(3.98E-2\ ft/ft)(2.72E-7\ ft/sec)}{0.32}$$

$$Vs = 3.38E-8\ ft/sec$$

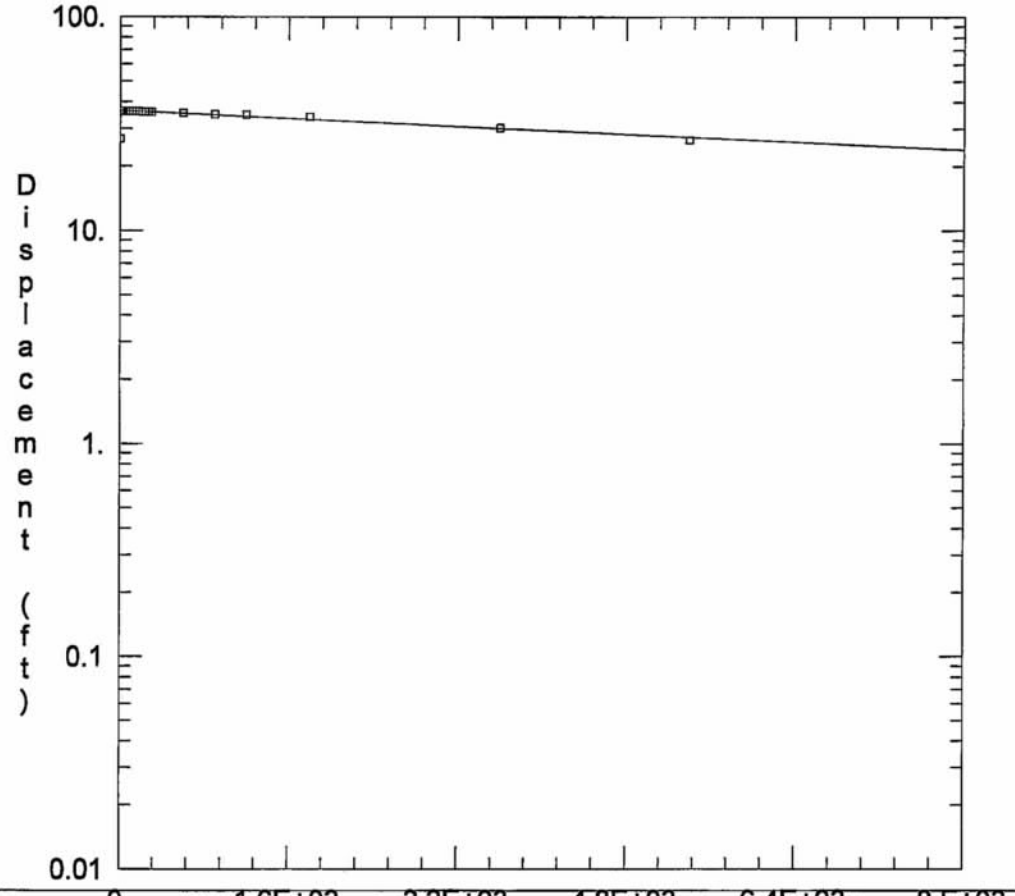
Vs = 1.07 ft/yr

Slug Test Data for AQTESOLV

Broad River Amoco (UST Permit #11946)
Performed in Monitoring Well dMW-2
March 8, 2013

Static Depth to Water (ft.) = 9.40
Total Depth (ft.) = 65.0

Elapsed Time (sec)	Depth to Water (feet)	Displacement (feet)
0	45.70	36.30
5	45.69	36.29
10	45.68	36.28
15	45.67	36.27
20	45.66	36.26
30	45.65	36.25
60	45.62	36.22
90	45.58	36.18
120	45.55	36.15
150	45.51	36.11
180	45.47	36.07
210	45.42	36.02
240	45.40	36.00
270	45.36	35.96
300	45.33	35.93
600	44.97	35.57
900	44.48	35.08
1200	44.30	34.90
1800	43.50	34.10
3600	39.80	30.40
5400	36.01	26.61



WELL TEST ANALYSIS

PROJECT INFORMATION

Company: ARM Environmental Services
Client: Cecchini
Project: 06-414.1-12
Test Location: Broad River Amoco

AQUIFER DATA

Saturated Thickness: 50. ft
Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (DMW-2)

Initial Displacement: 26.9 ft
Wellbore Radius: 0.19 ft
Screen Length: 5. ft
Gravel Pack Porosity: 0.3
Casing Radius: 0.083 ft
Well Skin Radius: 0.2 ft
Total Well Penetration Depth: 35. ft

SOLUTION

Aquifer Model: Confined
Solution Method: Bouwer-Rice
K = 1.007E-07 ft/sec
y0 = 36.49 ft

2ND ZONE AQUIFER CALCULATIONS (deeper depth)

HYDRAULIC GRADIENT

The top of casing elevations of each of the permanent groundwater monitoring wells were established by direct survey. The elevation of the aquifer was then calculated and utilized to evaluate the primary direction of groundwater flow and the hydraulic gradient in the water bearing formation at the site

Calculations

Based on water elevation change per unit distance as measured from DMW-3 to DMW-1 as presented on Figure 5C:

I = Hydraulic Gradient = **1.27 E-2 ft/ft**
(2.08 ft / 163.73 ft)

SEEPAGE VELOCITY

Vs = Seepage Velocity
K = Hydraulic Conductivity = **1.01 E-7 ft/sec**
Hydraulic conductivity calculated from slug test conducted in DMW-2.
n = Effective Porosity (assumed) = **0.30** (clayey sand)

$$Vs = \frac{I \times K}{n}$$

$$Vs = \frac{(1.27E-2\ ft/ft)(1.01E-7\ ft/sec)}{0.30}$$

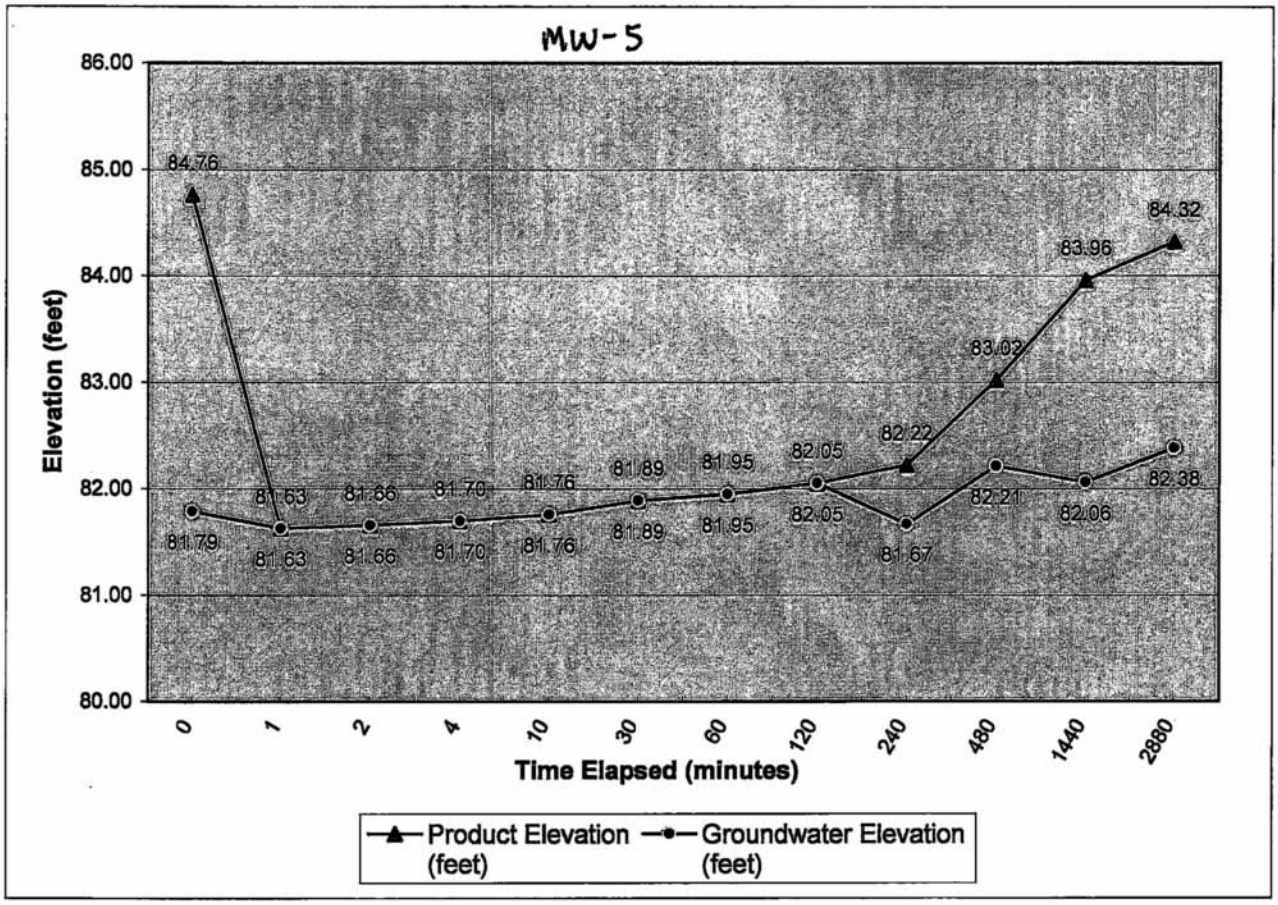
$$Vs = 4.28E-9\ ft/sec$$

Vs = 0.13 ft/yr

Appendix F – Free Product Recovery Rate Test

March 11 through March 13, 2013

Elapsed Time (minutes)	Product Elevation (feet)	Groundwater Elevation (feet)	Product Thickness (feet)
0	84.76	81.79	2.97
1	81.63	81.63	0.00
2	81.66	81.66	0.00
4	81.70	81.70	0.00
10	81.76	81.76	0.00
30	81.89	81.89	0.00
60	81.95	81.95	0.00
120	82.05	82.05	0.00
240	82.22	81.67	0.55
480	83.02	82.21	0.81
1440	83.96	82.06	1.90
2880	84.32	82.38	1.94



APPENDIX G
DISPOSAL MANIFEST(S)

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number 10904

GENERATOR

5. Generator's Name and Mailing Address

ARM ENVIRONMENTAL
PO BOX 50285
COLUMBIA, SC 29250

Generator's Phone: ~~803-783-3314~~

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

BROAD RIVER BP
4355 BROAD RIVER RD.
COLUMBIA, SC

6. Transporter 1 Company Name — U.S. EPA ID Number

T K TANK SERVICES, INC.

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

8. Designated Facility Name and Site Address — U.S. EPA ID Number

T K TANK SERVICES INC.
425 BOULEVARD RD.
SUMTER, SC

Facility's ~~803~~ 418-5314

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	nonhazardous petroleum contaminated soil/product	001	TZ	23	YM	
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month 8 Day ~~28~~ 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: Steve A. Gamble — Signature — Month 8 Day ~~28~~ 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: Tommy Keels — Signature — Month 8 Day 28 Year 12

169-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

CERTIFICATE OF DISPOSAL

certify to all that

T K TANK SERVICES, INC.

OF TONS 11.5 Contaminant NONHAZARDOUS PETROLEUM CONTAMINATED SOIL

This is to certify that the above water/product has been disposed of
in accordance with EPA regulations on petroleum contaminated soil/product

BROAD RIVER BP

8/29/12
Date

Tommy Webb
Signature

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

ARM ENVIRONMENTAL
PO BOX 50285
COLUMBIA, SC 29250

Generator's Phone: 803-782-3314

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

BROAD RIVER BP
4355 BROAD RIVER RD
COLUMBIA, SC

6. Transporter 1 Company Name: T K TANK SERVICES,INC. — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address

T K TANK SERVICES INC.
425 BOULEVARD RD.
SUMTER, SC

U.S. EPA ID Number:

Facility's Phone: 803-418-5314

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	NONHAZARDOUS SOIL CUTTINGS FROM WELL DRILLING	32	DM	32		
	2.					
	3.					
	4.					

13. Special Handling Instructions and Additional Information

INT'L

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Todd Allred — Signature: Todd Allred — Month: 2 — Day: 28 — Year: 2013

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: Steve A. Gamble — Signature: Steve A. Gamble — Month: 2 — Day: 28 — Year: 2013

Transporter 2 Printed/Typed Name — Signature — Month — Day — Year

DESIGNATED FACILITY

17. Discrepancy

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

16 Tons by weight

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 — Month: 2 — Day: 28 — Year: 2013

Printed/Typed Name: Tommy Keels — Signature: Tommy Keels — Month — Day — Year

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Waste Tracking Number: 10992

GENERATOR

5. Generator's Name and Mailing Address:
ARM ENVIRONMENTAL
PO BOX 50285
COLUMBIA, SC 29250
Generator's Phone: 803-783-3314

Generator's Site Address (if different than mailing address):
BROAD RIVER BP
4355 BROAD RIVER RD
COLUMBIA, SC

6. Transporter 1 Company Name: T K TANK SERVICES,INC. | U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address:
T K TANK SERVICES INC.
425 BOULEVARD RD.
SUMTER, SC
Facility's Phone: 803-418-5314 | U.S. EPA ID Number:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
	non-hazardous petroleum contaminated soil/product	18	DM			
2.						
3.						
4.						

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Michael Faris as agent for: Fred Cucchini | Signature | Month 3 | Day 4 | Year 13

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 | Signature | 3 | 4 | Month | Day | 2013 | Year
Transporter 2 Printed/Typed Name: Tommy Keels | Signature: Tommy Keels | Month 3 | Day 4 | Year 13

17. Discrepancy

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

DESIGNATED FACILITY

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
3 4 2013
Printed/Typed Name: Tommy Keels | Signature: Tommy Keels | Month 3 | Day 4 | Year 13

169-BLC-O 5 11977 (Rev. 9/09)

DESIGNATED FACILITY TO GENERATOR

CERTIFICATE OF DISPOSAL

Certify to all that

T K TANK SERVICES, INC.

TONS 25 TONS Contaminant: NONHAZARDOUS PETROLEUM CONTAMINATED SOIL/PRODUCT

This is to certify that the above SOIL/product has been disposed of

In accordance with EPA regulations on PETROLEUM CONTAMINATED SOIL

BROAD RIVER BP

3/04/13

DATE

SIGNATURE

NON-HAZARDOUS WASTE 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 Document No. 851

2. Page 1 of

3. Generator's Name and Mailing Address
Broad River Amoco
4335 Broad River Rd.
Columbia, SC 29210

06-414.1-12

4. Generator's Phone ( )

5. Transporter 1 Company Name
ARM ENVIRONMENTAL SERVICES, INC.

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone 803-783-3314

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
U.S. Water Recovery
435 Old Mt. Holly Rd.
Mt. Holly, SC 29445

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone 843 797-3111

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON-HAZARDOUS PETROLEUM CONTAMINATED SOIL				
b. NON-HAZARDOUS PETROLEUM CONTAMINATED WATER	1	TT	110	gallons
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

ARM ENVIRONMENTAL SERVICES, INC.
PO BOX 50285
COLUMBIA, SC 29250

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name: Michael Faris as agent for: Fredonia Cecchini

Signature: Michael Faris

Date: Month 4 Day 23 Year 13

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Billy Pittenger

Signature: Billy Pittenger

Date: Month 5 Day 3 Year 13

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name

Signature

Date: Month Day Year

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: David Ward

Signature: David Ward

Date: Month 5 Day 13 Year 13

NON-HAZARDOUS WASTE GENERATOR TRANSPORTER FACILITY

APPENDIX H
LOCAL ZONING REGULATIONS

Local Zoning Regulations

Officials of the County of Richland, the City of Columbia Water Works and the SCDHEC EQC Office indicated that no restrictions are enforced in the site study area regarding the installation of water supply wells for drinking water and/or irrigation. For commercial and industrial properties, no restrictions are enforced regarding the installation of water supply wells for irrigation or as source of process water. A permit application is required for commercial and industrial properties regarding the installation of water supply wells (public) as a drinking water source. The City of Columbia is served by a municipal water supply system.

No potable water wells or irrigation wells were identified within 1,000 feet of the contaminant plume from the subject site while conducting this assessment or during the potential receptors survey completed during the Tier I Assessment in 2011.

APPENDIX I
FATE & TRANSPORT MODELING

APPENDIX J
PROPERTY ACCESS DOCUMENTATION

ARM ENVIRONMENTAL SERVICES, INC.
ASSESSMENT & REMEDIAL SERVICES armenv.com

September 18, 2012

Jim R. Rice, Jr.
22 Caddis Creek Ct.
Irmo, SC 29063

Re: Request for Access to Private Property:
1257 Dothan Rd. in Columbia, SC

Richland Co. Tax Map # R06108-04-27

Dear Mr. Rice;

The South Carolina Department of Health and Environmental Control (DHEC) has requested additional environmental assessment at the Broad River Rd. BP gas station site. The gas station is located at the 4335 Broad River Rd. at the intersection of Dothan Rd. in Columbia, South Carolina. The site is designated as DHEC Underground Storage Tank (UST) Permit # 11946. ARM Environmental Services, Inc. (ARM) has been contracted to conduct the assessment required by DHEC.

The gas station utilizes underground storage tanks for the storage of fuel for retail sales. Previous assessments conducted at the site and surrounding properties have shown elevated levels of petroleum contamination in the groundwater beneath the gas station and other private properties. DHEC has required that the extent of the contamination be completed defined both horizontally and vertically.

In order to complete the assessment required by SC DHEC, it is necessary to install groundwater monitoring wells on your property.

The monitoring wells will be installed flush with the ground surface in such a way as not to interfere with lawn equipment or vehicle / foot traffic. The well manhole covers will be bolted and locked for security.

The work required is being done under the direction of SC DHEC and is being funded by the former owner/operator of the underground storage tanks and the State of South Carolina SUPERB Fund in order to protect human health and the environment.

Request for Access to Private Property
Broad River BP gas station site
Columbia, Richland County, South Carolina

Your permission for site access would be greatly appreciated and will help us to evaluate and monitor the area of ground water pollution in a timely manner.

We appreciate your assistance in this matter. If you should have any questions or need additional information, please do not hesitate to contact me at 800 831-7803 or *mfaris@armenv.com* .

Sincerely,
ARM Environmental Services, Inc.

Michael L. Faris, P.G.
Senior Geologist

- *Please return this form via fax, email, or mail*
- *Please provide a phone number so that I may contact you regarding the proposed schedule for the work.* 803-917-8341

Richland Co. Tax Map # R06108-04-27

✓ Property Access Granted

_____ Property Access Denied

✓ ✓
803 896-4114 office / 803 917-8341 cell **Telephone #** (daytime)

Signature

9/19/12
Date

APPENDIX K
SCDHEC CONTRACTOR CHECKLIST

Contractor 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	Is Facility Name, Permit #, and address provided?	☒	☐	☐
2	Is UST Owner/Operator name, address, & phone number provided?	☒	☐	☐
3	Is name, address, & phone number of current property owner provided?	☒	☐	☐
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	☒	☐	☐
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	☒	☐	☐
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	☒	☐	☐
7	Has the facility history been summarized?	☒	☐	☐
8	Has the regional geology and hydrogeology been described?	☒	☐	☐
9	Are the receptor survey results provided as required?	☒	☐	☐
10	Has current use of the site and adjacent land been described?	☒	☐	☐
11	Has the site-specific geology and hydrogeology been described?	☒	☐	☐
12	Has the primary soil type been described?	☒	☐	☐
13	Have field screening results been described?	☒	☐	☐
14	Has a description of the soil sample collection and preservation been detailed?	☒	☐	☐
15	Has the field screening methodology and procedure been detailed?	☒	☐	☐
16	Has the monitoring well installation and development dates been provided?	☒	☐	☐
17	Has the method of well development been detailed?	☒	☐	☐
18	Has justification been provided for the locations of the monitoring wells?	☒	☐	☐
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	☒	☐	☐
20	Has the groundwater sampling methodology been detailed?	☒	☐	☐
21	Have the groundwater sampling dates and groundwater measurements been provided?	☒	☐	☐
22	Has the purging methodology been detailed?	☒	☐	☐
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	☒	☐	☐
24	If free-product is present, has the thickness been provided?	☒	☐	☐
25	Does the report include a brief discussion of the assessment done and the results?	☒	☐	☐
26	Does the report include a brief discussion of the aquifer evaluation and results?	☒	☐	☐
27	Does the report include a brief discussion of the fate & transport models used?	☐	☐	☒

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)	☐	☐	☒
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)	☐	☐	☒
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)	☐	☐	☒
31	Have recommendations for further action been provided and explained?	☒	☐	☐
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	☒	☐	☐
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	☒	☐	☐
34	Has the current and historical laboratory data been provided in tabular format?	☒	☐	☐
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	☒	☐	☐
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)	☐	☐	☒
37	Has the topographic map been provided with all required elements? (Figure 1)	☒	☐	☐
38	Has the site base map been provided with all required elements? (Figure 2)	☒	☐	☐
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	☒	☐	☐
40	Has the site potentiometric map been provided? (Figure 5)	☒	☐	☐
41	Have the geologic cross-sections been provided? (Figure 6)	☒	☐	☐
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)	☐	☐	☒
43	Has the site survey been provided and include all necessary elements? (Appendix A)	☒	☐	☐
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	☒	☐	☐
45	Is the laboratory performing the analyses properly certified?	☒	☐	☐
46	Has the tax map been included with all necessary elements? (Appendix C)	☒	☐	☐
47	Have the soil boring/field screening logs been provided? (Appendix D)	☒	☐	☐
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	☒	☐	☐
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)	☒	☐	☐
50	Have the disposal manifests been provided? (Appendix G)	☒	☐	☐
51	Has a copy of the local zoning regulations been provided? (Appendix H)	☒	☐	☐
52	Has all fate and transport modeling been provided? (Appendix I)	☐	☐	☒
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)	☒	☐	☐
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	☒	☐	☐

Broad River Amoco
Tier II Assessment
UST Permit #11946, CA #42065

Explanation for missing and incomplete information?

D H E C
PROMOTE PROTECT PROSPER

Shrader, Art A. <shradeaa@dhec.sc.gov>

Re: Broad River Amoco; UST Permit #11946.

1 message

Jim R. Rice <ricejr@dhec.sc.gov> Thu, Jun 6, 2013 at 12:09 PM
To: "Shrader, Art A." <shradeaa@dhec.sc.gov>

Thanks Art, I appreciate it.

Jim

Sent from my iPad

On Jun 6, 2013, at 11:17 AM, "Shrader, Art A." <shradeaa@dhec.sc.gov> wrote:

> Jim,
>
> FYI.
>
> I got the ARM Environmental report for the gas station adjacent to your property on Dothan Road. There were no petroleum Chemicals of Concern detected from the groundwater samples collected from the wells on your property or Mechanical Design, Inc adjacent to your property. A pair of the monitoring wells on your property were abandoned per your earlier request.
>
> Art Shrader
>
> ——— Forwarded message ———
> From: **Shrader, Art A.** <shradeaa@dhec.sc.gov>
> Date: Thu, Mar 21, 2013 at 7:24 AM
> Subject: Re: Broad River Amoco; UST Permit #11946
> To: Michael Faris <mfaris@armenv.com>
> Cc: "Jim R. Rice" <ricejr@dhec.sc.gov>
>
> Mike,
>
> I went out visiting sites in Richland and Lexington counties yesterday afternoon.
>
> I agree with Jim Rice that there are too many wells in his front yard (28 ft. and 9 in. from the pad of MW-15B to the pad of MW-16B). After your comprehensive sampling event please abandon MW-16A and 16B in accordance with the QAPP (well grouted to 6" of the surface, pads removed, and soil replaced to bring all to grade). Yesterday the well covers were reversed (MW-16A ob MW-16B). I'll pay for well install and abandonment.
>
> Please check to make sure the well id plates are on the four original wells also. It appeared the well id plate was gone from MW-2.
>
> Are you planning on installing another product recovery well? There was an "X" marked in the vicinity of MW-2 but no recovery well installed in that area.
>
> Thanks
> Art

On Wed, Feb 27, 2013 at 9:10 AM, Michael Faris <mfaris@armenv.com> wrote:

> Art,
> We are drilling at the site again. We plan to drill the recovery wells starting this week and hope to finish by mid-week next week onsite. We were scheduled to install the four monitoring wells behind the day care last weekend, but it was simply too wet. We will attempt to install those four this weekend.
>
> Thanks for speaking with Jim Rice regarding his adjacent property. He doesn't like having four concrete pads in the front yard of that property, but is agreeable to letting us finish.
>
> Please find attached a cost addendum request for the job. Let me know if you have any questions. If at all possible, the goal is to complete the installation and development by mid-week next week and begin the purging and sampling process ASAP thereafter.
>
> Michael
>
> ***Michael L. Faris, P.G.***
> ***ARM Environmental Services, Inc.***
> *1210 First Street South*
> *Columbia, SC 29209*
> *mfaris@armenv.com*
> *ph: 803 783-3314*
> *cell: 803 269-3913*

–

Arthur Shrader, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management
tel: (803) 896-6669
fax: (803) 896-6245

–

Please Note We Have Moved to Bull Street.
Arthur Shrader, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land & Waste Management
tel: (803) 898-0586
fax: (803) 898-

Table 2 – Potentiometric Data
Historical and March 6 & 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-1	1/21/2011	40.0	20.0 - 40.0	101.84	20.92	N/A	N/A	N/A	80.92
	3/5/2011	40.0	20.0 - 40.0	101.84	14.45	N/A	N/A	N/A	87.39
	3/6/2013	40.0	20.0 - 40.0	101.84	18.62	N/A	N/A	N/A	83.22
MW-2	3/5/2011	28.0	18.0 - 28.0	101.13	13.50	N/A	N/A	N/A	87.63
	3/6/2013	28.0	18.0 - 28.0	101.13	17.66	16.32	1.34	16.70	84.43
MW-3	3/5/2011	31.0	21.0 - 31.0	101.09	13.72	N/A	N/A	N/A	87.37
	3/6/2013	31.0	21.0 - 31.0	101.09	17.94	N/A	N/A	N/A	83.15
MW-4	3/5/2011	25.0	15.0 - 25.0	97.02	9.15	N/A	N/A	N/A	87.87
	3/6/2013	25.0	15.0 - 25.0	97.02	12.41	10.10	2.31	10.75	86.27
MW-5	6/20/2011	20.0	10.0 - 20.0	101.34	14.05	13.75	0.30	13.83	87.51
	3/6/2013	20.0	10.0 - 20.0	101.34	19.63	16.80	2.83	17.59	83.75
MW-6A	3/6/2013	25.5	15.5 - 25.5	101.84	18.00	N/A	N/A	N/A	83.84
MW-6B	3/6/2013	38.5	28.5 - 38.5	101.91	18.05	N/A	N/A	N/A	83.86
MW-7A	3/6/2013	24.0	14.0 - 24.0	100.04	16.60	N/A	N/A	N/A	83.44
MW-8A	3/6/2013	23.0	13.0 - 23.0	100.45	16.84	N/A	N/A	N/A	83.61
MW-8B	3/6/2013	37.5	27.5 - 37.5	100.37	16.60	N/A	N/A	N/A	83.77
MW-9A	3/6/2013	23.0	13.0 - 23.0	101.36	18.61	N/A	N/A	N/A	82.75
MW-9B	3/6/2013	31.5	21.5 - 31.5	101.38	17.60	N/A	N/A	N/A	83.78
MW-10A	3/6/2013	17.5	7.5 - 17.5	97.20	11.05	N/A	N/A	N/A	86.15
MW-10B	3/6/2013	39.0	29.0 - 39.0	97.34	13.87	N/A	N/A	N/A	83.47
MW-11A	3/6/2013	20.0	10.0 - 20.0	89.93	10.52	N/A	N/A	N/A	79.41
MW-11B	3/6/2013	35.0	29.0 - 39.0	90.26	10.30	N/A	N/A	N/A	79.96
MW-12A	3/6/2013	20.0	10.0 - 20.0	99.26	13.95	N/A	N/A	N/A	85.31
MW-12B	3/6/2013	36.5	26.5 - 36.5	99.35	16.72	N/A	N/A	N/A	82.63
MW-13A	3/25/2013	22.0	12.0 - 22.0	98.70	19.80	N/A	N/A	N/A	78.90
MW-13B	3/6/2013	33.5	23.5 - 33.5	98.69	19.88	N/A	N/A	N/A	78.81
MW-14A	3/6/2013	20.0	10.0 - 20.0	97.49	14.52	N/A	N/A	N/A	82.97
MW-14B	3/6/2013	38.5	28.5 - 38.5	97.45	17.27	N/A	N/A	N/A	80.18

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

UST PROGRAM JUN 10 2013

UST COMPLIANCE

UST Permit # 11946
Additional Tier II Data

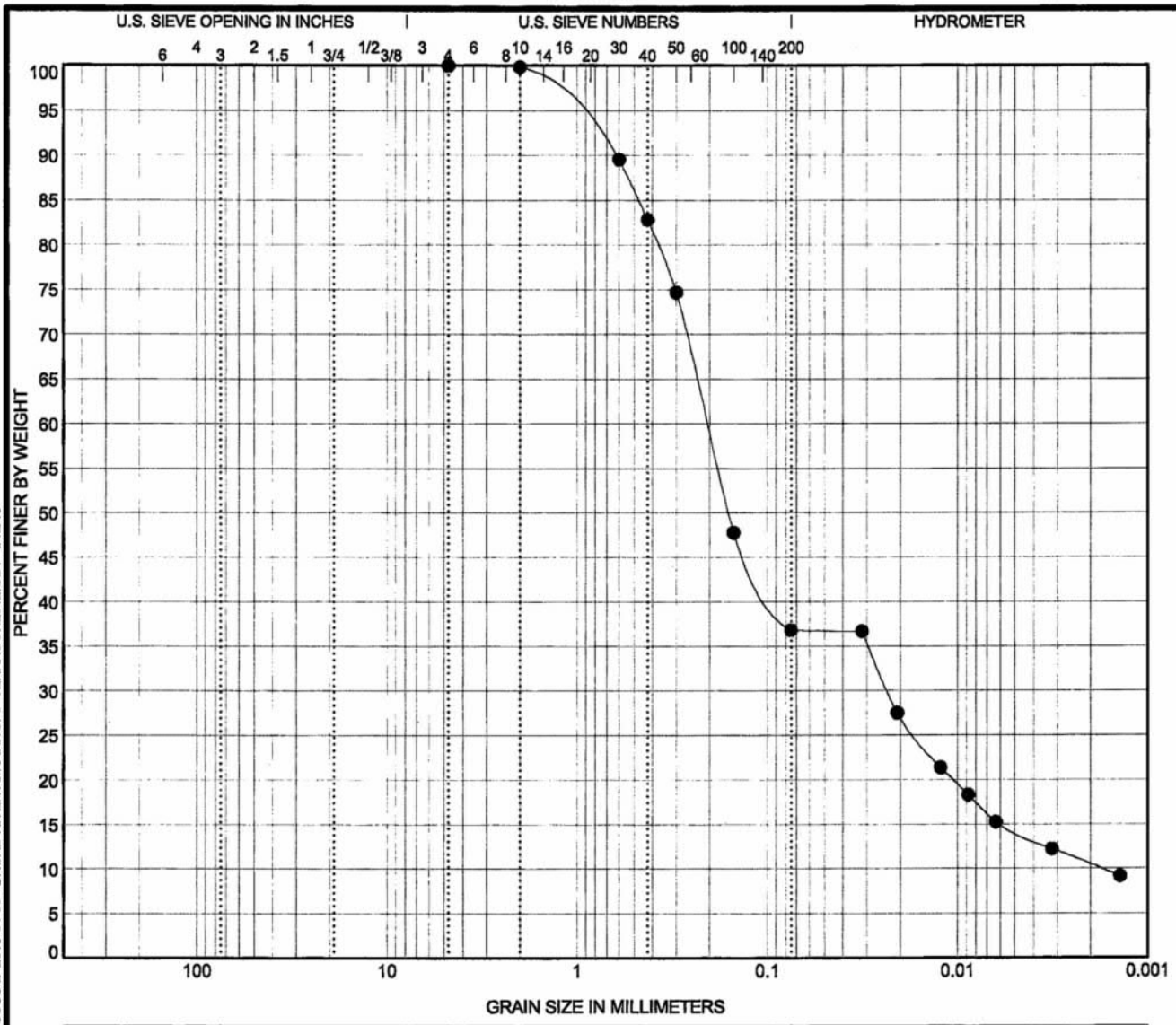
Table 2 – Potentiometric Data
Historical and March 6 & 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-15A	3/25/2013	17.0	7.0 - 17.0	96.87	16.01	N/A	N/A	N/A	80.86
MW-15B	3/6/2013	40.0	30.0 - 40.0	96.82	17.60	N/A	N/A	N/A	79.22
MW-16A	3/25/2013	18.0	8.0 - 18.0	95.95	16.21	N/A	N/A	N/A	79.74
MW-16B	3/6/2013	37.0	27.0 - 37.0	95.68	16.75	N/A	N/A	N/A	78.93
MW-17B	3/6/2013	39.5	29.5 - 39.5	92.69	9.05	N/A	N/A	N/A	83.64
MW-18A	3/6/2013	13.0	3.0 - 13.0	88.20	0.85	N/A	N/A	N/A	87.35
MW-18B	3/6/2013	35.0	25.0 - 35.0	88.30	1.05	N/A	N/A	N/A	87.25
MW-19A	3/6/2013	15.0	5.0 - 15.0	91.63	7.95	N/A	N/A	N/A	83.68
MW-19B	3/6/2013	34.0	24.0 - 34.0	91.69	8.35	N/A	N/A	N/A	83.34
MW-20A	3/6/2013	15.0	5.0 - 15.0	88.67	5.05	N/A	N/A	N/A	83.62
MW-20B	3/6/2013	35.0	25.0 - 35.0	88.61	4.11	N/A	N/A	N/A	84.50
MW-21A	3/6/2013	12.0	2.0 - 12.0	87.16	0.85	N/A	N/A	N/A	86.31
MW-21B	3/6/2013	35.0	25.0 - 35.0	87.23	1.35	N/A	N/A	N/A	85.88
MW-22B	3/6/2013	35.0	25.0 - 35.0	87.40	2.10	N/A	N/A	N/A	85.30
RW-1	3/6/2013	40.0	20.0 - 40.0	101.21	17.26	17.11	0.15	17.15	84.06
RW-2	3/6/2013	40.0	20.0 - 40.0	100.96	16.96	N/A	N/A	N/A	84.00
RW-3	3/6/2013	41.0	21.0 - 41.0	101.44	17.41	17.36	0.05	17.37	84.07
RW-4	3/6/2013	40.5	20.5 - 40.5	100.83	16.73	N/A	N/A	N/A	84.10
RW-5	3/6/2013	38.5	18.5 - 38.5	101.62	17.64	17.58	0.06	17.6	84.02
DMW-1	3/6/2013	65.0	60.0 - 65.0	101.16	18.21	N/A	N/A	N/A	82.95
DMW-2	3/6/2013	65.0	60.0 - 65.0	92.63	9.40	N/A	N/A	N/A	83.23
DMW-3	3/6/2013	65.0	60.0 - 65.0	87.41	2.10	N/A	N/A	N/A	85.31

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

GRAIN SIZE DISTRIBUTION

ASTM D422



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring ID	Depth (ft)	USCS Classification	LL	PL	PI	Cc	Cu
●	MW-17B	38.0 -					1.51	117.43

	Boring ID	Depth (ft)	D_{100}	D_{60}	D_{30}	D_{10}	% Gravel	% Sand	% Silt	% Clay
●	MW-17B	38.0 -	4.75	0.205	0.023	0.002	0.0	63.1	22.6	14.2

PROJECT: BROAD RIVER AMOCO

SITE: SOUTH CAROLINA

Terracon
521 Clemson Road
Columbia, South Carolina

PROJECT NUMBER: 73075016

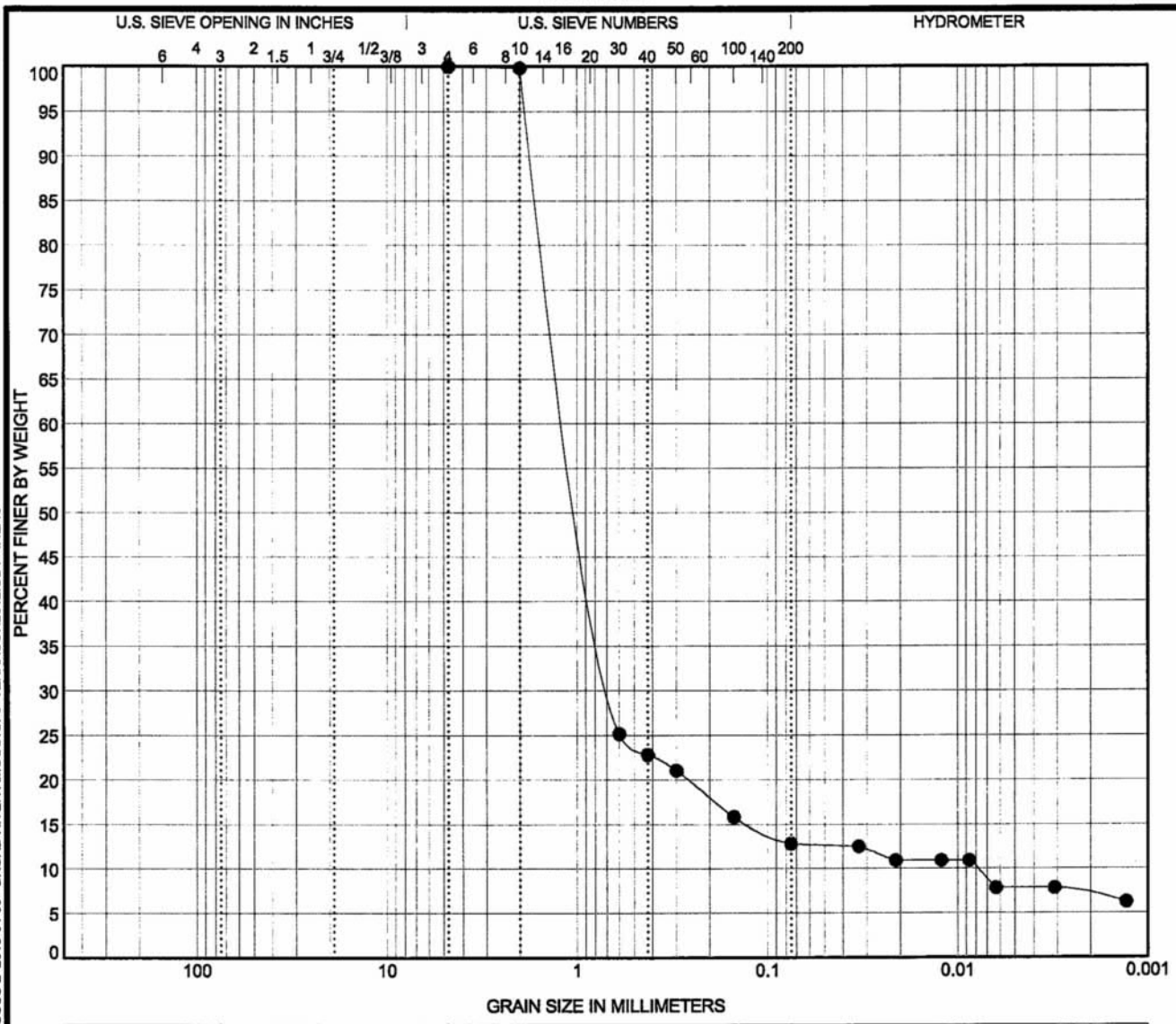
CLIENT: ACCESS ANALYTICAL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 2013-04-08 - BROAD RIVER AMOCO.GPJ TERRACON2012.GDT 4/12/13

clay to 10

GRAIN SIZE DISTRIBUTION

ASTM D422



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring ID	Depth (ft)	USCS Classification	LL	PL	PI	Cc	Cu
●	DMW-2	62.0 -					50.67	133.32

	Boring ID	Depth (ft)	D_{100}	D_{60}	D_{30}	D_{10}	% Gravel	% Sand	% Silt	% Clay
●	DMW-2	62.0 -	4.75	1.052	0.649	0.008	0.0	87.2	5.0	7.8

PROJECT: BROAD RIVER AMOCO

SITE: SOUTH CAROLINA

Terracon

521 Clemson Road
Columbia, South Carolina

PROJECT NUMBER: 73075016

CLIENT: ACCESS ANALYTICAL

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GRAIN SIZE: USCS-2 2013-04-08 - BROAD RIVER AMOCO.GPJ TERRACON2012.GDT 4/12/13

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

MR FREDERICK CECCHINI
4335 BROAD RIVER RD
COLUMBIA SC 29210-4009

AUG 20 2013

Re: **Corrective Action Options**
Broad River Amoco, 4335 Broad River Rd., Columbia, SC
UST Permit # 11946
Release reported January 4, 2011
Tier II Assessment Report received May 30, 2013
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by ARM Environmental Services, Inc. on your behalf. The report indicates that active corrective action is necessary at the site to mitigate petroleum impact 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 the petroleum chemicals of concern (CoC) concentrations to site-specific target levels (SSTLs) determined by the Division.

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 you are the responsible party for the release reported on January 4, 2011. 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 Division 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, DHEC will not hold you responsible for the failure of the state selected contractor to meet the terms of the contract. 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 Division will prepare a technical specification package and provide you copies to send to contractors of your choice. In addition, the Division 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 Division 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 Division'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 # 11946. If you have any questions, please contact me at (803) 898-0614 or fulmersb@dhec.sc.gov.

Sincerely,

Susan B. Fulmer

Susan B. Fulmer, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Permission/Right-of-Entry Forms
Active Corrective Action Options Form

cc: Enviro-Test Services, PO Box 2237, Irmo, SC 29063 (w/ enc)
Technical File (w/ enc)

State Lead Option

PERMISSION FORM

UNDERGROUND STORAGE TANK AND PROPERTY OWNER

UST Permit # 11946

If you are both the owner of the existing underground storage tanks for the release reported on January 4, 2011 and the current property owner, please complete this form.

I, _____, certify that I am the identified legal owner of the underground storage tanks for the release reported on January 4, 2011 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 (SCDHEC) to secure on my behalf contractor services to conduct assessment and corrective action activities as required, and authorize SCDHEC, or a contractor selected by SCDHEC, 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 SCDHEC 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 _____Phone # _____

Street Address of Facility _____

Town, City, District, Suburb _____

Name of nearest intersecting street, road, highway, alley _____

Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____, phone number _____

Is the property currently leased or rented to someone? (yes or no) _____. If yes, please provide his/her name _____and phone number _____ _____and let him/her know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before SCDHEC's contractor arrives at the site.

NAME of UST/property owner (Please Print):_____

Phone Number (home/cell)_____(work)_____

Signature of UST/property Owner:_____

Witness:_____

Date:_____Month _____Day_____ _____Year

State Lead Option

PERMISSION FORM

UNDERGROUND STORAGE TANK OWNER

UST Permit # 11946

If you are the owner of the existing underground storage tanks for the release reported on January 4, 2011 or are designated as their authorized representative, but do not own the property, please complete this form.

I, _____ certify that I am the legal owner of the existing underground storage tanks located at the facility identified below and for the release reported on January 4, 2011 or serve as the authorized representative for the UST owner. I grant permission to the South Carolina Department of Health and Environmental Control (SCDHEC) to secure on my behalf services of a contractor to conduct assessment and corrective action activities, as required. The contractor will be designated as my contractor for only the required environmental site rehabilitation activities. Compensation to the contractor will be from the SUPERB Account and I will have no obligation to pay the contractor. I understand that SCDHEC or its contractor will be responsible for obtaining right-of-entry from the property owner and 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 _____ Phone # _____

Street Address of Facility _____

Town, City, District, Suburb _____

Name of nearest intersecting street, road, highway, alley _____

Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____ _____, phone number _____

NAME of UST owner (Please Print):_____

Phone Number (home/cell)_____ (work)_____

Signature of UST Owner:_____

Witness:_____

Date:_____Month _____Day_____Year

State Lead Option

RIGHT-OF-ENTRY FORM

PROPERTY OWNER

UST Permit # 11946

If you are the Property Owner or are the authorized representative for that person, but did not own the former or existing underground storage tanks at the time the release was reported, please complete this form.

I, _____, certify that I am the legal owner of the property identified below or serve as the authorized representative for the property owner. I authorize the South Carolina Department of Health and Environmental Control (SCDHEC), or a contractor selected by SCDHEC, to enter this property at reasonable times only to conduct assessment and corrective action activities, as required. The contractor will be designated as the contractor for the UST owner or operator for only the required environmental site rehabilitation activities. Compensation to the contractor will be from the SUPERB Account and I will have no obligation to pay the contractor. I understand that SCDHEC or its contractor will notify me of all activities that are necessary prior to their initiation and will promptly provide to me a summary of the data upon request.

Name of Facility _____Phone # _____

Street Address of Facility _____

Town, City, District, Suburb _____

Name of nearest intersecting street, road, highway, alley _____

Is this facility within the city limits? (yes or no) _____

Does a public water or sewer utility service this facility? (yes or no) _____, if no, please provide the name and phone number of a person that we can contact that can assist in the location of private water and septic tank lines _____, phone number _____

Is the property currently leased or rented to someone? (yes or no) _____. If yes, please provide his/her name _____and phone number _____ and let him/her know about the pending site rehabilitation activities. If vehicles or other mobile structures are parked over the monitoring wells, they should be moved before SCDHEC's contractor arrives at the site.

NAME of Property owner (Please Print):_____

Phone Number: (home/cell)_____ (work)_____

Current Mailing Address:_____

Signature of Property Owner:_____

Witness:_____

Date:_____Month _____Day_____Year

Owner/ Operator Lead Option

ACTIVE CORRECTIVE ACTION
OPTIONS FORM

UST PERMIT # 11946

I, _____, certify that I am the legal owner on record for the underground storage tanks at the facility identified below for the release reported on January 4, 2011 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 and provide the results to me. **I understand compensation to the contractor will be from the SUPERB Account, but I may have the obligation to pay the contractor for any costs not approved by the SCDHEC. I understand that if the contractor I select does not or cannot complete the required activities, I will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount and that no additional funding from the SUPERB Account may be allowed. I also understand that the SCDHEC will pursue enforcement actions against me if the contractor I select does not make satisfactory progress towards achieving established corrective actions goals.**

NAME of UST owner or authorized representative (Please Print):

_____

Phone Number: (home/cell)_____ (work)_____

Signature of UST Owner:_____

Date:_____

Witness:_____

Date:_____

Susan

Owner/ Operator Lead Option

ACTIVE CORRECTIVE ACTION
OPTIONS FORM

UST PERMIT # 11946

I, Frederick Cecchini, certify that I am the legal owner on record for the underground storage tanks at the facility identified below for the release reported on January 4, 2011 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 and provide the results to me. **I understand compensation to the contractor will be from the SUPERB Account, but I may have the obligation to pay the contractor for any costs not approved by the SCDHEC. I understand that if the contractor I select does not or cannot complete the required activities, I will be required to find another certified contractor to complete the required activities for the remainder of the existing financial approval amount and that no additional funding from the SUPERB Account may be allowed. I also understand that the SCDHEC will pursue enforcement actions against me if the contractor I select does not make satisfactory progress towards achieving established corrective actions goals.**

NAME of UST owner or authorized representative (Please Print):

Frederick Cecchini

Phone Number: (home/cell) (803) 781-6626 (home) (803) 238-2143 (cell) (work) _____

UST DOCKETING 29 Feb

Signature of UST Owner: F. P. Cecchini

Date: 9-16-13

Witness: _____

Date: 9-16-13

RECEIVED
SEP 16 2013
SC Department of Health and Environmental Control

ENVIRO-TEST SERVICES

February 4, 2011

Mr. Arthur Shrader Hydrogeologist
Assessment Section
Underground Storage Tank Program
Bureau of Land and Waste Management
SCDHEC
2600 Bull Street
Columbia, SC 29201

UST
FEB 0 4 2011
PROGRAM

RE: IGWA: Initial Groundwater Assessment
Broad River BP (Amoco)
Site # 11946;
Richland County

Dear Mr. Shrader,

Enviro-Test Services Inc. has completed the Initial Groundwater assessment and installed the Monitor Well (MW-1) in the location as directed in your January 12th 2011 directive. The results of the analytical data show there are several COC's (Chemicals of Concern), which are over the RBSL's (Risk Based Screening Levels).

Please apply the amount of $1,300.00 to Mr. Cecchini $25,000.00 deductible a copy of the paid check is included.

Should you have any questions, comments or require any additional information, please call (803)-413-4936 at your convenience.

Very truly yours,

Terry L. Teate

Project Manager

ENVIRO-TEST SERVICES, INC.

Attachments

UST
DOCKET
3 Tech

INITIAL GROUNDWATER ASSESSMENT REPORT

Facility Name Broad River BP

Facility Address 4335 Broad River Rd. Columbia, SC 29210

Facility Telephone Number 803-798-3051

UST Permit Number 11946

UST Owner and Operator's Name Fred Cecchini

Address 4335 Broad River Rd. Columbia, SC 29210

Phone Number 803-238-2143

Property Owner's Name Fred Cecchini

Address 4335 Broad River Rd. Columbia, SC 29210

Phone Number 803-238-2143

Contractor Enviro-Test Services Inc. Cert. # 14

Address P.O. Box 2237 Irmo, SC 29063

Phone Number 803-413-4936

Well Driller Terry TeaTe Cert. # 1242

Address P.O. Box 2237 Irmo, SC 29063

Phone Number 803-413-4936

Receptor and Site Data

Please place a check in the appropriate answer block for each question:

Receptor Survey Questions	No	Yes *
Are any drinking water supply wells (public or private) or surface water supply intakes within 1000 feet of the UST?	✓	
Are irrigation or other non-drinking water wells located within 1000 feet of the UST?	✓	
Are other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?		✓

* If "yes" provide additional information below:

Water Lines, Gas lines, Phone lines,

Were any water supply wells or surface waters within 250 ft. sampled?

Yes ____ No ✓ (Show on site base map)

Is a public water supply line in the area? Yes ✓ No ____ (Show on site base map)

Is the current use of the facility and surrounding properties commercial, residential, agricultural or industrial?

Site: Residential & Commercial

Adjacent Properties:
North: SLED South Carolina Law Enforcement Division
East: Mechanical Engineering Firm
South: Nail + Beauty Salon
West: Day Care Play Pals

Soil and Boring/Monitoring Well Data

Primary Soil Type: Clay

Well Installation Method and Date: auger 1-20-2011

Development Method and Date: Bailer (Teflon) 1-20-2011

Soil Sample obtained from 15 feet.

SOIL ANALYTICAL DATA

Benzene (µg/kg)	Toluene (µg/kg)	Ethylbenzene (µg/kg)	Xylenes (µg/kg)	Naphthalene (µg/kg)	MTBE (µg/kg) 189 J
<293	834	520	2760	635	<293

Benzo(a)-anthracene (µg/kg)	Benzo(b)-fluoranthene (µg/kg)	Benzo(k)-fluoranthene (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Total PAH (µg/kg)	Lead (µg/kg)
65.9 J	83.0 J	55.6 J	96.9 J	11.1	312.5	4.77

*For waste oil UST releases only:

Chromium* (µg/kg)	Mercury* (µg/kg)	Selenium* (µg/kg)	Silver* (µg/kg)	Arsenic* (µg/kg)	Barium* (µg/kg)	Cadmium* (µg/kg)

Include Laboratory Data and Chain of Custody Form in Appendix B.

Groundwater Data

Depth to Groundwater: 20.92 Depth to FP, if present: None

Free Product Thickness: NA

Well Purging/Sampling Method: Teflon Bailer

Date Sampled: 1-21-2011

Equilibrated values: Temperature: 21.3 °C pH: 8.3

Dissolved Oxygen: 2.73 Specific Conductance: 76

Soil/Water Disposal Method: Crandall Corp.

Include in Appendix D. Costs for work cannot be compensated without manifest.

GROUNDWATER ANALYTICAL DATA

Benzene (µg/l)	Toluene (µg/l)	Ethylbenzene (µg/l)	Xylenes (µg/l)	MTBE (µg/l)	EDB (µg/l)	Naphthalene (µg/l)
929	10,300	684	2,960	243	<0.010	922

Benzo(a)-anthracene (µg/l)	Benzo(b)-fluoranthene (µg/l)	Benzo(k)-fluoranthene (µg/l)	Chrysene (µg/l)	Dibenz(a,h) anthracene (µg/l)	Total PAH (µg/l)	Lead (µg/l)
<10.1	<10.1	<10.1	<10.1	<10.1	50.5	<15

*For waste oil UST releases only:

Chromium* (µg/l)	Mercury* (µg/l)	Selenium* (µg/l)	Silver* (µg/l)	Arsenic* (µg/l)	Barium* (µg/l)	Cadmium* (µg/l)

Include Laboratory Data and Chain of Custody Form in Appendix B.

Report Completed By (Print Name): Terry TeaTe

Signature : Terry L. Teate

DHEC Contractor Certification # 14 Date: 2-4-2011

Appendices

The appendices required for this report are as follows:

Appendix A. Well Construction Log
Appendix B. Laboratory Data
Appendix C. Maps (Topographic and Site Base)
Appendix D. Disposal Manifest(s). (Must be included for payment from SUPERB)
Appendix E. Additional Data (Property owner name, address, phone number for any water supply wells or surface water bodies sampled.)

APPENDIX A

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: SCDHEC (last) (first)
Address: 2600 Bull Street
City: Columbia State: SC Zip: 29201-0000
Telephone: Work: (803) 898-3432 Home:

2. LOCATION OF WELL: **COUNTY:** Richland
Name: Broad River BP DHEC Site # 11946
Street Address: 4335 Broad River Rd.
City: Columbia Zip: 29219-4009
Latitude: N 34*03.920' Longitude: W 081*06.995'

3. PUBLIC SYSTEM NAME: MW-1 **PUBLIC SYSTEM NUMBER:** Permit # 11946

4. ABANDONMENT: ☐ Yes ☑ No
Grouted Depth: from _____ ft. to _____ ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
SEE ATTACHED		
BORING LOG		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		
5. REMARKS:		

6. TYPE: ☐ Mud Rotary ☐ Jetted ☑ Bored ☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☐ Other

7. PERMIT NUMBER: UMW-24060

8. USE:
☐ Residential ☐ Public Supply ☐ Process
☐ Irrigation ☐ Air Conditioning ☐ Emergency
☐ Test Well ☑ Monitor Well ☐ Replacement

9. WELL DEPTH (completed) 40.0 ft. Date Started: 01-20-2011 Date Completed: 01-20-2011

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
_____ in. to 0 ft. depth
_____ in. to 20 ft. depth
Height: Above /Below Surface U _____ ft.
Weight _____ lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 inch
Slot/Gauge: 0.010 Length: _____
Set Between: _____ ft. and 20 ft.
_____ ft. and 40 ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 20.92 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
NA 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 ft. to 40 ft.
Effective size No.2 sand Uniformity Coefficient _____

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other _____
Depth: From 18 ft. to 0 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: 10 ft. ft. S direction
Type Petroleum
Well Disinfected ☐ Yes ☑ No Type: _____ Amount: _____

18. PUMP: Date installed: NA 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: Terry L. Teate **CERT. NO.:** 1242
Address: (Print) P.O. Box 2237 Irmo, SC 29063
Level: (A) B C D (circle one)
Telephone No.: 803-413-0930 Fax No.:

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: Terry L. Teate (Well Driller) Date: 02-02-2011

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)

SOIL BORING LOG

Project Name: Broad River BP	**Site #: 11946**	**Location: 4335 Broad River Rd. Columbia, SC 29210**	**County:** Richland
Driller: Terry L. Teate	**Logged by: T. Teate**	**Installed: 01/20/11**	**TD: 40 Feet**
Sample Method: Cuttings		**Development Method: Bailing**	

DEPTH (FT)	DESCRIPTION	PPM	ODOR
5	Sandy CLAY – Dark Brown Red, very firm, sandy; dry CXLN	190	Slight
10	Sandy CLAY – Lt Gray, Orange, mod. firm, sandy, silty; Dry MXLN	567	Slight
15	CLAY- Lt Orange, Red , FXLN Dry	1782	Strong
20	CLAY- Tan, Brown, Orange Mott, VFXLN Dry	1760	Strong
25	CLAY- Tan, Brown, Orange, VFXLN Dry	1281	Moderate
30	CLAY – Orange Lt Red Brown, mod. firm, silty; moist, micaceous, FVXLN	1243	Moderate
35	CLAY – Lt Gray. firm, silty; moist, VFXLN	715	Moderate
40	CLAY – Lt Gray, silty; firm, VFXLN Wet	208	Slight

APPENDIX B

ACCESS
ANALYTICAL, INC.

ANALYTICAL REPORT

CLIENT
Enviro-Test Services
P.O. Box 2237
Irmo, SC 29063

ATTENTION
Terry Teate

PROJECT ID
Broad River BP

LABORATORY REPORT NUMBER
211012406

DATE
01/31/2011

Primary Data Review By

Curtis Ekker
Data Validation Manager, GCAL

Secondary Data Review By

Ashley B. Amick
Project Manager, Access Analytical, Inc.
aamick@accessanalyticalinc.com

PLEASE NOTE:

- **Unless otherwise noted, all analysis on this report performed at Gulf Coast Analytical Labs (GCAL), 7979 GSRI Avenue, Baton Rouge, LA 70820.**
- **GCAL is SCDHEC certified laboratory # 73006, NCDENR certified lab # 618, GA certified lab # LA-01955, NELAP certified laboratory # 01955**
- Local support services for this project are provided by Access Analytical, Inc.. Access Analytical is a representative of GCAL serving clients in the SC/NC/GA areas. All questions regarding this report should be directed to your local Access Analytical representative at 803.781.4243 or toll free at 888.315.4243.

NELAP CERTIFICATE NUMBER 01955
DOD ELAP CERTIFICATE NUMBER ADE - 1482

ANALYTICAL RESULTS

PERFORMED BY

GULF COAST ANALYTICAL LABORATORIES, INC.
7979 GSRI Avenue
Baton Rouge, LA 70820

Report Date 01/31/2011

GCAL Report 211012406

Deliver To Enviro-Test Services
P.O. Box 2237
Irmo, SC 29063
803-732-5770

Attn Terry Teate

Project Broad River BP

CASE NARRATIVE

Client: Enviro-Test Services **Report:** 211012406

Gulf Coast Analytical Laboratories received and analyzed the sample(s) listed on the sample cross-reference page of this report. Receipt of the sample(s) is documented by the attached chain of custody. This applies only to the sample(s) listed in this report. No sample integrity or quality control exceptions were identified unless noted below.

VOLATILES MASS SPECTROMETRY

In the SW-846 8260B analysis, samples 21101240602 (MW-1) and 21101240601 (MW-1-SB) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument.

SEMI-VOLATILES MASS SPECTROMETRY

In the SW-846 8270D analysis for prep batch 449503, the LCS/LCSD exhibited recoveries above the established control limits for Benzo(g,h andi)perylene and Indeno(1,2,3-cd)pyrene. However, Benzo(g,h ,i)perylene and Indeno(1,2,3-cd)pyrene were not detected in the associated samples, therefore the data is reportable.

MISCELLANEOUS

Sample 21101240601 (MW-1-SB) container ID 21101240601-2 had to be preserved at the laboratory with HNO3. This container was used to analyze SW-846 6010B.

Laboratory Endorsement

Sample analysis was performed in accordance with approved methodologies provided by the Environmental Protection Agency or other recognized agencies. The samples and their corresponding extracts will be maintained for a period of 30 days unless otherwise arranged. Following this retention period the samples will be disposed in accordance with GCAL's Standard Operating Procedures.

Common Abbreviations Utilized in this Report

ND	Indicates the result was Not Detected at the specified RDL
DO	Indicates the result was Diluted Out
MI	Indicates the result was subject to Matrix Interference
TNTC	Indicates the result was Too Numerous To Count
SUBC	Indicates the analysis was Sub-Contracted
FLD	Indicates the analysis was performed in the Field
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
RDL	Reporting Detection Limit
00:00	Reported as a time equivalent to 12:00 AM

Reporting Flags Utilized in this Report

J	Indicates an estimated value
U	Indicates the compound was analyzed for but not detected
B	(ORGANICS) Indicates the analyte was detected in the associated Method Blank
B	(INORGANICS) Indicates the result is between the RDL and MDL

Sample receipt at GCAL is documented through the attached chain of custody. In accordance with NELAC, this report shall be reproduced only in full and with the written permission of GCAL. The results contained within this report relate only to the samples reported. The documented results are presented within this report.

This report pertains only to the samples listed in the Report Sample Summary and should be retained as a permanent record thereof. The results contained within this report are intended for the use of the client. Any unauthorized use of the information contained in this report is prohibited.

I certify that this data package is in compliance with the NELAC standard and terms and conditions of the contract and Statement of Work both technically and for completeness, for other than the conditions in the case narrative. Release of the data contained in this hardcopy data package and in the computer-readable data submitted has been authorized by the Quality Assurance Manager or his/her designee, as verified by the following signature.

Estimated uncertainty of measurement is available upon request. This report is in compliance with the DOD QSM as specified in the contract if applicable.

Robyn Migues
Technical Director
GCAL REPORT 211012406

THIS REPORT CONTAINS 20 PAGES.

Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240601	MW-1-SB	Solid	01/20/2011 10:30	01/22/2011 09:00
21101240602	MW-1	Water	01/21/2011 10:45	01/22/2011 09:00

Summary of Compounds Detected

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240601	MW-1-SB	Solid	01/20/2011 10:30	01/22/2011 09:00

SW-846 6010B

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	4.77	0.74	0.089	mg/kg

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
108-88-3	Toluene	834	293	11.7	ug/Kg
100-41-4	Ethylbenzene	520	293	12.1	ug/Kg
1330-20-7	Xylene (total)	2260	585	40.2	ug/Kg
91-20-3	Naphthalene	635	293	48.3	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	189J	293	9.78	ug/Kg

SW-846 8270D

CAS#	Parameter	Result	RDL	MDL	Units
56-55-3	Benzo(a)anthracene	65.9J	403	17.2	ug/Kg
50-32-8	Benzo(a)pyrene	62.7J	403	23.2	ug/Kg
205-99-2	Benzo(b)fluoranthene	83.0J	403	12.6	ug/Kg
191-24-2	Benzo(g,h,i)perylene	57.0J	403	11.1	ug/Kg
207-08-9	Benzo(k)fluoranthene	55.6J	403	18.4	ug/Kg
218-01-9	Chrysene	96.9J	403	13.5	ug/Kg
206-44-0	Fluoranthene	235J	403	8.91	ug/Kg
86-73-7	Fluorene	15.9J	403	12.3	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	41.1J	403	16.1	ug/Kg
91-20-3	Naphthalene	46.0J	403	13.4	ug/Kg
85-01-8	Phenanthrene	191J	403	16.4	ug/Kg
129-00-0	Pyrene	166J	403	56.5	ug/Kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240602	MW-1	Water	01/21/2011 10:45	01/22/2011 09:00

SW-846 8270D

CAS#	Parameter	Result	RDL	MDL	Units
91-20-3	Naphthalene	170	10.1	0.135	ug/L
85-01-8	Phenanthrene	0.671J	10.1	0.152	ug/L

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	929	100	5.42	ug/L
100-41-4	Ethylbenzene	684	100	6.27	ug/L
91-20-3	Naphthalene	922	500	8.17	ug/L
108-88-3	Toluene	10300	100	5.90	ug/L
1330-20-7	Xylene (total)	2960	300	5.80	ug/L

Summary of Compounds Detected (con't)

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240602	MW-1	Water	01/21/2011 10:45	01/22/2011 09:00

SW-846 8260B

CAS#	Parameter	Result	RDL	MDL	Units
1634-04-4	tert-Butyl methyl ether (MTBE)	243	100	5.17	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101246601	MW-1-SB	Solid	01/20/2011 10:30	01/22/2011 09:05

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			50	01/28/2011 13:09	RJU	449790

CAS#	Parameter	Result	RDL	MDL	Units
71-43-2	Benzene	8.02U	293	8.02	ug/Kg
108-88-3	Toluene	834	293	11.7	ug/Kg
100-41-4	Ethylbenzene	520	293	12.1	ug/Kg
1330-20-7	Xylene (total)	2260	585	40.2	ug/Kg
91-20-3	Naphthalene	635	293	48.3	ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)	189J	293	9.78	ug/Kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2360	2160	ug/Kg	92	62 - 127
1868-53-7	Dibromofluoromethane	2360	2470	ug/Kg	105	65 - 130
2037-26-5	Toluene d8	2360	2310	ug/Kg	98	71 - 132
17060-07-0	1,2-Dichloroethane-d4	2360	2620	ug/Kg	111	62 - 125

SW-846 8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
01/26/2011 10:15	449579	3550B	1	01/27/2011 16:01	KCB	449756

CAS#	Parameter	Result	RDL	MDL	Units
83-32-9	Acenaphthene	22.8U	403	22.8	ug/Kg
208-96-8	Acenaphthylene	13.5U	403	13.5	ug/Kg
120-12-7	Anthracene	14.2U	403	14.2	ug/Kg
56-55-3	Benzo(a)anthracene	65.9J	403	17.2	ug/Kg
50-32-8	Benzo(a)pyrene	62.7J	403	23.2	ug/Kg
205-99-2	Benzo(b)fluoranthene	83.0J	403	12.6	ug/Kg
191-24-2	Benzo(g,h,i)perylene	57.0J	403	11.1	ug/Kg
207-08-9	Benzo(k)fluoranthene	55.6J	403	18.4	ug/Kg
218-01-9	Chrysene	96.9J	403	13.5	ug/Kg
53-70-3	Dibenz(a,h)anthracene	11.1U	403	11.1	ug/Kg
206-44-0	Fluoranthene	235J	403	8.91	ug/Kg
86-73-7	Fluorene	15.9J	403	12.3	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	41.1J	403	16.1	ug/Kg
91-20-3	Naphthalene	46.0J	403	13.4	ug/Kg
85-01-8	Phenanthrene	191J	403	16.4	ug/Kg
129-00-0	Pyrene	166J	403	56.5	ug/Kg

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	1640	1230	ug/Kg	75	46 - 123
321-60-8	2-Fluorobiphenyl	1640	1210	ug/Kg	74	47 - 127
1718-51-0	Terphenyl-d14	1640	1200	ug/Kg	73	38 - 167

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240601	MW-1-SB	Solid	01/20/2011 10:30	01/22/2011 09:00

SW-846 6010B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
01/24/2011 12:00	449472	SW-846 3050B	1	01/25/2011 20:58	BNB	449617

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	4.77	0.74	0.089	mg/kg

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240602	MW-1	Water	01/21/2011 10:45	01/22/2011 09:00

SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
			100	01/26/2011 20:25	CLH	449688

CAS#	Parameter	Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane	8.60U	100	8.60	ug/L
71-43-2	Benzene	929	100	5.42	ug/L
100-41-4	Ethylbenzene	684	100	6.27	ug/L
91-20-3	Naphthalene	922	500	8.17	ug/L
108-88-3	Toluene	10300	100	5.90	ug/L
1330-20-7	Xylene (total)	2960	300	5.80	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)	243	100	5.17	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	5000	5870	ug/L	117	78 - 130
1868-53-7	Dibromofluoromethane	5000	5190	ug/L	104	77 - 127
2037-26-5	Toluene d8	5000	5560	ug/L	111	76 - 134
17060-07-0	1,2-Dichloroethane-d4	5000	4710	ug/L	94	71 - 127

SW-846 8270D

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
01/25/2011 07:17	449503	3510C	1	01/25/2011 19:45	KCB	449613

CAS#	Parameter	Result	RDL	MDL	Units
83-32-9	Acenaphthene	0.204U	10.1	0.204	ug/L
208-96-8	Acenaphthylene	0.119U	10.1	0.119	ug/L
120-12-7	Anthracene	0.159U	10.1	0.159	ug/L
56-55-3	Benzo(a)anthracene	0.159U	10.1	0.159	ug/L
50-32-8	Benzo(a)pyrene	0.123U	10.1	0.123	ug/L
205-99-2	Benzo(b)fluoranthene	0.242U	10.1	0.242	ug/L
191-24-2	Benzo(g,h,i)perylene	0.162U	10.1	0.162	ug/L
207-08-9	Benzo(k)fluoranthene	0.239U	10.1	0.239	ug/L
218-01-9	Chrysene	0.267U	10.1	0.267	ug/L
53-70-3	Dibenz(a,h)anthracene	0.263U	10.1	0.263	ug/L
206-44-0	Fluoranthene	0.175U	10.1	0.175	ug/L
86-73-7	Fluorene	0.135U	10.1	0.135	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene	0.270U	10.1	0.270	ug/L
91-20-3	Naphthalene	170	10.1	0.135	ug/L
85-01-8	Phenanthrene	0.671J	10.1	0.152	ug/L
129-00-0	Pyrene	0.203U	10.1	0.203	ug/L

CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0	Nitrobenzene-d5	50.5	42.4	ug/L	84	52 - 120
321-60-8	2-Fluorobiphenyl	50.5	44.1	ug/L	87	16 - 128
1718-51-0	Terphenyl-d14	50.5	39	ug/L	77	43 - 138
4165-62-2	Phenol-d5	101	37.8	ug/L	37	10 - 120
367-12-4	2-Fluorophenol	101	34.5	ug/L	34	10 - 120
118-79-6	2,4,6-Tribromophenol	101	76.6	ug/L	76	52 - 121

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21101240802	MW-1	Water	01/21/2011 10:45	01/22/2011 08:30

SW-846 8011

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
01/25/2011 16:15	449506	SW-846 8011	1	01/28/2011 18:01	DLB	449866

CAS#	Parameter	Result	RDL	MDL	Units
106-93-4	1,2-Dibromoethane	0.00380U	0.010	0.00380	ug/L

SW-846 6010B Dissolved

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By	Analytical Batch
01/25/2011 09:35	449486	SW-846 3005 Dissolved	1	01/26/2011 23:19	BNB	449658

CAS#	Parameter	Result	RDL	MDL	Units
7439-92-1	Lead	0.0014U	0.015	0.0014	mg/L

GC/MS Volatiles Quality Control Summary

Analytical Batch 449688	Client ID	MB449688	LCS449688	LCSD449688
Prep Batch N/A	GCAL ID	916356	916357	916358
	Sample Type	Method Blank	LCS	LCSD
	Analytical Date	01/26/2011 19:19	01/26/2011 17:52	01/26/2011 18:35
	Matrix	Water	Water	Water

SW-846 8260B		Units	ug/L	Spike			Control				
		Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	RPD Limit
107-06-2	1,2-Dichloroethane	0.086U	0.086	50.0	58.2	116	71 - 129	55.1	110	5	30
100-41-4	Ethylbenzene	0.063U	0.063	50.0	56.8	114	74 - 126	52.5	105	8	30
1634-04-4	tert-Butyl methyl ether (MTBE)	0.052U	0.052	50.0	55.9	112	71 - 125	55.1	110	1	30
1330-20-7	Xylene (total)	0.058U	0.058	150	168	112	74 - 127	157	105	7	30
91-20-3	Naphthalene	0.082U	0.082	50.0	44.9	90	57 - 138	48.6	97	8	35
71-43-2	Benzene	0.054U	0.054	50.0	58.6	117	70 - 129	53.6	107	9	20
108-88-3	Toluene	0.059U	0.059	50.0	58.2	116	72 - 120	54.3	109	7	20
Surrogate											
460-00-4	4-Bromofluorobenzene	51.1	102	50	49.4	99	78 - 130	48.8	98		
1868-53-7	Dibromofluoromethane	53.1	106	50	47.6	95	77 - 127	46.7	93		
2037-26-5	Toluene d8	55.6	111	50	46.8	94	76 - 134	47.8	96		
17060-07-0	1,2-Dichloroethane-d4	48.1	96	50	49.5	99	71 - 127	48.1	96		

Analytical Batch 449790	Client ID	MB449790	LCS449790	LCSD449790
Prep Batch N/A	GCAL ID	916916	916917	916929
	Sample Type	Method Blank	LCS	LCSD
	Analytical Date	01/28/2011 10:09	01/28/2011 07:49	01/28/2011 10:52
	Matrix	Solid	Solid	Solid

SW-846 8260B		Units	ug/Kg	Spike			Control				
		Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	RPD Limit
100-41-4	Ethylbenzene	10.3U	10.3	2500	2440	98	74 - 130	2320	93	5	30
1634-04-4	tert-Butyl methyl ether (MTBE)	8.35U	8.35	2500	2630	105	69 - 126	2510	100	5	30
1330-20-7	Xylene (total)	34.3U	34.3	7500	6870	92	71 - 129	6640	89	3	30
91-20-3	Naphthalene	41.3U	41.3	2500	2390	96	54 - 132	2220	89	7	30
71-43-2	Benzene	6.85U	6.85	2500	2660	106	73 - 128	2470	99	7	30
108-88-3	Toluene	10.0U	10.0	2500	2290	92	74 - 121	2290	92	0	30
Surrogate											
460-00-4	4-Bromofluorobenzene	2310	92	2500	2350	94	62 - 127	2460	98		
1868-53-7	Dibromofluoromethane	2500	100	2500	2640	106	65 - 130	2570	103		
2037-26-5	Toluene d8	2430	97	2500	2300	92	71 - 132	2380	95		
17060-07-0	1,2-Dichloroethane-d4	2750	110	2500	2700	108	62 - 125	2700	108		

GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 449613	**Client ID**	MB449503			LCS449503			LCSD449503			
Prep Batch 449503	**GCAL ID**	915446			915447			915448			
Prep Method 3510C	**Sample Type**	Method Blank			LCS			LCSD			
	Prep Date	01/25/2011 07:17			01/25/2011 07:17			01/25/2011 07:17			
	Analytical Date	01/25/2011 18:37			01/25/2011 18:54			01/25/2011 19:10			
	Matrix	Water			Water			Water			
SW-846 8270D		**Units**	ug/L								
		Result	**RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
208-96-8	Acenaphthylene	0.118U	0.118	100	94.7	95	55 - 120	102	102	7	50
120-12-7	Anthracene	0.157U	0.157	100	94.7	95	58 - 120	102	102	7	50
56-55-3	Benzo(a)anthracene	0.157U	0.157	100	89.3	89	56 - 120	98.6	99	10	50
205-99-2	Benzo(b)fluoranthene	0.240U	0.240	100	86.1	86	55 - 120	94.9	95	10	50
207-08-9	Benzo(k)fluoranthene	0.237U	0.237	100	82.7	83	49 - 121	89.3	89	8	50
191-24-2	Benzo(g,h,i)perylene	0.160U	0.160	100	128	128	44 - 132	155	**155***	19	50
50-32-8	Benzo(a)pyrene	0.122U	0.122	100	92.3	92	56 - 120	102	102	10	50
218-01-9	Chrysene	0.264U	0.264	100	96.6	97	58 - 120	103	103	6	50
53-70-3	Dibenz(a,h)anthracene	0.260U	0.260	100	120	120	50 - 138	137	137	13	50
206-44-0	Fluoranthene	0.173U	0.173	100	98.0	98	55 - 120	89.5	90	9	50
86-73-7	Fluorene	0.134U	0.134	100	92.6	93	54 - 120	95.7	96	3	50
193-39-5	Indeno(1,2,3-cd)pyrene	0.267U	0.267	100	121	121	43 - 133	142	**142***	16	50
91-20-3	Naphthalene	0.134U	0.134	100	92.2	92	44 - 120	98.5	99	7	50
85-01-8	Phenanthrene	0.150U	0.150	100	92.7	93	58 - 120	102	102	10	50
83-32-9	Acenaphthene	0.202U	0.202	100	94.3	94	52 - 120	100	100	6	32
129-00-0	Pyrene	0.201U	0.201	100	84.8	85	54 - 120	99.7	100	16	30
Surrogate											
4165-60-0	Nitrobenzene-d5	42.8	86	50	42.8	86	52 - 120	44.7	89		
321-60-8	2-Fluorobiphenyl	43.7	87	50	44.4	89	16 - 128	47.1	94		
1718-51-0	Terphenyl-d14	42.2	84	50	39.4	79	43 - 138	44.3	89		
4165-62-2	Phenol-d5	39.5	40	100	39.9	40	10 - 120	44.7	45		
367-12-4	2-Fluorophenol	58.1	58	100	59.3	59	10 - 120	64.7	65		
118-79-6	2,4,6-Tribromophenol	71	71	100	80.9	81	52 - 121	82.8	83		

GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 449756	**Client ID**	MB449579	LCS449579	LCSD449579	
Prep Batch 449579	**GCAL ID**	915804	915805	915806	
Prep Method 3550B	**Sample Type**	Method Blank	LCS	LCSD	
	Prep Date	01/26/2011 10:15	01/26/2011 10:15	01/26/2011 10:15	
	Analytical Date	01/27/2011 13:14	01/27/2011 13:31	01/27/2011 13:48	
	Matrix	Solid	Solid	Solid	

SW-846 8270D		**Units** Result	ug/Kg RDL	**Spike Added**	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
208-96-8	Acenaphthylene	11.1U	11.1	3330	3040	91	53 - 120	3270	98	7	40
120-12-7	Anthracene	11.6U	11.6	3330	3090	93	52 - 120	3250	98	5	40
56-55-3	Benzo(a)anthracene	14.1U	14.1	3330	2890	87	48 - 120	3150	95	9	40
205-99-2	Benzo(b)fluoranthene	10.3U	10.3	3330	3090	93	31 - 130	3260	98	5	40
207-08-9	Benzo(k)fluoranthene	15.0U	15.0	3330	3250	98	36 - 122	3370	101	4	40
191-24-2	Benzo(g,h,i)perylene	9.09U	9.09	3330	3170	95	29 - 134	3410	102	7	40
50-32-8	Benzo(a)pyrene	18.9U	18.9	3330	3210	96	44 - 120	3320	100	3	40
218-01-9	Chrysene	11.1U	11.1	3330	3190	96	51 - 120	3450	104	8	40
53-70-3	Dibenz(a,h)anthracene	9.03U	9.03	3330	3150	95	27 - 129	3390	102	7	40
206-44-0	Fluoranthene	7.28U	7.28	3330	3260	98	39 - 120	3330	100	2	40
86-73-7	Fluorene	10.1U	10.1	3330	3030	91	48 - 120	3230	97	6	40
193-39-5	Indeno(1,2,3-cd)pyrene	13.2U	13.2	3330	3180	95	43 - 132	3370	101	6	40
91-57-6	2-Methylnaphthalene	17.6U	17.6	3330	2760	83	43 - 120	2960	89	7	40
91-20-3	Naphthalene	11.0U	11.0	3330	2920	88	48 - 120	3140	94	7	40
85-01-8	Phenanthrene	13.4U	13.4	3330	3080	92	53 - 120	3270	98	6	40
83-32-9	Acenaphthene	18.6U	18.6	3330	3050	92	50 - 120	3160	95	4	40
129-00-0	Pyrene	46.1U	46.1	3330	2850	86	38 - 136	3180	95	11	40
Surrogate											
4165-60-0	Nitrobenzene-d5	1340	81	1670	1440	86	46 - 123	1420	85		
321-60-8	2-Fluorobiphenyl	1340	81	1670	1500	90	47 - 127	1470	88		
1718-51-0	Terphenyl-d14	1370	82	1670	1400	84	38 - 167	1480	89		

Analytical Batch 449756	**Client ID**	SB0078	SB0078 MS	SB0078 MSD	
Prep Batch 449579	**GCAL ID**	21101202413	21101202414	21101202415	
Prep Method 3550B	**Sample Type**	SAMPLE	MS	MSD	
	Prep Date	01/26/2011 10:15	01/26/2011 10:15	01/26/2011 10:15	
	Analytical Date	01/27/2011 17:08	01/27/2011 17:24	01/27/2011 17:41	
	Matrix	Solid	Solid	Solid	

SW-846 8270D		**Units** Result	ug/Kg RDL	**Spike Added**	Result	% R	Control Limits % R	Result	% R	RPD	RPD Limit
208-96-8	Acenaphthylene	0.00	10.9	3280	3080	94	53 - 120	2990	90	3	40

GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch	449756	**Client ID**	SB0078			SB0078 MS				SB0078 MSD		
Prep Batch	449579	**GCAL ID**	21101202413			21101202414				21101202415		
Prep Method	3550B	**Sample Type**	SAMPLE			MS				MSD		
		Prep Date	01/26/2011 10:15			01/26/2011 10:15				01/26/2011 10:15		
		Analytical Date	01/27/2011 17:08			01/27/2011 17:24				01/27/2011 17:41		
		Matrix	Solid			Solid				Solid		
SW-846 8270D		**Units**	ug/Kg	**Spike**			**Control**					
		Result	**RDL**	**Added**	**Result**	**% R**	**Limits % R**		**Result**	**% R**	**RPD**	**RPD Limit**
120-12-7	Anthracene	0.00	11.4	3280	3030	92	52 - 120		3040	91	0.3	40
56-55-3	Benzo(a)anthracene	0.00	13.9	3280	3040	93	48 - 120		3100	93	2	40
205-99-2	Benzo(b)fluoranthene	0.00	10.1	3280	2880	88	31 - 130		2700	81	6	40
207-08-9	Benzo(k)fluoranthene	0.00	14.9	3280	2780	85	36 - 122		2820	85	1	40
191-24-2	Benzo(g,h,i)perylene	0.00	8.97	3280	3800	116	29 - 134		3720	112	2	40
50-32-8	Benzo(a)pyrene	0.00	18.7	3280	3040	93	44 - 120		2910	87	4	40
218-01-9	Chrysene	0.00	10.9	3280	3140	96	51 - 120		2870	86	9	40
53-70-3	Dibenz(a,h)anthracene	0.00	8.91	3280	3870	118	27 - 129		3680	110	5	40
206-44-0	Fluoranthene	0.00	7.18	3280	3070	94	39 - 120		3180	95	4	40
86-73-7	Fluorene	0.00	9.93	3280	2960	90	48 - 120		2930	88	1	40
193-39-5	Indeno(1,2,3-cd)pyrene	0.00	13.0	3280	3710	113	43 - 132		3560	107	4	40
91-57-6	2-Methylnaphthalene	0.00	17.4	3280	2650	81	43 - 120		2650	80	0	40
91-20-3	Naphthalene	0.00	10.8	3280	2900	88	48 - 120		2860	86	1	40
85-01-8	Phenanthrene	0.00	13.2	3280	3040	93	53 - 120		3050	92	0.3	40
83-32-9	Acenaphthene	0.00	18.4	3280	3000	92	50 - 120		2920	88	3	40
129-00-0	Pyrene	0.00	45.5	3280	2780	85	38 - 136		2800	84	0.7	40
Surrogate												
4165-60-0	Nitrobenzene-d5			1640	1300	79	46 - 123		1310	79		
321-60-8	2-Fluorobiphenyl			1640	1360	83	47 - 127		1300	78		
1718-51-0	Terphenyl-d14			1640	1200	73	38 - 167		1200	72		

General Chromatography Quality Control Summary

Analytical Batch 449866	**Client ID**	MB449506	LCS449506	LCSD449506	
Prep Batch 449506	**GCAL ID**	915456	915457	915759	
Prep Method SW-846 8011	**Sample Type**	Method Blank	LCS	LCSD	
	Prep Date	01/25/2011 16:15	01/25/2011 16:15	01/25/2011 16:15	
	Analytical Date	01/28/2011 15:32	01/28/2011 15:54	01/28/2011 16:16	
	Matrix	Water	Water	Water	

SW-846 8011		**Units**	ug/L							
		Result	**RDL**	**Spike Added**	**Result**	**% R**	**Control Limits % R**	**Result**	**% R**	**RPD**	**RPD Limit**
96-12-8	1,2-Dibromo-3-chloropropane	0.00650U	0.00650	1.15	1.17	102	45 - 150	1.07	98	9	40
106-93-4	1,2-Dibromoethane	0.00380U	0.00380	1.15	1.43	124	55 - 141	1.33	122	7	40

Inorganics Quality Control Summary

Analytical Batch	449617	**Client ID**	MB449472			LCS449472		
Prep Batch	449472	**GCAL ID**	915323			915324		
Prep Method	SW-846 3050B	**Sample Type**	Method Blank			LCS		
		Prep Date	01/24/2011 12:00			01/24/2011 12:00		
		Analytical Date	01/25/2011 20:44			01/25/2011 20:51		
		Matrix	Solid			Solid		
SW-846 6010B		**Units**	mg/kg	**Spike**		**Result**		**Control**
		Result	**RDL**	**Added**			**% R**	**Limits % R**
7439-92-1	Lead	0.072U	0.072	20.0		19.8	99	80 - 120

Analytical Batch	449617	**Client ID**	MW-1-SB			915386MS		
Prep Batch	449472	**GCAL ID**	21101240601			915389		
Prep Method	SW-846 3050B	**Sample Type**	SAMPLE			MS		
		Prep Date	01/24/2011 12:00			01/24/2011 12:00		
		Analytical Date	01/25/2011 20:58			01/25/2011 21:11		
		Matrix	Solid			Solid		
SW-846 6010B		**Units**	mg/kg	**Spike**		**Result**		**Control**
		Result	**RDL**	**Added**			**% R**	**Limits % R**
7439-92-1	Lead	3.85	0.072	20.0		22.9	96	75 - 125

Analytical Batch	449617	**Client ID**	MW-1-SB			915386DUP		
Prep Batch	449472	**GCAL ID**	21101240601			915388		
Prep Method	SW-846 3050B	**Sample Type**	SAMPLE			DUP		
		Prep Date	01/24/2011 12:00			01/24/2011 12:00		
		Analytical Date	01/25/2011 20:58			01/25/2011 21:05		
		Matrix	Solid			Solid		
SW-846 6010B		**Units**	mg/kg		**Result**		**RPD**	
		Result	**RDL**			**RPD**	**Limit**	
7439-92-1	Lead	3.85	0.072		3.53	9	20	

Inorganics Quality Control Summary

Analytical Batch	449658	Client ID	MB449486			LCS449486		
Prep Batch	449486	GCAL ID	915392			915393		
Prep Method	SW-846 3005 Dissolved	Sample Type	Method Blank			LCS		
		Prep Date	01/25/2011 09:35			01/25/2011 09:35		
		Analytical Date	01/26/2011 23:05			01/26/2011 23:12		
		Matrix	Water			Water		
SW-846 6010B Dissolved		Units	Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R
7439-92-1	Lead		0.0014U	0.0014	0.50	0.52	103	80 - 120

Analytical Batch	449658	Client ID	MW-1			915387MS		
Prep Batch	449486	GCAL ID	21101240602			915395		
Prep Method	SW-846 3005 Dissolved	Sample Type	SAMPLE			MS		
		Prep Date	01/25/2011 09:35			01/25/2011 09:35		
		Analytical Date	01/26/2011 23:19			01/26/2011 23:33		
		Matrix	Water			Water		
SW-846 6010B Dissolved		Units	Result	mg/L RDL	Spike Added	Result	% R	Control Limits % R
7439-92-1	Lead		0.0	0.0014	0.50	0.52	104	75 - 125

Analytical Batch	449658	Client ID	MW-1		915387DUP		
Prep Batch	449486	GCAL ID	21101240602		915394		
Prep Method	SW-846 3005 Dissolved	Sample Type	SAMPLE		DUP		
		Prep Date	01/25/2011 09:35		01/25/2011 09:35		
		Analytical Date	01/26/2011 23:19		01/26/2011 23:26		
		Matrix	Water		Water		
SW-846 6010B Dissolved		Units	Result	mg/L RDL	Result	RPD	RPD Limit
7439-92-1	Lead		0.0	0.0014	0.0	0	20

Access Analytical - Chain of Custody Record

LAB USE ONLY

Sales Order # _____ PO # _____ Access Quote # _____

Project Work Order # _____

Laboratory ID: _____

Company Name: Enviro-Test Services

Report To: Terry TeaTe

Address: P.O. Box 2237

City: Irmo State: SC Zip: 29063

Phone: 413-4936 Fax:

Email:

Project ID: Broad River BP

Sampled By: Terry TeaTe

Sample ID/Description	Date Collected	Time Collected	Type (grab or composite)	Matrix (see codes)	Program Area (see codes)	TOTAL # of containers	Preservative (*see codes)	Container Type (*see codes)	REQUESTED LAB ANALYSIS: BTEX, Naph, MTBE	1,2-DCA	EDB - 8011	PAH's	Total Lead	Filtered Lead	NOTES / COMMENTS (if sample is a composite please use space below to note start/finish times & dates)
MW-1-SB	1-20-11	1030	G	S	SHW	5			X			X	X		Taken @ 15 FT.
MW-1	1-21-11	1045	G	W	SHW	6			X	X	X	X		X	

Turnaround Time:

✓ Standard

___ RUSH*

*Date Required: _____

(For rush work, results emailed/faxed by end of business day on date required)

Project Location:

✓ SC

___ NC

___ Other

(specify) _____

Relinquished By:	Received By:	Date (mm-dd-yy)	Time (24HR)	Sample Temp. Upon Receipt (°C)	
Terry L Teate	M. Rebuton	1/21/11	1125	5.9 (°C)	___ (N/A)
M. Rebuton	FedEx	1/21/11	1700	___ (°C)	✓ (N/A)
FedEx	Dan	1/22/11	0900	4.6 (°C)	___ (N/A)
				___ (°C)	___ (N/A)

ACCESS ANALYTICAL, INC.

7478 Carlisle Street
Irmo, SC 29063

Phone: (803) 781-4243
Fax: 781-4303

www.axs-inc.com

*Preservative Codes (place corresponding # in block above analysis field): 0 = None; 1 = HCl; 2 = HNO3; 3 = H2SO4; 4 = NaOH; 5 = Na2SO3; 6 = Method 5035 kit w/ NaHSO4 & CH3OH; 7 = NaOH/ZnOAc; 8 = H3PO4

*Matrix Codes (place corresponding code in matrix column): GW = ground water; WW = waste water; DW = drinking water; S = soil; SL = sludge; A = air; IW = industrial waste; WO = waste oil; OT = other (specify in comments section)

*Program Area Codes: CWA = Clean Water Act (for wastewaters); SDWA = Safe Drinking Water Act (for drinking waters); SHW = Solid and Hazardous Wastes (for soils, ground waters and waste samples)

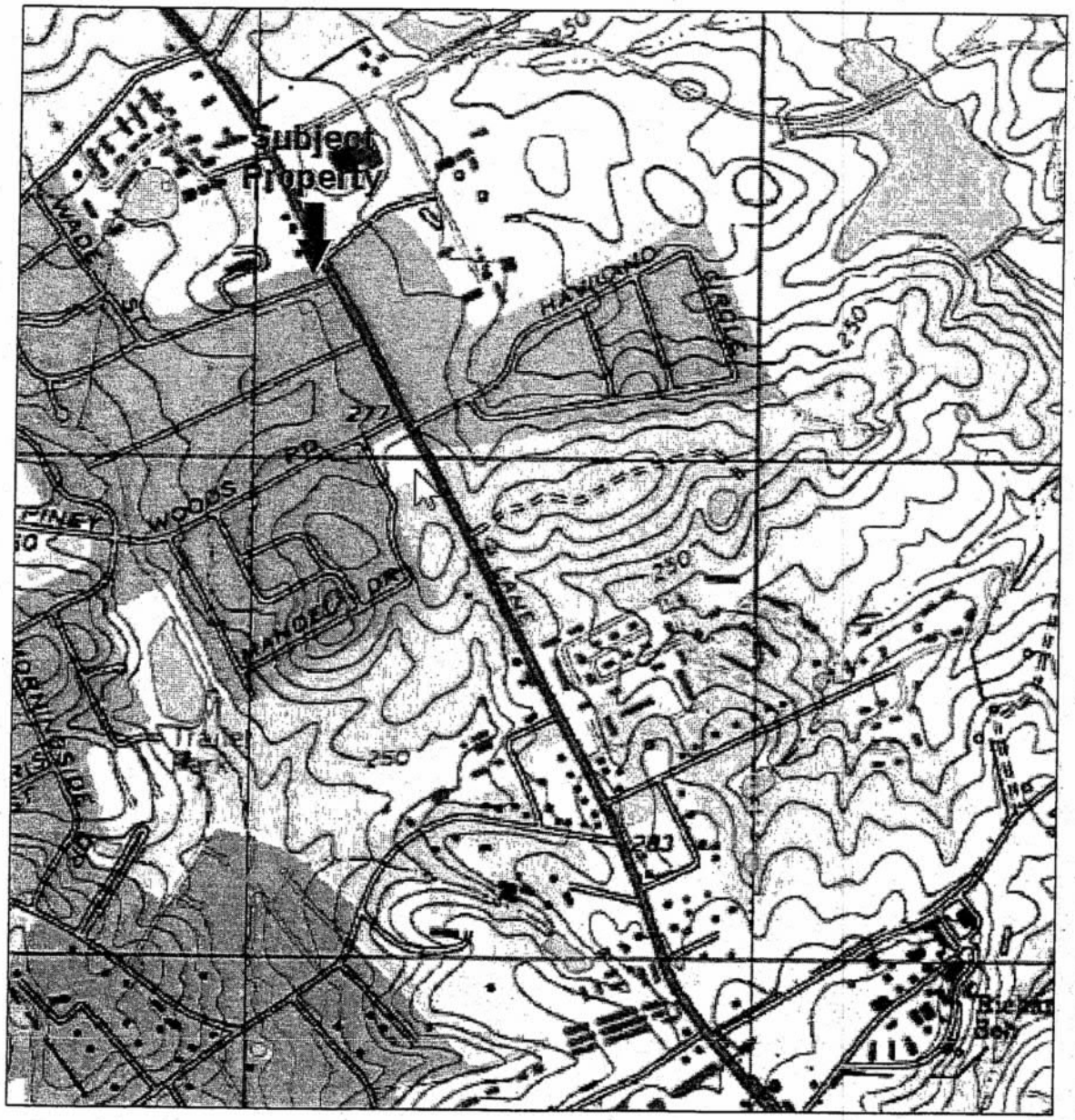
*Container Type: G = Glass; P = Plastic

See Reverse for Terms and Conditions

Original Copy - Returned w/Report
Yellow Copy - Access File Copy
Pink Copy - Client Copy

Pg ____ of ____

APPENDIX C

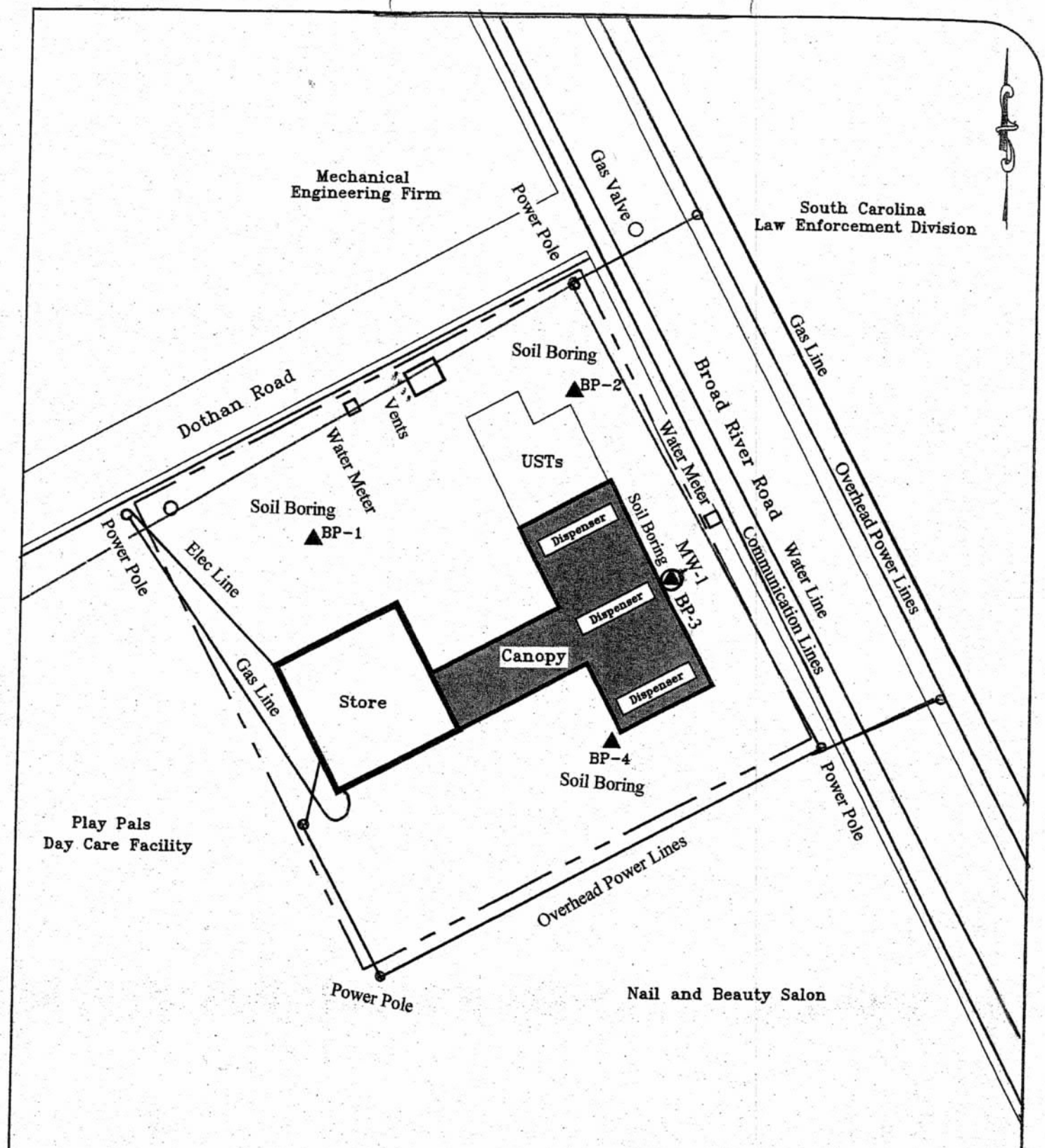


NOT TO SCALE

SITE VICINITY MAP

BP
4335 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SOUTH CAROLINA 29210
PROJECT NO:. 10-72634.2

FIGURE 1



LEGEND

▲ Soil Boring Location

USTs Underground Storage Tanks

NOT TO SCALE

Monitor Well Location for IGWA

BP
4335 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SOUTH CAROLINA 29210

DHEC Site # 11946

Date: February 2, 2011

APPENDIX D

C 161297

Crandall

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. .
Manifest Document No. 64826
2. Page 1 of 1

GENERATOR

3. Generator's Name and Mailing Address
Enviro-Test Services
7505 Irmo Dr
Columbia, SC 29212
4. Generator's Phone (803) 732-5770

5. Transporter 1 Company Name
Crandall Corporation
6. US EPA ID Number
SCD981864499
A. Transporter's Phone
(803) 791-4800

7. Transporter 2 Company Name
8. US EPA ID Number
B. Transporter's Phone

9. Designated Facility Name and Site Address
Crandall Corporation
100 Rich Lex Dr
Lexington, SC 29072
10. US EPA ID Number
SCD981864499
C. Facility's Phone
(803) 791-4800

11. Waste Shipping Name and Description	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non - Hazardous Waste, Petroleum Contaminated Soil	001	DM	0500	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
Broad River BP IGWA
Columbia, SC
Infotrac 800-535-5053 Registrant Crandall Corp
Srv Call ID: GLB0164226
ID. Profile: ENV004-001-C

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: Terry Teate
Signature: Terry Teate
Month: 01 Day: 31 Year: 11

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: Terry Teate
Signature: Terry Teate
Month: 01 Day: 31 Year: 11

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: Bob Grooms
Signature
Month: 02 Day: 01 Year: 11

GENERATOR COPY

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

MR FREDERICK CECCHINI
4335 BROAD RIVER RD
COLUMBIA SC 29210-4009

NOV 26 2013

Re: **Corrective Action Solicitation**
Broad River Amoco, 4335 Broad River Rd., Columbia, SC
UST Permit # 11946
Release reported January 4, 2011
Tier II Assessment Report received May 30, 2013
Corrective Action Options Form received September 16, 2013
Richland County

Dear Mr. Cecchini:

The Underground Storage Tank (UST) Management Division (Division) of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the May 2013 Tier II Report submitted by ARM Environmental Services, Inc. Free-phase product has been detected in multiple monitoring wells. Active corrective action is necessary to remediate the subsurface and ensure there is no potential impact to human health or the environment at the receptor locations.

The site's priority classification is 2BA. Therefore, funds from the State Underground Petroleum Environmental Response Bank (SUPERB) Account are currently available for implementation of an acceptable method of corrective action. The selected technology must completely reduce the petroleum chemicals of concern to those concentrations listed in the Corrective Action Solicitation package. All rehabilitation activities associated with a release from an UST must be performed by a SCDHEC certified site rehabilitation contractor as required by R.61-98 and in accordance with the UST Quality Assurance Program Plan (QAPP), Revision 2.0.

The Division understands that you wish to select the rehabilitation contractor to perform the corrective action. In addition to the three solicitation responses you personally obtain as outlined below, the Agency will announce the Corrective Action Solicitation in the South Carolina Business Opportunities. This announcement is to ensure enough responses are received to establish a fair and competitive price to initiate corrective action in a timely manner. This announcement will clearly indicate that the UST owner/operator will make the contractor selection to receive financial and technical approval.

Procedures

The following steps should be followed as you secure responses to the Corrective Action Solicitation.

Step 1. Select a minimum of three (3) certified site rehabilitation contractors to complete the enclosed Financial Approval Form. A list of currently certified contractors is enclosed.

Step 2. Please provide each of the proposed site rehabilitation contractors a copy of this letter. The Corrective Action Solicitation package is available at http://www.scdhec.gov/environment/lwm/usthome/OOBid.htm.

Step 3. Direct each of your proposed site rehabilitation contractors to submit their Financial Approval Form, addressed to the attention of Lee A. Monts, by the date specified in the table on Page 3 of the attached solicitation. The form may be hand delivered or mailed in a sealed envelope to SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC 29201. The envelope must be marked as Financial Approval Form for UST Permit # 11946.

You will be provided copies of all the solicitation response forms submitted. Upon review of the responses, you will be required to complete a Corrective Action Solicitation Proposal - Summary form that designates which site rehabilitation contractor you wish to use. Once you select a contractor, the Agency strongly suggests that a written contract between you and the contractor be developed. The only parties to this contract would be you and the contractor you choose. Since the Agency's only function would be to monitor the corrective action activities to ensure progress toward achieving defined corrective actions goals, rather than perform and/or oversee the associated activities, the Agency would not be party to your contract. Please note that 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.

On all future correspondence, please reference the UST Permit # 11946. Please note that approval from the Agency must be issued before corrective action begins. If you have questions concerning this correspondence, please contact me by telephone at (803) 898-0614, by fax at (803) 898-0673, or by email at fulmersb@dhec.sc.gov.

Sincerely,

Susan B. Fulmer

Susan B. Fulmer, P.G., Hydrogeologist
Corrective Action Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Enc: Corrective Action Solicitation Package
List of Certified Site Rehabilitation Contractors

Cc: Technical File (Cover letter and solicitation package)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

I. FINANCIAL APPROVAL FORM

A. ACCEPTANCE and DELIVERY STATEMENT

In compliance with the solicitation and subject to all conditions thereof, the Offeror agrees, if selected by the UST Owner/Operator within _____ days from the date of financial approval form submittal, to complete the corrective action as specified at the price set forth for the site as stated below. For the purpose of this submittal and possible acceptance of financial approval, I certify that this company understands the nature of the release(s) and the geologic conditions at the site as documented in the technical file and this solicitation. **Any quantities listed in the corrective action method(s) below are estimates and changes to those quantities or to the listed method(s) will not affect the financial approval amount.** Additionally, I certify that this company understands that acceptance is based on total cost to treat the area of concern.

_____	_____
Offeror (Print)	UST Site Rehabilitation Contractor Certification #
_____	_____
Registered Professional Name (Print)	Registered Professional Signature (required)
P.G. ☐ P.E. ☐ (check appropriate box)	Professional Certification # _____

B. CORRECTIVE ACTION SOLICITATION RESPONSE

Please respond to the following questions for UST Permit # 11946, Broad River Amoco, 4335 Broad River Rd., Columbia, SC:

1. State and briefly describe the corrective action method(s) or technology(ies) that will be discussed in detail in the CAP to achieve completion in five years, should financial approval occur. Attach an additional sheet if necessary.

2. The Corrective Action Completion Time, in months, to complete the corrective action from the date of corrective action plan implementation until the final corrective action goal has been achieved and maintained for 2 consecutive quarters is _____ months. All activities must be completed within 5 years of the date of financial approval unless otherwise approved in writing by the Agency.

3. The Corrective Action Cost, in whole dollars, regardless of the type, quantity, or duration of the permitted technology applied, to treat the area of concern shown in the Appendix such that FPP thicknesses do not exceed 0.01' at any point in the area of concern; complete all associated monitoring and post-corrective action verification; prepare all plans, reports, and correspondence; obtain and meet all terms and conditions of all required permits and licenses; design, install, monitor, operate, maintain, and when completed, properly abandon or remove all assessment and corrective action components; and complete other items outlined in this solicitation is:
   $_____

II. SCOPE OF WORK

A. DEFINITIONS:

For the purposes of this solicitation the following terms and definitions shall apply:

1. Area of Concern: The horizontal and vertical area in which concentrations of petroleum chemicals of concern have been quantified and/or can be relatively determined by actual data and subsequent interpretation using accepted scientific principles.

2. Catastrophic Occurrence: An event (e.g., hurricane) that results in a declared state of emergency and directly and substantially affects the Contractor's operations at a site.

3. Chemicals of Concern (CoC): Specific petroleum constituents that are identified for monitoring and corrective action.

4. Corrective Action Completion Time: The time in months, submitted by the Contractor, necessary to reduce FPP thicknesses to at or below 0.01', verify attainment of corrective action goals, and remove and/or properly abandon assessment and corrective action components (wells, treatment lines, etc.). All activities must be completed within 5 years of the date of financial approval unless otherwise approved in writing by the Agency.

5. Corrective Action Cost: The total amount established via the procurement process to complete the scope of work/specifications detailed in the solicitation.

6. Corrective Action Plan (CAP): A document submitted by the Contractor that outlines and details proposed corrective action(s) and contains a timetable consistent with the Corrective Action Completion Time.

7. Corrective Action Plan Implementation Date: The date on which the Contractor initiates corrective action (i.e., physical treatment activities such excavation, extraction, injection, etc.) under the approved Corrective Action Plan. The date must be within 30 days of receipt of a Notice to Proceed issued by the Agency.

8. Day: For the purpose of this solicitation, any reference to day(s) will be intended as calendar day(s) and not business day(s).

9. Free-Phase Product (FPP): Petroleum lighter than water non-aqueous phase liquid (LNAPL) identified for monitoring and corrective action.

10. QAPP: UST Management Division Quality Assurance Program Plan.

11. Site Incentive Period: The period of time in months established by the Agency during which the Contractor must achieve the corrective action goals (see Solicitation Item III.A.9.) in order to qualify for the Early Completion Incentive.

B. SOLICITATION STATEMENT

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) is seeking services on behalf of Frederick Cecchini to perform corrective action of a petroleum release at a regulated underground storage tank site in accordance with defined corrective action goals. The objectives are to prevent significant further migration of FPP and to remove measurable (>0.01') thicknesses of FPP. All Offerors must be South Carolina-Certified Class I Site Rehabilitation Contractors.

C. SCHEDULE OF DELIVERABLES

The following table summarizes the deadlines for deliverables associated with this solicitation:

DELIVERABLE DUE	DEADLINE
Questions	By December 30, 2013, 4:30 PM ET
Financial Approval Form	By January 15, 2014, 4:30 PM ET in sealed envelope
QAPP Contractor Addendum for Initial Monitoring Report	15 days from date of financial approval
Corrective Action Plan and QAPP Contractor Addendum for Corrective Action	30 days from date of financial approval
Initial Monitoring Report	45 days from approval of QAPP Contractor Addendum for Initial Monitoring Report
CAP Implementation	30 days from Notice to Proceed
CAP Implementation Report	60 days from Notice to Proceed
Notify Project Manager of Sampling	At least 2 weeks prior to sampling event
Corrective Action System Evaluation Report (CASE)	Quarterly from date of CAP Implementation Report or other schedule approved by the Agency
Groundwater Sampling Results	Annually from date of CAP Implementation Report or other schedule approved by the Agency
Update QAPP Contractor Addendum for Corrective Action	First quarter of each year or as needed until completion of corrective action
Abandon and/or Remove Assessment and Corrective Action Components	Within 60 days from notice by the Agency

D. SITE SPECIFIC INFORMATION

The scope of work defined in this solicitation is to be implemented at UST Permit # 11946, Broad River Amoco, 4335 Broad River Rd., Columbia, SC 29210 for the release(s) reported on January 4, 2011. A copy of the technical file will be available on-line at http://www.scdhec.gov/environment/lwm/usthome/OpenBids.htm until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882).

III. SOLICITATION REQUIREMENTS

A. GENERAL REQUIREMENTS

1. PAYMENT PERIOD: The payment period will be effective from the date of financial approval until corrective action is complete as outlined in this solicitation.

2. EQUAL OPPORTUNITY EMPLOYMENT: Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses.

3. AMENDMENTS: All amendments to this solicitation shall be in writing from the Agency. The Agency shall not be legally bound by any amendment, interpretation or settlement that is not in writing.

4. RESTRICTION . . . THE ONLY OFFICIAL CONTACT PERSON AT THE AGENCY DURING THE SOLICITATION AND FINANCIAL APPROVAL PROCESS IS LEE MONTS. OFFERORS ARE NOT TO CONTACT ANY OTHER AGENCY PERSONNEL OR OTHER CONTRACTORS.

5. FINANCIAL APPROVAL: The UST Owner/Operator has the right to select an SCDHEC-certified Class I Site Rehabilitation Contractor to perform corrective action in accordance with SUPERB Act (Title 44, Chapter 2 of the Code of Laws of South Carolina), and is not limited to Contractors who respond to this solicitation. Therefore, financial approval may be made to a Contractor who has been selected by the Owner/Operator but has not responded to this solicitation. The financial approval will be for the reasonable cost as defined in Solicitation Item III.A.6. The selected Contractor must agree to make positive efforts to employ women, other minorities, and minority-owned businesses. **The Agency strongly suggests that a written contract be developed between the Owner/Operator and the selected Contractor following completion of the solicitation process. The Agency will not be a party to this contract. If the selected Contractor does not or cannot complete the corrective action in accordance with the specifications outlined in this solicitation, the Owner/Operator will be required to find another SCDHEC-certified Class I Site Rehabilitation Contractor to complete the corrective action for the remainder of the existing financial approval amount. Additional SUPERB funding in excess of financial approval amount may not be allowed. Per the Underground Storage Tank Control Regulations R. 61-92, Part 280, the Owner/Operator is ultimately responsible to the Agency for the actions of their selected Contractor. Therefore, the Agency will pursue enforcement actions against the Owner/Operator if their selected Contractor does not make satisfactory progress towards achieving corrective action goals as outlined in Solicitation Item III.A.9.**

6. REASONABLE COST: The lowest Corrective Action Cost submitted on a Financial Approval Form in response to this solicitation will be considered the reasonable or SUPERB-allowable cost to complete corrective action as defined by the solicitation. The Agency reserves the right to reject any and all submitted Financial Approval Forms that propose Corrective Action Costs that are not advantageous to the State of South Carolina, that propose a Corrective Action Completion Time that is not protective of public health and the environment, and that propose remediation technology(ies) or method(s) that cannot be permitted in the State of South Carolina and/or that

are not protective of public health and the environment.

a. The Corrective Action Completion Time for the site shall be determined by the Offeror and entered on the Financial Approval Form in Solicitation Item I.B.

1) Time is of the essence in completing the site work to restore the aquifer and protect human health and the environment. Therefore, the Offeror is encouraged to strive for efficient corrective action methods and to propose the shortest practical completion time for the site.

2) The Offeror shall enter the number of months in the space provided for the site in Solicitation Item I.B.

7. SITE WORK VERIFICATION: The Contractor will be required to treat the area of concern as defined in Solicitation Item II.A.1. and as shown in the Appendix (Figure 4). Verification that interim corrective action goals have been achieved will be based upon gauging results from the site-specific target level (SSTL) wells and gauging points listed in the Appendix. Verification that the final corrective action goal has been achieved will be based upon gauging results from all wells and gauging points listed in the Appendix, all injection and/or extraction wells installed as part of corrective action, and all verification wells to be installed at locations and depths designated by the Agency (see Solicitation Item IV.B.11. for more details). It is understood that seasonal fluctuations in FPP thicknesses will occur. It is the intent of this corrective action to prevent further degradation of the aquifer(s) by continued migration of FPP into areas not previously impacted. If the corrective action allows FPP to migrate into areas not previously impacted, the Contractor will be responsible for completing assessment activities necessary to re-define the impacted areas and for providing amendments to their Corrective Action Plan (CAP) to address the additional impact.

8. REPORTS: Reports are to be submitted to the Agency on, or prior to, established due dates unless otherwise approved in writing by the Agency. Deliver one paper copy and one electronic copy of each plan and report to: SCDHEC, Bureau of Land and Waste Management, UST Management Division 2600 Bull Street, Columbia, SC 29201. The electronic copy should be submitted on compact disk (CD) in Personal Data Format (PDF). All data tables should be in MS Excel or comparable format. One copy of each plan or report must be delivered to each party listed on the Distribution List included in the Appendix. The distribution copies may be electronic or paper as agreed upon by the party and the Contractor. Based on permitting and other requirements, additional copies of plans and reports may be required by the Agency. The Agency will notify the Owner/Operator of the exact number of copies of each document to be submitted.

9. INVOICING: Invoices will be submitted to SCDHEC, Bureau of Land and Waste Management, UST Management Division, ATTN: Financial Section, 2600 Bull Street, Columbia, SC 29201, using the Corrective Action (CA) Invoice form. The initial invoice must be received at the above address within 4 months of CAP approval or funds will be uncommitted as required by the Section 44-2-40(B) of the SUPERB Act. If funds are uncommitted, the invoice will be held until funds become available. **Payment will only be made for achieving corrective action goals as specified below. No partial payments will be made, except as outlined in Solicitation Item**

IV B 4. Payment to the Contractor will be on a pay-for-performance basis as follows:

a. Payment of 40% of the total Corrective Action Cost will be made within 90 days following receipt of an invoice and documentation that the Contractor has completed Corrective Action Plan implementation. All corrective action activities must be as described in the CAP and are subject to the limitations of Section 44-2-40 of the SUPERB Act. The implementation should be documented in the Corrective Action Plan Implementation Report. The Corrective Action Plan Implementation Report must include the construction logs for all injection and/or extraction wells installed in accordance with the CAP.

b. Payment of 30% of the total Corrective Action Cost will be made based on achieving interim and final FPP thickness reduction goals as verified in the SSTL wells and gauging points listed in the Appendix, in all injection and/or extraction wells, and in all verification wells. Payments will be made upon receipt of invoices and documentation that the Contractor has achieved interim and final goals of 60, 90 and 100% reduction of the total FPP thickness above 0.01' **by the implementation of corrective action**. The FPP thicknesses are listed in the Appendix.

1) The first interim thickness reduction goal will be achieved when 60% of the total FPP thickness above 0.01' in the SSTL wells and gauging points listed in the Appendix is removed. The following formula will be used to calculate the percent total thickness reduction: sum of FPP thicknesses above 0.01' from initial gauging less sum of FPP thicknesses above 0.01' from subsequent gauging divided by sum of FPP thicknesses above 0.01' from initial gauging. Payment of 10% of the total Corrective Action Cost will be made upon confirmation by CASE report or by verification (see Solicitation Item IV.B.11.for the method of verification) that at least 60% of the total FPP thickness above 0.01' has been removed.

The following is an example to demonstrate the FPP Thickness Reduction Calculation:

Well		Thickness	Thickness>Target
MW-1	Initial [A]	0.11	[redacted] [A]
	Target [B]	0.01	[redacted] [B]
	Initial > Target [C]	0.10	0.10 [C]
	Subsequent [D]	0.08	[redacted] [D]
	Target [E]	0.01	[redacted] [E]
	Subsequent > Target [F]	0.07	0.07 [F]
MW-4	Initial [G]	2.40	[redacted] [G]
	Target [H]	0.01	[redacted] [H]
	Initial > Target [I]	2.39	2.39 [I]
	Subsequent [J]	1.80	[redacted] [J]
	Target [K]	0.01	[redacted] [K]

	Subsequent> Target [L]	1.79	1.79 [L]
Totals	Initial > Target	(C+I)	2.49 [M]
	Subsequent > Target	(F+L)	1.86 [N]

$$\text{FPP Thickness Reduction} = \frac{(M-N)}{(M)} = \frac{(2.49-1.86)}{(2.49)} = 0.25 * 100 = 25\%$$

2) The second interim thickness reduction goal will be achieved when 90% of the total FPP thickness above 0.01' in the SSTL wells and gauging points listed in the Appendix is removed. The formula outlined in Solicitation Item III.A.9.b.1 will be used to calculate the percent total thickness reduction. Payment of 10% of the total Corrective Action Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that at least 90% of the total FPP thickness above 0.01' has been removed. **Achievement of this goal must be verified by gauging conducted by the Agency.**

3) The final thickness reduction goal will be achieved when 100% of the total FPP thickness above 0.01'in the SSTL wells and gauging points listed in the Appendix is removed. The formula outlined in Solicitation Item III.A.9.b.1 will be used to calculate the percent total thickness reduction. Payment of 10% of the total Corrective Action Cost will be made upon verification (see Solicitation Item IV.B.11. for the method of verification) that 100% of the total FPP thickness above 0.01' has been removed. **The 100% payment milestone must be verified following two consecutive quarters with <u>all</u> corrective action activities completely ceased prior to payment eligibility. Achievement of this goal must be verified by gauging conducted by the Agency (to be completed during the 2nd 100% verification quarter).** FPP thicknesses must not exceed 0.01' in all wells and gauging points listed in the Appendix, in all injection and/or extraction wells, in all verification wells, and at any point in the area of concern.

c. The final 30% of the total Corrective Action Cost will be paid upon receipt of an invoice and verification that all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or properly abandoned (see Solicitation Items IV.B.11-14. for more details), and the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action (Solicitation Item IV.B. 13.). If 100% FPP thickness reduction is not achieved, the final payment may be reduced accordingly (e.g., 98% paid for 98% final reduction) as mutually agreed upon by the Agency and the Contractor.

10. LIMITATIONS: **The approved Corrective Action Cost will be final and will not be increased or cancelled for any reason (e.g., unanticipated iron fouling of a system, wells clogging because of biological activity or sediments, damage by lightning, increased subcontractor costs, loss of utilities, modification to the system to meet the remediation goals, etc.) with the exception of: 1) unforeseen subsurface conditions as determined solely at the discretion of the Agency; or 2) identification of additional FPP from a confirmed release that occurs subsequent to financial approval and that adversely impacts corrective action as determined by the Agency. Payment will only be made for achieving the corrective action goals as specified in this solicitation. No interim or partial payments will**

be made once corrective action is initiated, except as outlined in Solicitation Item IV.B.4. Once corrective action has been initiated and in the event of a cancellation due to any of the conditions described in this solicitation Item, final payment, if appropriate, will be a percentage of the Corrective Action Cost. The percentage will be equal to the actual percent total FPP thickness reduction based upon last gauging results, as verified by the Agency, from all wells and gauging points listed in the Appendix, all injection and/or extraction wells , and all verification wells, less the amount previously paid. Contractor-owned items used on-site for the corrective action that are damaged or destroyed by common acts of nature, improper maintenance or handling, theft or vandalism will not be replaced or reimbursed by the SUPERB Account. The Contractor cannot delay progress or suspend corrective action activities at the site based upon a claim of a suspected new petroleum release from the UST system. Unless directed otherwise by the Agency, the Contractor must continue to perform corrective action activities under this solicitation during any period of time during which a new petroleum release from the UST system is being investigated. The Contractor must clearly demonstrate sufficient evidence of the release in the form of analytical test results or other demonstrative evidence to the Agency. The determination that a new petroleum release from the UST system has occurred that post-dates the financial approval, and that adversely impacts corrective action at the site, is the sole discretion of the Agency.

B. SPECIFIC REQUIREMENTS

1. SCOPE OF SOLICITATION: This solicitation is for corrective action at one site in South Carolina.

2. INQUIRIES: A copy of the technical file will be available on-line at http://www.scdhec.gov/environment/lwm/usthome/OpenBids.htm until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information (FOI) Office located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC (803-898-3882). All questions or requests for information must be submitted in writing to Lee Monts, FAX number (803) 898-0673, in accordance with the date specified in Solicitation Item II.C. After this date, no further questions or requests for information will be addressed. A written response will be provided.

3. PROVISION FOR EARLY COMPLETION INCENTIVE: The Agency will pay the Contractor an incentive of 10% of the Corrective Action Cost for early completion, subject solely to the conditions set forth in this provision. Payment will be made if the corrective action goals have been met in accordance with the terms and conditions of this solicitation prior to the end of the Site Incentive Period, as established by the Agency and verified in accordance with Solicitation Item IV.B.11.

   The Site Incentive Period will commence on the Corrective Action Plan Implementation Date. A month starts at 12:00 Midnight on the Corrective Action Plan Implementation Date and ends at Midnight preceding the same day of the following month. Months will be counted consecutively from the Corrective Action Plan Implementation Date. Following implementation, the Agency will notify the Contractor in writing of the closing date of the Site Incentive Period.

The Site Incentive Period will not be adjusted for any reason, cause, or circumstance whatsoever, regardless of fault, save and except: 1) in the instance of a catastrophic occurrence (e.g., hurricane) that results in a declared state of emergency and that directly and substantially affects the Contractor's operations at a site and results in unavoidable delay of the corrective action, or 2) an unforeseen condition that could not have been anticipated following financial award to which the Agency has been notified in writing by the Contractor and as the Agency has approved in writing. In the event of a catastrophic occurrence or unforeseen condition on a specific site, the Agency shall determine the number of months reasonably necessary to extend the Site Incentive Period due solely to such catastrophic occurrence. Any amendments to the Site Incentive Period will be provided to the Contractor in writing.

The parties anticipate that routine delays may be caused by or arise from any number of events during the course of corrective action, including, but not limited to: work performed, work deleted, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors, or other Contractors, actions by third parties, revision of the work scope by the Contractor, weather, weekends, holidays, suspensions of the Contractor's operations, or any other such events, forces or factors experienced in environmental work. Such delays or events, and their potential impacts on performance by the Contractor are specifically contemplated and acknowledged by the Contractor upon entering into this contract, and shall not affect the Site Incentive Period or incentives set forth in this contract item. Further, any and all costs or impacts whatsoever incurred by the Contractor to complete corrective action within the Site Incentive Period, whether successful or not, shall be the sole responsibility of the Contractor in every instance.

The Contractor shall have no rights under the contract to make any claim arising out of this incentive provision except as is expressly set forth in this provision.

The Site Incentive Period for UST Permit # 11946, Broad River Amoco, 4335 Broad River Rd., Columbia, SC 29210 is 36 months.

4. SITE-SPECIFIC DETAILS: A brief technical summary, including maps and data tables, is attached in the Appendix. A copy of the technical file will be available on-line at http://www.scdhec.gov/environment/lwm/usthome/OpenBids.htm until the initial Corrective Action Plan is approved. The technical file may also be reviewed at the Freedom of Information Office (FOI) located at the Sims/Aycock Building, 2600 Bull Street, Columbia, SC. Appointment(s) to view the technical file may be scheduled on weekdays between the hours of 8:30 A.M. to 5:00 P.M. by calling FOI at 803-898-3882. **Offerors are strongly encouraged to review the file(s) to ensure a complete understanding of corrective action requirements. The selected Contractor will be responsible for all information in the technical file(s).**

IV. SPECIFICATIONS for CORRECTIVE ACTION

A. GENERAL SPECIFICATIONS

1. SUBMITTALS: All offerors must submit a completed Financial Approval Form. All submittals must be either hand-delivered or mailed in a sealed envelope to SCDHEC, UST Management

Division, 2600 Bull Street, Columbia, SC 29201, ATTN: Lee A. Monts. The envelope must be marked as a Financial Approval Form for Broad River Amoco, UST Permit # 11946. The completed Form outlines an approach to achieve the corrective action goals (i.e., reduction of FPP to at or below 0.01') and contains the following elements:

a. A description of the proposed treatment method(s) or technology(ies) for corrective action.

b. The amount of time in months to meet the corrective action goals, install verification wells, and remove or abandon all assessment and corrective action components.

c. The total Corrective Action Cost (in U.S. dollars) to meet the corrective action goals and to remove or abandon all assessment and corrective action components.

2. MINIMUM REQUIREMENTS: Corrective action will be considered complete when: 1) the FPP thickness are verified to be at or below 0.01' in all wells and gauging points listed in the Appendix, in all injection and/or extraction wells, in all verification wells, and at any point in the area of concern **for two consecutive quarters;** 2) all assessment and corrective action components (e.g., piping, wells, trenches, etc.) have been removed from the site or are properly abandoned; and 3) the facility and associated adjacent properties have been restored to the condition that existed prior to assessment and corrective action in accordance with Solicitation Item IV.B.13. See Solicitation Item IV.B.11. for the method of verification. Per R. 61-98, all site rehabilitation activities associated with a UST release must be performed by an SCDHEC-certified Class I Site Rehabilitation Contractor. The Contractor will be required to adhere to all applicable portions of the QAPP. See http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm and follow the link for UST Quality Assurance Program Plan for the most up-to-date version. All corrective action plans and reports must be sealed by a Professional Engineer or Professional Geologist registered in the State of South Carolina. All engineering reports, drawings and plans must be sealed by a Professional Engineer registered in the State of South Carolina. All laboratory analysis for CoC must be performed by an SC-certified laboratory. All monitoring, verification, injection, and extraction wells must be installed and abandoned by an SC-certified well driller. All applicable certification, training, permits, applications, and fees associated with well installation; injection, discharge, treatment, or transportation of groundwater, air, or soil; construction or operation of a corrective action system; and any other action requiring a permit are the responsibility of the Contractor. Any required business or occupation license and occupational safety and health training (e.g., OSHA) as defined by the laws and regulations of the United States of America, the State of South Carolina, the county or city is also the responsibility of the Contractor. The terms and conditions of all applicable permits will be met. Any contaminated soil or construction debris, contaminated water, and FPP must be properly transported and disposed of, or treated at, an approved facility with prior approval from the Agency. Any costs for utilities construction and service (electric, telephone, sewer, etc.) required by the corrective action are the responsibility of the Contractor.

B. PERFORMANCE REQUIREMENTS

1. QAPP CONTRACTOR ADDENDA: The Contractor must submit a QAPP Contactor Addendum for the Initial Monitoring Report **within 15 days** from the date of financial approval. The

Addendum for the Initial Monitoring Report must be approved by the Agency prior to initiation of work at the site. A QAPP Contractor Addendum for corrective action must be submitted with the Corrective Action Plan (CAP). The Addendum for corrective action must be updated during the first quarter of each year or as needed until completion of corrective action.

2. CORRECTIVE ACTION PLAN: The Contractor must complete and submit a detailed Corrective Action Plan and QAPP Contractor Addendum for corrective action within 30 days from the date of financial approval. Copies of the CAP must be distributed in accordance with Solicitation Item III.A.8. The CAP must define the method(s) and technology(ies) proposed to achieve corrective action goals in a manner that is consistent with the Corrective Action Completion Time submitted by the Contractor. **The corrective action method(s) or technology(ies) must be designed to prevent vapors from entering onsite or adjacent structures.** It must be shown, by use of scientific models, computations, or discussion, how FPP thicknesses will be reduced by each method and technology proposed. Any assumptions used in a model will be listed or shown, as well as appropriate references. **The use of monitoring well(s) for injection, extraction, or FPP recovery purposes is not allowed.** Accordingly, the CAP may propose installation of additional injection, extraction, or compliance wells. General construction details will be included in the CAP (e.g., install 4 extraction wells, install 8 injection wells, excavate 3,000 cubic yards of impacted soils, etc.) as well as details of assessment and corrective action component abandonment and/or removal.

   A corrective action timetable that includes demobilization and site restoration (Solicitation Items IV. B. 12-14.) will be provided by the Contractor. As corrective action is required to be completed within 5 years from CAP implementation, the submitted timetable shall not exceed 5 years in any case. The timetable shall itemize when the Contractor expects to meet the 60%, 90%, and 100% interim payment milestones. During corrective action implementation, this timetable may be adjusted (as approved in writing by the Agency) if circumstances beyond the control of the Contractor arise. If the Contractor fails to meet the interim goals in the proposed time frames, a remedy will be sought through the procedures outlined in Solicitation Item III.A.5.

   The Agency will review the CAP and initiate a public notice period for a maximum of 30 days. The names and addresses of the owners of all impacted properties and all properties located adjacent to the impacted properties are provided in the Appendix. The Contractor may be required to attend and provide input at one or more public meetings upon request by the Agency. Any CAP amendments and modifications resulting from the public notice must be submitted within 15 days of notification by the Agency. The CAP and any amendments or modifications must be sealed by a qualified Professional Geologist or Engineer registered in the State of South Carolina. The UST Owner/Operator and any other affected property owners will be consulted and will approve the location of the corrective action system. Any aboveground part of the system that is to remain on-site for longer than 30 contiguous days must be secured within a fenced area or building.

3. PERMIT APPLICATIONS: The Contractor must complete and submit all applications for permits (injection, NPDES, BAQC modeling form, thermal treatment, construction, etc.) with the CAP. All submitted applications must comply with the requirements of the respective permitting program. Any required permit changes or corrections will be submitted within 15 days of notification by the Agency.

4. INITIAL MONITORING REPORT: Prior to Corrective Action Plan implementation, the Contractor must submit an Initial Monitoring Report to the Agency documenting CoC concentrations, FPP thicknesses, and potentiometric conditions in all wells and gauging points listed in the Appendix. The report will be due **within 45 days** after QAPP Contractor Addendum approval. The report should include color photographs with date stamp of the facility/site and surrounding properties to provide documentation of the condition of the facility/site prior to implementation of any corrective action activities. Copies of the Initial Monitoring Report must be distributed in accordance with Solicitation Item III.A.8.

   Naturally occurring conditions may cause FPP thicknesses to increase or decrease. For the purpose of this solicitation, the total FPP thickness for all wells and gauging points listed in the Appendix may reasonably increase up to 150% or decrease as much as 50%. If the total FPP thickness in all wells and gauging points listed in the Appendix increases more than 150% based on initial gauging and sampling, or if measurable (>.01') FPP that has not been previously documented in any report is detected during the initial sampling event, the Contractor may request in writing that financial approval be cancelled. **If any of these conditions is identified during initial sampling, the Contractor will notify the Agency within 2 days of identification and will submit written documentation within 5 days of notification.** Financial approval will be cancelled and the Contractor will be reimbursed based on the following rate schedule:

Subcontract Costs*	Invoice + 15%
Personnel mobilization	$125.00
Equipment mobilization	$250.00
Groundwater sample collection	$35.00 per well
Gauging FPP	$20.00 per well
Contaminated water disposal	$0.80 per gallon
CAP preparation and associated costs	$6,000.00
QAPP Contractor Addendum preparation	$525.00

* Includes laboratory analysis, drilling, electrical, etc.

   If the total FPP thickness in all wells and gauging points listed in the Appendix decreases more than 50% based on initial gauging and sampling, the Agency may cancel financial approval. The Contractor will be notified of the cancellation by certified letter and must submit an invoice for the appropriate items listed in the rate schedule within 20 days from receipt of the letter. If financial approval is cancelled prior to the Corrective Action Plan Implementation Date due to any of the conditions described in this Solicitation Item, final payment will not exceed 40% of the Corrective Action Cost under any circumstances as no FPP thickness reduction will have been accomplished by implementation of corrective action. If the CAP has been implemented and physical treatment activities performed, the Contractor will be required to complete the corrective action unless conditions described in Solicitation Item III.A.10. are encountered.

5. CORRECTIVE ACTION PLAN IMPLEMENTATION: After the CAP, QAPP Contractor Addendum, and all permit applications are reviewed and approved in accordance with the QAPP and R.61-92, Section 280.66, the Agency will issue a Notice to Proceed with CAP implementation. The Contractor will implement the CAP within 30 days of receipt of the Notice to Proceed and any required permit to construct. A penalty of $100 per day will be assessed for

each calendar day late if the CAP is not implemented in 30 days unless the Contractor obtains written approval from the Agency regarding a change in the implementation schedule. Any assessed penalty amounts will be deducted from the initial payment. If any problem with CAP implementation occurs, the Contractor will notify the Agency within 24 hours of problem identification and will submit written documentation within 5 days of notification. Disruption to the normal business at the site will be kept to a minimum. Any modification, relocation, disturbance, or destruction of physical structures or features as a result of CAP implementation must be approved in writing by the affected property owner prior to CAP implementation. Upon completion of any required construction, the Agency will inspect the corrective action system and issue a permit to operate. The Contractor will, at all times, keep the site free from waste materials and rubbish related to corrective action and maintain the site in a neat and workmanlike condition for the duration of the corrective action. All contaminated soil and construction debris, contaminated water, and FPP generated on-site will be removed from the site promptly. Manifests documenting the proper disposal of contaminated soil and construction debris, contaminated water, and FPP must be included in the appropriate report. The Contractor will repair and/or restore the site/facility to the condition that existed prior to CAP implementation and as documented by the photographs included in the Initial Monitoring Report in accordance with IV.B.4. Any deviation in returning the site/facility to the condition that existed prior to CAP implementation must be documented in writing by the Contractor and signed by the Owner/Operator and property owner.

Implementation of the CAP is not authorized until the Contractor receives a Notice to Proceed from the Agency. If unauthorized implementation occurs, the Agency will not reimburse related costs incurred by the Contractor from the SUPERB Account, and the Corrective Action Cost will be reduced by the amount of the incurred costs. If the Agency agrees with early implementation to better protect human health in an emergency and provides approval in writing, early implementation without any reduction to the Corrective Action Cost will be authorized.

A Corrective Action Plan Implementation Report will be due 60 days from the Notice to Proceed and shall include a description of work sufficient to document CAP implementation activities and the associated dates of work.

6. PROPERTY ACCESS: The Contractor will secure access to the site and adjacent properties to gauge wells and gauging points, and to install any corrective action components, as required. The Contractor will be responsible for corrective action components installed on adjacent properties. Costs to repair or replace components of the corrective action system damaged due to the actions of adjacent property owners cannot be paid by the SUPERB Account.

7. START-UP: The Contractor will initiate corrective action within 15 days of receipt of a permit to operate, if required. Corrective action as defined in the CAP will begin upon start-up. **NOTE: The application of corrective action technologies or natural fluctuations in the water table can mobilize FPP and cause possible appearance of FPP in non-SSTL wells and gauging points.**

8. REPORTING: The Contractor must complete and submit a Corrective Action Plan (CAP) Implementation Report within 60 days of the Notice to Proceed. The Contractor must also complete and submit a Corrective Action System Evaluation (CASE) report on a quarterly

schedule. The CAP Implementation Report and CASE reports will be distributed in accordance with Solicitation Item III.A.8. The first CASE report is due within 90 days of the CAP Implementation Report. **CASE reports must be submitted regardless of the status of corrective action activities.**

All wells and gauging points listed in the Appendix will be gauged on a quarterly schedule and sampled on an annual schedule (see Solicitation Item IV.B. 9 for sampling details) following submittal of the CAP Implementation Report. The Contractor must submit a written request for a change in the protocol to the Agency. **Approval for any reduction in the number of wells and gauging points to be gauged/sampled, or for any lengthening of the reporting interval, is at the sole discretion of the Agency.**

CASE reports must include, at a minimum, all items stipulated in the Documents and Records section and Active Site Rehabilitation Procedures section of the QAPP. CASE reports must also include any additional data required by permits (e.g., air analyses, wastewater effluent analyses, etc.). The Contractor will be provided with the proper report forms and reporting format prior to CAP Implementation. The Agency will notify the Contractor regarding any revisions to the forms or format 60 days prior to the due date for the next CASE report.

9. SAMPLING: The Contractor must collect water samples from all wells and gauging points listed in the Appendix on an annual schedule. **Do not sample wells and gauging points containing measurable (>0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The sampling will be conducted in accordance with applicable portions of the QAPP. Additional samples (air, groundwater, effluent, soil) required by permits must be collected in accordance with established QA/QC protocol and submitted to an SC-certified laboratory for analysis. The samples will be analyzed for parameters stipulated in the permits. Sampling and analytical data for each sample (e.g., field sampling logs, chain of custody forms, certificates of analysis, lab certification number) will be included in the CASE report.

   The Contractor must submit a written request to the Agency for a change in the gauging/sampling protocol. Approval for any reduction in the number of wells and gauging points to be gauged/sampled is at the sole discretion of the Agency. The Contractor may choose to conduct gauging/sampling more frequently in order to document that a reduction milestone has been achieved.

10. DISPOSAL: The Contractor must properly dispose of all contaminated water, contaminated soil, and FPP generated during corrective action. The Owner/Operator of the UST facility will be considered the generator. In the case of an orphan site, the Contractor will be considered the generator. Treatment and disposal must be conducted at an SCDHEC-approved facility, and must be documented in the CASE reports.

11. QUALITY ASSURANCE & VERIFICATION: Once gauging data indicate 100% FPP thickness reduction, the Contractor must completely suspend corrective action and provide notification to the Agency. After 30 days, the Contractor will gauge all wells and gauging points listed in the Appendix and all injection and/or extraction wells to verify that the final (100%) FPP thickness reduction goal has been achieved and maintained. If the goal is maintained, the date of the 30-

day sampling event will be considered the start of the two-quarter, post-corrective action verification period. During the verification period, the Contractor will conduct quarterly sampling of all wells and gauging points listed in the Appendix and all verification wells, and conduct quarterly gauging of all injection and/or extraction wells after the start of the verification period. **Do not sample wells and gauging points containing measurable (>0.01') FPP.** If measurable FPP is present, the thickness of product and depth to groundwater must be recorded to the nearest 0.01'. The samples should be analyzed for the parameters listed in the Appendix, and for dissolved oxygen, ferrous iron, methane, nitrate, and sulfate using the analytical methods and reporting limits detailed in the QAPP.

If gauging results show that the final FPP thickness reduction goal has not been maintained, and/or the FPP thickness exceeds 0.01' in any injection, extraction, or verification well, corrective action must be resumed. The Agency may require the Contractor to propose a revised corrective action strategy and timetable to achieve and maintain the goal. The strategy may require modification of the existing corrective action system. The post-corrective action period will be suspended and corrective action will continue until the final (100%) FPP thickness reduction goal is again achieved and maintained for a period of 30 days, and the FPP thicknesses in the injection, extraction, and verification wells remain at or below 0.01'for a period of 30 days. Once again, the Contractor will suspend corrective action and a new post-corrective action verification period will begin. The aforementioned cycle of activity must be repeated until the FPP thicknesses remain at or below 0.01' in all wells and gauging point listed in the Appendix, in all injection and/or extraction wells, and in all verification wells for 2 consecutive quarters.

The Agency may require installation of three (3) verification wells during the post-corrective action verification period at designated locations and depths. Costs for the verification wells will be considered part of the Corrective Action Cost. The SSTL for any verification well will be an FPP thickness of 0.01'.

The Agency will conduct gauging to verify achievement of the second (90%) interim FPP thickness reduction goal, and <u>may</u> conduct gauging to verify achievement of the first (60%) interim FPP thickness reduction goal and to confirm the start of the two-quarter, post-corrective action verification period. The Agency will also conduct gauging during the two-quarter, post-corrective action verification period to confirm that corrective action goals have been maintained.

If the Contractor anticipates that gauging by the Agency is warranted, and desires to participate or is required to participate, the Agency must be allowed at least 2 weeks to schedule a mutually agreeable time for the gauging event.

12. DEMOBILIZATION: The Contractor will disassemble and remove the corrective action system and associated components including utilities from the site within 60 days of notification by the Agency that the final FPP thickness reduction goal has been achieved and maintained for 2 consecutive quarters. Disruption to the UST Owner/Operator's or property owner's business must be kept to a minimum.

13. SITE RESTORATION: The Contractor must remove or properly abandon all assessment and corrective action components (piping, monitoring wells, injection and/or extraction wells, trenches, etc.) within 60 days of notification by the Agency that the final FPP thickness reduction

goal has been achieved and maintained for 2 consecutive quarters. Abandonment will be in accordance with the South Carolina Well Standards and Regulations R. 61-71, the UST Management Division QAPP, and accepted industry standards for abandonment of trenches and piping/utility runs. Disruption to the Owner/Operator's or property owner's business must be kept to a minimum. The Contractor must provide the Agency with documentation of the abandonment and disposal of any remaining contaminated soil, contaminated groundwater, and FPP. **The Contractor will restore the site and adjacent properties to the condition that existed prior to assessment and corrective action (e.g., repaving, reseeding, etc.) as documented by the photographs included in the Initial Monitoring Report or other written documentation detailing a variance from the conditions documented by the photographs. Neither the Agency nor the SUPERB Account will be liable for any damages caused by the Contractor. As required by Section IV.A.4c. of the SUPERB Site Rehabilitation and Fund Access Regulations R.61-98, the Contractor shall be required to indemnify the property owner, UST Owner/Operator and the State of South Carolina from and against all claims, damages, losses and expenses arising out of or resulting from activity conducted by the Contractor, its agents, employees or subcontractors.**

14. COMPLETION NOTICE: Written notice must be provided to the Agency at least 2 weeks prior to completion of site restoration. This will allow the Agency and the Contractor time to jointly inspect the site and adjacent properties, and compile a list of tasks to be finished. Task items may include, but are not limited to, well abandonment, pavement repair, debris removal, etc. **Site restoration will be complete once all the tasks are finished, the site passes a final inspection by the Agency, and the Agency issues written notice that the corrective action is complete**.

Appendix

UST # 11946, Broad River Amoco
Richland County

Distribution List for Plans and Reports

Responsible Party and Site Property Owner:

Mr. Frederick Cecchini 4335 Broad River Rd Columbia SC 29210	Tax Map R06108-04-69 MW-1, 2, 3, 4, 5, 6A, 6B, DMW-1, RW-1, RW-2, RW-3, RW-4, RW-5

Affected Property Owners:*

William & Bonnie Saville 4509 Wade St Columbia SC 29210	Tax Map R06108-04-68, 1252 Dothan Rd Tax Map R06108-04-67, 1246 Dothan Rd MW-11A, 11B, 17B, 18A, 18B, 19A, 19B, 20A, 20B, 21A, 21B, 22B, DMW-2, DMW-3
James & Wendy Rice 22 Caddis Creek Ct Irmo SC 29063	Tax Map R06108-04-27, 1257 Dothan Rd MW-15A, 15B, 16A, 16B
MDC Associates 4403 Broad River Rd Columbia SC 29210	Tax Map R06108-04-25, 4409 Broad River Rd Tax Map R06108-04-26, 4403 Broad River Rd MW-12A, 12B, 13A, 13B, 14A, 14B
State of SC General Services 300 Gervais St Columbia SC 29201	Tax Map R06200-03-02, 4430 Broad River Rd MW-7A, 8A, 8B, 9A, 9B
Herteline Lowman 4315 Broad River Rd Columbia SC 29210	Tax Map R06108-04-70, 4313 Broad River Rd MW-10A, MW-10B

*Property owners are subject to change.

Table 1: Analytical Parameters

Analyte	Analytical Method*
BTEX	8260B
Naphthalene	8260B
MTBE	8260B
1,2-DCA	8260B
EDB	8011
Oxygenates + Ethanol	8260-OXY

* See Programmatic QAPP for Reporting Limits.

The analyses listed in Table 1 are required for all sampling events.

Table 2: Natural Attenuation Parameters

Analyte	Analytical Method*
Dissolved Oxygen	SM4500-O G
Ferrous Iron	SM3500-Fe D
Methane	Kerr Method
Nitrate	9056/9210
Sulfate	9038/9056

* See Programmatic QAPP for Reporting Limits.

The analyses listed in Table 2 are required for verification sampling.

Verification Wells

Three (3) verification wells may be installed during the post-corrective action monitoring period at locations and depths designated by the UST Management Division. Costs for the well installation are considered part of the approved Corrective Action Cost. The site-specific target level (SSTL) for the verification wells is <0.01' free-phase product thickness per well. During verification, all wells must be sampled for the analytical parameters listed above in Table 1 as well as the natural attenuation parameters listed in Table 2.

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Table 3: Current CoC Concentrations in Groundwater

CoC concentrations in micrograms per liter (µg/l) based on the March 2013 sampling. Product thickness based on the October 30, 2013 gauging:

Well	Free Product Thickness	Benzene	Toluene	Ethylbenzene	Xylene	Naphthalene	MTBE	1,2-DCA	EDB
MW-1	**None**	**2480**	**12,800**	**1550**	**5650**	**623**	**70.8J**	**<11.6**	**<0.0039**
MW-2	**1.43'**								
MW-3		0.417J	1.05	0.408J	1.72J	<0.176	<0.078	<0.116	<0.0039
MW-4	**2.25'**								
MW-5	**6.26'**								
MW-6A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-6B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-7A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-8A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-8B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-9A		<0.111	<0.122	<0.109	<0.179	<0.176	2.62	0.642J	<0.0039
MW-9B		<0.111	<0.122	<0.109	<0.179	<0.176	2.79	0.675J	<0.0039
MW-10A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-10B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-11A		<0.111	<0.122	<0.109	<0.179	<0.176	1	<0.116	<0.0039
MW-11B		<0.111	<0.122	<0.109	<0.179	<0.176	1.12	<0.116	<0.0039
MW-12A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-12B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-13A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-13B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-14A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-14B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-15A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-15B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-16A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-16B		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-17B		6.58	2.47	1.1J	3.87J	<0.352	244	<0.232	<0.0039
MW-18A		<0.111	<0.122	<0.109	<0.179	<0.176	1.42	<0.116	<0.0039
MW-18B		<0.111	0.459J	<0.109	2.03J	<0.176	0.841J	<0.116	<0.0039
MW-19A		0.566J	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-19B		0.253J	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-20A		<0.111	<0.122	<0.109	<0.179	<0.176	1.15	<0.116	<0.0039
MW-20B		<0.111	<0.122	<0.109	<0.179	<0.176	2.25	<0.116	<0.0039
MW-21A		<0.111	<0.122	<0.109	<0.179	<0.176	<0.078	<0.116	<0.0039
MW-21B		<0.111	<0.122	<0.109	<0.179	<0.176	1.34	<0.116	<0.0039
MW-22B		<0.111	<0.122	<0.109	<0.179	<0.176	1.83	<0.116	<0.0039
RW-1	**5.30'**								
RW-2	**None**	**9420**	**12,800**	**2030**	**11,000**	**565J**	**9100**	**224J**	**1.65**
RW-3	**0.01'**								
RW-4	**None**	**3390**	**1730**	**977**	**4900**	**210J**	**4460**	**<5.81**	**<0.0039**
RW-5	**0.03'**								
DMW-1		507	<1.22	<1.09	<1.79	<1.76	131	14.2J	<0.0039
DMW-2		4.12	<0.548J	<0.109	0.805J	<0.176	153	<0.116	<0.0039
DMW-3		0.281J	0.497	<0.109	<0.179	<0.176	1.76	<0.116	<0.0039

* CoC concentations and free product thicknesses may vary due to seasonal fluctuations in the groundwater.

UST # 11946, Broad River Amoco
Richland County

Table 4: Site-Specific Target Levels

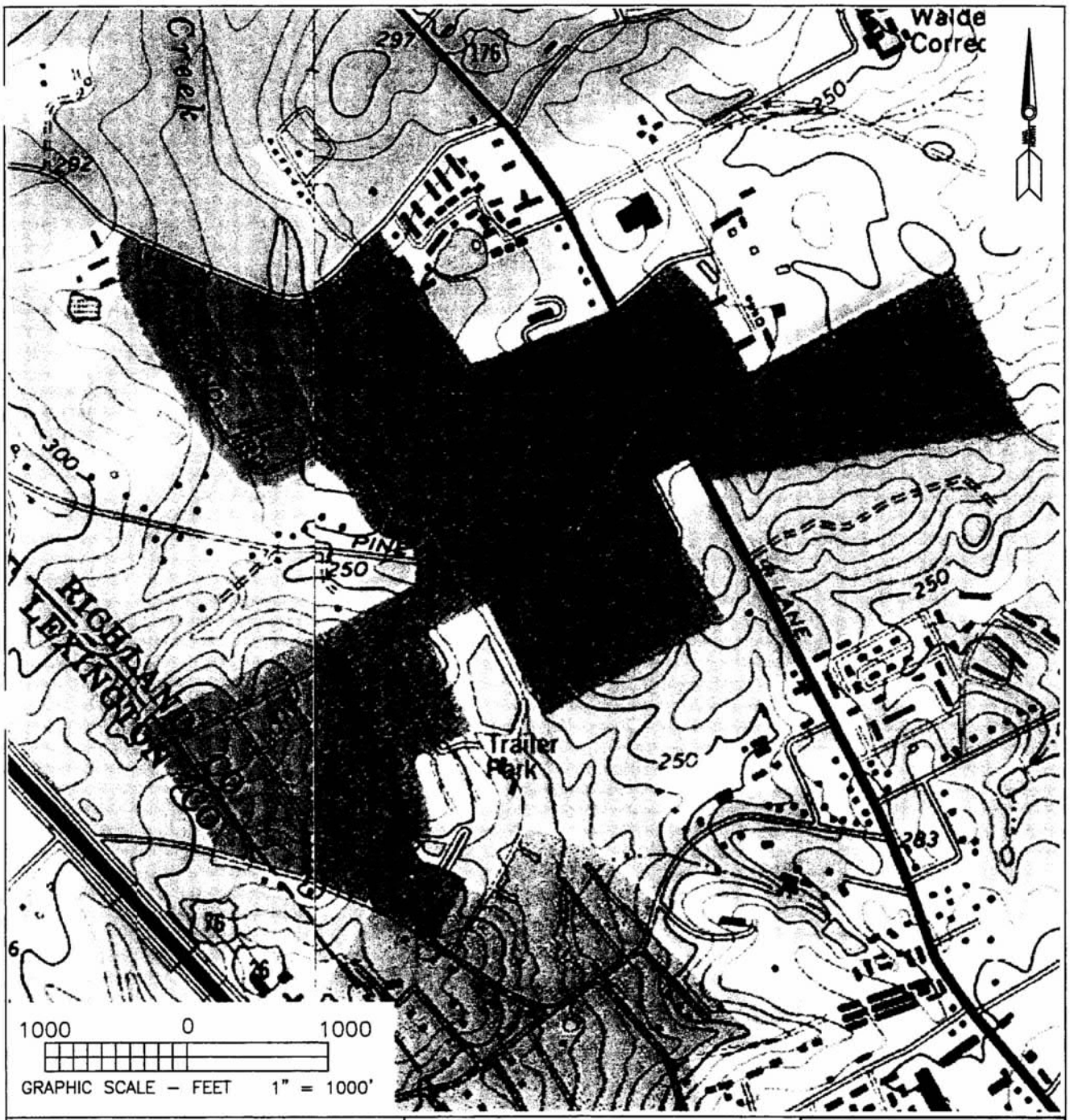
Site-specific target levels (SSTLs) for interim payment under this solicitation.

Monitoring Well	Free Product Thickness (feet)
MW-1	<0.01'
MW-2	<0.01'
MW-4	<0.01'
MW-5	<0.01'
RW-1	<0.01'
RW-2	<0.01'
RW-3	<0.01'
RW-4	<0.01'
RW-5	<0.01'
Total Initial Thickness	15.28'
Total SSTL Thickness	<0.09'
Total Initial Thickness Above SSTL	15.19'

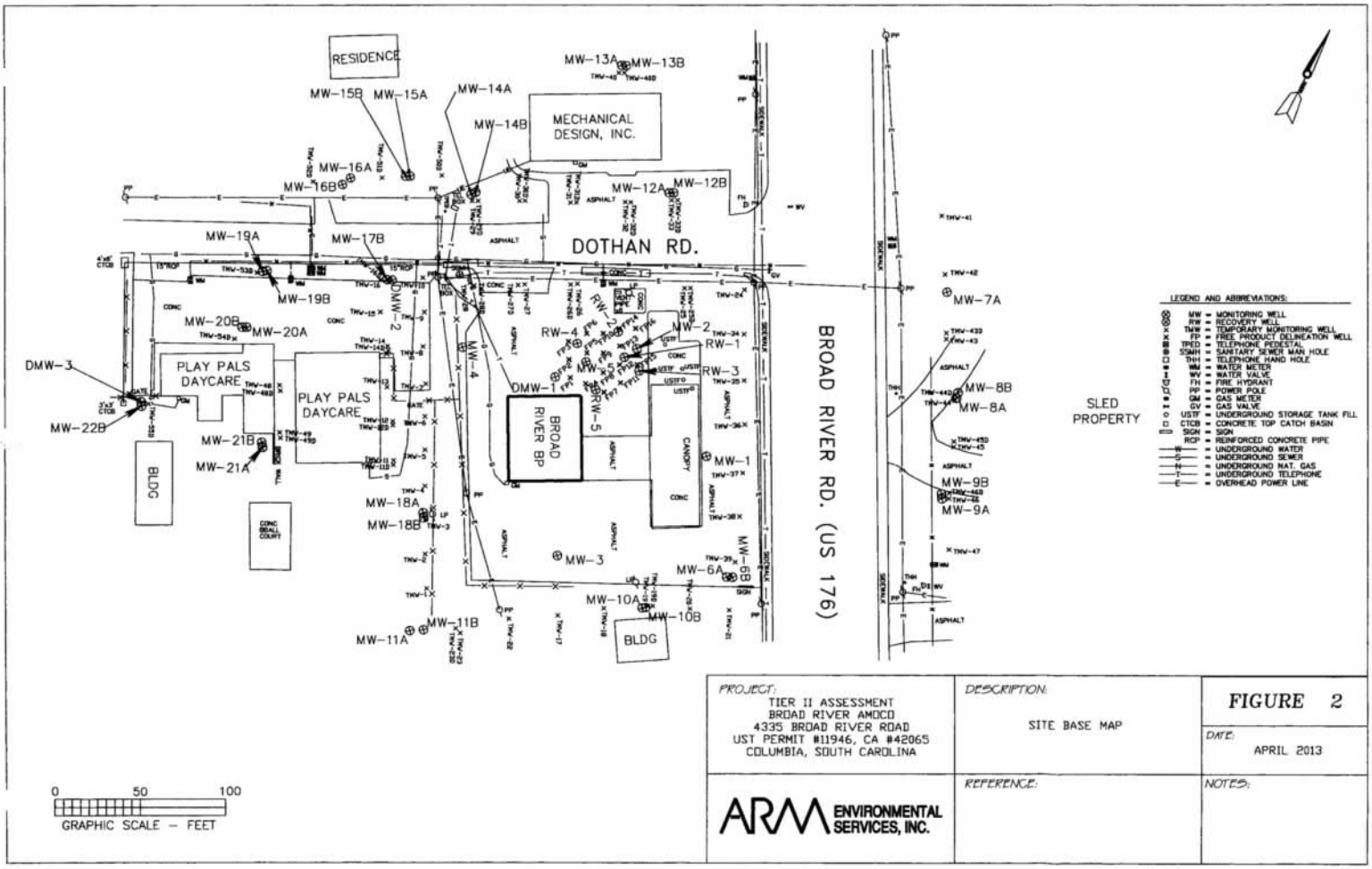
UST # 11946, Broad River Amoco
Richland County

List of Adjacent Facilities

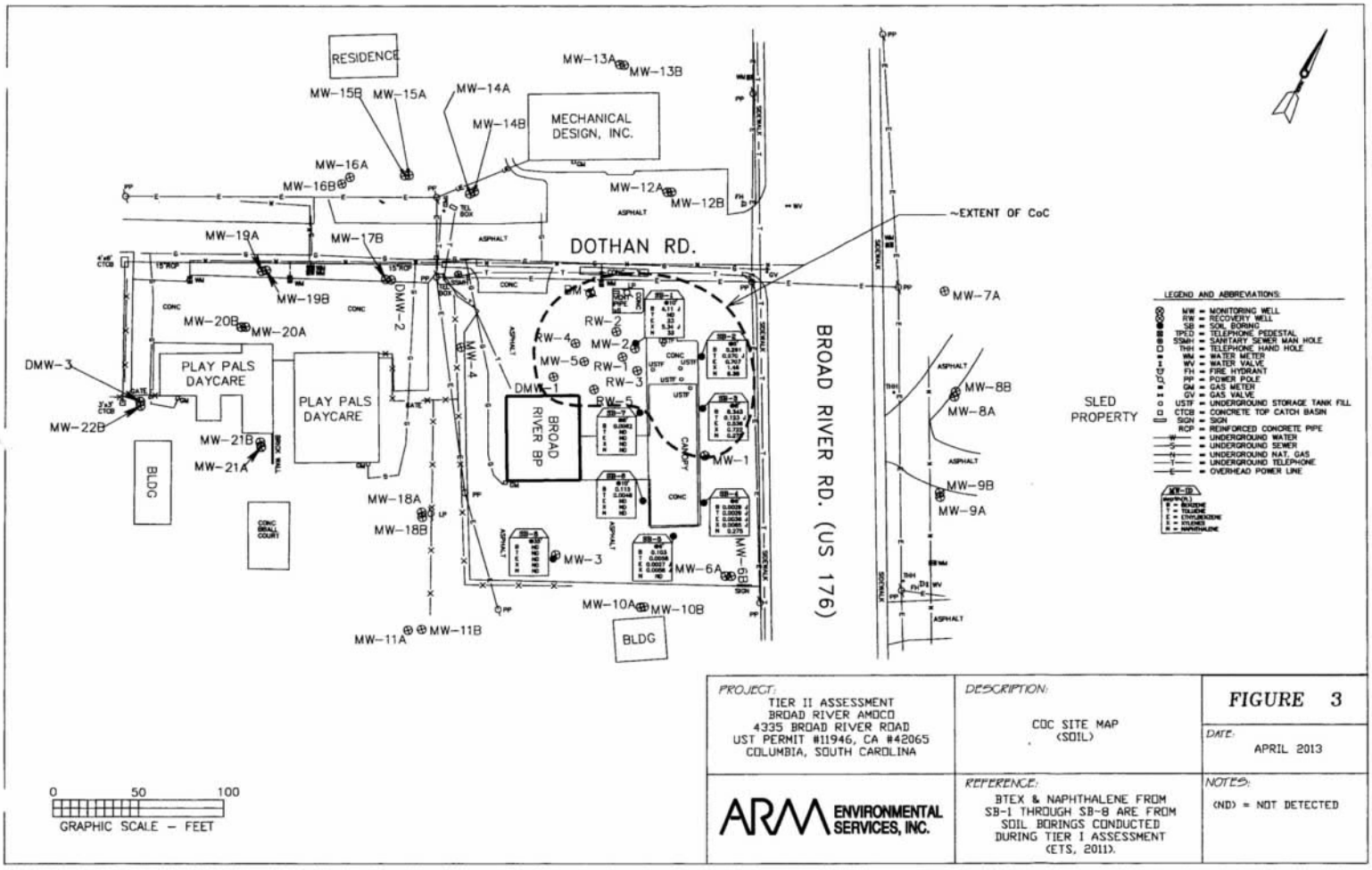
- UST Permit # 07374, Walden Correctional Institution, 4340 Broad River Rd., Columbia, SC
  Release reported April 9, 1999; Conditional No Further Action issued December 3, 2008.
  Release reported April 9, 1999; No Further Action issued January 7, 2008.
- UST Permit # 07375, Kirkland Correctional Institution, 4444 Broad River Rd., Columbia, SC
  Release reported April 13, 1998, open.
  Release reported April 13, 1998; No Further Action issued January 4, 2013.
  Release reported June 4, 1999; No Further Action issued September 21, 2000.
  Release reported June 4, 1999, open.
  Release reported June 4, 1999; No Further Action issued September 21, 2000.
  Release reported June 4, 1999; No Further Action issued October 8, 2002.
- UST Permit # 13776, SLED, 4400 Broad River Rd., Columbia, SC
  Release reported July 31, 1991; No Further Action issued September 28, 2000.
- UST Permit # 16466, Women's Correctional Institution, 4450 Broad River Rd., Columbia, SC
  Release reported June 4, 1999; No Further Action issued June 7, 2000.
- UST Permit # 18391, Broad River Fueling Facility, 4424 Broad River Rd., Columbia, SC
  No releases reported.
- UST Permit # 18422, SC Computer Data Center, 4430 Broad River Rd., Columbia, SC
  No releases reported.



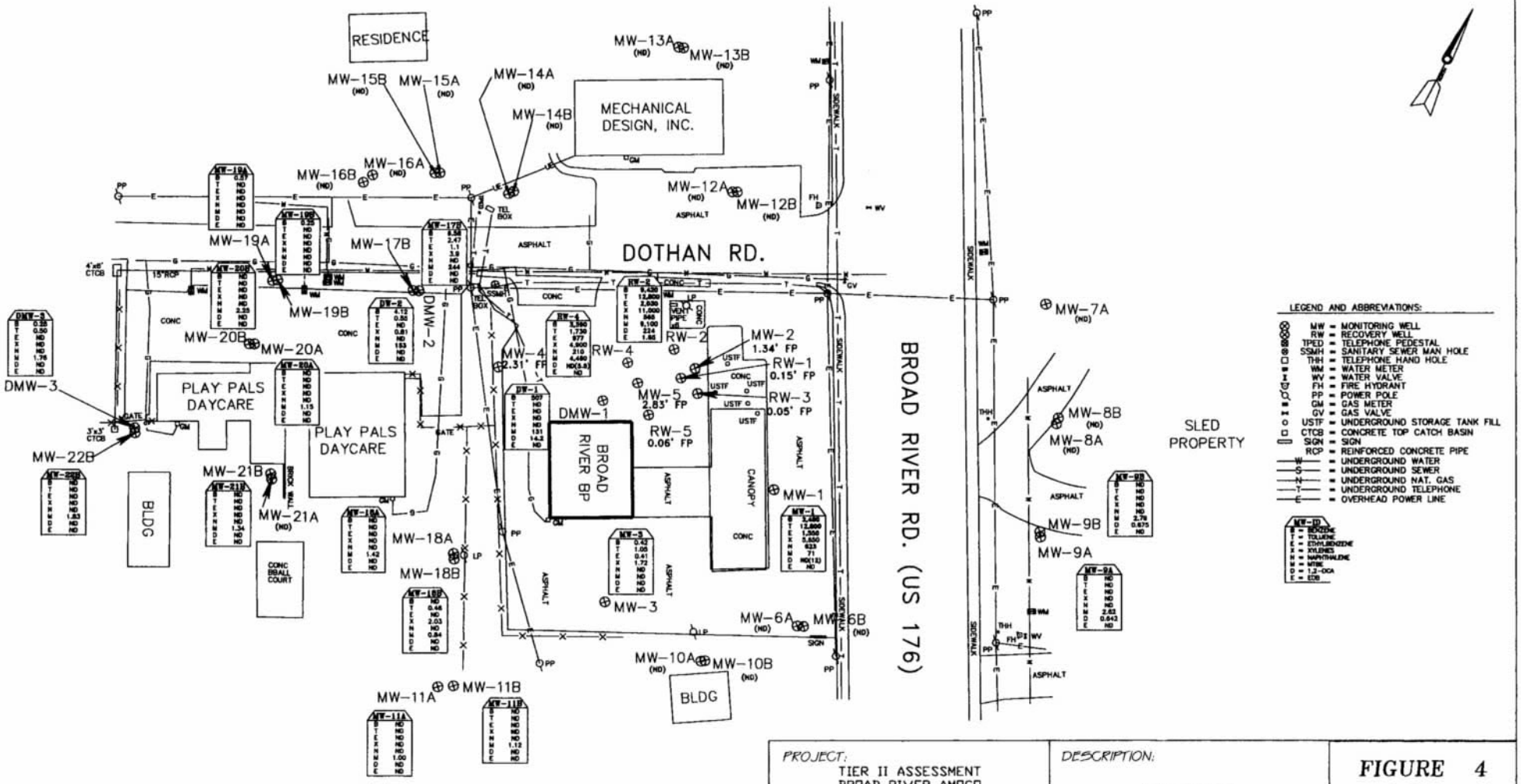
PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: SITE LOCATION MAP	*FIGURE 1* DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: U.S.G.S. TOPOGRAPHIC MAP (7.5 MINUTE SERIES) COLUMBIA NORTH - 1972, REV. 1990 SOUTH CAROLINA QUADRANGLE	LEGEND:



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: SITE BASE MAP	**FIGURE 2** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE:	NOTES:



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: COC SITE MAP (SOIL)	**FIGURE 3** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: BTEX & NAPHTHALENE FROM SB-1 THROUGH SB-8 ARE FROM SOIL BORINGS CONDUCTED DURING TIER I ASSESSMENT (ETS, 2011).	NOTES: (ND) = NOT DETECTED



PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, CA #42065
COLUMBIA, SOUTH CAROLINA

DESCRIPTION:
COC SITE MAP
(GROUNDWATER)

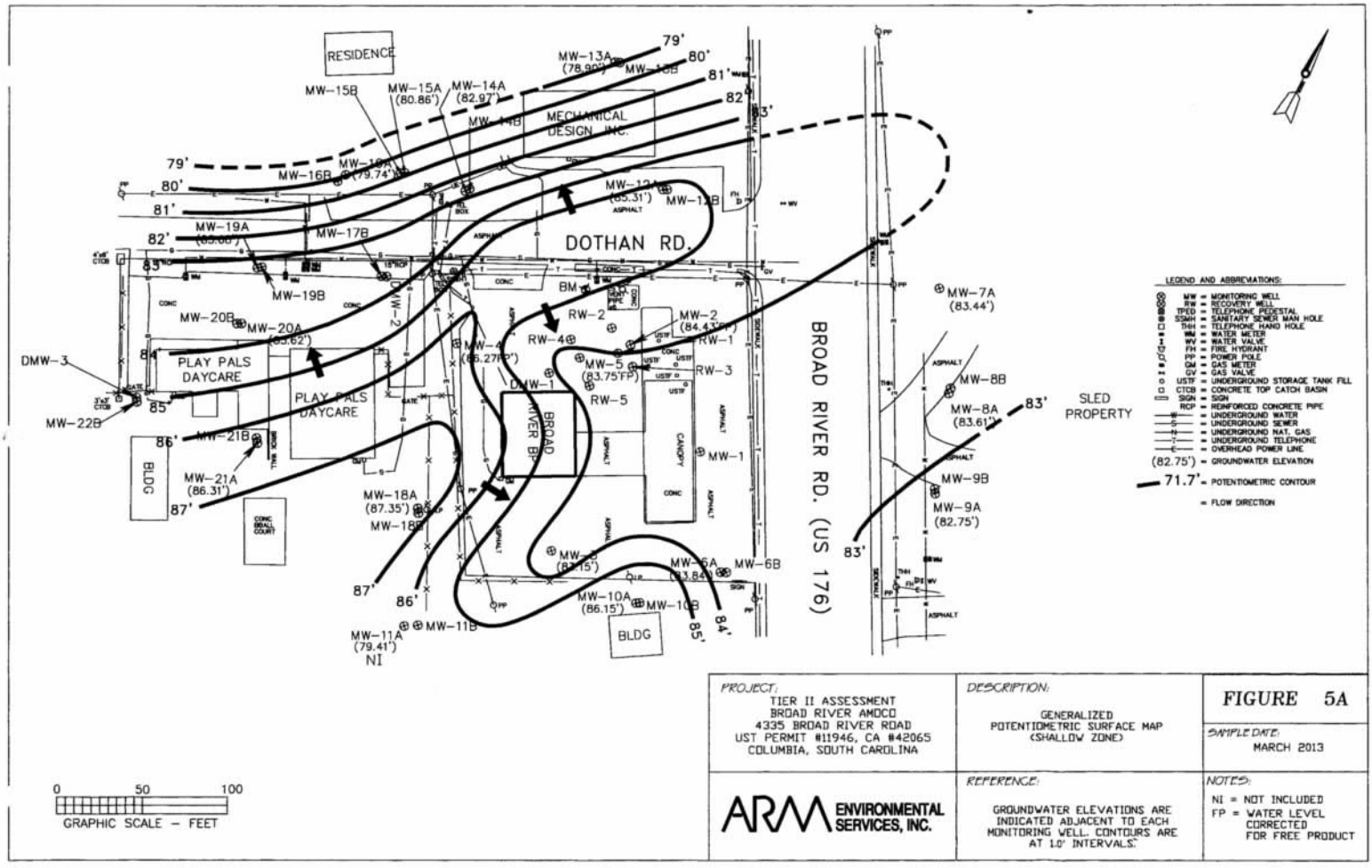
FIGURE 4

SAMPLE DATE:
MARCH 2013

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE:
BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, NAPHTHALENE, MTBE, 1,2-DCA & EDB CONCENTRATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL IN ug/L.

NOTES:
(ND) = NOT DETECTED
FP = FREE PRODUCT
(thickness in feet)



PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, CA #42065
COLUMBIA, SOUTH CAROLINA

DESCRIPTION:
GENERALIZED
POTENTIOMETRIC SURFACE MAP
(SHALLOW ZONE)

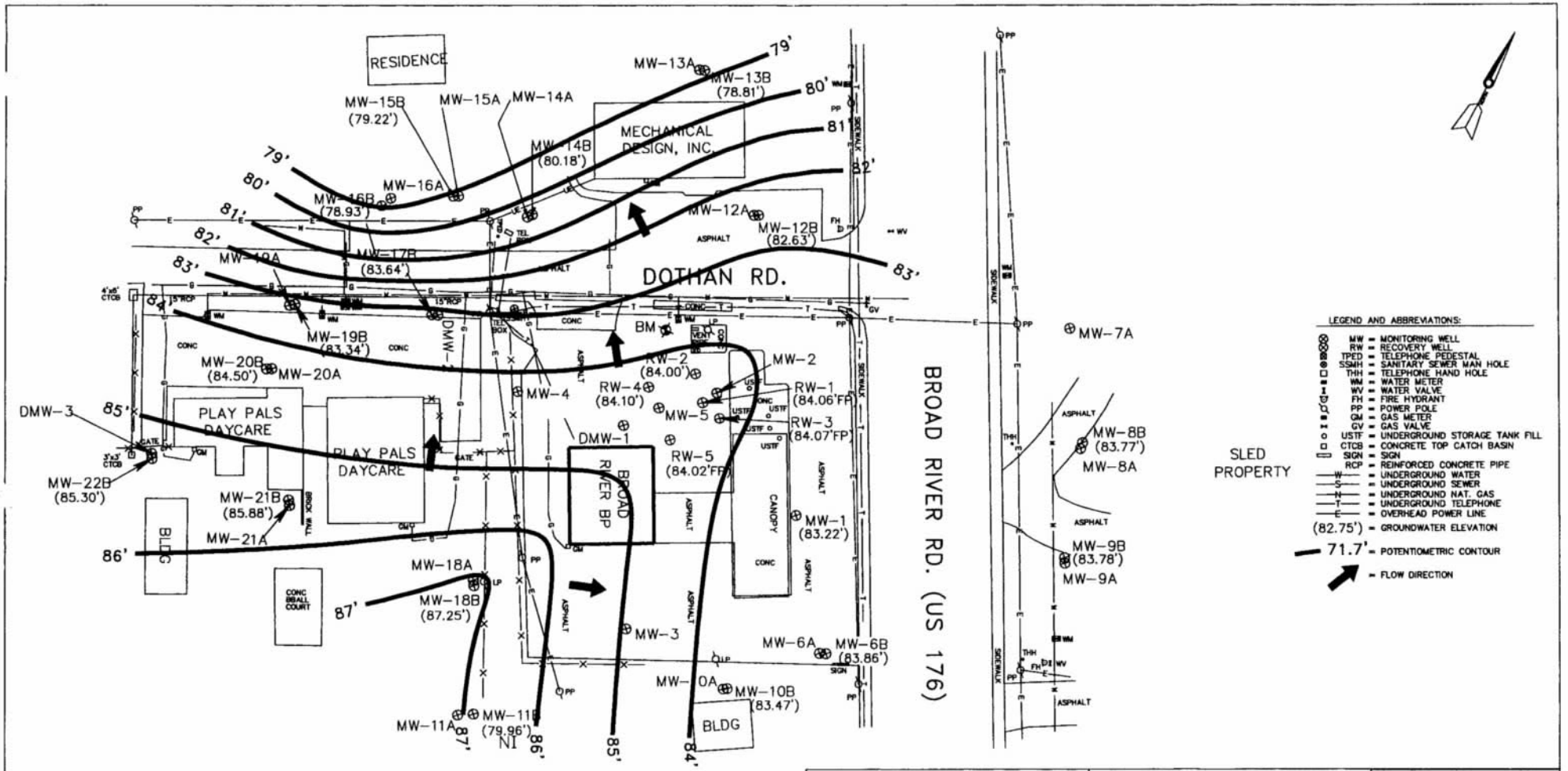
FIGURE 5A

SAMPLE DATE:
MARCH 2013

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE:
GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 1.0' INTERVALS.

NOTES:
NI = NOT INCLUDED
FP = WATER LEVEL CORRECTED FOR FREE PRODUCT



PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, CA #42065
COLUMBIA, SOUTH CAROLINA

DESCRIPTION:
GENERALIZED
POTENTIOMETRIC SURFACE MAP
(DEEPER ZONE)

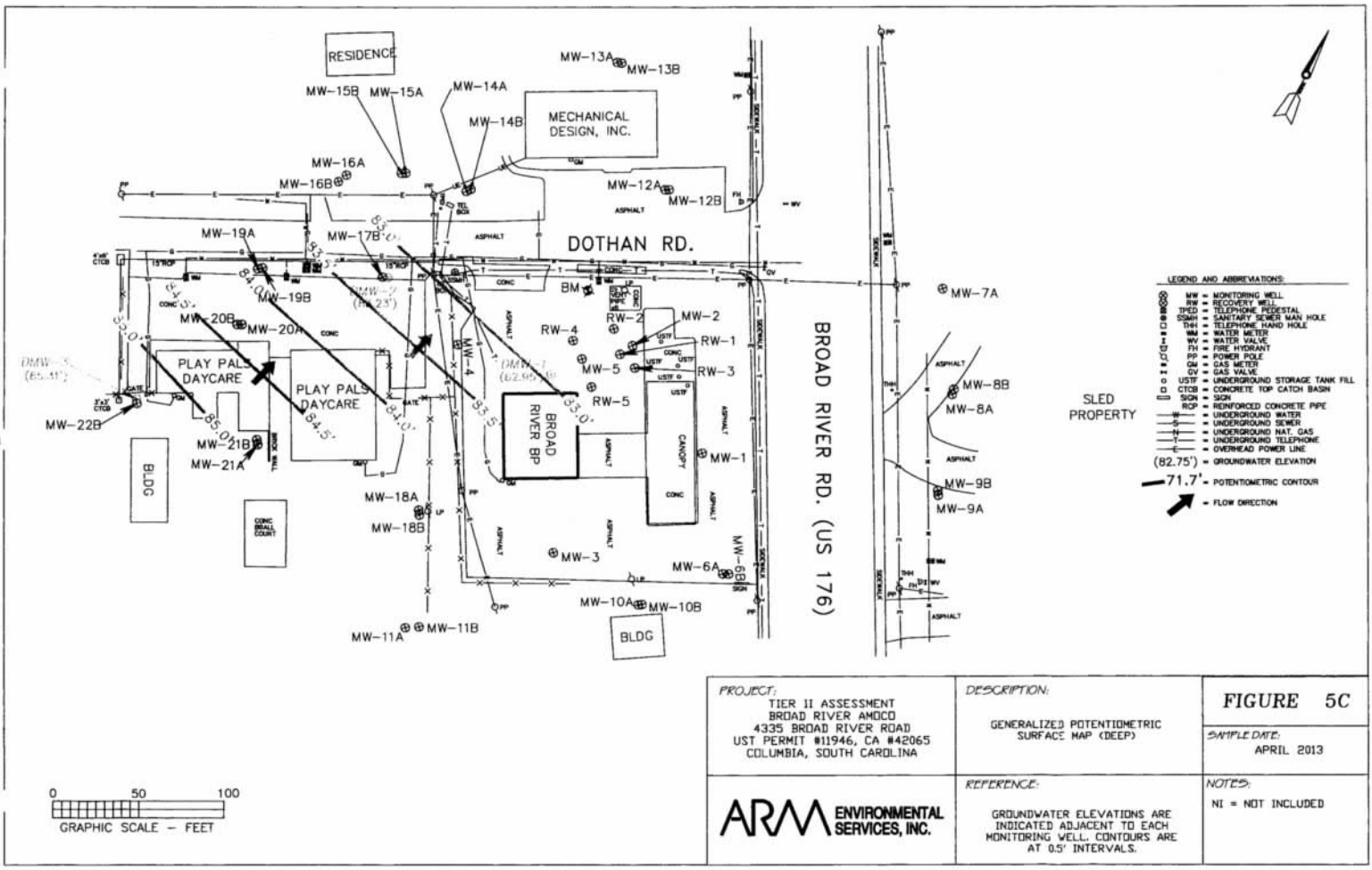
FIGURE 5B

SAMPLE DATE:
MARCH 2013

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE:
GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 1.0' INTERVALS.

NOTES:
NI = NOT INCLUDED
FP = WATER LEVEL CORRECTED FOR FREE PRODUCT



PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, CA #42065
COLUMBIA, SOUTH CAROLINA

DESCRIPTION:
GENERALIZED POTENTIOMETRIC SURFACE MAP (DEEP)

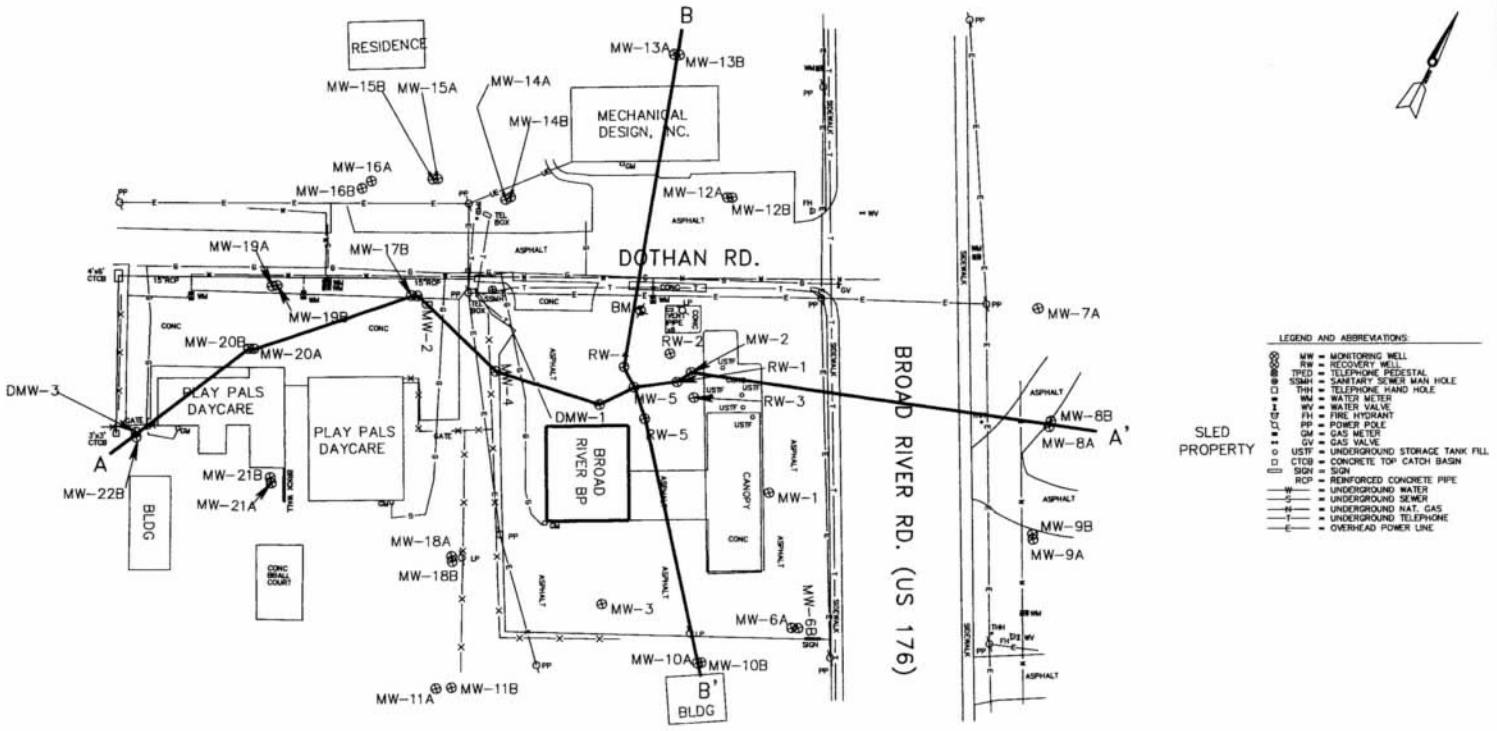
FIGURE 5C

SAMPLE DATE:
APRIL 2013

ARM ENVIRONMENTAL SERVICES, INC.

REFERENCE:
GROUNDWATER ELEVATIONS ARE INDICATED ADJACENT TO EACH MONITORING WELL. CONTOURS ARE AT 0.5' INTERVALS.

NOTES:
NI = NOT INCLUDED



PROJECT:
TIER II ASSESSMENT
BROAD RIVER AMOCO
4335 BROAD RIVER ROAD
UST PERMIT #11946, CA #42065
COLUMBIA, SOUTH CAROLINA

DESCRIPTION:
GEOLOGICAL CROSS SECTION
BASE MAP

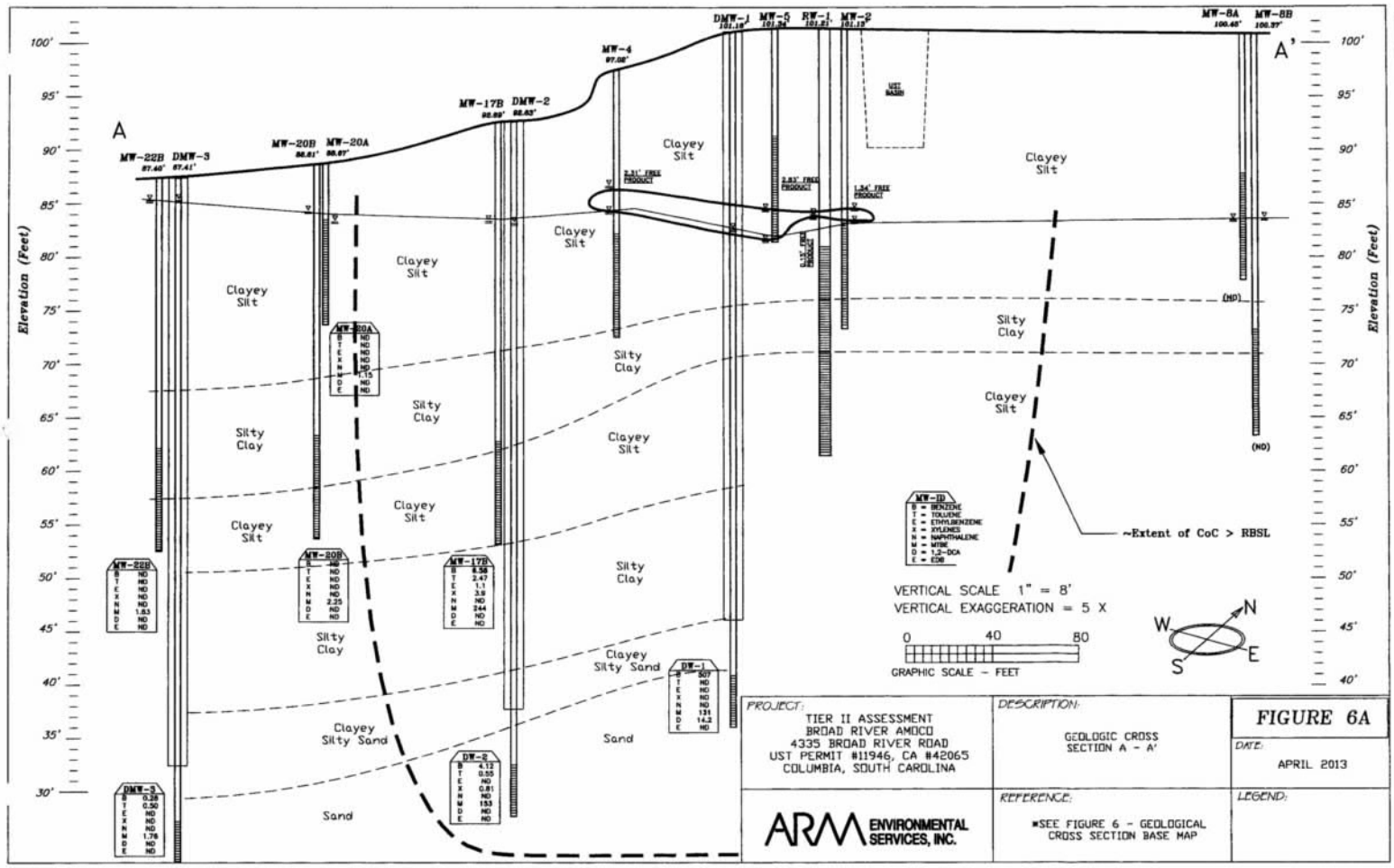
FIGURE 6

DATE:
APRIL 2013

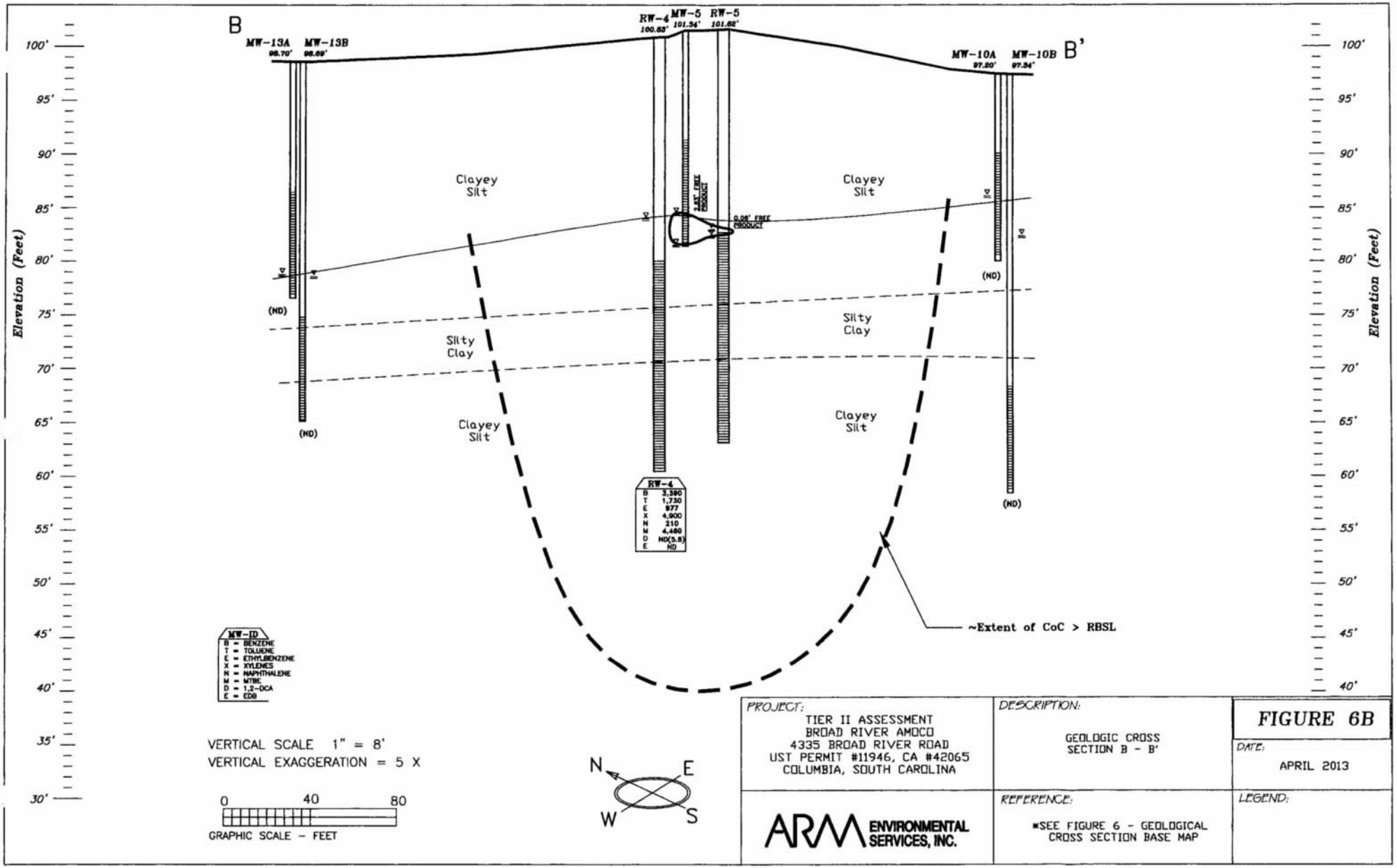
REFERENCE:

NOTES:

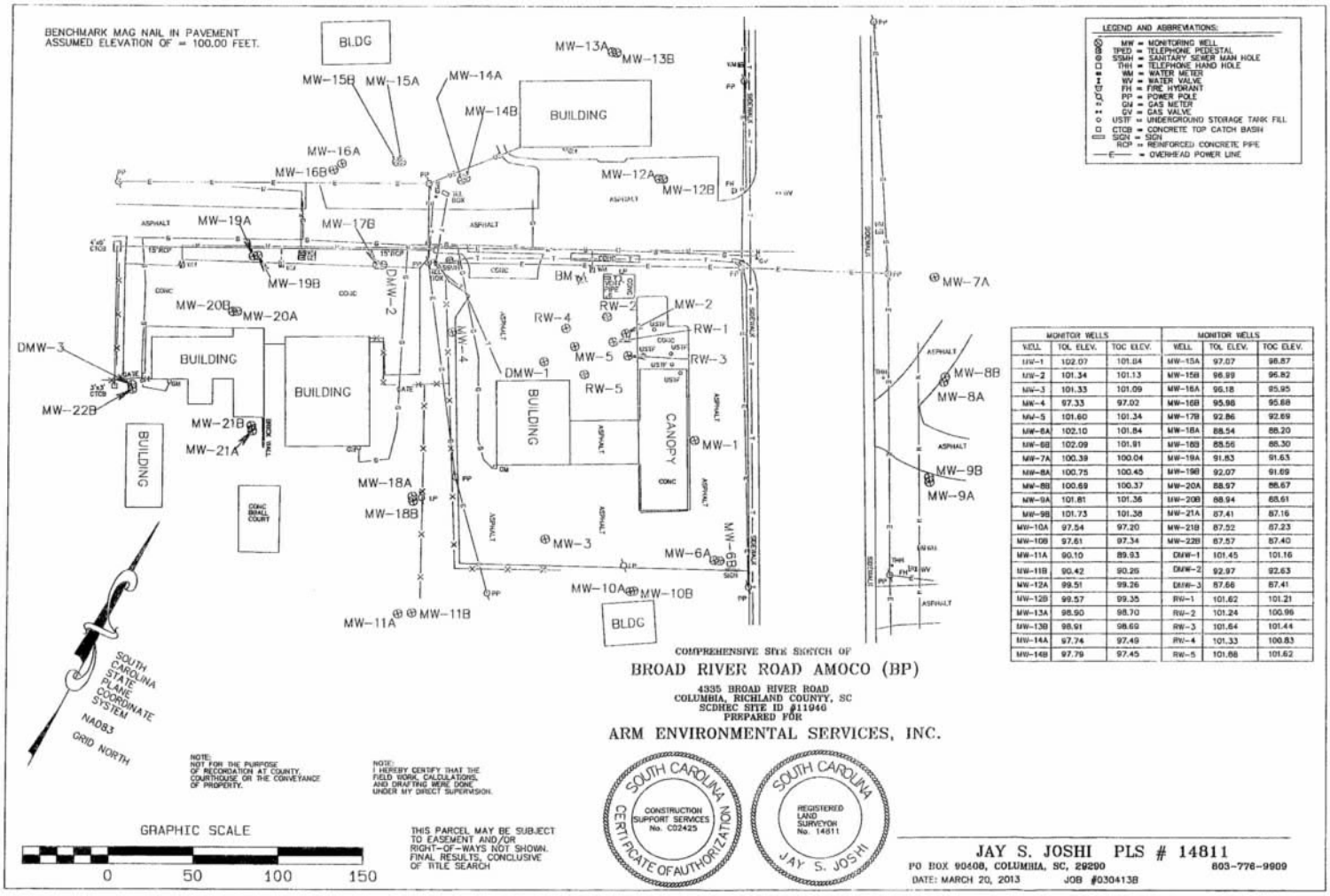
ARM ENVIRONMENTAL SERVICES, INC.



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GEOLOGIC CROSS SECTION A - A'	**FIGURE 6A** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: *SEE FIGURE 6 - GEOLOGICAL CROSS SECTION BASE MAP	LEGEND:



PROJECT: TIER II ASSESSMENT BROAD RIVER AMOCO 4335 BROAD RIVER ROAD UST PERMIT #11946, CA #42065 COLUMBIA, SOUTH CAROLINA	DESCRIPTION: GEOLOGIC CROSS SECTION B - B'	**FIGURE 6B** DATE: APRIL 2013
ARM ENVIRONMENTAL SERVICES, INC.	REFERENCE: *SEE FIGURE 6 - GEOLOGICAL CROSS SECTION BASE MAP	LEGEND:



LEGEND AND ABBREVIATIONS:

- MW = MONITORING WELL
- TPED = TELEPHONE PEDESTAL
- SSMH = SANITARY SEWER MAN HOLE
- THH = TELEPHONE HAND HOLE
- WM = WATER METER
- WV = WATER VALVE
- FH = FIRE HYDRANT
- PP = POWER POLE
- GM = GAS METER
- GV = GAS VALVE
- USTF = UNDERGROUND STORAGE TANK FILL
- CTCB = CONCRETE TOP CATCH BASIN
- SIGN = SIGN
- RCP = REINFORCED CONCRETE PIPE
- E = OVERHEAD POWER LINE

MONITOR WELLS			MONITOR WELLS		
WELL	TOL ELEV.	TOC ELEV.	WELL	TOL ELEV.	TOC ELEV.
MW-1	102.07	101.84	MW-15A	97.07	96.87
MW-2	101.34	101.13	MW-15B	96.99	96.82
MW-3	101.33	101.09	MW-16A	96.18	95.95
MW-4	97.33	97.02	MW-16B	95.98	95.68
MW-5	101.60	101.34	MW-17B	92.86	92.69
MW-6A	102.10	101.84	MW-18A	88.54	88.20
MW-6B	102.09	101.91	MW-18B	88.56	88.30
MW-7A	100.39	100.04	MW-19A	91.83	91.63
MW-8A	100.75	100.45	MW-19B	92.07	91.69
MW-8B	100.69	100.37	MW-20A	88.97	88.67
MW-9A	101.81	101.36	MW-20B	88.94	88.61
MW-9B	101.73	101.38	MW-21A	87.41	87.16
MW-10A	97.54	97.20	MW-21B	87.52	87.23
MW-10B	97.61	97.34	MW-22B	87.57	87.40
MW-11A	90.10	89.93	DMW-1	101.45	101.16
MW-11B	90.42	90.26	DMW-2	92.97	92.63
MW-12A	99.51	99.26	DMW-3	87.66	87.41
MW-12B	99.57	99.35	RW-1	101.62	101.21
MW-13A	98.90	98.70	RW-2	101.24	100.96
MW-13B	98.91	98.69	RW-3	101.64	101.44
MW-14A	97.74	97.49	RW-4	101.33	100.83
MW-14B	97.79	97.45	RW-5	101.68	101.62

COMPREHENSIVE SITE SKETCH OF

BROAD RIVER ROAD AMOCO (BP)

4335 BROAD RIVER ROAD
COLUMBIA, RICHLAND COUNTY, SC
SCDHEC SITE ID #11946
PREPARED FOR

ARM ENVIRONMENTAL SERVICES, INC.

NOTE:
NOT FOR THE PURPOSE OF RECORDATION AT COUNTY COURTHOUSE, OR THE CONVEYANCE OF PROPERTY.

NOTE:
I HEREBY CERTIFY THAT THE FIELD WORK, CALCULATIONS, AND DRAFTING WERE DONE UNDER MY DIRECT SUPERVISION.

THIS PARCEL MAY BE SUBJECT TO EASEMENT AND/OR RIGHT-OF-WAYS NOT SHOWN. FINAL RESULTS, CONCLUSIVE OF TITLE SEARCH

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION — CONSTRUCTION SUPPORT SERVICES No. C02425

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 14811 — JAY S. JOSHI

JAY S. JOSHI PLS # 14811
PO BOX 90408, COLUMBIA, SC, 29290 803-776-9909

DATE: MARCH 20, 2013 JOB #0304138

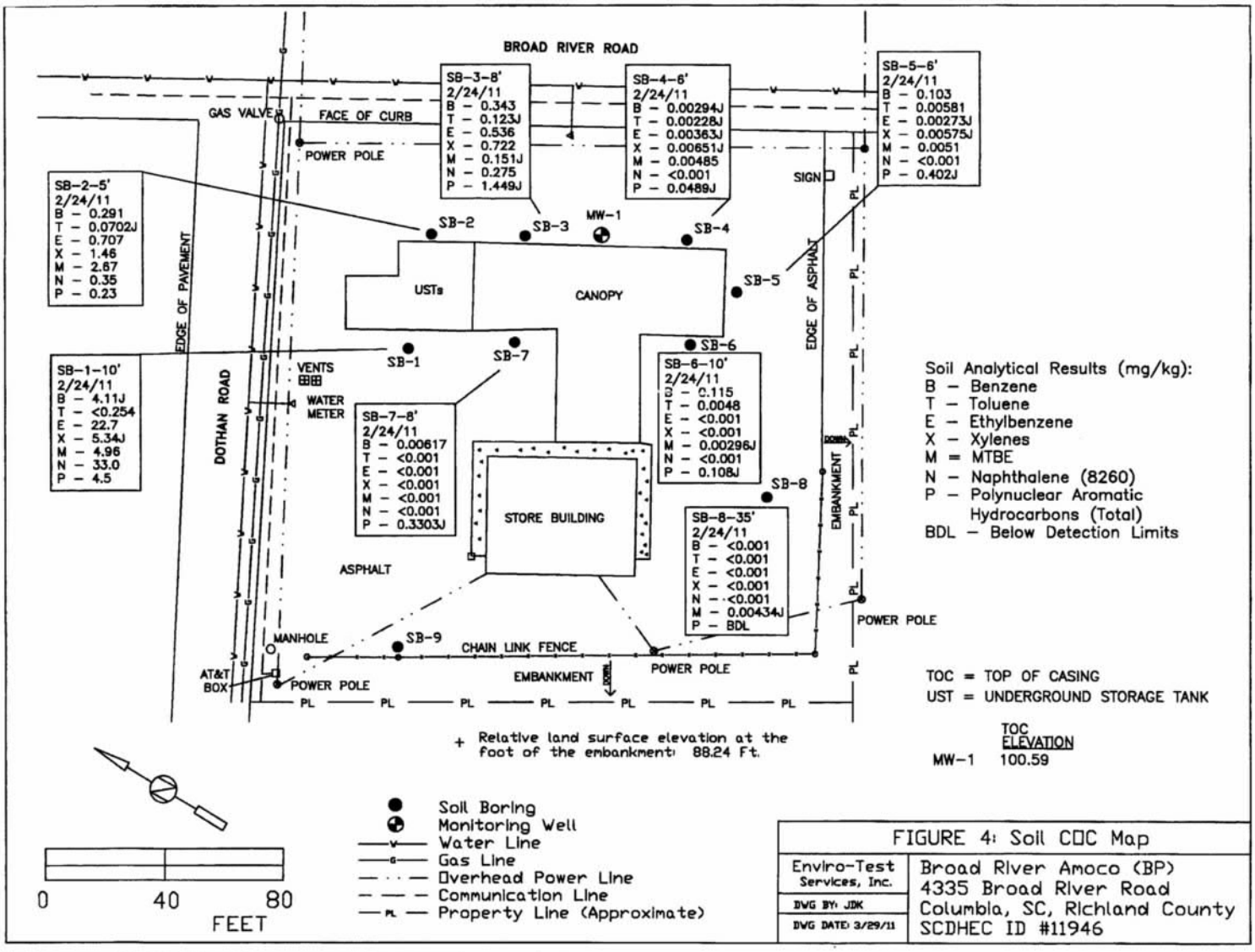


FIGURE 4: Soil COC Map

Enviro-Test Services, Inc.	Broad River Amoco (BP)
DWG BY: JDK	4335 Broad River Road
DWG DATE: 3/29/11	Columbia, SC, Richland County
	SCDHEC ID #11946

Table 5 – Soil Analytical Data

Soil Boring ID	Sample Depth (ft.)	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene
RBSLs	**N/A**	**N/A**	**0.187**	**12.085**	**1114.5**	**176.8**	**0.292**
SB-1	10.0	2/24/2011	**4.11J**	<0.254	23	5.34J	**33**
SB-2	5.0	2/24/2011	**0.291**	0.0702J	0.707	1.46	**0.35**
SB-3	8.0	2/24/2011	**0.343**	0.123J	0.536	0.722	0.275
SB-4	6.0	2/24/2011	0.00294J	0.00294J	0.00363J	0.00651J	0.275
SB-5	6.0	2/24/2011	0.103	0.00581	0.00273J	0.00575J	<0.001
SB-6	10.0	2/24/2011	0.115	0.0048	<0.001	<0.001	<0.001
SB-7	8.0	2/24/2011	0.00617	<0.001	<0.001	<0.001	<0.001
SB-8	35.0	2/24/2011	<0.001	<0.001	<0.001	<0.001	<0.001

Note: All units expressed in mg/kg (PPM)
< = Not Detected Above Practical Quantitation Limit (limit in µg/kg)
NA - Not Analyzed

Table 6 – Potentiometric Data
Historical and March 6 & 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-1	1/21/2011	40.0	20.0 - 40.0	101.84	20.92	N/A	N/A	N/A	80.92
	3/5/2011	40.0	20.0 - 40.0	101.84	14.45	N/A	N/A	N/A	87.39
	3/6/2013	40.0	20.0 - 40.0	101.84	18.62	N/A	N/A	N/A	83.22
MW-2	3/5/2011	28.0	18.0 - 28.0	101.13	13.50	N/A	N/A	N/A	87.63
	3/6/2013	28.0	18.0 - 28.0	101.13	17.66	16.32	1.34	16.70	84.43
MW-3	3/5/2011	31.0	21.0 - 31.0	101.09	13.72	N/A	N/A	N/A	87.37
	3/6/2013	31.0	21.0 - 31.0	101.09	17.94	N/A	N/A	N/A	83.15
MW-4	3/5/2011	25.0	15.0 - 25.0	97.02	9.15	N/A	N/A	N/A	87.87
	3/6/2013	25.0	15.0 - 25.0	97.02	12.41	10.10	2.31	10.75	86.27
MW-5	6/20/2011	20.0	10.0 - 20.0	101.34	14.05	13.75	0.30	13.83	87.51
	3/6/2013	20.0	10.0 - 20.0	101.34	19.63	16.80	2.83	17.59	83.75
MW-6A	3/6/2013	25.5	15.5 - 25.5	101.84	18.00	N/A	N/A	N/A	83.84
MW-6B	3/6/2013	38.5	28.5 - 38.5	101.91	18.05	N/A	N/A	N/A	83.86
MW-7A	3/6/2013	24.0	14.0 - 24.0	100.04	16.60	N/A	N/A	N/A	83.44
MW-8A	3/6/2013	23.0	13.0 - 23.0	100.45	16.84	N/A	N/A	N/A	83.61
MW-8B	3/6/2013	37.5	27.5 - 37.5	100.37	16.60	N/A	N/A	N/A	83.77
MW-9A	3/6/2013	23.0	13.0 - 23.0	101.36	18.61	N/A	N/A	N/A	82.75
MW-9B	3/6/2013	31.5	21.5 - 31.5	101.38	17.60	N/A	N/A	N/A	83.78
MW-10A	3/6/2013	17.5	7.5 - 17.5	97.20	11.05	N/A	N/A	N/A	86.15
MW-10B	3/6/2013	39.0	29.0 - 39.0	97.34	13.87	N/A	N/A	N/A	83.47
MW-11A	3/6/2013	20.0	10.0 - 20.0	89.93	10.52	N/A	N/A	N/A	79.41
MW-11B	3/6/2013	35.0	29.0 - 39.0	90.26	10.30	N/A	N/A	N/A	79.96
MW-12A	3/6/2013	20.0	10.0 - 20.0	99.26	13.95	N/A	N/A	N/A	85.31
MW-12B	3/6/2013	36.5	26.5 - 36.5	99.35	16.72	N/A	N/A	N/A	82.63
MW-13A	3/25/2013	22.0	12.0 - 22.0	98.70	19.80	N/A	N/A	N/A	78.90
MW-13B	3/6/2013	33.5	23.5 - 33.5	98.69	19.88	N/A	N/A	N/A	78.81
MW-14A	3/6/2013	20.0	10.0 - 20.0	97.49	14.52	N/A	N/A	N/A	82.97
MW-14B	3/6/2013	38.5	28.5 - 38.5	97.45	17.27	N/A	N/A	N/A	80.18

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

UST Permit # 11946
Additional Tier II Data

Table 6 – Potentiometric Data
Historical and March 6 & 25, 2013

Monitor Well ID	Date	Total Well Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing Elevation* (feet)	Static Water Level (feet bgs)	Static Product Level (feet bgs)	Product Thickenss (feet)	Corrected Water Level* (feet)	GW Elevation (feet)
MW-15A	3/25/2013	17.0	7.0 - 17.0	96.87	16.01	N/A	N/A	N/A	80.86
MW-15B	3/6/2013	40.0	30.0 - 40.0	96.82	17.60	N/A	N/A	N/A	79.22
MW-16A	3/25/2013	18.0	8.0 - 18.0	95.95	16.21	N/A	N/A	N/A	79.74
MW-16B	3/6/2013	37.0	27.0 - 37.0	95.68	16.75	N/A	N/A	N/A	78.93
MW-17B	3/6/2013	39.5	29.5 - 39.5	92.69	9.05	N/A	N/A	N/A	83.64
MW-18A	3/6/2013	13.0	3.0 - 13.0	88.20	0.85	N/A	N/A	N/A	87.35
MW-18B	3/6/2013	35.0	25.0 - 35.0	88.30	1.05	N/A	N/A	N/A	87.25
MW-19A	3/6/2013	15.0	5.0 - 15.0	91.63	7.95	N/A	N/A	N/A	83.68
MW-19B	3/6/2013	34.0	24.0 - 34.0	91.69	8.35	N/A	N/A	N/A	83.34
MW-20A	3/6/2013	15.0	5.0 - 15.0	88.67	5.05	N/A	N/A	N/A	83.62
MW-20B	3/6/2013	35.0	25.0 - 35.0	88.61	4.11	N/A	N/A	N/A	84.50
MW-21A	3/6/2013	12.0	2.0 - 12.0	87.16	0.85	N/A	N/A	N/A	86.31
MW-21B	3/6/2013	35.0	25.0 - 35.0	87.23	1.35	N/A	N/A	N/A	85.88
MW-22B	3/6/2013	35.0	25.0 - 35.0	87.40	2.10	N/A	N/A	N/A	85.30
RW-1	3/6/2013	40.0	20.0 - 40.0	101.21	17.26	17.11	0.15	17.15	84.06
RW-2	3/6/2013	40.0	20.0 - 40.0	100.96	16.96	N/A	N/A	N/A	84.00
RW-3	3/6/2013	41.0	21.0 - 41.0	101.44	17.41	17.36	0.05	17.37	84.07
RW-4	3/6/2013	40.5	20.5 - 40.5	100.83	16.73	N/A	N/A	N/A	84.10
RW-5	3/6/2013	38.5	18.5 - 38.5	101.62	17.64	17.58	0.06	17.6	84.02
DMW-1	3/6/2013	65.0	60.0 - 65.0	101.16	18.21	N/A	N/A	N/A	82.95
DMW-2	3/6/2013	65.0	60.0 - 65.0	92.63	9.40	N/A	N/A	N/A	83.23
DMW-3	3/6/2013	65.0	60.0 - 65.0	87.41	2.10	N/A	N/A	N/A	85.31

Note: ** -Corrected WL = Static WL - (Product Thickness x Product Gravity)
N/A - Not Applicable
NM - Not Measured
NL - Not Located

Table 7 – Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	**N/A**	**5**	**1,000**	**700**	**10,000**	**25**	**40**	**5 (MCL)**	**0.05**	**15 (Action Level)**
MW-1	3/8/2013	**2,480**	**12,800**	**1,550**	5,650	**623**	**70.8 J**	**ND (11.6)**	ND (0.0039)	14 J
MW-2	3/6/2013	**1.34' Free Product**								
MW-3	3/8/2013	0.417 J	1.05	0.408 J	1.72 J	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-4	3/6/2013	**2.31' Free Product**								
MW-5	3/6/2013	**2.83' Free Product**								
MW-6A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	13 J
MW-6B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**19**
MW-7A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-8A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	6.8 J
MW-8B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-9A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.62	0.642 J	ND (0.0039)	ND (3.8)
MW-9B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.79	0.675 J	ND (0.0039)	ND (3.8)
MW-10A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-10B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-11A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.00	ND (0.116)	ND (0.0039)	11 J
MW-11B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.12	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-12B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-13A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	7.8 J
MW-13B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14A	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-14B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 7 – Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	**N/A**	**5**	**1,000**	**700**	**10,000**	**25**	**40**	**5 (MCL)**	**0.05**	**15 (Action Level)**
MW-15A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	5.3 J
MW-15B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-16A	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	**35**
MW-16B	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-17B	3/6/2013	**6.58**	2.47	1.1 J	3.87 J	ND (0.352	**244**	ND (0.232)	ND (0.0039)	ND (3.8)
MW-18A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.42	ND (0.116)	ND (0.0039)	**590**
MW-18B	3/6/2013	ND (0.111)	0.459 J	ND (0.109)	2.03 J	ND (0.176)	0.841 J	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19A	3/6/2013	0.566 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-19B	3/6/2013	0.253 J	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.15	ND (0.116)	ND (0.0039)	ND (3.8)
MW-20B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.25	ND (0.116)	ND (0.0039)	8.7 J
MW-21A	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	ND (0.0039)	12 J
MW-21B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.34	ND (0.116)	ND (0.0039)	6.8 J
MW-22B	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	1.83	ND (0.116)	ND (0.0039)	ND (3.8)
RW-1	3/6/2013	**0.15' Free Product**								
RW-2	3/8/2013	**9,420**	**12,800**	**2,030**	**11,000**	**565 J**	**9100**	**224 J**	**1.65**	ND (3.8)
RW-3	3/6/2013	**0.05' Free Product**								
RW-4	3/8/2013	**3,390**	**1,730**	**977**	4,900	**210 J**	**4,460**	**ND (5.81)**	ND (0.0039)	12 J
RW-5	3/6/2013	**0.06' Free Product**								
DMW-1	3/8/2013	**507**	ND (1.22)	ND (1.09	ND (0.179)	ND (1.76)	**131**	**14.2 J**	ND (0.0039)	ND (3.8)
DMW-2	3/6/2013	4.12	0.548 J	ND (0.109)	0.805 J	ND (0.176)	**153**	ND (0.116)	ND (0.0039)	ND (3.8)
DMW-3	3/6/2013	0.281 J	0.497 J	ND (0.109)	ND (0.179	ND (0.176)	1.76	ND (0.116)	ND (0.0039)	**120**

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit

Table 7 - Current Groundwater Analytical Data
March 6 through March 8, 2013

Monitor Well ID	Date Sampled	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Naph-thalene	MTBE	1,2-DCA	EDB	Total Lead
RBSLs	**N/A**	**5**	**1,000**	**700**	**10,000**	**25**	**40**	**5 (MCL)**	**0.05**	**15 (Action Level)**
Duplicate 1 (MW-20B)	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	2.4	ND (0.116)	ND (0.0039)	4.5 J
Duplicate 2 (DMW-2)	3/6/2013	4.62	0.748 J	ND (0.218)	1.05 J	ND (0.352	**169**	ND (0.232)	ND (0.0039)	ND (3.8)
Field Blank 1	3/6/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 2	3/7/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Field Blank 4	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 1	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 2	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 3	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 4	3/8/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA
Trip Blank 5	3/25/2013	ND (0.111)	ND (0.122)	ND (0.109)	ND (0.179)	ND (0.176)	ND (0.078)	ND (0.116)	NA	NA

Note: All units expressed in µg/L (PPB) MCL = Maximum Contaminant Level
ND( ) - Not Detected Above Practical Quantitation Limit (limit in µg/l)
NA - Not Analyzed J - Estimated result < PQL and > Method Detection Limit