

UNDERGROUND STORAGE TANK PROGRAM

**TIER II Assessment Plan** 

O.H. Meggs Exxon

UST Permit #: 03423

4925 Pamplico Hwy., Florence, SC

(843) 669-6818

### PREPARED FOR:

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

**MARCH 26, 2008** 

William Van Ward, P.E.



# Tier II Assessment Plan Underground Storage Tank Program

UST Permit #: 03423	County: Florence	Facility Name: O.H.Megg	
Facility Address: 4925 Pamplico Hwy.			
Responsible Party: B.W Stokes Oil Com	pany Add	ress: P.O. Box 274	
City: Florence	State: South Carolina	Zipcode: 29501	A SECTION AND ADDRESS OF THE PARTY OF THE PA
No. USTs: 4	Removed?	Replaced?	
Current use of facility/property:	(date: мм/DD/YYYY	()	date: мм/DD/YYYY)
Gas station and convenience store locate			
Current property owner name: B.W Stok	es Oil Company	Address: P.O. Box 274	
City: Florence			
Specify the field screening methodolog of permanent wells is required.  We will need to clear some of the wooder samples. A Foxboro OVA will be used for some samples will be sent off for rush BT	d property adjacent to and down gr	adient of site. A Geoprobe will be om the site, and OVA reading rea	e used to collect ich less than 2 ppm
Permanent Monitoring Wells (estin			
# of deep wells: 1			
Comments, if warranted:			
This estimated time frame assumes we a	re allowed access to the adjacent	sites.	
Analyses List the analytical parameters (e.g., BT	EX, MTBE) and estimated numl	per.	
10 Soil samples [BTEX, Naphthalene, and 11 Water samples [BTEX, Naphthalene, I 1 Water Supply sample [BTEX, Naphthalene, I 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	MTBE, EDB, LEAD, 1, 2 DCA, Oxyg	enates and PAH's]	
Implementation Schedule (Use MI	M/DD/YYYY format - Example	01/23/2004)	
Start up date: 05/01/2008	Completion dat		
(MM/DD/YYYY)  Report submittal date: 08/01/2008	(MM/DD/Y)	(MM/DD/YYYY)	

UST Permit #: 03423 Facility Name: O.H.Meggs	
Site Maps	
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.	
<ol><li>Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:</li></ol>	it
North arrow Location of property lines Location of buildings Paved areas on or adjacent to site Previous soil sampling locations Previous monitoring well locations  Legend with facility name and address, UST Permit number, date, and a bar Streets or highways (indicate names and numbers) Identification of located buildings Location of all present and former ASTs and USTs Underground and above ground utilities on or adjacent to site Location of any other potential receptor	·scale
Aquifer Characterization	
Pump test: Slug tests: (check one and provide explanation for choice)  1 slug test - most economical	
Small Volume Disposal Type and Method Soil:	
Containerized on site in 55 gallon drums. If disposal is required, it will be sent to G&K tank in Sumter.	
Purge water:	
Containerized on site in 55 gallon drums. If disposal is required, either it will be sent to G&K tank in Sumter or disposed of at Fle POTW per our approval letter	orence
Additional comments:	
This estimated time frame assumes we are allowed access to the adjacent sites.	



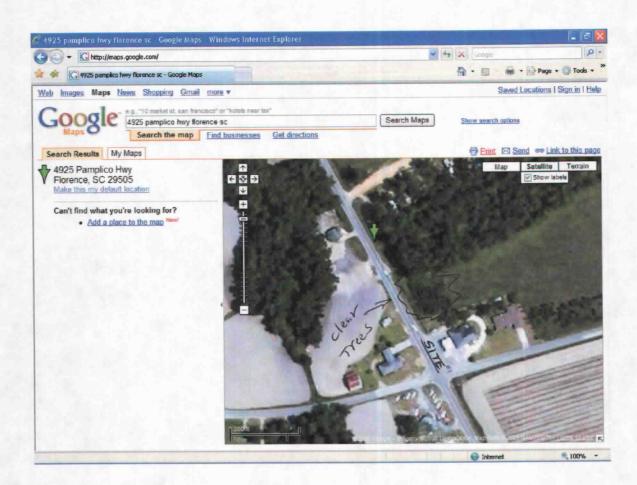
# ASSESSMENT COMPONENT COST AGREEMENT SOUTH CAROLINA

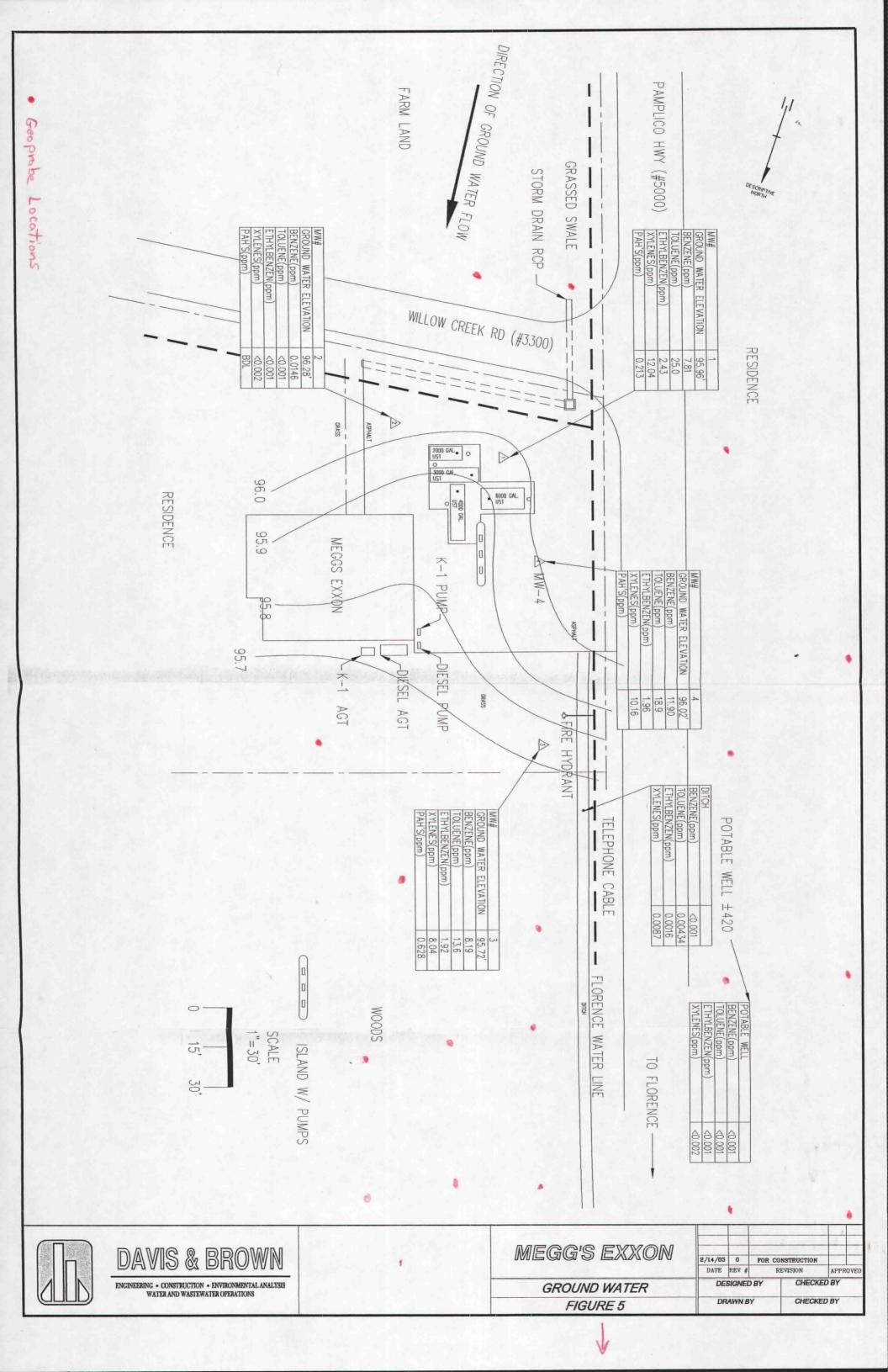
Department of Health and Environmental Control Underground Storage Tank Program State Underground Petroleum Environmental Response Bank Account

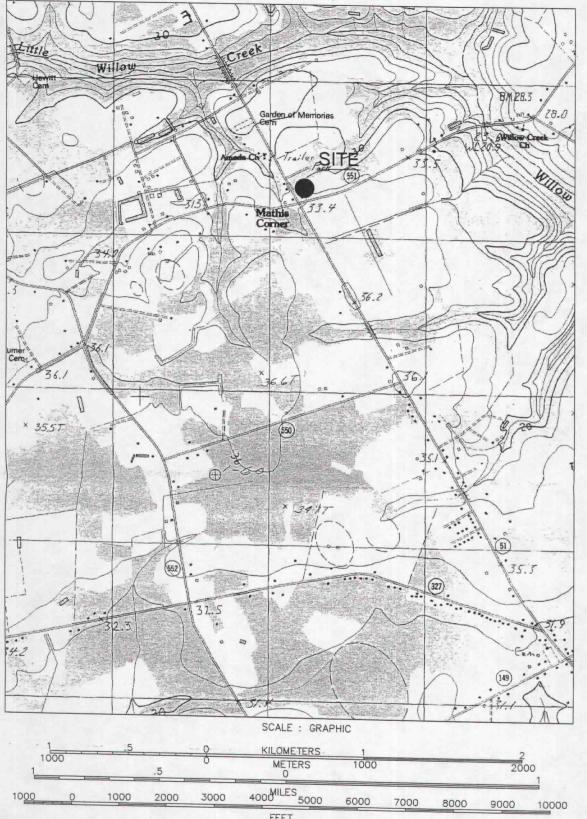
Facility Name O.H. Meggs		4	ALC: NO.	
UST Permit # 3423	Cost A	greement #		
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
A. Plan Preparation	1	х	\$100.00	\$100.00
B. Tax Map		Х	\$50.00	\$0.00
2. Receptor Survey *		X	\$500.00	\$0.00
3. Comprehensive Survey		Х	\$1,000.00	\$0.00
4. Mob/Demob				
A. Equipment	3	x	\$550.00	\$1,650.00
B. Personnel	5	each x	\$275.00	\$1,375.00
C. Adverse Train Vehicle		×	\$550.00	\$0.00
5. Soil Borings (hand auger)*		feet x	\$14.00	\$0.00
6. Soil Borings (drilled) & Field Screening				
A. Standard	300	feet x	\$17.00	\$5,100.00
B. Alternative, on-site		feet x	\$12.50	\$0.00
C. Fractured Rock		feet x	\$27.50	\$0.00
7. Soil Leachability Model		each x	\$200.00	\$0.00
8. Abandonment*	300	feet x	\$5.00	\$1,500.00
9. Well Installation*				
A. Water Table (hand auger)		feet x	\$20.00	\$0.00
B. Water Table (drilled)	90	feet x	\$38.00	\$3,420.00
C. Telescoping	40	feet x	\$58.00	\$2,320.00
D. Rock Drilling		feet x	\$58.00	\$0.00
E. 2" Rock Coring		feet x	\$44.10	\$0.00
F. 4" Rock Coring		feet x	\$50.40	\$0.00
G. multi sampling port/screen		feet x	\$47.20	\$0.00
10. Groundwater Sample Collection				
A.Groundwater	11	samples x	\$55.00	\$605.00
B. Air Vapor		samples x	\$90.00	\$0.00
C. Water Supply	1	samples x	\$25.00	\$25.00
D. Groundwater No Purge	APPLICATE OF	samples x	\$35.00	\$0.00
E. Gauge Well only		per well x	\$20.00	\$0.00
F. Sample Below Product		samples x	\$50.00	\$0.00
G. Passive Diffusion Bag		each x	\$40.00	\$0.00
3	I Methodology for			*****
A. BTEX+Naphth.+MTBE	12		\$100.00	\$1,200.00
	10	samples x	\$120.00	\$1,200.00
B. Rush BTEX analysis	12	samples x	\$120.00	\$1,440.00
D. PAH's			\$20.00	\$0.00
E. Lead	0	samples x	\$55.00	\$660.00
F. EDB	12	samples x		\$0.00
G. 8 RCRA Metals		samples x	\$140.00	\$0.00
H.TPH (9070)		samples x	\$55.00	
J. BOD		samples x	\$40.00	\$0.00
K. Nitrate	11	samples x	\$20.00	\$220.00
L. Sulfate	11	samples x	\$20.00	\$220.00
M. Ferrous Iron	11	samples x	\$20.00	\$220.00
N. Methane	11	samples x	\$110.00	\$1,210.00
O. Organic Lead		samples x	\$100.00	\$0.00
P. 8 Oxygenates	11	samples x	\$85.00	\$935.00
AA. Filtered Lead	12	samples x	\$46.00	\$552.00
BB. 1,2-DCA	11	samples x	\$10.75	\$118.25

11. Analyses-Soil	-			
Q. BTEX + Naphth.	10	samples x	\$100.00	\$1,000.00
R. PAH's	10	samples x	\$120.00	\$1,200.00
S. 8 RCRA Metals		samples x	\$150.00	\$0.00
T. TPH (9071)		samples x	\$60.00	\$0.00
U. TPH (3550B/8015B)		samples x	\$65.00	\$0.00
V. TPH (5030B/8015B)		samples x	\$65.00	\$0.00
W. Grain size/hydrometer		samples x	\$75.00	\$0.00
X. Total Organic Carbon		samples x	\$35.00	\$0.00
11. Analyses-Air				
Y. BTEX + Naphthalene		samples x	\$247.50	\$0.00
Z. Hydrocarbon Fuel Identification		samples x	\$620.00	\$0.00
12. Aquifer Characterization*				
A. Pumping Test		hours x	\$120.00	\$0.00
B. Slug Test*	1	tests x	\$150.00	\$150.00
C. Fractured Rock		tests x	\$500.00	\$0.00
13. Free Product Recovery Rate Test*		tests x	\$120.00	\$0.00
14. Fate/Transport Modeling				
A. Mathematical Model		each x	\$300.00	\$0.00
B. Computer Model		each x	\$500.00	\$0.00
15. Risk Evaluation				
A. Tier I Risk Evaluation		x	\$301.00	\$0.00
B. Tier II Risk Evaluation		x	\$500.00	\$0.00
16. Subsequent Survey*	1	x	\$260.00	\$260.00
17. Disposal*				
A. Wastewater				
1. Purging/Sampling	5	drums x	\$90.00	\$450.00
2. Pumping Test/EFR		gallons x	\$0.60	\$0.00
B. Free Product		drums x	\$110.00	\$0.00
C. Soil (Treatment/Disposal)	3	drum/ton x	\$50.00	\$150.00
18. Miscellaneous (attach receipts)				
Tree removal/site clearing	1	×	\$1,000.00	\$1,000.00
		x		\$0.00
		Х		\$0.00
20. Tier I Assessment (Use DHEC 3665 form)				
21. IGWA (Use DHEC 3666 form)				
22. Corrective Action (Use DHEC 3667 form)				
23. EFR				
A. 8-hour Event*		each x	\$3,000.00	\$0.00
B. Additional Hour		per hour x	\$204.00	\$0.00
C. Off-gas treatment		per hour x	\$35.00	\$0.00
24. Granulated Activated Carbon (GAC) filter system	n installation	& service:		
A. New GAC System Installation*		each x	\$2,500.00	\$0.00
B. Refurbished GAC Sys. Install*		each x	\$850.00	\$0.00
C. Filter replacement/removal*		each x	\$450.00	\$0.00
D. System removal, cleaning, & refurbishment*		each x	\$450.00	\$0.00
E. GAC System housing		each x	\$450.00	\$0.00
F. In-line particulate filter		each x	\$140.00	\$0.00
G. Additional piping & fittings		feet x	\$4.00	\$0.00
25. Well Repair				
A. Additional Copies of Report		each x	\$25.00	\$0.00
B. Repair 2x2 MW pad		each x	\$100.00	\$0.00
C. Repair 4x4 MW pad		each x	\$150.00	\$0.00
D. Repair well vault	1.13	each x	\$225.00	\$0.00
E. Replace well cover & gasket		each x	\$30.00	\$0.00
F. Replace well cover bolts	100	each x	\$10.00	\$0.00
G. Replace locking well cap & lock		each x	\$15.00	\$0.00
19. Report/Project Management			334.67	
and Coordination	15%	X	\$28,280.25	\$4,242.04
TOTAL				\$32,522.29

<sup>\*</sup>The appropriate mobilization cost can be added to complete these tasks, as necessary







FEET CONTOUR INTERVAL 2 METERS

EVERGREEN QUADRANGLE SOUTH CAROLINA-FLORENCE CO. 7.5 MINUTE SERIES (TOPOGRAPHIC)





C. Earl Hunter, Commissioner

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

# MAY 2 8 2008

B W STOKES OIL CO INC **PO BOX 274 FLORENCE SC 29503-0274** 

Re:

Monitoring Well Installation and Groundwater Sampling Directive

O. H. Meggs Exxon, 4925 Pamplico Hwy, Florence, SC UST Permit # 03423, CA# 32499; MWA# UMW-21750

Release #1 Reported February 26, 2002

Florence County

### To Whom It May Concern:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing Davis & Brown, Inc. on your behalf. The Program has reviewed the technical file and determined the next necessary scope of work to be a monitoring well installation (see enclosed map for location) and groundwater sampling event of all existing wells to obtain current data.

According to Program records, the release at the facility was reported to SCDHEC on February 26, 2002. In accordance with Section 44-2-40(D) of the SUPERB Act, B W Stokes Oil, Inc. is responsible for the first \$25,000 of site rehabilitation costs. To insure that expenditures made toward rehabilitation apply to the \$25,000 deductible, the Program has pre-approved costs for implementing the sampling event and assigned Cost Agreement number 32449 for the tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

Cost Agreement # 32499 has been approved in the amount shown on the enclosed cost agreement for the sampling. Sample should be collected from all wells associated with the release (including the newly installed one) and the water supply well 420 feet from site and analyzed for BTEX+Napth.+MtBE, 1,2 DCA, EDB and lead in accordance with Analytical Methodology dated August 24, 2005. A copy of this publication is available on line at http://www.scdhec.gov/eqc/admin/html/..%5C..%5Cust% 5Cpubs% 5Canalmet.pdf. Note that purging will not be required for existing monitoring wells where the water table is bracketed by the screen. Please have your contractor request low detection limits/reporting levels for all analyses. The use of "J" values is encouraged. Note that the Program cannot make a decision based upon a non-detect analysis where the detection limit/reporting level exceeds the risk-based screening level (RBSL). In this case, payment for the analysis may be denied. The Assessment report submitted at the completion of these activities should include the following:

- A narrative portion documenting current site conditions and noting the names of field personnel, date, time, ambient air temperature, and general weather conditions during the sampling event. The report shall also contain well purging data, pH, specific conductivity, water temperature, PID readings (where applicable) and turbidity comments.
- Well measurements (groundwater elevations, depth to groundwater, measurable free product thickness (where applicable), total well depth, screened interval) and groundwater laboratory analytical data for all monitoring wells associated with the site, unless otherwise directed by the Program, shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well. SOUTH CAROLINA DEPARTMENT OF HEALTH AND EN WET PACENTA
  2600 Bull Street • Columbia, SC 29201 • Phone: (803) 898-3432 • www.scdhec.gov

- Boring Log and Well Log (SCDHEC form 1903) signed by a SC Certified well driller for the new well.
- The report must be signed and sealed by a professional geologist or engineer registered in the State of South Carolina.

The Assessment report and SUPERB invoice are due within 60 days of the date of this correspondence. Upon receipt of the report and invoice with all necessary supporting documentation, up to the amount indicated on the enclosed cost agreement will be applied towards the \$25,000 deductible. Suitable supporting documentation can be a copy of a cancelled check (front and back) or notarized statement verifying payments to the contractor. Please note that if an invoice is not received within 120 days of this correspondence, the referenced cost agreement will be closed and any eligible costs will not be applied to your deductible.

Please be advised if the time frame exceeds 45 days between the date when the groundwater samples are collected and the date the report of findings is received, the analytical data will not be considered current and your contractor will not be reimbursed for a personnel mobilization to collect the groundwater samples, sample collection costs, laboratory analyses, or associated disposal costs.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Program 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.

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

The Program grants pre-approval for transportation of virgin petroleum contaminated soil and groundwater from the referenced site to a permitted treatment facility. The contaminated soil or groundwater must be properly stored in labeled containers or covered with plastic as appropriate. The contaminated soil and/or groundwater must be accepted by the approved treatment facility. There can be no spillage or leakage in transport. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the final report. If the levels of petroleum contamination based on laboratory analysis are below risk-based screening levels, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not compensate for transportation or treatment of clean soil and/or groundwater.

On all correspondence concerning this site, please reference **UST Permit # 03423.** If there are any questions concerning this project, please contact me at (803) 896-6664. I can also be reached by email at <u>milenkmp@dhec.sc.gov</u> or by fax at (803) 896-6245.

Clara ledeuna

Sincerely,

Maia Milenkova, Hydrogeologist

**Assessment Section** 

Assessment and Corrective Action Division

Underground Storage Tank Program

Bureau of Land and Waste Management

enc: Approved Cost Agreement

Monitoring Well Approval

Site map

cc: Technical File (w/enc)

Mr. Van Ward, Davis & Brown, PO Box 15038, Quinby, SC 29506 (w/enc)

SCDHEC/UST/05/21/08/MPM



### C. Earl Hunter, Commissioner

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

### **Monitoring Well Approval**

Approval is hereby granted to:

Davis & Brown, Inc.

(On behalf of):

B W Stokes Oil Co., Inc.

Facility:

O H Meggs Exxon, 4925 Pamplico Hwy., Florence, SC

**UST Permit Number:** 

03423

County:

Florence

This approval is for the installation of one groundwater monitoring well. The monitoring well is to be installed in the approved location. Monitoring well is 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 Maia Milenkova (tel: 803 896-6664 or e-mail: milenkmp@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:

May 21, 2008

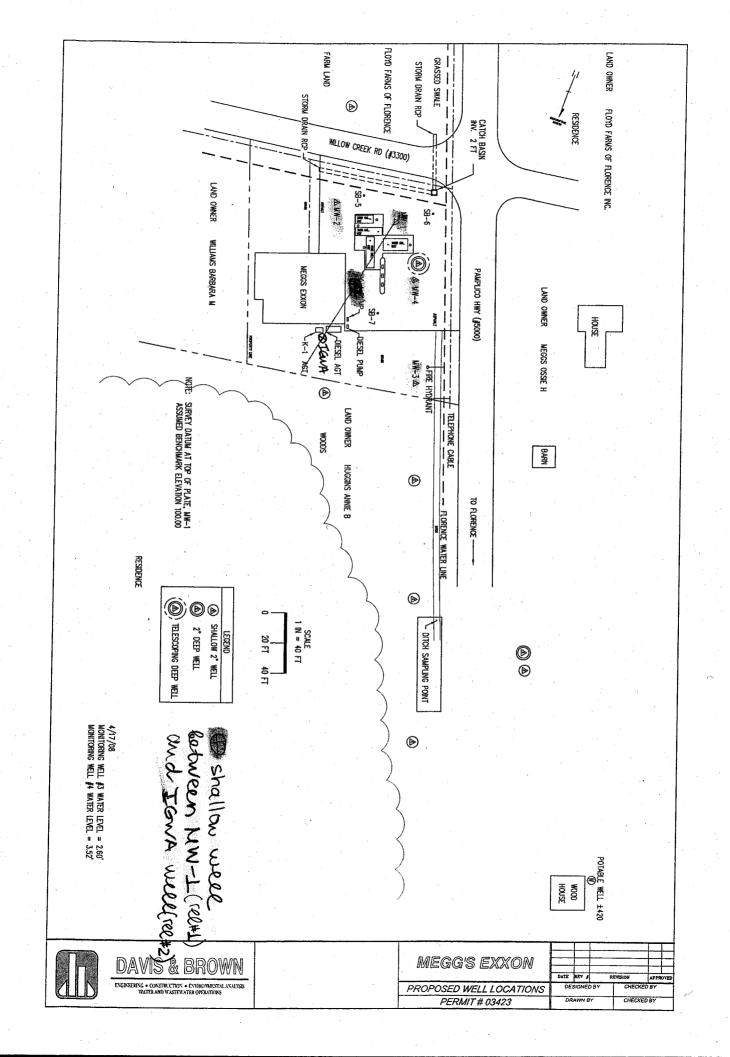
Approval #: UMW-21749

Maia Milenkova, Hydrogeologist

**Assessment Section** 

Division of Assessment and Corrective Action

Bureau of Land and Waste Management



## Approved Cost Agreement 32499

Facility: 03423 OHMEGGS

MILENKMP PO Number:

Task / Description Categories	Item Description	Qty / Pct	<b>Unit Price</b>	<u>Amount</u>
04 MOB/DEMOB				
	A EQUIPMENT	1.0000	550.00	550.00
	B PERSONNEL	3.0000	275.00	825.00
09 WELL INSTALLATION				
	B WATER TABLE (DRILLED)	15.0000	38.00	570.00
10 SAMPLE COLLECTION				
	A GROUND WATER	1.0000	55.00	55.00
	C WATER SUPPLY	1.0000	25.00	25.00
	D GROUNDWATER NO-PURGE	4.0000	35.00	140.00
11 ANALYSES				
GW GROUNDWATER	A BTEX+NAPTH+MTBE	6.0000	100.00	600.00
•	BB 1,2-DCA	6.0000	10.75	64.50
	E LEAD	6.0000	20.00	120.00
	F EDB	6.0000	55.00	330.00
16 SUBSEQUENT SURVEY		-		
	SUBSEQUENT SURVEY	1.0000	260.00	260.00
17 DISPOSAL		-		
	A1 WASTEWATER - PURGING/SAMPLING	1.0000	90.00	90.00
	C SOIL (TREATMENT/DISPOSAL)	1.0000	50.00	50.00
19 RPT/PROJECT MNGT & COORDINATIO				
	PCT PERCENT	0.1500	3,679.50	551.93

Total Amount

4,231.43

C. Earl Hunter, Commissioner

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

MAY 2 8 2008

B W STOKES OIL CO INC PO BOX 274 FLORENCE SC 29503-0274

Re:

Initial Groundwater Assessment (IGWA) Directive

O. H. Meggs Exxon, 4925 Pamplico Hwy, Florence, SC

UST Permit # 03423, CA# 32500; MWA# UMW- &1750

Release # 2 Reported September 17, 2002

Closure report May 20, 2002

Florence County

### To Whom It May Concern:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed the referenced report. The report indicates that chemicals of concern are present in the soil in concentrations that exceed Risk-based Screening Levels (RBSL). To determine what risk the chemicals may pose to the environment and public health, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of the scope of work as outlined in the Initial Groundwater Assessment (IGWA) document is necessary. The IGWA document may be obtained from our website at: <a href="http://www.scdhec.gov/EQC/admin/html/eqforms.html#UST">http://www.scdhec.gov/EQC/admin/html/eqforms.html#UST</a>. IGWA well should be placed in the vicinity of the former kerosene tank (see enclosed map).

According to Program records, the release at the facility was reported to SCDHEC on September 17, 2002. In accordance with Section 44-2-40(D) of the SUPERB Act, B W Stokes Oil, Inc. is responsible for the first \$25,000 of site rehabilitation costs. To insure that expenditures made toward rehabilitation apply to the \$25,000 deductible, the Program has pre-approved costs for implementing the IGWA and assigned Cost agreement # 32500for tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

The Program has pre-approved a total of \$1,545.00 for implementation of the IGWA. The total includes costs for completion of up to 25 feet of permanent monitoring well footage. Additional monitoring well footage can be billed at the appropriate SUPERB allowable component rate, provided that the cost is pre-approved by the Program. Please note that samples for EDB (by EPA method 8011) and lead are now required as part of all initial assessment activities as directed in the revised SUPERB Account Allowable Costs document issued on February 1, 2006. Additional costs for the analyses are reflected in the revised IGWA rate. Also, if any drinking water wells are located within 250 feet of the UST area, a water sample shall be obtained from the well(s) and analyzed for the appropriate parameters. Upon receipt of a report of findings, and a completed IGWA invoice with all necessary supporting documentation, up to \$1,545.00 will be applied towards the \$25,000 deductible provided that the release is qualified for SUPERB. The report and invoice should be submitted to the Program, within,

90 days of the date of this correspondence. Please be certain that the IGWA report is submitted in the format that corresponds to the SCDHEC Guidance document.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Program 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.

Implementation of the IGWA may proceed immediately upon receipt of this correspondence. Approval to install one permanent monitoring well is enclosed. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. Also note that only EPA Method 8260B will be accepted for analysis of volatile organic hydrocarbons. Any site rehabilitation activity associated with the UST release must be performed by an SCDHEC-certified site rehabilitation contractor as required by R.61-98.

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety (90) days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations based on laboratory analysis are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site, please reference UST Permit # 03423. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6664.

Sincerely,

Maia Milenkova, Hydrogeologist Assessment Section

Assessment and Corrective Action Division

llair litemos

Underground Storage Tank Program
Bureau of Land and Waste Management

enc: Approved cost agreement (ACA)

Monitoring well approval (MWA)

Site map

cc: Technical File (w/enc)

Mr. Van Ward, Davis & Brown, PO Box 15038, Quinby, SC 29506 (w/enc)



### C. Earl Hunter, Commissioner

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

### **Monitoring Well Approval**

Approval is hereby granted to:

Davis & Brown, Inc.

(On behalf of):

B W Stokes Oil Co., Inc.

Facility:

O H Meggs Exxon, 4925 Pamplico Hwy., Florence, SC

**UST Permit Number:** 

03423

County:

Florence

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- 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 Maia Milenkova (tel: 803 896-6664 or e-mail: milenkmp@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:** 

May 21, 2008

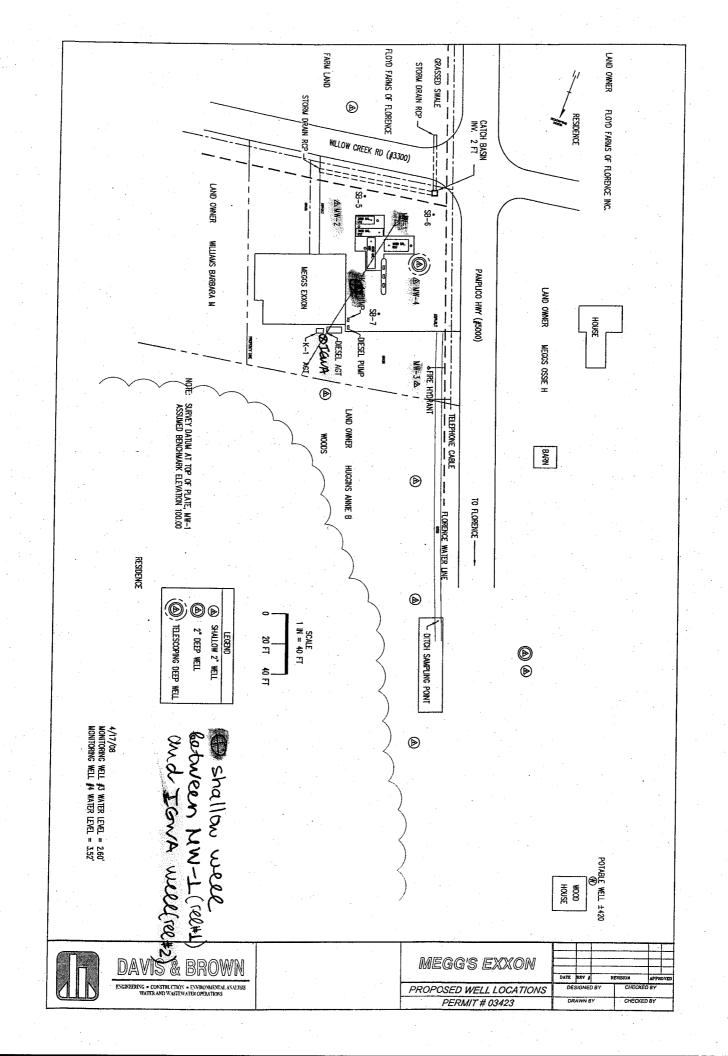
Approval #: UMW-21750

Maia Milenkova, Hydrogeologist

Assessment Section

Division of Assessment and Corrective Action

Bureau of Land and Waste Management



### Approved Cost Agreement 32500

Facility: 03423 OH MEGGS

MILENKMP PO Number:

Task / Description Categories	Item Description	Qty / Pct	Unit Price	<u>Amount</u>
21 INITIAL GROUNDWATER ASSESSMENT				
	IGWA	1.0000	1,545.00	1,545.00

Total Amount

1,545.00



UNDERGROUND TANK

### Monitoring Well Installation and Groundwater Sampling

O.H. Meggs Exxon

UST Permit #: 03423

4925 Pamplico Hwy., Florence, SC

(843) 669-6818

### PREPARED FOR:

# SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

**AUGUST 27, 2008** 

DAVIS & BROWN
No. CO0413
OF AUTHORITIES

William Van Ward, P.E.

UST DOCKET

ALLEN VAN WALL

P.O. Box 15038 • Quinby, SC 29506 • Telephone: (843) 665-6746 • Fax: (843) 656-2208

### **Introduction and Site History**

O.H. Meggs Exxon (ID# 03423) is located at 4925 Pamplico Hwy. in Florence, SC. A Tier I assessment report was submitted in February of 2003. Since 2 releases have been documented in SCDHEC's file, this effort will help determine if the contamination from release #1 is the primary source of contamination at this site. Release #1 was from a gasoline source and release #2 was from a suspected diesel fuel source.

### 2 Scope of Work

This is a monitoring well installation and groundwater sampling directive per SCDHEC letter dated May 28, 2008. Cost agreement # 32499 has been approved for installing 1 groundwater monitoring well and sample collection of wells associated with release #1. The analysis of each well should include BTEX+Napth.+MtBE, 1,2 DCA, EDB, and lead.

### **Ground Water Monitoring Well Installation** 3

On June 26, 2008 ARM Environmental installed a 2-inch diameter, schedule 40, flush threaded PVC well casing with 0.01-inch opening, slotted schedule 40 PVC well screen attached. The Type II monitor well was constructed with the top of the well screen above the water table to allow for detection of potential freephase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet above the top of the screen. The filter pack was followed by 0.5 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. The well was completed with water tight, locking PVC cap, protected by a flush finished concrete pad and traffic-rated manhole with a bolt down cover. This well was designated as MW-6, and was located between MW-1 and MW-5. The purpose of this monitor well was to have a data point between the area of release #1 and release #2. We also, installed a new IGWA well (MW-5) in the area of release #2. Since MW-1 has the highest level of contaminants in the ground water and MW-5 and MW-6 are located in a straight line down gradient of MW-1, the evaluation of this data will help to determine if release #2 actually caused ground water contamination. Monitoring well development and boring logs and construction details are presented in Appendix A. In addition, historical water level data has been tabulated and included in Appendix A. On July 16, 2008 we developed MW-5 and MW-6 using a peristaltic pump. The

development water was containerized and disposed of at a permitted facility. See disposal manifest located in Appendix E.

### 4 Ground Water Sampling and Analysis

Jody Ricks with Davis & Brown obtained ground water samples from monitoring wells MW-1 through MW-6 on July 24, 2008. The weather was sunny and 90 F. The depth to ground water measurements were used to construct the potentiometric map included as Figure 1. As indicated in Figure 1, the ground water flow is from south to north at this site.

A new, disposable, polyethylene bailer was used for the collection of each ground water sample. Groundwater samples were collected from MW-1 through MW-6 using "no-purge" methodology. Field measurements obtained during the sampling process for the monitoring wells are presented in Appendix B.

### 5 Ground Water Analytical Results

The laboratory analytical reports from the July 24, 2008 sampling event are presented in Appendix C. The data is also presented in historical tabular form in Appendix D. Benzene was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-4, MW-5, and MW-6. MW-1 had 14.1 mg/L of benzene, the next down gradient well, MW-6, had 2.87 mg/L of benzene and MW-5 had a benzene concentration of 0.686 mg/L. Naphthalene was detected at concentrations above its RBSL in samples collected from wells MW-1, MW-4, MW-5, and MW-6. MW-1 was diluted so that the naphthalene level reported was < 10 mg/L. MW-6 had 0.65 mg/L naphthalene and MW-5 had 0.255 mg/L naphthalene.

MTBE was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-4, MW-5, and MW-6. MW-1 had 37.8 mg/L of MTBE. MW-4 had 11.6 mg/L of MTBE. MW-6 had 0.69 mg/L MTBE and MW-5 had 0.83 mg/L MTBE.

Toluene and Xylene were detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-3, MW-4, MW-5, and MW-6.

Ethylbenzene was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-3, MW-4, and MW-6. MW-1, MW-3, and MW-4 were diluted and had reporting limits higher than RBSLs. EDB was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1 and MW-4.

1,2 DCA was not detected in any of the ground water samples. A chemical of concern map is included as Figure 2.

### 6 Conclusions

- Groundwater flow is in the north direction at this site.
- The water supply well located 420 feet from site has been abandoned. The house has been removed from the property and there is no indication of the well.
- Benzene and MTBE were detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-4, MW-5, and MW-6. Naphthalene was detected at concentrations above its RBSL in samples collected from wells MW-1, MW-4, MW-5, and MW-6. Toluene and Xylene were detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-3, MW-4, MW-5, and MW-6. EDB was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1 and MW-4.
- The data from the IGWA well MW-5 indicates that gasoline is the contaminant in this well and that its relative petroleum levels are lower than the two up gradient wells (MW-1 and MW-6) for all contaminants. Naphthalene is a good indicator for diesel fuel contamination. The naphthalene concentration in MW-5 is 0.255 mg/L and the next up gradient well (MW-6) has a naphthalene concentration of 0.65 mg/L. Therefore, we feel that only one release has occurred at this site.

The vertical and horizontal extent of contamination has not been defined at this site. Additional assessment is required to completely delineate the petroleum plume.

# APPENDIX A



### Water Well Record Bureau of Water

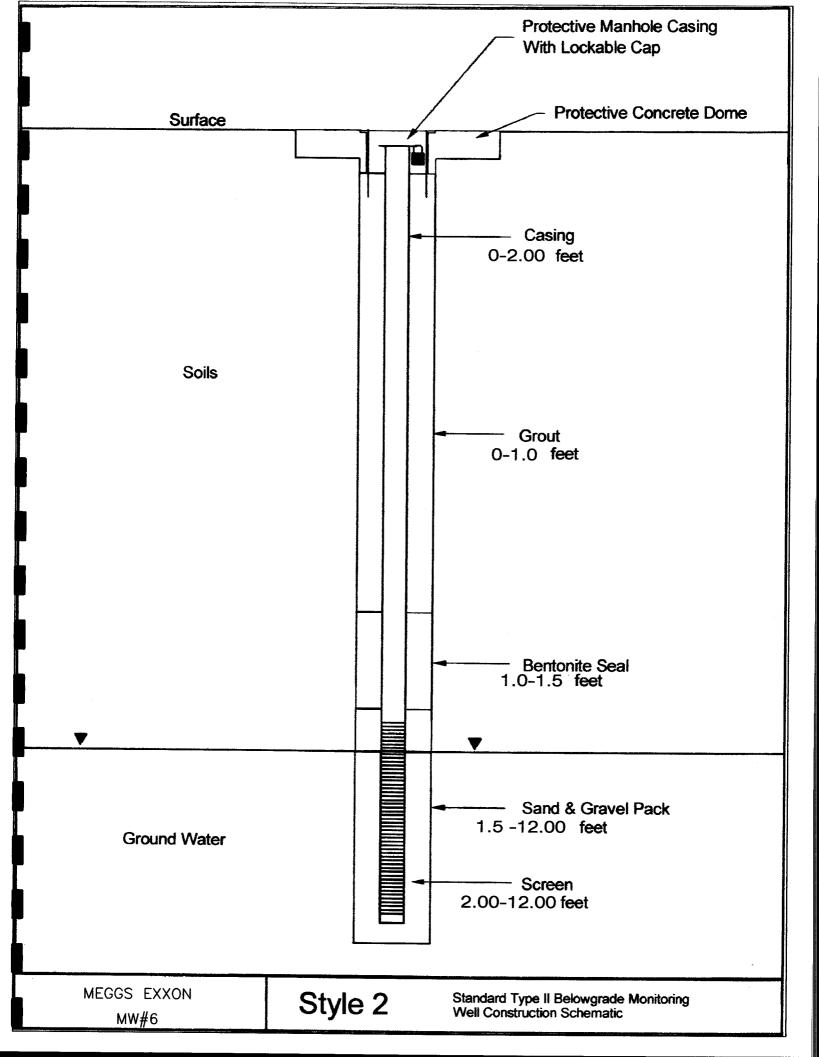
2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

THE WOLLD'S TROOT ER			
1. WELL OWNER INFORMATION:  Name: Bw STOK	ES AT		6. PERMIT NUMBER:
Address: Po Box 27			7. USE:
			Residential Public Supply Process  Irrigation Air Conditioning Emergency
City: FLOREINCE State:	Zip: 2	29503	Test Well Replacement
Telephone: Work:	_ Home:		8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 6-16-2008
2. LOCATION OF WELL: COL	JNTY: Fw	re1466	
Name: Megs Grun			9. TYPE: Mud Rotary Jetted Bored Dug Air Rotary Driven
Street Address: 4925 P	Auplito	H137	Cable tool Other
City: Pamplica	_ Zip:		10. CASING: Threaded Welded  Diam.: Height Above/Below
Latitude: Longit	ude:		Type: Galvanized Surface ft.
3. PUBLIC SYSTEM NAME:			Steel Other Weight lb./ft in. to ft. depth
PUBLIC SYSTEM NUMBER:			in. to ft. depth
4. ABANDONMENT: Yes	No		11. SCREEN
Grouted Depth: from	ft. to	ft.	Type: Diam.: 2 '
	*Thickness	Depth to	Set Between: 12 ft. and 2 ft. NOTE: MULTIPLE SCREENS
Formation Description	of Stratum	Bottom of Stratum	ft. and ft. USE SECOND SHEET
			Sieve Analysis Yes (please enclose) No  12. STATIC WATER LEVEL 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) Tho
			14. WATER QUALITY
			Chemical Analysis: Yes 100 Bacterial Analysis: Yes 140 P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack)
			Installed from
			16. WELL GROUTED? Yes No Neat Cement Bentonite Defintonite/Cement Other
			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ftdirection
			Type: Amount Amount
			18. PUMP: Date installed (MM/DD/YYY): Not installed
			Mfr. Name: Model No.:
		l	H.P Volts Length of drop pipeft. Capacity gpm  TYPE: Submersible Jet (shallow) Turbine
The state of the s			TYPE: Submersible Jet (shallow) Turbine Jet (deep) Reciprocating Centrifugal
			19. WELL DRILLER: CERT. NO.: 1920
			Name: Michael Casey Address: 1216 Ist St Sull Ext. City: Cola
			State: Zip:
			Telephone No.: Fax No.:
ndicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			
. REMARKS:			
MW-6		. [	Signed: Date: 7-6-2008
<u> </u>			Authorized Representat ₩e (MM/DD/YYYY)



DAVIS & BROWN
ENGINEERING • ENVIRONMENTAL • O&M SERVICES
www.NACCDB.com
ph: (843)665-6746 fax: (843)629-1444

		RING LOG	BOR	ING NO: I	BORING - MW-6 PA	GE 0F		
LOCATION:	MEGGS EXXON FLORENCE SC	DATE COMPLETED: 6-26-08	PRO.	JECT NAN	ME: MEGGS EXXON			
TOTAL DEP	TH (ft):12	GROUND WATER DEPTH (ft): 6	SCRI	EEN DEPT	TH (A):2			
		G/W ELEV (MSL): NA	SCRI	EEN INTE	RVAL (MSL): 10			
DEPTH		UNIFIED CLASSIFICATION		OVA COMMENTS PID				
(FT)		DESCRIPTION				(PPM)		
0-2	BROWN MO			<1	ASPHALT	(* 1 1/1)		
2-5	BROWN MO			100	ASITIALI			
5-8		RANGE MOIST CLAY		500				
8-12		RANGE WET CLAY		600				
0 12	Giurrion	MINUE WEI CEAT		000				
		The state of the s						
		190						
				· · · · · · · · · · · · · · · · · · ·				
	FIELD PERS	ON: SODY PECKS						
	TILLD I DIO	J. Faces						
		W						
METUODII	SED:DRIVEN							
	SED:DRIVEN [: TRACT MACHIN]	E				į		
	SCREEN INTERVAL							
	- BELOW GROUNI							
DATA/PERSON	AL/WVW/BORING LOG				· · · · · · · · · · · · · · · · · · ·			



# LELL DEVELOPMENT FIELD DATA INFORMATION FOR GROUND WATER SAMPLING

DATE: FIELD PERS WEATHER AMBIENT	P. O. Box Quinby, S 843 665-6 843 629-1 50NNEL CONDIT.	15038 C 29506 746 444 Fax	ROWN L	OCATIO ITE ID #	N FLO	17 MEG 12 EHLE 4 Z 3	45 (	EXXC	<b>)</b> H		
WELL#			7			WELL#	6		_		
WELL DIAM				>A.		WELL DIA			<u> </u>	0~	
DEPTH TO						DEPTH TO				.97	
GALLONS			12.00			TOTAL DE GALLONS			) 12.0	0	
						ONLLOINS	TO BUT	JROLD			
PURGED	PH	TEMP	COND.	TURB.	TIME	PURGED	РН	TEMP	COND.	TURB.	TIME
GALLONS		С	U/CM			GALLONS	<u> </u> 	c	U/CM		
5	5.92	18.9	196	3	1201	5	5.40	19.0	198	3	1138
7	5.85	19.2	193	2	1205	7	5.33	19.4	193	2_	1145
	<u> </u>			<u> </u>		ļ		ļ	ļ		
	<del> </del>										
			<del> </del>								
TURBIDITY (	I-NONE) (2	-FAINT) (	3-MODERAT	E) (4-5TR(	DNG)	TURBIDITY (	(1-NONE) (	2-FAINT)	(3-MODERA	TE) (4-STI	RONG)
WELL#						WELL#					ŕ
WELL DIAM						WELL DIA					
TOTAL DEP			(FI)	<del></del>		DEPTH TO				<del></del>	
GALLONS T						TOTAL DE			)	-	
07.020740	O DC TO	NOCO				<u>GALLONS</u>	TO BE PC	KGED			
PURGED	PH	TEMP	COND.	TURB.	TIME	PURGED	PH	TEMP	COND.	TURB.	TIME
GALLONS		c	U/CM			GALLONS		С	U/CM		,
-											
TURBIDITY (	1-NONE) (2	2-FAINT) (	3-MODERAT	E) (4-STR	ONG)	TURBIDITY	(1-NONE)	(2-FAINT)	(3-MODERA	TE) (4-ST	RONG)

# OH MEGGS EXXON POTENTIOMETRIC DATA SITE # 03423

WELL #	CAS. ELEV.	GW DEPTH GW ELEV.		GW DEPTH GW ELEV.	GW ELEV.	WELL DEPTH	SCREENED INT.
DATE		1/03	1/03	7\08	7\08		
-	99.56	3.60	96'36	6.10	93.46	15.00	5.00-15.00'
7	100.18	3.90	96.28	6.80	93.38	15.00	5.00-15.00'
က	97.74	2.02	95.72	4.21	93.53	12.00	2.00-12.00'
4	-98,85	2.93	95.92	5.52	93.33	13.00	3.00-13.00'
2	99.58			6.36	93.22	12.00	2.00-12.00'
9	100.37			7.00	93.37	12.00	2.00-12.00'

# APPENDIX B

OH MEGGS EXXON HISTORICAL FIELD DATA UST # 03423

# MW	1	1	1	2	7	3	က	4	4	വ	9
DATE	7\02	1/03	7/08	1/03	2/08	1/03	7\08	1/03	7\08	7\08	7\08
ЬН	4.51	4.92	4.25	3.73	4.43	5.62	5.33	4.67	4.66	6.22	5.33
TEMP	28.1	18.2	27.6	19.5	26.7	17.6	25.8	18.1	27.6	24.6	25.2
COND	78.90	90.09	68.60	75.90	26.60	139.40	128.70	74.00	92.10	398.20	128.90
00	1.50	1.05	0.84	01.1	2.23	1.60	1	2.40	1.17	0.98	1.28
FE		2.54		<0.03		>3.30		1.43			

SITE CONDITIONS: CONVIENCE STORE IN RURAL AREA

FIELD PERSON: JODY RICKS

DATE: 7/24/08 AFTERNOON

WEATHER: SUNNY/HOT 90 F NOTE: WELLS DID NOT NEED TO BE PURGED

# APPENDIX C

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 25-Jul-08

South Carolina Certification Number: 21117

Report Date: 14-Aug-08

Sample Date:

24-Jul-08

SDG #:

SDG-061833

Lab Sample ID: LSID-136745 Sample ID:

MW 1

Approved By:

Van Ward Lab Director

		Reporting						
ırameter	Result	Limit	Unit	Method	Flag	g Date	Time	Analyst
2-Dichloroethane	<10.0	10	ppm	8260B	S11	8/3/2008	6:40	ADI
enzene	14.1	10	mg/L	EPA 8260	S11	8/3/2008	6:40	ADI
ΓEX, Total	81.1	50	mg/L	EPA 8260		8/3/2008		WWS
hylbenzene	<10.0	10	mg/L	EPA 8260	S11	8/3/2008	9:40	ADI
ethyl tert-Butyl Ether	37.8	10	mg/L	EPA 8260	S11	8/3/2008	6:40	ADI
apthalene	<10.0	10	mg/L	EPA 8260	S11	8/3/2008	6:40	ADI
luene	46.5	10	mg/L	EPA 8260	S11	8/3/2008	9:40	ADI
ylenes, Total	20.5	20	mg/L	EPA 8260	S11	8/3/2008	9:40	ADI
OB .	0.183	0.01	ug/L	SW 846 8011	S11	8/2/2008	16:12	TLS
ead, Dissolved	0.005	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR
<del>-</del>		0.01	ug/L		S11			

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 25-Jul-08

Report Date: 14-Aug-08

South Carolina Certification Number: 21117

Sample Date:

24-Jul-08

SDG #:

SDG-061833

Lab Sample ID: LSID-136746

Sample ID:

MW 2

Approved By:

Van Ward

Lab Director

Parameter	Result	Reporting Limit	Unit	Method	Fla	g Date	Time	Analyst
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	8/3/2008	7:02	ADI
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260		8/3/2008		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11	8/3/2008	7:02	ADI
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	8/2/2008	16:33	TLS
Lead, Dissolved	< 0.001	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 25-Jul-08

Report Date: 14-Aug-08

South Carolina Certification Number: 21117

Sample Date:

24-Jul-08

SDG #:

SDG-061833

Lab Sample ID: LSID-136747 Sample ID:

MW 3

Approved By:

Van Ward

Lab Director

Parameter								
	Result	Reporting Limit	Unit	Method	Fla	g Date	Time	Analyst
1,2-Dichloroethane	< 2.50	2.5	ppm	8260B	S11	8/3/2008	7:24	ADI
Benzene	< 2.50	2.5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
BTEX, Total	34.4	12.5	mg/L	EPA 8260		8/3/2008		WSF
Ethylbenzene	< 2.5	2.5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
Methyl tert-Butyl Ether	< 2.50	2.5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
Napthalene	< 2.50	2.5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
Toluene	18.2	2.5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
Xylenes, Total	16.2	5	mg/L	EPA 8260	S11	8/3/2008	7:24	ADI
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	8/2/2008	16:54	TLS
Lead, Dissolved	0.001	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 25-Jul-08

South Carolina Certification Number: 21117

Report Date: 14-Aug-08

Sample Date:

24-Jul-08

SDG #:

SDG-061833

Lab Sample ID: LSID-136748 Sample ID:

MW 4

Approved By:

Van Ward

Lab Director

Reporting **Parameter** Result Limit Unit Method Flag Date Time Analyst 1,2-Dichloroethane 8260B < 5.00 5 ppm S11 8/3/2008 7:46 ADI Benzene 13.9 5 EPA 8260 mg/L S11 8/3/2008 7:46 ADI BTEX, Total 69.6 25 mg/L EPA 8260 8/3/2008 WSF Ethylbenzene < 5.00 5 EPA 8260 mg/L S11 8/3/2008 7:46 ADI Methyl tert-Butyl Ether 11.6 5 EPA 8260 S11 8/3/2008 mg/L 7:46 ADI Napthalene < 5.00 5 mg/L EPA 8260 S11 8/3/2008 7:46 ADI Toluene 40.4 5 mg/L EPA 8260 S11 8/3/2008 7:46 ADI Xylenes, Total EPA 8260 15.3 10 mg/L S11 8/3/2008 7:46 ADI **EDB** 0.105 0.01 ug/L SW 846 8011 S11 8/2/2008 17:16 TLS Lead, Dissolved < 0.001 SW846 6010B 0.001 mg/L 7/29/2008 9:26 JR

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 25-Jul-08

Report Date: 14-Aug-08

South Carolina Certification Number: 21117

Sample Date:

24-Jul-08

SDG #:

SDG-061833

Lab Sample ID: LSID-136749 Sample ID:

MW 5(IGWA)

Approved By:

Van Ward

Lab Director

	Reporting							
Parameter	Result	Limit	Unit	Method	Fla	g Date	Time	Analyst
1,2-Dichloroethane	< 0.025	0.25	ppm	8260B	S11	8/3/2008	8:11	ADI
Benzene	0.686	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
BTEX, Total	0.9539	0.125	mg/L	EPA 8260		8/3/2008		WSF
Ethylbenzene	0.118	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Methyl tert-Butyl Ether	0.828	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Napthalene	0.255	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Toluene	0.0309	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Xylenes, Total	0.119	0.05	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Polynuclear Aromatic Hydc.	0.226	4	ppm	EPA 8270C	S11	8/1/2008	13:02	KNB
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	8/2/2008	17:37	TLS
Lead, Dissolved	< 0.001	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR

### Davis & Brown

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

### **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 25-Jul-08 Report Date: 14-Aug-08

South Carolina Certification Number: 21117

Sample Date:

24-Jul-08

SDG #:

SDG-061833 Lab Sample ID: LSID-136750

Sample ID:

MW 6

Approved By:

Van Ward

Lab Director

Parameter	D 1/	Reporting						
	Result	Limit	Unit	Method	Fla	g Date	Time	Analyst
1,2-Dichloroethane	< 0.250	0.25	ppm	8260B	S11	8/3/2008	8:33	ADI
Benzene	2.87	0.25	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
BTEX, Total	16.39	1.25	mg/L	EPA 8260		8/3/2008		WSF
Ethylbenzene	2.05	0.25	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
Methyl tert-Butyl Ether	0.690	0.25	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
Napthalene	0.650	0.25	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
Toluene	3.76	0.25	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
Xylenes, Total	7.71	0.5	mg/L	EPA 8260	S11	8/3/2008	8:33	ADI
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	8/2/2008	17:58	TLS
Lead, Dissolved	< 0.001	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293102	136745	Water	07/24/2008 14:45	07/29/2008 08:49

Prep Date	Prep Batch	Prep Method	Dilution 2000	<b>Analyzed</b> 08/03/2008 06:40	By Anal	lytical Batch 317
CAS#	Parameter		Result	RDL	REG LIM	IT Units
107-06 <b>-</b> 2	1,2-Dichloroethane		ND	10000		ug/L
71-43-2	Benzene		14100	10000		ug/L
100-41-4	Ethylbenzene		ND	10000		ug/L
91-20-3	Naphthalene		ND	10000		ug/L
108-88-3	Toluene		46500	10000		ug/L
1330-20-7	Xylene (total)		20500	20000		ug/L
1634-04-4	tert-Butyl methyl ether (l	MTBE)	37800	10000		ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100000	113000	ug/L	113	78 - 130
1868-53-7	Dibromofluoromethane	100000	103000	ug/L	103	77 - 127
2037-26-5	Toluene d8	100000	102000	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100000	109000	ug/L	109	71 - 127

### SW-846 8011

Prep Date 08/01/2008 1	<b>Prep Batch</b> 5:00 394170	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 08/02/2008 16:12	•	Analytical Batch 394366	
CAS#	Parameter		Result	RDL	REG	LIMIT	Units
106-93-4	1,2-Dibromoethane		0.183	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293103	136746	Water	07/24/2008 15:00	07/29/2008 08:49

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 08/03/2008 07:02	<b>By</b> ADI	Analytica 394317	l Batch
CAS#	Parameter		Result	RDL	R	REG LIMIT	Units
107-06-2	1,2-Dichloroethane		ND	5.00			ug/L
71-43-2	Benzene		ND	5.00			ug/L
100-41-4	Ethylbenzene		ND	5.00			ug/L
91-20-3	Naphthalene		ND	5.00			ug/L
108-88-3	Toluene		ND	5.00			ug/L
1330-20-7	Xylene (total)		ND	10.0			ug/L
1634-04-4	tert-Butyl methyl ether (I	MTBE)	ND	5.00			ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Re	ecovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	54.4	ug/L		109	78 - 130
1868-53-7	Dibromofluoromethane	50	53.4	ug/L		107	77 - 127
2037-26-5	Toluene d8	50	50.8	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	54.7	ug/L		109	71 - 127

### SW-846 8011

Prep Date 08/01/2008 15:00	Prep Batch 394170	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 08/02/2008 16:33	<b>By</b> TLS	Analytical Batch 394366	
CAS#	Parameter		Result	RDL	RE	G LIMIT	Units
106-93-4	1,2-Dibromoethane		ND	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293104	136747	Water	07/24/2008 13:55	07/29/2008 08:49

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 500	<b>Analyzed</b> 08/03/2008 07:24	<b>By</b> ADI	Analytica 394317	l Batch
CAS#	Parameter		Result	RDL	RE	G LIMIT	Units
107-06-2	1,2-Dichloroethane		ND	2500			ug/L
71-43-2	Benzene		ND	2500			ug/L
100-41-4	Ethylbenzene		ND	2500			ug/L
91-20-3	Naphthalene		ND	2500			ug/L
108-88-3	Toluene		18200	2500			ug/L
1330-20-7	Xylene (total)		16200	5000			ug/L
1634-04-4	tert-Butyl methyl ether (M	ГВЕ)	ND	2500			ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	25000	30100	ug/L		120	78 - 130
1868-53-7	Dibromofluoromethane	25000	27000	ug/L		108	77 - 127
2037-26-5	Toluene d8	25000	25700	ug/L		103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	25000	27900	ug/L		112	71 - 127

### SW-846 8011

Prep Date 08/01/2008 1	<b>Prep Batch</b> 5:00 394170	Prep Method SW-846 8011	<b>Dilution</b> 1	<b>Analyzed</b> 08/02/2008 16:54	<b>By</b> TLS	Analytical Batch 394366	
CAS#	Parameter		Result	RDL	F	REG LIMIT	Units
106-93-4	1,2-Dibromoethane		ND	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

0041.10					
GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	
20807293105	136748	Water	07/24/2008 14:30	07/29/2008 08:49	

Prep Date	Prep Batch	Prep Method	Dilution 1000	<b>Analyzed</b> 08/03/2008 07:46	By Analytica ADI 394317	l Batch
CAS#	Parameter		Result	RDL	REG LIMIT	Units
107 <b>-</b> 06-2	1,2-Dichloroethane		ND	5000		ug/L
71-43-2	Benzene		13900	5000		ug/L ug/L
100-41-4	Ethylbenzene		ND	5000		_
91-20-3	Naphthalene		ND	5000		ug/L ug/L
108-88-3	Toluene		40400	5000		•
1330-20-7	Xylene (total)		15300	10000		ug/L
1634-04-4	tert-Butyl methyl ether (i	MTBE)	11600	5000		ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50000	57200	ug/L	114	78 - 130
1868-53-7	Dibromofluoromethane	50000	54500	ug/L	109	77 - 127
2037-26-5	Toluene d8	50000	51600	ug/L	103	77 - 127 76 - 134
17060-07-0	1,2-Dichloroethane-d4	50000	54500	ug/L	109	76 - 134 71 - 127

### SW-846 8011

Prep Date 08/01/2008 1	<b>Prep Batch</b> 15:00 394170	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 08/02/2008 17:16	<b>By</b> TLS	Analytical Batch 394366	
CAS#	Parameter	-	Result	RDL	R	EG LIMIT	Units
106-93-4	1,2-Dibromoethane		0.105	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge,
LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293106	136749	Water	07/24/2008 13:45	07/29/2008 08:49

Prep Date	Prep Batch	Prep Method	Dilution 5	<b>Analyzed</b> 08/03/2008 08:11	<b>By</b> ADI	Analytical 394317	Batch
CAS#	Parameter		Result	RDL	R	EG LIMIT	Units
107-06-2	1,2-Dichloroethane		ND	25.0			ug/L
71-43-2	Benzene		686	25.0			ug/L
100-41-4	Ethylbenzene		118	25.0			ug/L
91-20-3	Naphthalene		255	25.0			ug/L
108-88-3	Toluene		30.9	25.0			ug/L
1330-20-7	Xylene (total)		119	50.0			ug/L
1634-04-4	tert-Butyl methyl ether (I	WTBE)	828	25.0			ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Re	covery	Rec Limits
460-00-4	4-Bromofluorobenzene	250	286	ug/L		114	78 - 130
1868-53-7	Dibromofluoromethane	250	242	ug/L		97	77 - 127
2037-26-5	Toluene d8	250	263	ug/L		105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	250	273	ug/L		109	71 - 127

### SW-846 8270C

Prep Date 07/30/2008 18:0	<b>Prep Batch</b> 00 393842	Prep Method 3510C	<b>Dilution</b> 10	<b>Analyzed</b> 08/01/2008 13:02	<b>By</b> KNB	Analytical Ba 394202	tch
CAS#	Parameter		Result	RDL	RI	EG LIMIT	Units
83-32-9	Acenaphthene		ND	100			ug/L
208-96-8	Acenaphthylene		ND	100			ug/L
120-12-7	Anthracene		ND	100			ug/L
56-55-3	Benzo(a)anthracene		ND	100			ug/L
50-32-8	Benzo(a)pyrene		ND	100			ug/L
205 <b>-</b> 99-2	Benzo(b)fluoranthene		ND	100			ug/L
191-24-2	Benzo(g,h,i)perylene		ND	100			ug/L
207-08-9	Benzo(k)fluoranthene		ND	100			ug/L
218-01-9	Chrysene		ND	100			ug/L
53-70-3	Dibenz(a,h)anthracene		ND	100			ug/L
206-44-0	Fluoranthene		ND	100			ug/L
86-73-7	Fluorene		ND	100			ug/L
193-39-5	Indeno(1,2,3-cd)pyrene		ND	100			ug/L
91-20-3	Naphthalene		226	100			ug/L
85-01-8	Phenanthrene		ND	100			ug/L
129-00-0	Pyrene		ND	100			ug/L
CAS# S	Surrogate	Conc. Spiked	Conc. Rec	Units	% Red	overy F	Rec Limits
4165-60-0 N	litrobenzene-d5	50	Diluted Out	ug/L		0*	52 - 110
321-60-8 2	-Fluorobiphenyl	50	Diluted Out	ug/L		0*	16 - 128
1718-51-0 T	erphenyl-d14	50	Diluted Out	ug/L		0*	43 - 138

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293106	136749	Water	07/24/2008 13:45	07/29/2008 08:49

### SW-846 8011

Prep Date 08/01/2008 15:00	<b>Prep Batch</b> 394170	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 08/02/2008 17:37	<b>By</b> TLS	Analytical Batch 394366	
CAS#	Parameter		Result	RDL	R	EG LIMIT	Units
106-93-4	1,2-Dibromoethane		ND	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20807293107	136750	Water	07/24/2008 14:10	07/29/2008 08:49

Prep Date	Prep Batch	Prep Method	Dilution 50	<b>Analyzed</b> 08/03/2008 08:33	<b>By</b> ADI	Analytica 394317	l Batch
CAS#	Parameter		Result	RDL	RE	G LIMIT	Units
107-06-2	1,2-Dichloroethane		ND	250			ug/L
71-43-2	Benzene		2870	250			ug/L
100-41-4	Ethylbenzene		2050	250			ug/L
91-20-3	Naphthalene		650	250			ug/L
108-88-3	Toluene		3760	250			ug/L
1330-20-7	Xylene (total)		7710	500			ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	690	250			ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	2500	3010	ug/L		120	78 - 130
1868-53-7	Dibromofluoromethane	2500	2460	ug/L		98	77 - 127
2037-26-5	Toluene d8	2500	2550	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	2500	2620	ug/L		105	71 - 127

### SW-846 8011

Prep Date 08/01/2008 1	<b>Prep Batch</b> 5:00 394170	Prep Method SW-846 8011	<b>Dilution</b> 1	Analyzed 08/02/2008 17:58	<b>By</b> TLS	Analytical Batch 394366	
CAS#	Parameter		Result	RDL	R	EG LIMIT	Units
106-93-4	1,2-Dibromoethane		ND	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge,
LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

### **DAVIS & BROWN**

### **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

S	South Carolina Lab Certification Number: 23101
S1	South Carolina Lab Certification Number: 93013
S2	South Carolina Lab Certification Number: 23105
S3	South Carolina Lab Certification Number: 10120
S4	South Carolina Lab Certification Number: 84002
S5	South Carolina Lab Certification Number: 32117
S6	Agricultural Service Laboratory Clemson University
S7	South Carolina Lab Certification Number: 36001
S8	*****
S9	South Carolina Lab Certification Number: 94014001; 94014002
S10	South Carolina Lab Certification Number: 84009
S11	South Carolina Lab Certification Number: 96023; 96026; 96031; 98001; 73006
S12	AASHTO R18 Certified
S13	South Carolina Lab Certification Number: 96012
S14	South Carolina Lab Certification Number: 89002
S15	*****
S16	South Carolina Lab Certification Number: 84004
S17	South Carolina Lab Certification Number: 96037001
S18	South Carolina Lab Certification Number: 95005
S19	South Carolina Lab Certification Number: 23104
S20	South Carolina Lab Certification Number: 96027001
S21	South Carolina Lab Certification Number: 21005
S22	South Carolina Lab Certification Number: 24110
S23	South Carolina Lab Certification Number: 84001001
S24	South Carolina Lab Certification Number: 82014001
S25	Sample was analyzed by Microseeps, Inc Laboratory
S26	North Carolina Lab Certification Number: 21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 40569

## CHAIN OF CUSTODY RECORD

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124 West McIver Road DAVIS & BROWN

Quinby, South Carolina 29506

Florence, South Carolina 29501 Telephone (843) 665-6746

Post Office Box 15038

6(833 Use Codes in the boxes to indicate SAMPLE ANALYSIS REQUIRED (x) - use remarks Client Name / Facility Name

H<sub>2</sub>SO<sub>4</sub> = D NA<sub>2</sub>S<sub>2</sub>O<sub>3</sub> = E FILTRATION = F ZINCACETATE = G whether sample was filtered or preserved. 136747 6ht96) 136750 36745 (30746 (36748 LAB ID Time O Non Regulatory Sulo SII of Regulatory Code: HNO<sub>3</sub> = A HCL = B NAOH = C REMARKS Relinquished by (SIGNATURE) Received by (SIGNATURE) ബ്യാഹ് മന്ദ്യാഹ് D <u> YHYJ</u> × X ヌ X メ × メ マ ×  $\checkmark$ ¥  $\alpha$ ब o?  $\overline{\sim}$ Coliforn - Fecal Phenol - Specify LKN Cyanide Ø METALS - Spec × Z Relinquished by (SIGNATURE) X × X Received by (SIGNATURE) OOA Nitrate COD BOD **SST** 7/2/08/14/5 #15000 14(S a of containers S r COMP SOIL 72400 1500 M MW 5/EGIJA/7/24/08 1345 M METT 124h08 | 1355 M 72408 1445 M BIJ STOKES (MEGGS EXXON 12468 1430 7/24/08/14/10 TIME LATAS DATE Celinquished by (SIGNATURE) 7007 CLANA ON (SIGNATURE) SAMPLE ID 7007 A S MW A Me 7 3 B B **Σ** 

\* Program Area: D - Drinking Water / G - Groundwater / S - Solid / W -- Waste Water / N - NPDES / O - Other

### APPENDIX D

OH MEGGS EXXON SITE ID# 03423 HISTORICAL DATA

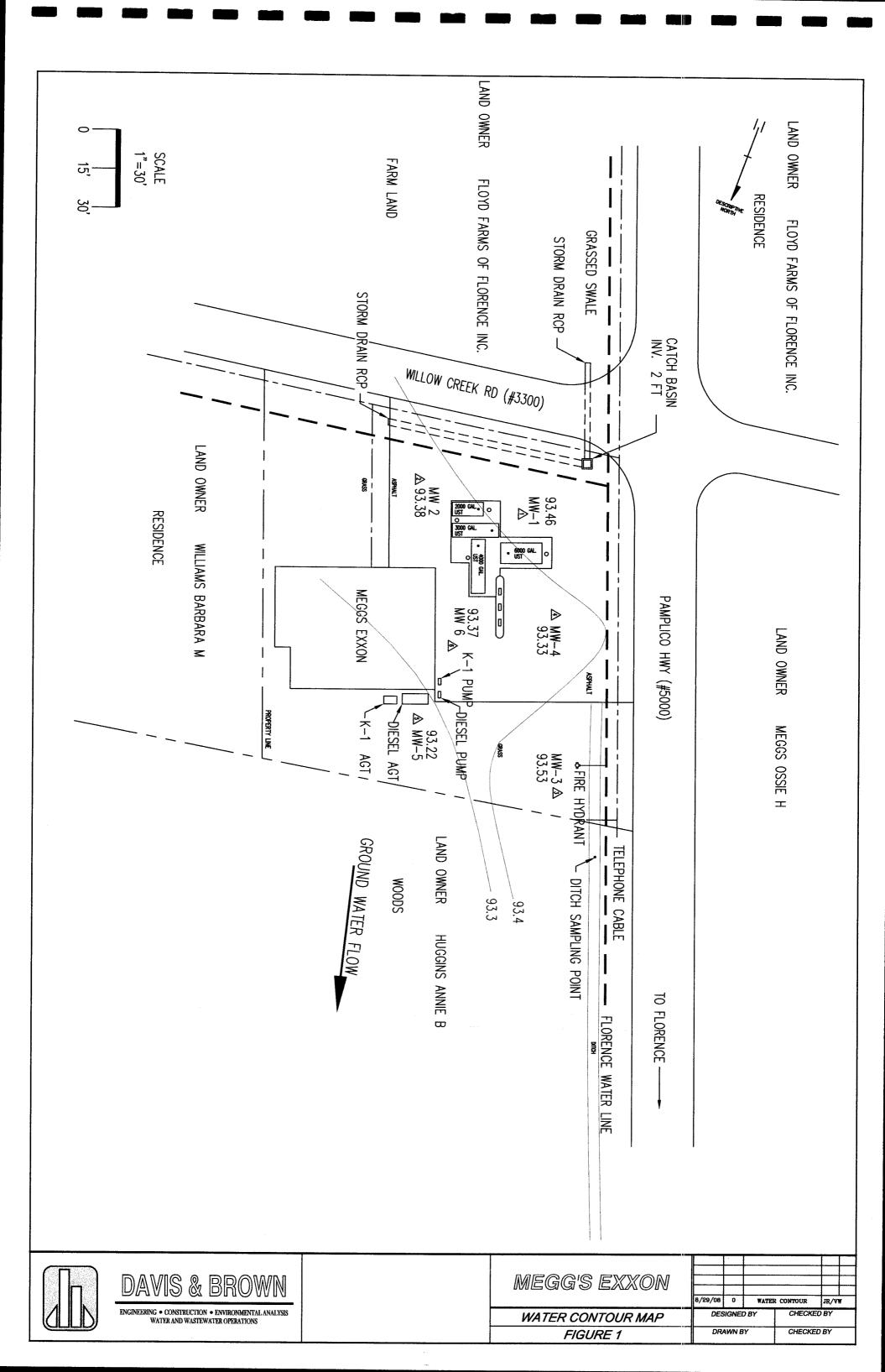
202	RBSL	MW1	MW1	MW1	MW2	MW2	MW3	MW3	MW4	MW4	MW5	WWW
DATE	l/6n	7\05	1/03	7\08	1\03	7\08	1/03	7\08	1/03	7\08	8//	8//
1,2 DCA			19.1	<10,000	281	ıĈ	157	<b>42,500</b>	272	<b>45,000</b>	<b>425</b>	<b>&lt;250</b>
BENZENE	EC.	888	3,410	<b>83</b> 1	977	ځ5	061'9	4.000	0871	19,900	98	282
втех	N/A	21,170	47,280	81,100	14.6	<b>&lt;25</b>	31,750	34,400	42,920	009'69	954	16,390
ETHYLBENZENE	700	8	2.80	40,000	₽	Ŝ	6851	3		<b>C C C C C C C C C C</b>	118	2,020
MTBE	40	aus.			6	Ĉ		<b>4.38</b>	27.6	SEE	838	\$
NAPTHALENE	25	100			÷	ŝ	R	2,300	8	888	B	3
TOLUENE	1,000	0000		33.00	<u>.</u>	ŝ	8	18,200		8	31	32
XYLENES	10,000	6,180			\$	ŝ,	8,040	<b>602.91</b>	10,160		119	7,710
EDB		1.2	4.6	0.183	<0.02	\$0.01	¢0.02	¢0.01	0.1	0.1	\$0.01	¢0.01
Pb	15	9	. a	5	14	₹	5	۷	6	₹	V	₹
РАН		285	213		BDL		628		480			
METHANE			<10		¢10		5		\$			
NITRATE			<500		4,500		×500		<500			
SULFATE			<2,000		¢2,000		3,100		ر2,000			
												Statement of the latest designation of the l

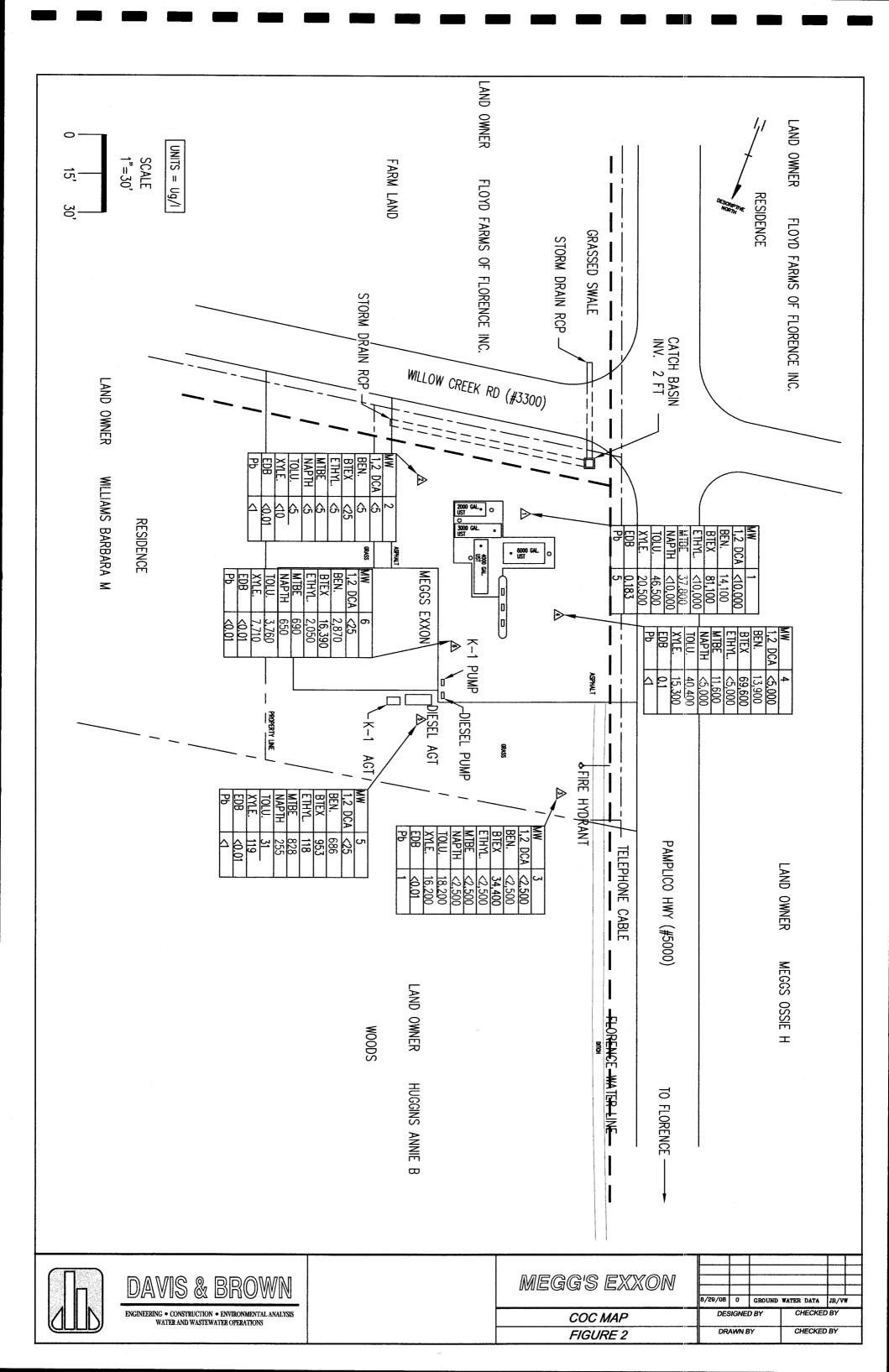
### APPENDIX E

## Crandall \_\_\_\_c

NOW WATER TO SHE	II Committee to the second					
NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No.	Manifest Document No	of			
3 Generator's Name and Mailing Address	<u> </u>	· · 1 · 27163	11-	L		
4925 Pamplico Hwy	Medds Exxon					
Florence, SC 29595						
4. Generator's Phone ( 943) 555-57	46					
5. Transporter 1 Company Name		JS EPA ID Number	A. Transporter's			
Crandall Corporation		81864499			3) 791-480	0
7. Transporter 2 Company Name	8. (	JS EPA ID Number	B. Transporter's	Phone		
9. Designated Facility Name and Site Address	10.	JS EPA ID Number	C. Facility's Pho	ne		
Crandall Corporation						
100 Rich-Lex Brive						_
Lexington, SC 29072	3009	81864499		7803	2) 791-480	C
11. Waste Shipping Name and Description			12.0	Containers	_13.	14.
			No	Туре	Total Quantity	Unit Wt./Vol
o. Non - Hazardous Waste, Pe	troleum Contaminat	ed Soil				
·			_	מם	1	P
b			. <i>0</i>	<u>·   ·</u>	· . O .	4
Non - Hazardous Waste, Wa	ste Water			ł		
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с.			0.0	<u>.a</u>	10.100	+
				.   .	1	
d.						†
D. A. Univ.				<u>. ] .</u>	<u>]</u> .	
D. Additional Descriptions for Materials Listed Above			E. Handling Cod	les for Was	tes Listed Above	
	F	FIELD				
	SE	RVICE	-		. ·	
				_		
15. Special Handling Instructions and Additional Inform	nation					
Service Call ID: GLB0127	163					
Deforms carring; Ambars	a. w w					
Emergency Response: Infot:	rac - 800-535-5053					
Caller wust ID Crandall as	s registrant ,	\ 0000 \ 100 \ 100	a ve kr	ر م س	1	
14 CENERATORY CERTIFICATION 1		) Affective; D	CLVOLD-	002-	<u>U</u>	
16. GENERATOR'S CERTIFICATION: I certify the mo	terials described above on this manif		egulations for report	ng proper	disposal of Hazardo Month Da	
A Sterry Andrews T	X.	2 -3	<del></del>		NRII.	3/08
17. Transporter Acknowledgement of Receipt of Mate	erials				<u> </u>	NIO.A
Printed/Typed Name	Signatu	ire		1	Month Do	y Year
Brigh Leggield		Breant.	eganil		0.81.	3 08
18. Transporter 2 Acknowledgement of Receipt of Mate			01			
Printed/Typed Name	Signatu	ire		_	Month Da	y Year
19. Discrepancy Indication Space			<del></del>			<u> </u>
12. Sisticpulity indication space						
20. Facility Owner or Operator: Certification of receipt of	f waste materials covered by this me	onifest except as noted in item	19.	·		
	<b>,</b>	,				
Printed/Typed Name	Signatu	ire An			Ma <del>n</del> D	- V-
Sal PMILL		VALX1111VI	ı		ו וכ <i>יללי)</i>	3/12
						ノレトノ

Maps and Figures





## INITIAL GROUNDWATER ASSESSMENT REPORRECEIVED MEGGS EXXON

	MEGGS EXXON	SEP 0 2 2008
Facility Address	4925 PAMPLICO HWY FLORENCE, SC	29502 HMDERGROUND STORAGE
Facility Telephone N	lumber843-669-6818	TANK PROGRAM
UST Permit Number	03423	
UST Owner and Opera	ntor's Name B W . STOKES OIL COMPA	NY
Address	PO BOX 274, FLORENCE, SC 29503-	0274
Phone Number	843-662-3954	
Property Owner's Nam	ne BARBRA WILLIAMS	
Address	3309 WILLOW CREEK ROAD, FLORENC	E, SC 29505
Phone Number		
Contractor DAVIS	& BROWN Ce	ert. #
Address 124 W	. MCIVER ROAD, FLORENCE, SC 29501	
Phone Number84	43-665-6746	
Well DrillerARM	C	ert. #1920
Address 1210	1ST ST. EXT. COLUMBIA, SC 29209	
Phone Number	803-783-3314	

### 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?	Х	
Are irrigation or other non-drinking water wells located within 1000 feet of the UST?	Х	
Are other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?		х

* If "yes"	provide	additional information below:					
		UTILITIES,	SHOWN	ON	SITE	MAP	

Were any water supply wells or surface waters within 250 ft. sampled?



YesNoX(Show on site base map)
Is a public water supply line in the area? YesNo _X _(Show on site base map)
Is the current use of the facility and surrounding properties commercial, residential, agricultural or industrial?
Site:COMMERCIAL
Adjacent Properties:
North: AGRICULTURAL
East: RESIDENTIAL
South: AGRICULTURAL
West: RESIDENTIAL
Soil and Boring/Monitoring Well Data  Primary Soil Type:SANDY/CLAY
Well Installation Method and Date:PUSHED
Development Method and Date: HAND BAILER/ 7/16/08
Soil Sample obtained from feet.

### SOIL ANALYTICAL DATA

Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	MTBE
(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)
<237	∠237	∠ 237	<b>473</b>	374	∠237

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)
4.26	∠4.26	∠4.26	∠4.26	∠4.26	<u> </u>	∠ 2840

\*For waste oil UST releases only:

Chromium*	Mercury*	Selenium*	Silver*	Arsenic*	Barium*	Cadmium*
(µg/kg)	(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)	(μg/kg)
						5.

Include Laboratory Data and Chain of Custody Form in Appendix B.

### **Groundwater Data**

Depth to Groundwater: 6.36	Depth to FP,	if present:	0
Free Product Thickness:	0	1.0	
Well Purging/Sampling Method:	HAND BAILER		
Date Sampled:	7/24/08	1.6 0	
Equilibrated values: Temperature:	24.6	pH:	6.22
Dissolved Oxyg	en:0.98Sp	ecific Condu	ctance: 398
Soil/Water Disposal Method: DRUM	MED DISPOSED BY CF	RANDALL	
Include in Appendix D. Costs for wo	rk cannot be comper	nsated withou	ut 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)
686	31	118	119	828	∠ 0.01	255

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)
∠ 100	∠100	∠100	∠100	∠ 100	۷100	1

\*For waste oil UST releases only:

Chromium*	Mercury*	Selenium*	Silver*	Arsenic*	Barium*	Cadmium*
(μg/l)	(μg/l)	(µg/l)	(µg/l)	(μg/l)	(μg/l)	(μg/l)

Include Laboratory Data and Chain of Custody Form in Appendix B.

Report Completed	By (Print Name)	· Va	n Ward	
Signature :	7/ m 7	las		
DHEC Contractor	Certification #_	79	Date: 8/29/6	8

### **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



### Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

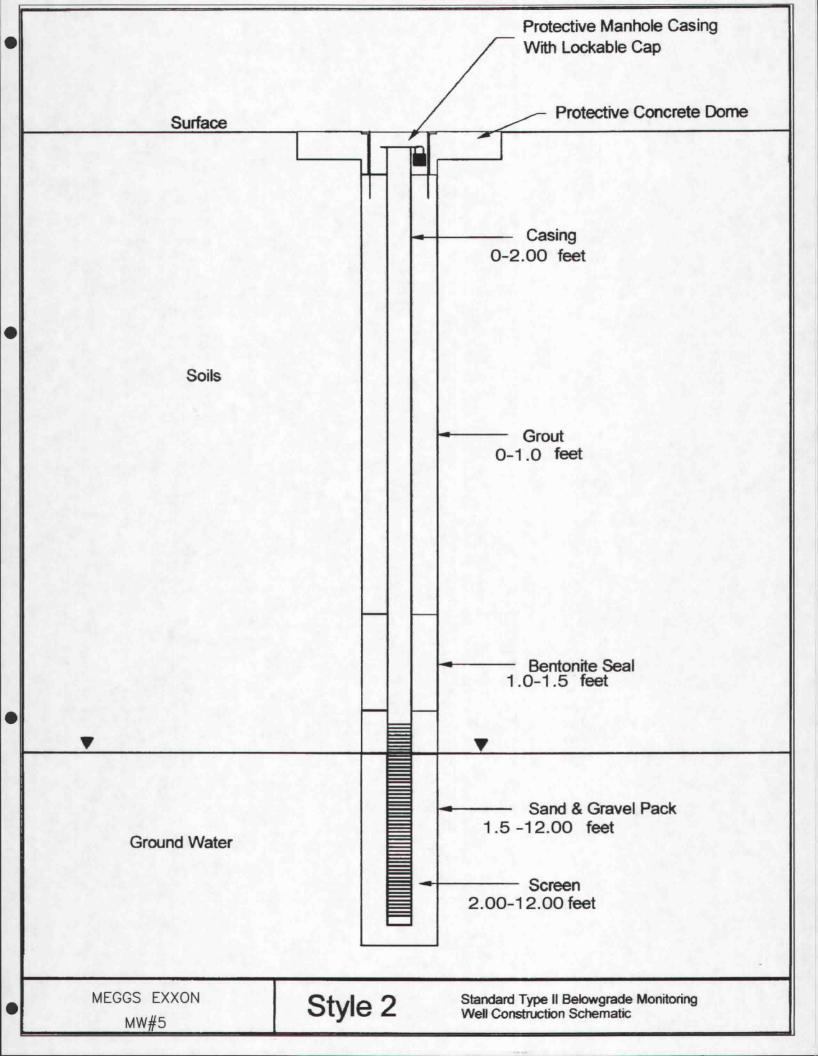
PROMOTE PROTECT PROSPER		2000 D	dir 5 deeg Columbia, 5 C 29201-1700, (805) 898-4500
1. WELL OWNER INFORMATION:  Name: 13 w STOKE	SOFL		6. PERMIT NUMBER: 03423
Address: Po Box 274			7. USE:  Residential Public Supply Process
City: FLOGRENCE State: S	C _zip: 2	9503	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	_ Home:		8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 6-26-2008
2. LOCATION OF WELL: COU	NTY: FLOR	EHLE	12 ft. Date Completed (MM/DD/YYY): 6-26-2008
Name: Meggs 6xxxx			9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 Pam	puro 1	July	Dug Air Rotary Driven Cable tool Other
City: Parphico Florestie		20	10. CASING: Threaded Welded Diam.: Y Height: Above/Below
Latitude: Longitude:	ıde:		Type: Galvanized Surfaceft
3. PUBLIC SYSTEM NAME:			Steel Other Weight — Ib./ft.  o in. to 2 ft. depth Drive Shoe? Yes
PUBLIC SYSTEM NUMBER:		- 1 to 1	in. toft. depth   Drive Shoe?
4. ABANDONMENT: Yes	No		11. SCREEN  Type: Puc Diam.: 2"
Grouted Depth: from	ft. to	ft.	S lot/Gauge:0(6 Length: 16'
	*Thickness	Depth to	Set Between: 12 ft. and 2 ft. NOTE: MULTIPLE SCREENS
Formation Description	of Stratum	Bottom of Stratum	ft. andft. USE SECOND SHEET
			Sieve Analysis Yes (please enclose)
			12. STATIC WATER LEVEL 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)
			Yield:
	7 114 114		14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
			P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Tyes No Installed from 1 12 ft
		ber 1	Effective size # 3 % Uniformity Coefficient
			16. WELL GROUTED? Yes No
			Neat Cement Bentonite Pentonite/Cement Other
			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ftdirection
			Type: Amount: Amount:
			18. PUMP: Date installed (MM/DD/YYYY):  Not installed
			Mfr. Name: Model No.:
			H.P Volts Length of drop pipeft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			Jet (deep) Reciprocating Centrifugal
			19. WELL DRILLER: CERT. NO.: 1936 Name: Michael Cores
	1 6		Name: Michael Casey Address: 1210 Ist 54 South Ext. City: Cola
			State: SC Zip: 24204
	HITTON I		Telephone No.: (503) 783-3314 Fax No.:
Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			, and the die server my mornings and benefit
S. REMARKS:			
mw-5			Signed: Muha Cory Date: 7/6/2008  Authorized Representative (MM/DD/YYY)



DAVIS & BROWN
ENGINEERING • ENVIRONMENTAL • O&M SERVICES
www.NACCDB.com
ph: (843)665-6746 fax: (843)629-1444

		ING LOG	BOF	RING NO: 1	BORING - MW-5	PAG	E OF	
LOCATION: M FI	EGGS EXXON LORENCE SC	DATE COMPLETED: 6-26-08	PRO	JECT NAM	ME: MEGGS EXX	ON		
TOTAL DEPTH	(ft):12	GROUND WATER DEPTH (ft): 6	SCR	EEN DEP	ΓH (ft):2			
		G/W ELEV (MSL): NA		SCREEN INTERVAL (MSL): 10				
DEPTH		UNIFIED CLASSIFICATION		OVA	COMMENTS	3	PID	
(FT)		DESCRIPTION					(PPM	
0-2	BROWN SAI	ND WITH LITTLE CLAY	72270	<1	SAND DRIVEY	VAY		
2-5		MOIST CLAYEY SAND		20	DIE OF BIG (B)			
5-8		RANGE MOIST CLAY		20				
8-10		RANGE MOIST CLAY		120				
10-12		RANGE MOIST CLAY		130				
10-12	OKATISH O	RANGE MOIST CLAT		130		-		
						40		
				-		46		
	TOTAL XX	VIII THE RESERVE		T WHE				
				-				
				20.40				
						1		
THE PARTY	FIELD PERS	ON: SODY PETERS						
AETHOD HOEF	DDIVEN				V.O.4-1	A.A		
METHOD USED	DRIVEN TRACT MACHINI							
	REEN INTERVAL					14.1		

DATA/PERSONAL/WVW/BORING LOG



### APPENDIX B

### Davis & Brown

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

### **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

SDG#:

Sample Date:

26-Jun-08

Lab Sample ID: LSID-135851

SDG-061387

Receipt Date: 26-Jun-08 Report Date: 28-Aug-08

South Carolina Certification Number: 21117

Approved By:

Van Ward Van Ward

Lab Director

Sample ID: MW 5 IGWA	ample ID: MW 5 IGWA									
Parameter	Result	Reporting Limit	Unit	Method	Flag	Date	Time	Analyst		
Acid Digestion (Solids)	YES	هزار کا		EPA 200.2		7/7/2008	16:00	DH		
Methyl tert-Butyl Ether	< 0.237	0.237	mg/kg	EPA 8260	S11	7/2/2008	17:34	JCK		
Benzene	< 0.237	0.237	mg/kg	EPA 8260/827	S11	7/2/2008	17:34	JCK		
BTEX, Total (Soil)	<1.184	1.184	mg/kg	EPA 8260/827		7/2/2008		WSF		
Ethylbenzene	< 0.237	0.237	mg/kg	EPA 8260/827	S11	7/2/2008	17:34	JCK		
Napthalene	0.374	0.237	mg/kg	EPA 8260/827	S11	7/2/2008	17:34	JCK		
Polynuclear Aromatic Hydc.	enclosed		mg/kg	EPA 8260/827	S11	7/1/2008	12:09	KNB		
Toluene	< 0.237	0.237	mg/kg	EPA 8260/827	S11	7/2/2008	17:34	JCK		
Xylenes, Total	< 0.473	0.473	mg/kg	EPA 8260/827	S11	7/2/2008	17:34	JCK		
Lead, Total	< 2.84	2.84	mg/kg	SW846 6010B		7/8/2008	10:00	DH		

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20806281301	135851	Solid	06/26/2008 11:30	06/28/2008 09:00

Prep Date	Prep Batch Pre	p Method	Dilution 50	Analyzed 07/02/2008 17:34		Analytical 391996	Batch
CAS#	Parameter		Result	RDL	REG	LIMIT	Units
71-43-2	Benzene		ND	237			ug/Kg
108-88-3	Toluene		ND	237			ug/Kg
100-41-4	Ethylbenzene		ND	237			ug/Kg
1330-20-7	Xylene (total)		ND	473			ug/Kg
91-20-3	Naphthalene		374	237			ug/Kg
1634-04-4	tert-Butyl methyl ether (MTBE)		ND	237			ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very	Rec Limits
460-00-4	4-Bromofluorobenzene	1830	1930	ug/Kg		106	62 - 127
1868-53-7	Dibromofluoromethane	1830	2020	ug/Kg		111	65 - 130
2037-26-5	Toluene d8	1830	2010	ug/Kg		110	71 - 132
17060-07-0	1,2-Dichloroethane-d4	1830	1990	ug/Kg		109	62 - 125

### SW-846 8270C

Prep Date 06/30/2008 1	Prep Batch 1:00 391860	Prep Method 3550B	Dilution 10	Analyzed 07/01/2008 12:09	<b>By</b> KNB	Analytical Bat 391953	tch
CAS#	Parameter	THE RESERVE	Result	RDL	R	EG LIMIT	Units
83-32-9	Acenaphthene		ND	4260			ug/Kg
208-96-8	Acenaphthylene		ND	4260			ug/Kg
120-12-7	Anthracene		ND	4260			ug/Kg
56-55-3	Benzo(a)anthracene		ND	4260			ug/Kg
50-32-8	Benzo(a)pyrene		ND	4260			ug/Kg
205-99-2	Benzo(b)fluoranthene		ND	4260			ug/Kg
191-24-2	Benzo(g,h,i)perylene		ND	4260			ug/Kg
207-08-9	Benzo(k)fluoranthene		ND	4260			ug/Kg
218-01-9	Chrysene		ND	4260			ug/Kg
53-70-3	Dibenz(a,h)anthracene		ND	4260			ug/Kg
206-44-0	Fluoranthene		ND	4260			ug/Kg
86-73-7	Fluorene		ND	4260			ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene		ND	4260			ug/Kg
91-20-3	Naphthalene		7910	4260			ug/Kg
85-01-8	Phenanthrene		5280	4260			ug/Kg
129-00-0	Pyrene		ND	4260			ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Re	covery	Rec Limits
4165-60-0	Nitrobenzene-d5	1660	0	ug/Kg		0*	46 - 123
321-60-8	2-Fluorobiphenyl	1660	0	ug/Kg		0*	47 - 127
1718-51-0	Terphenyl-d14	1660	0	ug/Kg		0*	38 - 167

RESULTS REPORTED ON A DRY WEIGHT BASIS

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL Report 208062813 6 of 9

### **DAVIS & BROWN**

### **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

S	South Carolina Lab Certification Number: 23101
S1	South Carolina Lab Certification Number: 93013
S2	South Carolina Lab Certification Number: 23105
S3	South Carolina Lab Certification Number: 10120
S4	South Carolina Lab Certification Number: 84002
S5	South Carolina Lab Certification Number: 32117
S6	Agricultural Service Laboratory Clemson University
S7	South Carolina Lab Certification Number: 36001
S8	******
S9	South Carolina Lab Certification Number: 94014001; 94014002
S10	South Carolina Lab Certification Number: 84009
S11	South Carolina Lab Certification Number: 96023; 96026; 96031; 98001; 73006
S12	AASHTO R18 Certified
S13	South Carolina Lab Certification Number: 96012
S14	South Carolina Lab Certification Number: 89002
S15	******
S16	South Carolina Lab Certification Number: 84004
S17	South Carolina Lab Certification Number: 96037001
S18	South Carolina Lab Certification Number: 95005
S19	South Carolina Lab Certification Number: 23104
S20	South Carolina Lab Certification Number: 96027001
S21	South Carolina Lab Certification Number: 21005
S22	South Carolina Lab Certification Number: 24110
S23	South Carolina Lab Certification Number: 84001001
S24	South Carolina Lab Certification Number: 82014001
S25	Sample was analyzed by Microseeps, Inc Laboratory
S26	North Carolina Lab Certification Number: 21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 40569

# CHAIN OF CUSTODY RECORD #1

Jo -

Page\_

**DAVIS & BROWN** 

15038 124 West McIver Road rna 29506 Florence, South Carolina 29501 Telephone (843) 865-6746 Post Office Box 15038 Quinby, South Carolina 29508

her sample	ar i		LAB ID	138361										Time	Time	
icate wheth				8										Date	Date	
Use Codes in the boxes to indicate whether sample	was filtered or preserved.		KEMARKS											Relinquished by (SIGNATURE)*	Received by (SIGNATURE)*	O Regulatory
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a or me			HAU	X										Rel	Re	
SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods.		XE	1781	X										Ттте	Time	
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ify spec	+		Ammor											Date	Date	
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\* Program Area: D-Drinking Water / G-Groundwater / S-Solid / W-Waste Water / N-NPDES / O-Other

### Davis & Brown

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

### Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 25-Jul-08 Report Date: 14-Aug-08

South Carolina Certification Number: 21117

24-Jul-08

SDG #:

Sample ID:

Sample Date:

SDG-061833 Lab Sample ID: LSID-136749

MW 5(IGWA)

Approved By:

Van Ward

Lab Director

Parameter	Result	Reporting Limit	Unit	Method	Fla	g Date	Time	Analyst
1,2-Dichloroethane	< 0.025	0.25	ppm	8260B	S11	8/3/2008	8:11	ADI
Benzene	0.686	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
BTEX, Total	0.9539	0.125	mg/L	EPA 8260		8/3/2008		WSF
Ethylbenzene	0.118	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Methyl tert-Butyl Ether	0.828	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Napthalene	0.255	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Toluene	0.0309	0.025	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Xylenes, Total	0.119	0.05	mg/L	EPA 8260	S11	8/3/2008	8:11	ADI
Polynuclear Aromatic Hydc.	0.226		ppm	EPA 8270C	S11	8/1/2008	13:02	KNB
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	8/2/2008	17:37	TLS
Lead, Dissolved	< 0.001	0.001	mg/L	SW846 6010B		7/29/2008	9:26	JR

### **DAVIS & BROWN**

### **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

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S15	******
S16	South Carolina Lab Certification Number: 84004
S17	South Carolina Lab Certification Number: 96037001
S18	South Carolina Lab Certification Number: 95005
S19	South Carolina Lab Certification Number: 23104
S20	South Carolina Lab Certification Number: 96027001
S21	South Carolina Lab Certification Number: 21005
S22	South Carolina Lab Certification Number: 24110
S23	South Carolina Lab Certification Number: 84001001
S24	South Carolina Lab Certification Number: 82014001
S25	Sample was analyzed by Microseeps, Inc Laboratory
S26	North Carolina Lab Certification Number: 21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 40569

## CHAIN OF CUSTODY RECORD

of

DAVIS & BROWN

Post Office Box 15038 Quinby, South Carolina 29506 Fto

038 124 West McIver Road a 29506 Florence, South Carolina 29501

Telephone (843) 665-6746

H<sub>2</sub>SO<sub>4</sub> = D NA<sub>2</sub>S<sub>1</sub>O<sub>3</sub> = E FILTRATION = F ZINCACETATE = G whether sample was filtered or preserved. 6ht98) (01833 36745 (30747 (3074G 36748 136750 LAB ID Time Use Codes in the boxes to indicate O Non Regulatory Solo 51 Regulatory Code: HNO<sub>3</sub> = A HCL = B NAOH = C REMARKS Relinquished by (SIGNATURE)\* Received by (SIGNATURE) early mergord\* 9 S'HAG SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods. × X × X × × ¥ × × Z × × o  $\overline{\mathcal{A}}$ X Z Date Coliforn - Fecal Phenol - Specify LKN (27) X X METALS - Spec × × X Relinquished by (SIGNATURE) × Received by (SIGNATURE)\* NOC Mitrate COD BOD ZZT 7/2/08/1415 H 55 68 14 # of containers S GRAB COMP TIOS 7 24/08 1500 P 7/24/08 1445 M 7 224 Baltz METT MEGGS EXXON 72468 1430 7/24/08 14/0 MW 5/EGIJA/7/24/08 1345 TIME LATAS DATE KTOKS Relinquished by (SIGNATURE)\* 1000 BIJ STOKES Client Name / Facility Nam weight by (SIGNATURE) SAMPLE ID 7007 S S Harran MW 4 MW 2 M ME 35 35

<sup>\*</sup> Program Area: D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	
20807293106	136749	Water	07/24/2008 13:45	07/29/2008 08:49	

Prep Date	Prep Batch	Prep Method	Dilution 5	<b>Analyzed</b> 08/03/2008 08:11	By Analytica ADI 394317	l Batch
CAS#	Parameter		Result	RDL	REG LIMIT	Units
107-06-2	1,2-Dichloroethane		ND	25.0		ug/L
71-43-2	Benzene		686	25.0		ug/L
100-41-4	Ethylbenzene		118	25.0		ug/L
91-20-3	Naphthalene		255	25.0		ug/L
108-88-3	Toluene		30.9	25.0		ug/L
1330-20-7	Xylene (total)		119	50.0		ug/L
1634-04-4	tert-Butyl methyl ether (	WTBE)	828	25.0		ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	250	286	ug/L	114	78 - 130
1868-53-7	Dibromofluoromethane	250	242	ug/L	97	77 - 127
2037-26-5	Toluene d8	250	263	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	250	273	ug/L	109	71 - 127

### SW-846 8270C

Prep Date 07/30/2008 18:00	Prep Batch 393842	Prep Method 3510C	Dilution 10	<b>Analyzed</b> 08/01/2008 13:02	By KNB	Analytical Batch 394202	
CAS#	Parameter	11. 151.5. 11.	Result	RDL	RE	G LIMIT	Units
83-32-9	Acenaphthene		ND	100			ug/L
208-96-8	Acenaphthylene		ND	100			ug/L
120-12-7	Anthracene		ND.	100			ug/L
56-55-3	Benzo(a)anthracene		ND	100			ug/L
50-32-8	Benzo(a)pyrene		ND	100			ug/L
205-99-2	Benzo(b)fluoranthene		ND	100			ug/L
191-24-2	Benzo(g,h,i)perylene		ND	100			ug/L
207-08-9	Benzo(k)fluoranthene		ND	100			ug/L
218-01-9	Chrysene		ND	100			ug/L
53-70-3	Dibenz(a,h)anthracene		ND	100			ug/L
206-44-0	Fluoranthene		ND	100			ug/L
86-73-7	Fluorene		ND	100			ug/L
193-39-5	Indeno(1,2,3-cd)pyrene		ND	100			ug/L
91-20-3	Naphthalene		226	100			ug/L
85-01-8	Phenanthrene		ND	100			ug/L
129-00-0	Pyrene		ND	100			ug/L
CAS# S	urrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy Re	c Limits
4165-60-0 N	itrobenzene-d5	50	Diluted Out	ug/L		0* 5	52 - 110
321-60-8 2-	-Fluorobiphenyl	50	Diluted Out	ug/L		0* 1	6 - 128
1718-51-0 T	erphenyl-d14	50	Diluted Out	ug/L		0* 4	3 - 138

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	
20807293106	136749	Water	07/24/2008 13:45	07/29/2008 08:49	

### SW-846 8011

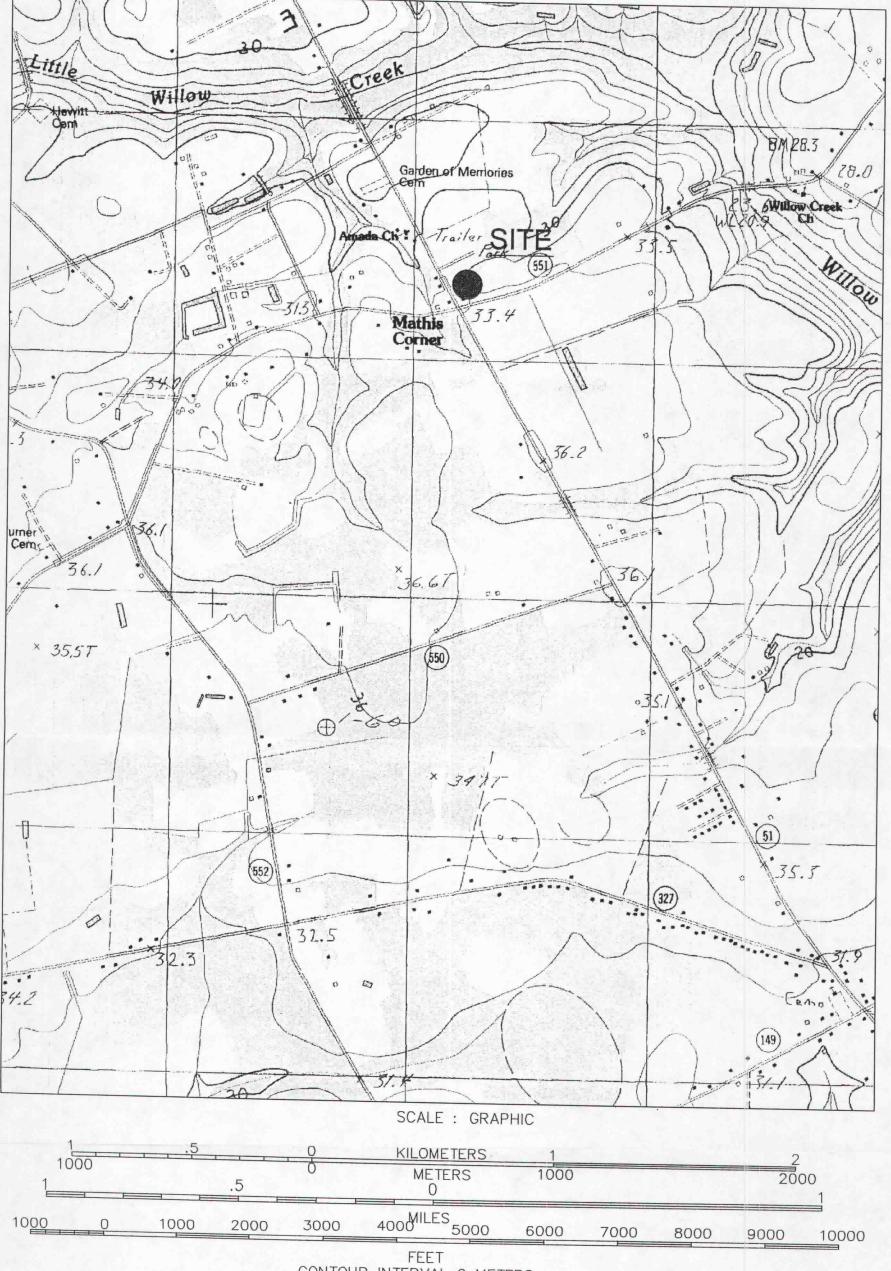
Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytical Batch	
08/01/2008 15:00	394170	SW-846 8011	1	08/02/2008 17:37	TLS	394366	
CAS#	Parameter		Result	RDL	REG LIMIT		Units
106-93-4	1,2-Dibromoethane		ND	0.010			ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

### APPENDIX C



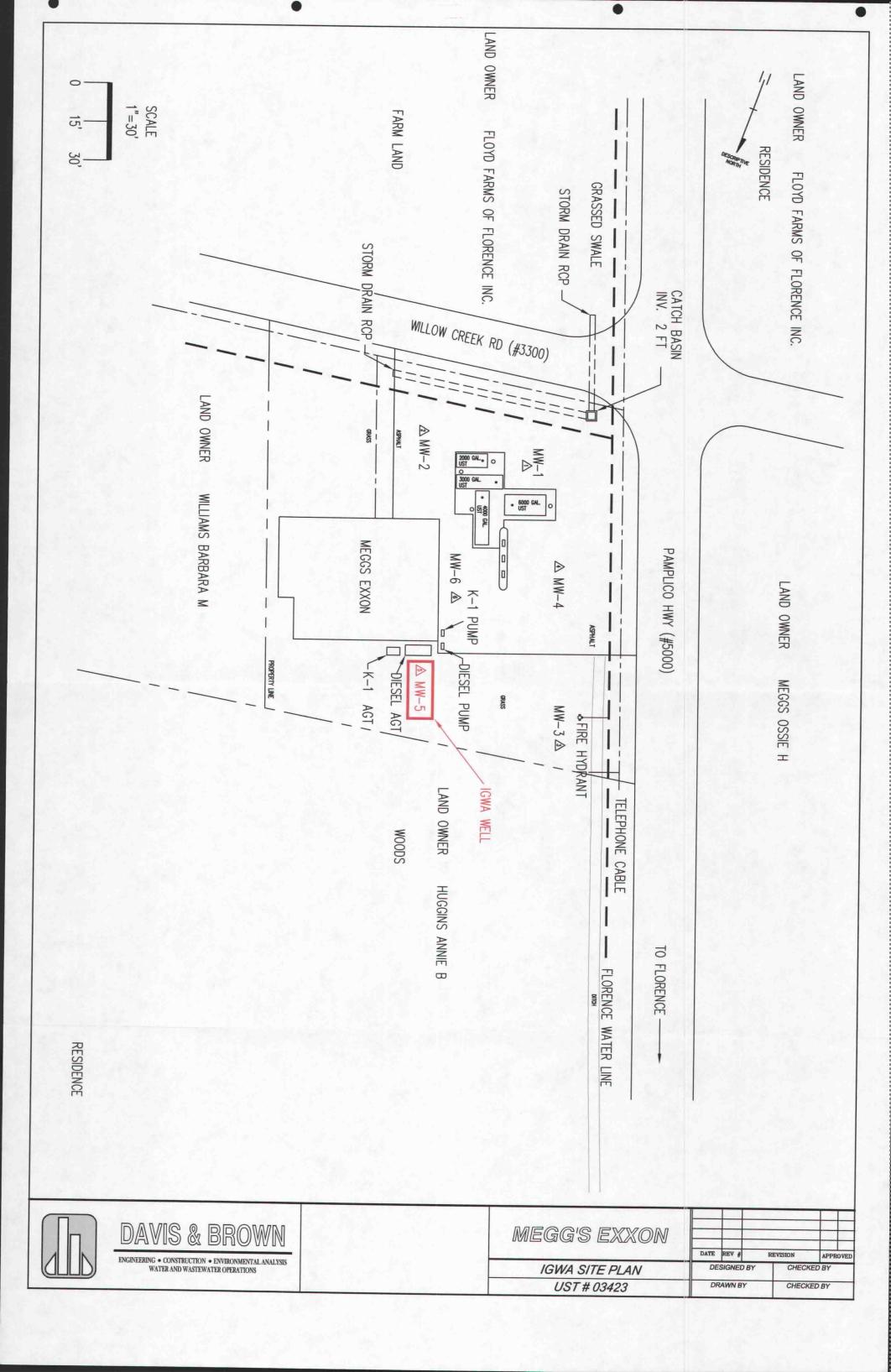
CONTOUR INTERVAL 2 METERS

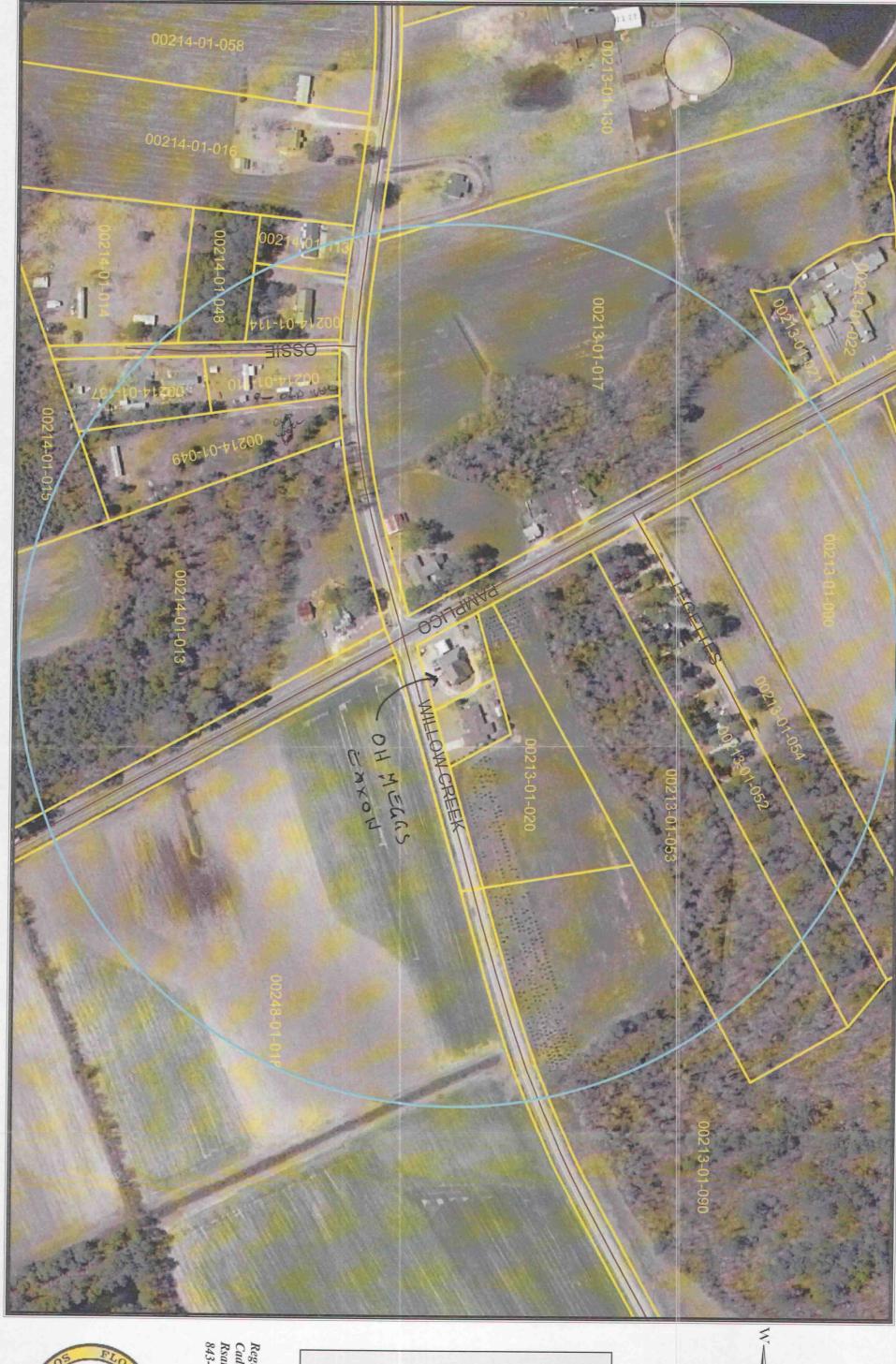
FIGURE

EVERGREEN QUADRANGLE SOUTH CAROLINA-FLORENCE CO. 7.5 MINUTE SERIES (TOPOGRAPHIC)



ENGINEERING + CONSTRUCTION - ENVIRONMENTAL ANALYSIS
WATER AND WASTEWATER OPERATIONS

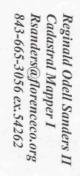




m a p S for reference use only Scale = 1 inch equals 200 feet

This







#### APPENDIX D

## Crandall C 138003

	NON-HAZARDOUS WASTE MANIFEST	Generator's US EPA ID No.	Monifest _ Document No.	2. Page 1 of		
	3 Generator's Name and Mailing Address		· 27163	1		
A	4925 Pamplico Hwy Florence, SC 29595	Mesos Exxon				
	4. Generator's Phone ( 1843) 555-57	96				
	5. Transporter 1 Company Name Crandall Corporation	6. US EPA ID No 3CD98186449		A. Transporter's Ph	one (803) 791-4	800
	7. Transporter 2 Company Name	8. US EPA ID No	umber	B. Transporter's Ph	one	7
	Designated Facility Name and Site Address	10. US EPA ID No	· · ·	C. Focility's Phone		
	Crandall Corporation 100 Rich-Lex Drive	io. OSEAIDA	imber	C. Fochity's Friorie		
	Lexington, SC 29072	3CD98188449	9		(803) 791-4	800
	11. Waste Shipping Name and Description			12. Con	tainers 13. Total Type Quantit	14. Unit Wt./Vol.
	o. Non - Hazardous Waste, Pe	troleum Contaminated Soi	1			
				1.0.	DM	. P
GEZER	b. Non - Hasardous Waste, Wa	ste Water			DM	P
E				0.03	. 0.1G	0.
RATOR	c.					
	d.			<u> </u>		
	D. Additional Descriptions for Materials Listed Above			E. Handling Codes	for Wastes Listed Abov	e
		FIELD SERVICE				
1	15. Special Handling Instructions and Additional Inform	action				
	Service Call ID: GLB0127	163				
	Emergency Response: Infot:	rac - 800-535-5053				
	Caller must ID Crandall as	1) (486)	sile: Do	2 VO 15-02	2-50	
1	16. GENERATOR'S CERTIFICATION: I certify the many Printed/Typed Name	terials described above on this manifest are not su Signature	bject to federal regu	ulations for reporting	TO SECURITION OF THE PERSON OF	
V	17. Transporter Acknowledgement of Receipt of Mate	VIZ F	3		Ø.8	Day Year 1.3 O.F
R	Printed/Typed Name	Signature	1		Month	Day Year
NSP	Brian Leagield	Bre	ande	agrea	0.8	13/08
TRANSPORTER	<ol> <li>Transporter 2 Acknowledgember of Receipt of Mate</li> <li>Printed/Typed Name</li> </ol>	rials Signature		0/	Month	Day Year
_	9. Discrepancy Indication Space					.   .
=						
40	00 5-110 0 0					
	20. Facility Owner or Operator: Certification of receipt of	waste materials covered by this manifest except	as noted in item 19	,		
1	Printed/Typed Name	Signature	Mull		08	1308
		ORIGINAL TO OFFICE	Variation.			



OCT 2 0 2008

UNDERGROUND STORAGE
TANK PROGRAM

Tier II Assessment Plan

O.H. Meggs Exxon

UST Permit #: 03423

4925 Pamplico Hwy., Florence, SC

(843) 669-6818

#### PREPARED FOR:

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

**OCTOBER 17, 2008** 

William Van Ward, P.E.

UST DOCKET

P.O. Box 15038 • Quinby, SC 29506 • Telephone: (843) 665-6746 • Fax: (843) 656-2208



#### Tier II Assessment Plan Underground Storage Tank Program

UST Permit #: 03423	County: Florence	Facility Name: O.H. Meeg	s
Facility Address: 4925 Pamplico Hwy.			
Responsible Party: B.W. Stokes Oil Co.	Addre	ss: P.O.Box 274	
City: Florence	State: South Carolina	Zipcode: 29501	
No. USTs: 4	Removed?	Replaced?	
Current use of facility/property:	(date: мм/DD/YYYY)	(	date: мм/DD/YYYY)
Gas station and convenience store located			
Current property owner name: B.W. Stok	es Oil	Address: P.O. Box 274	
City: Florence	State: South Carolina	Zipcode: 29505	
Specify the field screening methodology of permanent wells is required.  A geoprobe will be used to collect ground site, and OVA readings drop less than 2 p	water samples. A Foxboro OVA sha pm, samples will be collected for gro	all be used for field screening. A bund water analysis to verify B	As we step out from the
Permanent Monitoring Wells (estimulation of shallow wells: 6			
# of deep wells: 1			
Comments, if warranted:			
Comments, ii wairantee.			
Analyses			
List the analytical parameters (e.g., BTI		r.	
10 Soil samples [BTEX, Naphthalene, and 11 Water Samples [BTEX, Naphthalene, Nature 11 Water field screening Samples [BTEX, Naphthalene, Nature 12	MTBE, EDB, Lead, 1,2-DCA, Oxyge	nates and PAH's]	
Implementation Schedule (Use MM	//DD/YYYY format - Example (	01/23/2004)	
Start up date: 11/03/2208	Completion date:		
(MM/DD/YYYY) Report submittal date: 01/15/2009	(MM/DD/YYY	•	

UST Permit#: 03423	Facility Name: O.H. Meegs
Site Maps	
1. Attach a copy of the relevant portion	n of the USGS topographic map showing the site location.
Prepare a site base map. This map include the following:	o must be accurately scaled, but does not need to be surveyed. The map must
North arrow Location of property lines Location of buildings Paved areas on or adjacent to site Previous soil sampling locations Previous monitoring well locations	Legend with facility name and address, UST Permit number, date, and a bar scale Streets or highways (indicate names and numbers) Identification of located buildings Location of all present and former ASTs and USTs Underground and above ground utilities on or adjacent to site Location of any other potential receptor
Aquifer Characterization	
Pump test: Slug tests: ✓	(check one and provide explanation for choice)
slud test - most economical	
Small Volume Disposal Type and Mo	ethod
Containerize on site in 55 gallon drums. If	disposal is required, it will be sent to Crandall in Lexington, SC.
Purge water:	
Containerize on site in 55 gallon drums. If Florence POTW per our approval letter.	disposal is required, it will either be sent to Crandall in Lexington, SC. or disposed of at
Thoromout of the portion approval toward	
Additional comments:	
·	



South Carolina Department of Health and Environmental Control

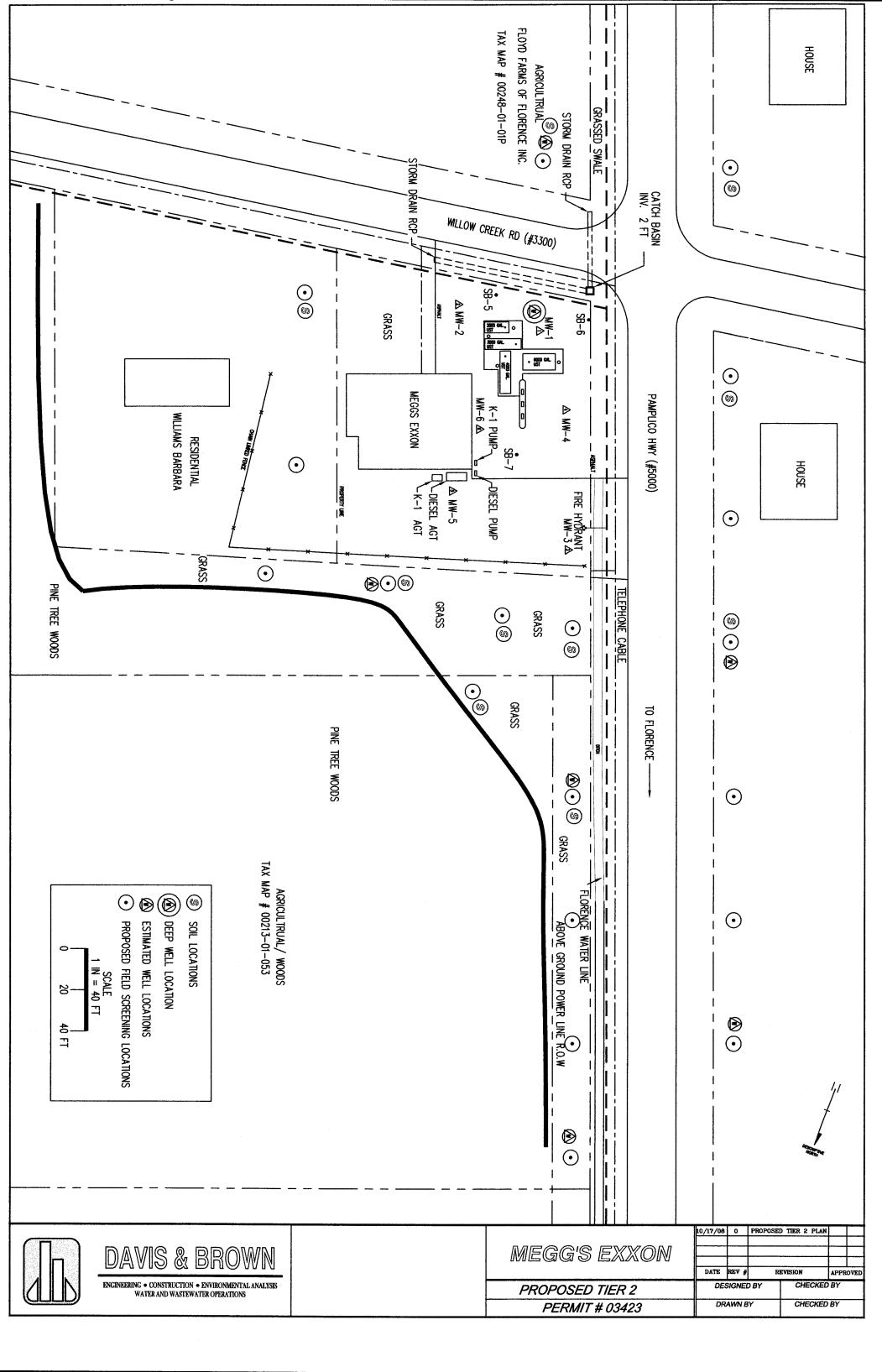
#### ASSESSMENT COMPONENT COST AGREEMENT SOUTH CAROLINA

Department of Health and Environmental Control
Underground Storage Tank Program
State Underground Petroleum Environmental Response Bank Account

Facility Name O.H. Meggs					
UST Permit # 3423	Cost Ag	reement #			
ITEM	QUANTITY	UNIT	UNIT PRICE		TOTAL
1. Plan*					
A. Plan Preparation	1	х	\$100.00		\$100.00
B. Tax Map		х	\$50.00		\$0.00
2. Receptor Survey *		Х	\$500.00		\$0.00
3. Comprehensive Survey		Х	\$1,000.00		\$0.00
4. Mob/Demob					
A. Equipment	3	х	\$575.00		\$1,725.00
B. Personnel	5	each x	\$290.00		\$1,450.00
C. Adverse Train Vehicle		Х	\$575.00	L	\$0.00
5. Soil Borings (hand auger)*		feet x	\$14.00		\$0.00
6. Soil Borings (drilled) & Field Screening					
A. Standard	300	feet x	\$17.00		\$5,100.00
B. Alternative, on-site		feet x	\$12.50		\$0.00
C. Fractured Rock		feet x	\$27.50		\$0.00
7. Soil Leachability Model		each x	\$200.00	_	\$0.00
8. Abandonment*	300	feet x	\$5.00	L	\$1,500.00
9. Well Installation*					
A. Water Table (hand auger)		feet x	\$20.00		\$0.00
B. Water Table (drilled)	90	feet x	\$38.00		\$3,420.00
C. Telescoping	40	feet x	\$58.00		\$2,320.00
D. Rock Drilling		feet x	\$58.00		\$0.00
E. 2" Rock Coring		feet x	\$44.10		\$0.00
F. 4" Rock Coring		feet x	\$50.40		\$0.00
G. multi sampling port/screen		feet x	\$47.20	L	\$0.00
10. Groundwater Sample Collection					****
A.Groundwater	7	samples x	\$55.00		\$385.00
B. Air Vapor		samples x	\$90.00		\$0.00
C. Water Supply		samples x	\$25.00		\$0.00
D. Groundwater No Purge	4	samples x	\$35.00		\$140.00
E. Gauge Well only		per well x	\$20.00		\$0.00
F. Sample Below Product		samples x	\$50.00		\$0.00
G. Passive Diffusion Bag	<u> </u>	each x	\$40.00	$\vdash$	\$0.00
11. Analyses-Groundwater (see Analytical Me					ቀኅ ኅብብ ብብ
A. BTEX+Naphth.+MTBE	22	samples x	\$100.00		\$2,200.00 \$0.00
B. Rush BTEX analysis	1	samples x	\$120.00		\$1,320.00
D. PAH's	11	samples x	\$120.00		\$1,320.00 \$0.00
E. Lead		samples x	\$20.00		\$6.00 \$605.00
F. EDB	11	samples x	\$55.00 \$140.00		\$0.00
G. 8 RCRA Metals		samples x	\$140.00		\$0.00
H.TPH (9070)		samples x	\$55.00		\$0.00 \$0.00
J. BOD	44	samples x	\$40.00		\$220.00
K. Nitrate	11	samples x	\$20.00		\$220.00
L. Sulfate	11	samples x	\$20.00		\$220.00 \$220.00
M. Ferrous Iron	11	samples x	\$20.00		\$220.00 \$1,210.00
N. Methane	11	samples x			\$1,210.00
O. Organic Lead	1 44	samples x	\$100.00 \$85.00		\$935.00
P. 8 Oxygenates	11	samples x	1		\$506.00
AA. Filtered Lead	11	samples x	\$46.00 \$10.75		\$118.25
BB. 1,2-DCA	11	samples x	\$10.75	J. L.	Ψ110.23

11. Analyses-Soil		<u> </u>		Г	
Q. BTEX + Naphth.	10	samples x	\$100.00		\$1,000.00
R. PAH's	10	samples x	\$120.00		\$1,200.00
S. 8 RCRA Metals	,,,	samples x	\$150.00		\$0.00
T. TPH (9071)		samples x	\$60.00		\$0.00
U. TPH (3550B/8015B)		samples x	\$65.00		\$0.00
V. TPH (5030B/8015B)		samples x	\$65.00		\$0.00
W. Grain size/hydrometer		samples x	\$75.00		\$0.00
X. Total Organic Carbon		samples x	\$35.00		\$0.00
11. Analyses-Air		l l	<b>V</b>	ŀ	
Y. BTEX + Naphthalene		samples x	\$247.50		\$0.00
Z. Hydrocarbon Fuel Identification		samples x	\$620.00		\$0.00
12. Aquifer Characterization*			¥	T	
A. Pumping Test		hours x	\$120.00		\$0.00
B. Slug Test*	1	tests x	\$150.00		\$150.00
C. Fractured Rock	l '	tests x	\$500.00		\$0.00
13. Free Product Recovery Rate Test*		tests x	\$120.00	ı	\$0.00
14. Fate/Transport Modeling		10010	* 1	ł	
A. Mathematical Model		each x	\$300.00		\$0.00
B. Computer Model		each x	\$500.00		\$0.00
15. Risk Evaluation		Quoii X	<b>\$333.33</b>	ł	***************************************
A. Tier I Risk Evaluation		x	\$301.00		\$0.00
B. Tier II Risk Evaluation		x	\$500.00		\$0.00
16. Subsequent Survey*	1	x	\$260.00		\$260.00
17. Disposal*		<del>  ^</del>	Ψ200.00	ł	<b>V</b>
A. Wastewater					
Nussiewater     Nussiewater     Nussiewater     Nussiewater     Nussiewater	5	drums x	\$90.00		\$450.00
2. Pumping Test/EFR		galions x	\$0.60		\$0.00
B. Free Product		idrums x	\$110.00		\$0.00
C. Soil (Treatment/Disposal)	4	drum/ton x	\$50.00		\$200.00
18. Miscellaneous (attach receipts)		diditi/toff X	400.00		<b>V</b>
16. mioonanoodo (attaon 1665.ptc)		x			\$0.00
		X			\$0.00
		X			\$0.00
20. Tier I Assessment (Use DHEC 3665 form)					•
21. IGWA (Use DHEC 3666 form)					
22. Corrective Action (Use DHEC 3667 form)					
23. EFR		<u>:</u>			
A. 8-hour Event*		each x	\$3,000.00		\$0.00
B. Additional Hour		per hour x	\$204.00		\$0.00
C. Off-gas treatment		per hour x	\$35.00		\$0.00
24. Granulated Activated Carbon (GAC) filter syste	m installation &		<del>\$00.00</del>		,,,,,
A. New GAC System Installation*		each x	\$2,500.00		\$0.00
B. Refurbished GAC Sys. Install*		each x	\$850.00		\$0.00
C. Filter replacement/removal*		each x	\$450.00		\$0.00
,		each x	\$450.00		\$0.00
D. System removal, cleaning, & refurbishment*		each x	\$450.00		\$0.00
E. GAC System housing F. In-line particulate filter		each x	\$140.00		\$0.00
The state of the s		feet x	\$4.00		\$0.00
G. Additional piping & fittings 25. Well Repair		166( ^	Ψ4.00		Ψ0.00
1		each x	\$25.00		\$0.00
A. Additional Copies of Report		each x	\$100.00		\$0.00
B. Repair 2x2 MW pad		each x	\$150.00		\$0.00
C. Repair 4x4 MW pad		each x	\$225.00		\$0.00
D. Repair well vault		each x	\$30.00		\$0.00
E. Replace well cover & gasket		each x	\$10.00		\$0.00
F. Replace well cover bolts		each x	\$15.00		\$0.00
G. Replace locking well cap & lock  19. Report/Project Management	1	Cacii X	ψ10.00		ψυ.υς
and Coordination	15%		\$26,954.25		\$4,043.14
	1070	X	ψ20,004,20		\$30,997.39
TOTAL					\$00,007.00

<sup>\*</sup>The appropriate mobilization cost can be added to complete these tasks, as necessary





#### C. Earl Hunter, Commissioner

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

B W STOKES OIL CO INC PO BOX 274 FLORENCE SC 29503-0274

NOV 0 4 2008

Re:

Tier II Assessment Directive

O. H. Meggs Exxon, 4925 Pamplico Hwy, Florence, SC UST Permit # 03423, CA# 34233; MWA# UMW-22186

Release #1 Reported February 26, 2002

Tier II Assessment Plan and Assessment Cost Agreement received October 20, 2008

Florence County

#### To Whom It May Concern:

The Underground Storage Tank (UST) Program of the South Carolina Department of Health and Environmental Control (SCDHEC) recognizes your commitment to continue work at this site utilizing your own contractor. The UST Program has reviewed the referenced Tier II Assessment Plan and cost agreement submitted by Davis & Brown.

Assessment activities at the site should begin immediately upon receipt of this letter. According to Program records, the release at the facility was reported to SCDHEC on February 26, 2002. In accordance with Section 44-2-40(D) of the SUPERB Act, B W Stokes Oil, Inc. is responsible for the first \$25,000 of site rehabilitation costs. To insure that expenditures made toward rehabilitation apply to the \$25,000 deductible, the Program has assigned Cost agreement number 34233 for the amount shown on the enclosed cost agreement form. Please be aware that the February 1, 2006 SUPERB Allowable Costs sheet states that "If vertical and horizontal extent of chemicals of concern are not fully defined by this tier report, additional mobilizations may not be approved by the Department." Please contact the department prior to well installation for concurrence regarding the final well locations. No-purge sampling is required for previously installed monitoring wells (except deep wells) where the screens bracket the water table. Guidance documents and Appendices may be obtained from our website at <a href="http://www.scdhec.gov/environment/lwm/html/ust\_guidance\_docs.htm">http://www.scdhec.gov/environment/lwm/html/ust\_guidance\_docs.htm</a>. Please note the following adjustments to the submitted cost agreement:

- Equipment mobilizations were reduced from three to two.

  Monitoring well installation has been approved for up to ten shallow wells and for two deep telescoping wells. Please consider installation of the deep two-inch well(s). It may not be necessary to pit case the well(s) unless a confining unit is reached; 150 feet was approved for shallow wells and 300 feet for temporary wells (if necessary) and must delineate the extent of the plume, to include offsite extent. See the enclosed site map for proposed locations. Please note that the screens of the permanent monitoring wells must bracket the water table, and all monitoring well locations must be technically justified or installation costs will not be approved. Field screening points converted to wells will be compensated at the permanent well installation rate.
- Number of groundwater samples is approved for the two new deep wells, ten new shallow wells, six existing wells, eleven field screening points and the ditch onsite; PAH analyses were omitted; nitrate, sulfate and ferrous iron analyses are necessary for the new wells only; methane analyses were omitted.
- Soil analyses for BTEX,+Naphth. were approved for six borings to complete the soil delineation onsite.
- Costs have been approved to conduct two slug tests (in one shallow and one deep well).

Beginning in 2009, the UST Program will begin requiring that laboratories be certified through the SCDHEC Office of Environmental Laboratory Certification for the oxygenate compounds. The UST Program will require that laboratories submit the application for certification no later than December 31, 2008. Beginning April 1, 2009, the UST Program will no longer reimburse costs for oxygenate analysis for any laboratory that is not certified. Detailed information regarding the oxygenate certification can be found on the UST Guidance Documents webpage. (<a href="http://www.scdhec.net/environment/lwm/forms/Oxygenate Certification.pdf">http://www.scdhec.net/environment/lwm/forms/Oxygenate Certification.pdf</a>).

A Report of Findings and the invoice are due within 90 days from the date of this letter. Costs that exceed the \$25,000 deductible can be compensated to Davis & Brown. An interim well drilling invoice for installation of the new wells may not be submitted, as the \$25,000 deductible has not been met. If the invoice and completed report are not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. Please be advised if the time frame exceeds 45 days between the date when the groundwater samples are collected and the date the report of findings is received, the analytical data will not be considered current and your contractor will not be reimbursed for a personnel mobilization to collect the groundwater samples, sample collection costs, laboratory analyses, or associated disposal costs.

Please note that you and/or your contractor are responsible for obtaining all off-site access agreements and/or encroachment permits necessary for this scope of work.

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

The Department grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. There can be no spillage or leakage in transport. All investigation derived waste (IDW) must be properly contained and labeled prior to disposal. IDW should not be stored on-site longer than ninety(90)days. A copy of the disposal manifest and/or acceptance letter from the receiving facility that clearly designates the quantity received must be included as an appendix to the report. If the COC concentrations based on laboratory analysis are below Risk Based Screening Levels (RBSLs), please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence regarding this site and scope of work, please reference UST Permit # 03423. If you have any questions concerning this correspondence, please contact me at (803) 896-6664.

Sincerely, llava Itellauro

Maia Milenkova, Hydrogeologist

Assessment Section

Assessment and Corrective Action Division

Underground Storage Tank program

Bureau of Land and Waste Management

enc.: Approved Cost Agreement

Monitoring Well Approval (MWA)

Site map

cc: Technical File (w/enc)

Mr. Van Ward, Davis & Brown, PO Box 15038, Quinby, SC 29506 (w/enc.)

SCDHEC/UST/10/24/08/MPM



#### C. Earl Hunter, Commissioner

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

#### **Monitoring Well Approval**

Approval is hereby granted to:

Davis & Brown, Inc.

(On behalf of):

B W Stokes Oil Co., Inc.

Facility:

O H Meggs Exxon, 4925 Pamplico Hwy., Florence, SC

**UST Permit Number:** 

03423

County:

Florence

This approval is for the installation of thirty-two groundwater monitoring wells (twenty temporary, ten shallow and two deep). The monitoring wells are to be installed in the approved location. 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 Maia Milenkova (tel: 803 896-6664 or e-mail: <a href="milenkmp@dhec.sc.gov">milenkmp@dhec.sc.gov</a>) 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:** 

October 23, 2008

Approval #: UMW-22186

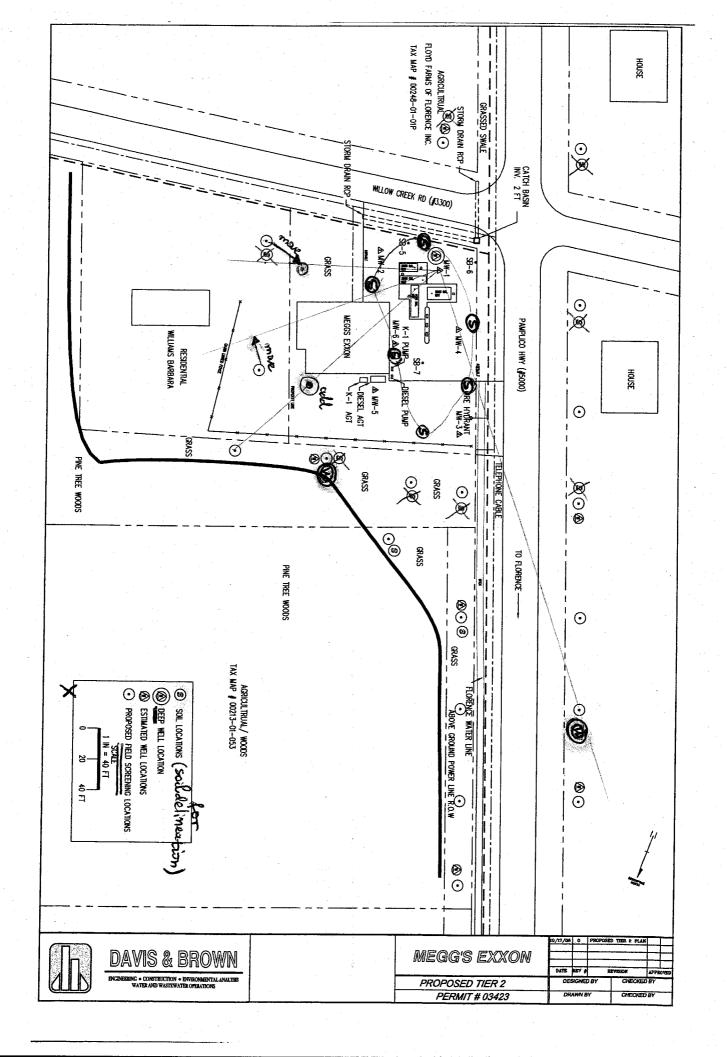
Maia Milenkova, Hydrogeologist

**Assessment Section** 

Division of Assessment and Corrective Action

Bureau of Land and Waste Management

llaia lielemaa



#### Approved Cost Agreement 34233

Facility: 03423 O H MEGGS

MILENKMP

PO Number:

Task / Description Categories	<u>Item</u> <u>Description</u>	Qty / Pct	<b>Unit Price</b>	<u>Amoun</u>
01 PLAN				
	A PLAN PREPARATION	1.0000	100.00	100.00
04 MOB/DEMOB				
	A EQUIPMENT	2.0000	575.00	1 150 00
<u></u>	B PERSONNEL	5.0000	290.00	1,150.00 1,450.00
06 SOIL BORINGS (DRILLED)		0.000	200.00	1,700.00
	A SOIL BORINGS & FLD SCREENING	300.0000	17.00	E 400 0
08 ABANDONMENT	, COLE BOTTINGO & FEB GOTTELPHING	300.0000	17.00	5,100.00
	ABANDONMENT	300.0000	5.00	1,500.00
09 WELL INSTALLATION			1 1 14	
	B WATER TABLE (DRILLED)	150.0000	38.00	5,700.00
	C TELESCOPING	80.0000	58.00	4,640.00
10 SAMPLE COLLECTION				
	A GROUNDWATER	10.0000	55.00	550.00
	C WATER SUPPLY	1.0000	25.00	25.00
	D GW NO PURGE	6.0000	35.00	210.00
11 ANALYSES		• .		
GW GROUNDWATER	A BTEX+NAPTH+MTBE	20.000		
	BB 1,2-DCA	30.0000	100.00	3,000.00
	E LEAD	12.0000	10.75	129.00
	F EDB	6.0000	20.00	120.00
	K NITRATE	12.0000	55.00	660.00
	L SULFATE	12.0000	20.00	240.00
	M FERROUS IRON	12.0000	20.00	240.00
	P 8 OXYGENATES	12.0000	20.00	240.00
SOIL SOIL		12.0000	85.00	1,020.00
	Q BTEX+NAPTH	6.0000	100.00	600.00
2 AQUIFER CHARACTERIZATION				
	B SLUG TEST	2.0000	150.00	300.00
6 SUBSEQUENT SURVEY				
	SUBSEQUENT SURVEY	1.0000	260.00	260.00
7 DISPOSAL				200.00
	A1 WASTEWATER - PURGING/SAMPLING	5.0000	00.00	450.00
	C SOIL (TREATMENT/DISPOSAL)	4.0000	90.00 50.00	450.00 200.00
9 RPT/PROJECT MNGT & COORDINATIO	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	7.0000	30.00	200.00
	POT DEDOENT			
	PCT PERCENT	0.1500	27,884.00	4,182.60

**Total Amount** 

32,066.60



www.NACCDB.com



#### Monitoring Well Installation and Groundwater Sampling

O.H. Meggs Exxon

UST Permit #: 03423

4925 Pamplico Hwyl, Florence, SC

(843) 669-6818

#### PREPARED FOR:

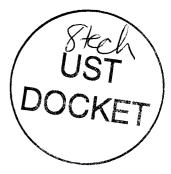
#### SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

MAY 12, 2009



William Van Ward, P.E.

William Van Ward, P.E.





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MAY 12, 2009



William Van Ward, P.E. WANDERSON, VAN WARD

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Table 2 Groundwater Elevation Data

Table 3 Historical data for Ground Water Samples

#### **APPENDICES**

Appendix A Boring Logs for temporary screening wells

Appendix B Analytical Reports for Screening, Soil, and Groundwater Samples

Appendix C Well Construction Information

Appendix D Field Measurements for Groundwater Sampling

Appendix E Disposal Manifests/Letter of Approval

Appendix F Slug Test

#### **FIGURES**

Figure 1 Analytical Results for Screening Samples

Figure 2 Soil Sample Map

Figure 3 Groundwater Elevation Contour Map

Figure 4 Chemicals of Concern Map

#### 1 Introduction and Site History

O.H. Meggs Exxon (ID# 03423) is located at 4925 Pamplico Hwy. in Florence, SC. The release for this site was reported in February 2002. Davis & Brown was contracted to provide assessment services to delineate impacted soil and groundwater at the site. This work was performed per SCDHEC directive letter dated November 4, 2008, under cost agreement number 34233.

#### 2 Field Screening Points

On January 12-13 and February 19 and 27, 2009, Davis & Brown contracted ARM Environmental to install forty (40), temporary groundwater monitoring wells (TMW-1 through TMW-40). The temporary well points were installed using a Geoprobe® and hand auger. Groundwater samples were collected from each location and screened in the field using a Foxboro OVA. Groundwater samples were collected in 40ml vials and sent to a contract lab for analysis for BTEX, Naphthalene, and MTBE using EPA Method 8260B. Field and analytical data generated during this investigation was used to select locations for monitoring well installations.

Boring logs for the temporary wells are contained in Appendix A. Temporary monitoring well locations and analytical data are illustrated on Figure 1.

Analytical results and chain of custody documentation are contained in Appendix B.

#### 3 Soil Sampling

On March 29, 2009, six (6) soil samples were collected using a hand auger. These soil samples were labeled SB-8 through SB-13. Soil samples were collected at 3 to 5 foot intervals and screened in the field using a Foxboro OVA. Soil samples were collected from each boring location at the depth with the highest OVA reading above the water table. Samples were placed in laboratory supplied jars and sent to a contract lab for analysis for BTEX and Naphthalene. Analytical data for soil samples are illustrated on Figure 2 and are contained in Table 1. Analytical reports and chain of custody documentation are contained in Appendix B.

#### 4 Monitoring Well Installation

Field and analytical data generated during field screenings was used to select locations for additional permanent monitoring wells. In addition, we had to consider the recently acquired right-of-way for the Pamplico highway. Per field meeting with the SC Department of Transportation representative, the road is due

to be widened in 2009. The new highway right-of-way is shown on our site map. Therefore, no monitoring wells were installed in this area.

During the period of March 25 to April 13, 2009, ARM Environmental installed a total of sixteen (16) groundwater monitoring wells. The wells were 2-inch diameter, schedule 40, flush threaded PVC well casing with 0.01-inch opening, slotted schedule 40 PVC well screen attached. The Type II monitor wells were constructed with the top of the well screen above the water table to allow for detection of potential free-phase liquid hydrocarbon. A uniformly graded silica filter pack was installed in the annular space from total depth to approximately 2 feet above the top of the screen. The filter pack was followed by 0.5 feet of bentonite pellets, which were hydrated. The remainder of the boring was grouted to land surface. The wells were completed with water tight, locking PVC cap, protected by a flush finished concrete pad and traffic-rated manhole with a bolt down cover.

On April 6-7, 2009, ARM Environmental installed two telescoping monitoring wells labeled MW-1-D and MW-2-D. These wells were set at 40 feet with a 5 foot screen.

Monitoring well development, boring logs and construction details are presented in Appendix C. In addition, ground water elevation data has been tabulated and included in Table 2.

The development water was containerized and disposed of at the Florence POTW. See disposal approval letter for Florence POTW located in Appendix E. Disposal manifest for soil cuttings (2 drums) and contaminated well water (3 drums) will follow under separate cover. These drums are scheduled for pick up the week of May 18, 2009 by Crandall Corporation USA.

#### 5 Ground Water Sampling and Analysis

Jody Ricks and Ryan Davis with Davis & Brown obtained ground water samples from monitoring wells MW-1 through MW-22, MW-1-D and MW-2-D on April 20, 2009. The weather was cloudy and 80° F. A new, disposable, polyethylene bailer was used for the collection of each ground water sample. Groundwater samples were collected from MW-3 through MW-6, and a surface water sample using "no-purge" methodology. Groundwater samples were collected from MW-1, MW-2, MW-7 through MW-22, MW-1-D, and MW-2-D After three well casing volumes of water had been purged from the well. Field measurements obtained during the sampling process for the monitoring wells are presented in Appendix D. New, disposable, Latex gloves were used to maintain sample integrity during the sampling process. Groundwater samples were placed in laboratory supplied containers, placed on ice, and shipped for analysis for BTEX, Naphthalene, MTBE, 1,2 DCA and 8 oxygenates using method 8260B. In addition, samples from monitoring wells MW-7 through MW-22, MW-1D and MW-2-D were analyzed for EDB, ferrous iron, Nitrate and Sulfate using SCDHEC approved analytical methods. Proper preservation methods and chainof-custody procedures were followed throughout the sampling process.

The depth to ground water measurements were used to construct the potentiometric map included as Figure 3. Groundwater measurements and water table elevations are summarized in Table 2.

A slug test was conducted on monitoring well MW-2-D and MW-15. Analysis of data collected during the slug test indicates approximate hydraulic conductivities of 0.35 feet per day for monitoring well MW-2-D and 0.032 feet per day for monitoring well MW-15. The slug test can be found in Appendix F. As indicated in Figure 3, the ground water flow is from south to north at this site.

#### 6 Ground Water Analytical Results

The laboratory analytical reports from the April 20, 2009 sampling event are presented in Appendix B. The data is also presented in historical tabular form in Table 3.

Benzene and Naphthalene was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-3 through MW-6, MW-13, and MW-14.

*Toluene* was detected at concentrations above its RBSL in samples collected from wells MW-1, MW-3 and MW-4.

MTBE was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1, MW-3, MW-4, MW-13, and MW-14 through MW-16. Also, the surface water sample collected from the ditch on the west side of the side had an MTBE concentration of 155 ppb.

*Xylene* was detected at concentrations greater than its RBSL in the sample collected from monitoring well MW-3.

Ethylbenzene was detected at concentrations greater than its RBSL in samples collected from monitoring wells MW-1 and MW-3.

EDB was detected at concentrations greater than its RBSL in the sample collected from monitoring well MW-1.

A chemical of concern map is included as Figure 4.

#### 7 Conclusions

- Groundwater flow is in the north direction at this site.
- Soil contamination was not fully delineated using the approved six sample points. Additional soil sampling on the north and east sides of the property are required to finish delineation.
- Benzene, Naphthalene and MTBE in groundwater has migrated off site to the north side.
- The surface water sample collected from the ditch on the west side of the side had an MTBE concentration of 155 ppb.
- The vertical and horizontal extent of groundwater contamination has been defined at this site.

**TABLES** 

# OH MEGGS EXXON HISTORICAL SOIL DATA

		HISTORICA	HISTORICAL SOIL DATA	A		TABLE 1	
	RBSL	SB2=MW2	SB3=MW3   SB4=MW4	SB4=MW4	SB-5	SB-6	SB-7
DATE	Mg/Kg	11\25\02	11\25\02	11\25\02	11\25\02	11\25\02   11\25\02	11\25\02
PARAMETER		Mdd					
BENZENE	0.007	<0.005	0.506	9.45	<0.050	0.592	0.985
втех		<0.025	166.41	386	0.014	10.28	133.5
ETHYLBENZENE	1.5	<0.005	14.7	67.5	600.0	0.782	13
NAPTHALENE	0.2	<0.005	19.2	16.2	0.418	0.83	8.61
РАН		BDL	3.63	26.3	BDL	BDL	39.2
TOLUENE	1.7	<0.005	36	122	<0.050	4.11	29.8
XYLENES	44	<0.010	115.2	217	900°0>	4.8	89.7

	RBSL	8-85	SB-9	SB-10	SB-11	SB-12	SB-13
DATE	Mg/Kg	3\27\09	3\27\09	3\27\09	3\27\09	3\27\09	3\27\09
PARAMETER		Wdd					
BENZENE	0.007	<0.005	43.4	20.9	51.1	40.00	<0.287
втех		0.027	1586	716	1425	<0.021	0.605
ETHYLBENZENE	1.5	<0.005	156	89	129	¢0.004	0.605
NAPTHALENE	0.2	¢0.005	82	43	11	<b>*0.00</b>	2.44
РАН				-			
TOLUENE	1.7	<0.005	602	256	563	0.004	<0.287
XYLENES	44	<0.011	785	122	089	600'0>	<0.574
	ľ	1200 // 4/ 4/ 0 / 40					

RBSL LIMITS ARE BASED ON SANDY SOIL

## OH MEGGS EXXON POTENTIOMETRIC DATA SITE # 03423

	SCREENED INT.		5.00-15.00'	5.00-15.00'	2.00-12.00'	3.00-13.00	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	2.00-12.00'	35.00-40.00'	35.00-40.00
TABLE 2	WELL DEPTH		15.00	15.00	12.00	13.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	40.00	40.00
	GW ELEV.	80\2	93.46	93.38	93.53	93.33	93.22	93.37																		
-	<b>GW DEPTH</b>	7\08	6.10	6.80	4.21	5.52	6.36	7.00																		:
Z	GW ELEV.	1/03	92.96	96.28	95.72	95.92																				
3423	CV. GW DEPTH	1/03	3.60	3.90	2.02	2.93					2															
SITE # 03423	No.	Spirate.									<b>9.76</b>								97.78		MM					1778
	SECTION OF			83	7.7			77			8.0			607												
	CAS. ELEV.		99.26	100.18	97.74	98.85	99.58	100.37	100.96	98.12	96.61	93.88	92.73	93.84	94.89	96.24	97.36	94.27	93.55	96.44	93.8	100.7	91.73	92.81	98.82	96.63
	WELL #	DATE	1	2	3	4	2	9	7	8	6	10	11	12	13	14	15	16	17	18	19	20	21	22	DW-1	DW-2

OH MEGGS EXX	(ON		нтя	TORICAL I	OATA		ST	TE ID# 03	423				
coc	RBSL	MW1	MW1	MW1	MW1	MW2	MW2	MW2	MW3	l ww3	I wws	1	
DATE	uq/l	7\25\02	1\06\03	7\24\08	4\20\09	1/06/03		<u> </u>		7\24\08		ł	
1.2 DCA		1	19.1	480	⟨2.50	281	<0.090	-(5	157	<45	<1,000	1	
BENZENE	5	3,690	7,810	14,100	7,010	14.6	<0.065	<b>√</b> 5	8,190	1,730	822		
BTEX	N/A	21,170	47.280	84.090	42,420	14.6	0.793	⟨25	31,750	38,220	23,620	ł	
DIPE	1077	,-,-	17,200	04,050	<2,500	14.0	0.793	<b>(25</b>	31,750	36,220	<1,000	ł	
	<0.03	1.2	4.6	0.183	0.487	<0.02	<0.003	40	<0.02	<0.003	<0.01	-	
ETHANOL	-0.00		1.0	0.100	<50.000	-0.02	10.003	<100	10.02	10.003	<20,000	1	
ETBA					<5,000	<b></b>		<10	1	<del> </del>	<2,000		
ETBE					<2,500			<5			<1,000	]	
ETHYLBENZENE	700	804	2,430	2,990	1670 J	∢1	<0.065	<b>√</b> 5	1,920	2,090	1,580		
FERROUS MTBE	40	2770	/07	37.000	40.000								
	40	2,770	68.7	37,800	12,300	9	-65	<u>45</u>	1,670	<2,500	<1,000		
NAPTHALENE NITRATE	25	218	615	<236	1070 J	4	<0.118	<5	715	2,130	685 J		
SULFATE			<500 <2,000	ļ	<del> </del>	4,500 <2,000			<500				
TAA			12,000	<u> </u>	27,400			<20	3,100	<b> </b>	<4.000	ł	
TAME		t		<u> </u>	<2,500			<5		<u> </u>	<1,000	ł	
TBA					<5,000			<10		<b>†</b>	<2,000	1	
TBF					<2,500			<5			<1,000	]	
TOLUENE	1,000	10,500	25,000	46,500	26,500	4	0.793	∢5	13,600	18,200	9,640		
XYLENE	10,000	6,180	12,040	20,500	8,910	<2	<0.183	<10	8,040	16,200	12,400		
Pb	15	6	17	5		14	<1		5	1		]	
PAH		285	213	ļ		BDL			628			1	
METHANE			<10			<10			10	<u> </u>			
COC	MW4	MW4	MW4	MW5	MW5	MW6	MW6	MW7	MW8	MW9	MW10	MW11	MW12
DATE	1\03	7\24\08	4\20\09	7\24\08	4\20\09	7\24\08	4\20\09	4\20\09	4\20\09		4\20\09	4\20\09	4\20\09
1,2 DCA	272	<5,000	<1,000	<25	-65 -5-	<250	<20	<5	-5	<b>5</b>	<u>45</u>	-5	<b>√</b> 5
BENZENE	11,900	13,900	3,930	686	87	2,870	70	<b>√5</b>	-5	- 45	<5	<b>√</b> 5	<b>45</b>
DIPE DIPE	42,920	69,600	19,320	954	94	16,390	1,545	<25 ~	<25	<25	<25	<25	<25
EDB	0.1	0.1	1,100 0.019		26		<20	<b>.</b> 5	<b>&lt;</b> 5	<b>&lt;</b> 5	<b>&lt;</b> 5	<b>&lt;</b> 5	<5
ETHANOL	0.1	0.1	<20.000	<0.01	<0.01 <100	<0.01	<0.01 <400	<0.01 <100	<0.01 <100	<0.01 <100	<0.01 <100	<0.01 <100	<0.01 <100
ETBA		<b>-</b>	<2,000		<10		<40	<100	<100	<10	<100	<100	<10
ETBE			<1,000		<5		<20	<5	<5	<5	<5	<5	<5
ETHYLBENZENE	1,960	< <b>5,000</b>	92.8 J	118	7	2,050	502	∢5	∢5	<5	∢5	√5	√5
FERROUS MTBE	0.400	11 (00	1000					1,040	<del></del>		•		
NAPTHALENE	9,490 695	11,600 <5,000	1,920 478	828	39	690	<20	-5	< <u>5</u>	<5	<5	<b>√</b> 5	< <u>5</u>
NITRATE	<500	49,000	4/8	255	136	650	594	<5 0.000	<5 <500	√5 √500	-(5 -1 esso	-65 -000	<5 4 coo
SULFATE	<2,000		<del></del>			<del></del>		8,000 <5,000	6,900	<500	4,600 <5,000	860 <5,000	4,600 <5,000
TAA			10,200		323		124	<20	<20	<20	<20	<20	<20
TAME			<1,000		10		<20	<5	<5	<5	<5	<5	<5
TBA TBF			<2,000		<10		<40	<10	<10	<10	<10	<10	<10
TOLUENE	18,900	40,400	<1,000 11,300	31	<5 -5	2740	<20	<5	<5 .#	<5 	<5	<5 .E	<5 .=
XYLENE	10,160		4,090	119	40	3,760 7,710	38 936	<b>40</b>	- 40	<5 40	- 40	-5	- 45 - 40
Pb	9	<1	4,030	<1	10	<1	930	<10	<10	<10	<10	<10	<10
PAH	480			71									
METHANE	40												
coc	MW13	MW14	MW15	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW1-D	MW2-D	DITCH
	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09		4\20\09	4\20\09	4\20\09	
1,2 DCA	<50	<100	-65	<10	-5	-65	- 45	<5	√5		<5	₹5	7 (20 (0)
BENZENE	288	281	-5	∢10	-5	-5	,	-5	.5 -5	-(5	-(5	-5	√5
BTEX	288	281	<25	<b>450</b>	√25	<b>&lt;25</b>	<b>~25</b>	<b>~25</b>	<i>-</i> 25	·25	<b>√25</b>	<b>&lt;25</b>	19
DIPE	138	234	15			<b>45</b>	<b>.</b> 5	45	<b>(5</b>	<b></b> 5	-, <u>r</u> -,	<del>(</del> 5	
EDB	<0.01	<0.01	<0.01	<b>√0.01</b>	<10	√0.01	<b>₹0.01</b>	≪0.01	₹0.01	<0.01	≪0.01	₹0.01	
ETUANO!		<2,000	<100	<200	<10	<100	<100	<100	<100	<100	<100	<100	
	<1,000					<10	<10	<10	<10	<10	<10	<10	
ETBA -	<100	<200	<10	<20	<5								
ETBA •	<100 <50	<200 <100	<5	<10	<5	<5	<5	<5 	<5 	<5	<5	<5	
ETBA • ETBE • ETHYLBENZENE	<100 <50 652 J	<200 <100 <5	<5 - 5	<10 <10	ক ক	<b>√</b> 5	<5 - 5	∢5	∢5	<5 - (5	<5 -(5	<5 -5	<b>√</b> 5
ETBA • ETBE • ETHYLBENZENE FERROUS	<100 <50 652 J 2,500	<200 <100 <5 1,080	<5 <5 2,260	<10 <10 620	<b>ড</b> ড	<5 <5 >3,300	<5 <5 1,190	<5 830	<5 2,230	<5 <5 1,790	<5 <5 1,050	<5 <5 680	
ETBA • ETBE • ETHYLBENZENE	<100 <50 652 J 2,500 1,150	<200 <100 <5 1,080 2,420	<5 <5 2,260 74	<10 <10 620 320	<5 ₹5 ₹5	<5 <5 >3,300 <5	<5 √5 1,190 √5	√5 830 √5	<5 2,230 <5	<5 <5 1,790 <5	<5 <5 1,050 <5	<5 -5 -680 -5	155
ETBA ETBE ETBE ETHYLBENZENE FERROUS MTBE	<100 <50 652 J 2,500 1,150 27 J	<200 <100 <5 1,080 2,420 50 J	<5 <5 2,260 74 <5	<10 <10 620 320 <10	<5 <5 <5 <5	<5 <5 >3,300 <5 <5	<5 <5 1,190 <5 <5	رخ 830 رخ رخ	√5 2,230 √5 √5	<5 <5 1,790 <5 <5	<5 <5 1,050 <5 <5	<5 √5 680 √5 √5	
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE	<100 <50 652 J 2,500 1,150 27 J 2,200	<200 <100 <5 1,080 2,420	<5 <5 2,260 74 <5 <500	<10 <10 620 320 <10 4,100	<5 <5 <5 <5 <5 <5,000	<5 <5 >3,300 <5 <5 3,200	<5 <5 1,190 <5 <5 2,900	√5 830 √5 √5 3,400	√5 2,230 √5 √5 5,200	<5 <5 1,790 <5 <5 5,200	<5 <5 1,050 <5 <5 <500	<5 -5 -680 -5 -5 -5,500	155
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE NITRATE	<100 <50 652 J 2,500 1,150 27 J	<200 <100 <5 1,080 2,420 50 J 1,100	<5 <5 2,260 74 <5 <500 6,000	<10 40 620 320 40 4,100 45,000	<5 <5 <5 <5	<5 <5 >3,300 <5 <5 3,200 <5,000	<5 <5 1,190 <5 <5 2,900 <5,000	√5 830 √5 √5 3,400 5,500	<5 2,230 <5 <5 5,200 <5,000	<5 <5 1,790 <5 <5 5,200 <5,000	<5 <5 1,050 <5 <5 <500 25,800	<5 <5 680 <5 <5 5,500 7,600	155
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE NITRATE SULFATE	<100 <50 652 J 2,500 1,150 27 J 2,200 29,000	<200 <100 <5 1,080 2,420 50 J 1,100 5,600	<5 <5 2,260 74 <5 <500 6,000	<10 40 620 320 40 4,100 <5,000 <40	<5 <5 <5 <5 <5 <5,000 <20	<5 <5 >3,300 <5 <5 3,200	<5 <5 1,190 <5 <5 2,900	√5 830 √5 √5 3,400	<pre>&lt;5     2,230     &lt;5     5,200 &lt;5,000 &lt;20</pre>	<5 <5 1,790 <5 <5 5,200 <5,000 <20	<5 -5 1,050 -5 -5 -500 -25,800 -20	<5 <5 680 <5 <5 5,500 7,600 <20	155
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE NITRATE SULFATE TAA TAME	<100 <50 652 J 2,500 1,150 27 J 2,200 29,000 609	<200 <100 <5 1,080 2,420 50 J 1,100 5,600 1,080	<5 -5 2,260 74 -5 <500 6,000 208 5	<10 40 620 320 40 4,100 <5,000 <40	<5 <5 <5 <5 <5,000 <20 <5	<5	<5 <5 1,190 <5 <5 2,900 <5,000 <20	√5 830 √5 √5 3,400 5,500 <20	<5 2,230 <5 <5 5,200 <5,000	<5 <5 1,790 <5 <5 5,200 <5,000	<5 <5 1,050 <5 <5 <500 25,800	<5 <5 680 <5 <5 5,500 7,600	155
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE NITRATE SULFATE TAA TAME TBA	<100 <50 652 J 2,500 1,150 27 J 2,200 29,000 609 63	<200 <100 √5 1,080 2,420 50 J 1,100 5,600 1,080	<5 -5 2,260 74 -5 <500 6,000 208 5	<10 -(10) -(10	<5 -5 -5 -5 -5,000 -20 -5 -10	<5 .5 .3300 .5 .5 .3200 .5,000 .20 .5	<5 -5 1,190 -5 -5 2,900 -5,000 -20 -5	<5 830 <5 <5 3,400 5,500 <20 <5	√5 2,230 √5 √5 5,200 √5,000 <20 <5	<5 -5 1,790 -5 -5 5,200 -5,000 -20 -5	<5 -5 1,050 -5 -5 -500 25,800 -20 -5	<5 -5 -680 -5 -5 -5,500 -7,600 -20 -5	155
ETBA ETBE ETHYLBENZENE FERROUS MTBE NAPTHALENE NITRATE SULFATE TAA TAME TBA	<100 <50 652 J 2,500 1,150 27 J 2,200 29,000 609 63	<200 <100 <5 1,080 2,420 50 J 1,100 5,600 1,080 125 <200	<5 2,260 74 <5 <500 6,000 208 5	<10 <10 620 320 <10 4,100 <5,000 <40 11 <20	<5 <5 <5 <5 <5,000 <20 <5 <10 <5	<5 .5 .3,300 .5 .3,200 .5,000 .20 .5 .10	<5 -5 1,190 -5 -5 2,900 -5,000 -20 -5 -10	.5 .830 .5 .5 3,400 5,500 <20 <5 <10	.5 2,230 .5 .5 5,200 .5,000 .20 .20 .5 .10	<5 -5 1,790 -5 -5 5,200 -5,000 -20 -5 -10	<5 -5 1,050 -5 -5 -500 25,800 -20 -5 -10	<5 <5 <5 <5 <5 5,500 7,600 <20 <5 <10	155

#### APPENDIX A



	BOR	ING LOG	ВО	RING NO: I	BORING - SB - 8	PAGE 0F	
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 3-27-	<del> </del>				
TOTAL DEPTH	(ft)4	GROUND WATER DEPTH (ft):	SC	REEN DEPT	TH (ft):		
		G/W ELEV (MSL): NA			RVAL (MSL):	, , , , , , , , , , , , , , , , , , ,	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS	PID (PPM)	
0-4	BROWNISH	MOIST SAND W/ LITTLE	CLAY	<1	SAMPLED @ 4 F	T	

		NG LOG		BORING	G NO: E	ORING - SB - 9	PAGE	0F
LOCATION: ME FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 3-27-	09	PROJEC	T NAM	E: MEGGS EXXO	N	
TOTAL DEPTH	(ft):4	GROUND WATER DEPTH (ft):		SCREE	V DEPT	H (ft):		
		G/W ELEV (MSL): NA		SCREE	N INTE	RVAL (MSL):		
DEPTH (FT)	Ţ	UNIFIED CLASSIFICATION			OVA	COMMENTS		PID
		DESCRIPTION					(	PPM)
0-4	BROWN MOI	ST SAND WITH LITTLE C	LAY	>	1000	SAMPLED @ 4 F	T	
		and the second s						·
			i L					

		ING	LOG	BC	RING NO: I	BORING - SB - 10	PAGE	0F
LOCATION: M	EGGS EXXON LORENCE SC		DATE COMPLETED: 3-27-09					,
TOTAL DEPTH	(ft):4	GR	OUND WATER DEPTH (ft):	SCREEN DEPTH (ft):				<del></del>
		G/V	V ELEV (MSL): NA	SC	REEN INTE	RVAL (MSL):		
DEPTH (FT)		UNI	FIED CLASSIFICATION  DESCRIPTION		OVA	COMMENTS		PID (PPM)
0-4	BROWNISH	MC	IST SANDY CLAY		>1000	SAMPLED @ 4	FT	
					1			



		UNG	LOG	BOR	ING NO: E	BORING - SB - 11	PAGE	0F
LOCATION: M	EGGS EXXON LORENCE SC	Ditte comi deled. 3 27						
TOTAL DEPTH	(ft):4	GR	OUND WATER DEPTH (ft):	SCR	EEN DEPT	`H (ft):		
	G/W ELEV (MSL): NA				SCREEN INTERVAL (MSL):			
DEPTH		UN	IFIED CLASSIFICATION		OVA	COMMENTS		PID
(FT)			DESCRIPTION					(PPM)
0-4	BROWNISH	I MO	DIST SANDY CLAY		>1000	SAMPLED @ 4	FT	

	BORING	G LOG	BOR	ING NO: I	BORING - SB - 12	PAGE OF
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 3-27-09	PRO	JECT NAN	ME: MEGGS EXXO	1
TOTAL DEPTH	(ft):4 GI	ROUND WATER DEPTH (ft):	SCR	EEN DEPT	TH (ft):	
	G/	W ELEV (MSL): NA	SCREEN INTERVAL (MSL):			
DEPTH (FT)	UN	IIFIED CLASSIFICATION DESCRIPTION	-1	OVA	COMMENTS	PID (PPM)
0-4				<1	SAMPLED @ 4 F	Γ

	BOI	RINC	LOG	BOR	LING NO: I	BORING - SB - 13	PAGE	0F
	MEGGS EXXON LORENCE SC		DATE COMPLETED: 3-27-09	PRO	JECT NAN	ие: MEGGS EXXO	ON	
TOTAL DEPTH	I (ft):4	ft):4 GROUND WATER DEPTH (ft):		SCR	EEN DEPT	ΓH (ft):		
		G/\	W ELEV (MSL): NA	SCR	EEN INTE	RVAL (MSL):		
DEPTH (FT)		UN	IFIED CLASSIFICATION  DESCRIPTION	•	OVA	COMMENTS		PID (PPM)
0-4	BROWNISH	MC	DIST SANDY CLAY		3	SAMPLED @ 4	FT	

OH MEGGS TMW'S SUMMARY

	1414	TAW S SUMMAR		0110.000	0111	במתרניית דייד
TMW	WATER LEVEL	TOTAL DEPTH	LAB DATA	PURGED	OVA	SCREENED INT.
1	7.00	9.00			<1	4.00 - 9.00
2	7.30	9.00			<u>&lt;1</u>	4.00 - 9.00
3	8.00	9.00			<b>&lt;1</b>	4.00 - 9.00
4	7.00	9.00	У		<1	4.00 - 9.00
5	6.35	9.00			<b>&lt;1</b>	4.00 - 9.00
6	4.91	9.00			<1	4.00 - 9.00
7	4.20	9.00			<1	4.00 - 9.00
8	4.10	9.00	У		<1	4.00 - 9.00
9	4.20	9.00			>10	4.00 - 9.00
10	1,15	9.00		У	5.00	4.00 - 9.00
11	1.95	9.00	У	У	1.00	4.00 - 9.00
12	5.00	9.00	У		<b>&lt;1</b>	4.00 - 9.00
13	3.65	9.00	У	У	1.00	4.00 - 9.00
14	2.60	9.00		У	60.00	4.00 - 9.00
15	3.00	9.00		У	>100	4.00 - 9.00
16	2.50	9.00		У	20.00	4.00 - 9.00
17	3.00	9.00		У	>100	4.00 - 9.00
18	2.50	9.00		У	30.00	4.00 - 9.00
19	6.30	9.00	У		3.00	4.00 - 9.00
20	5.50	9.00	У		<b>&lt;</b> 1	4.00 - 9.00
21	1.50	4.00	У		<1	0.00 - 4.00
22	1.30	4.00	У		<1	0.00 - 4.00
23	2.65	9.00	У	У	<1	4.00 - 9.00
24	2.50	5.00	У		150.00	0.00 - 5.00
25	1.30	5.00			7.00	0.00 - 5.00
26	2.70	5.00			4.00	0.00 - 5.00
27	2.74	5.00			70.00	0.00 - 5.00
28	0.80	5.00			110.00	0.00 - 5.00
29	0.95	5.00			10.00	0.00 - 5.00
30	0.60	5.00	У		<1.0	0.00 - 5.00
31	1.00	5.00			1.00	0.00 - 5.00
32	0.95	5.00	У		3.00	0.00 - 5.00
33	0.77	5.00			13.00	0.00 - 5.00
34	1.00	5.00	У		1.00	0.00 - 5.00
35	1.60	5.00			<1	0.00 - 5.00
36	1.10	5.00	У		<1	0.00 - 5.00
37	1.22	5.00			1.00	0.00 - 5.00
38	1.26	5.00	У		7.00	0.00 - 5.00
39	2.10	5.00			6.00	0.00 - 5.00
40	2.00	5.00	У	***	<1	0.00 - 5.00
L		NE SCHEEN WED		5005 6 4445		<del>†</del>

ALL TMW'S ABOVE SCREEN WERE PURGED BEFORE SAMPLING
ALL 5 FT. TMW'S WERE HAND AUGERED

FALSE OVA READINGS WERE DUE TO ORGANIC MATERIAL



	BORING	G LOG		BOR	ING NO: I	BORING - TMW-1 P	AGE 0F		
LOCATION: MI FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-12-0	09						
TOTAL DEPTH	(ft):9 GI	ROUND WATER DEPTH (ft): 7		SCREEN DEPTH (ft):4					
	G/W ELEV (MSL): NA				SCREEN INTERVAL (MSL): 5				
DEPTH	UN			OVA	COMMENTS	PID			
(FT)		DESCRIPTION			·		(PPM)		
0-2	BROWN MOIS	Γ SAND WITH LITTLE CI	LAY		<1	FIELD			
2-9	GRAYISH ORA	NGE MOIST CLAY			<1				

		ING LOG	BOF	RING NO: I	BORING - TMW-2	PAGE 0F		
LOCATION: MI FL	EGGS EXXON DATE COMPLETED: 1-12-09 LORENCE SC		PRC	DJECT NAM	ME: MEGGS EXXO	N		
TOTAL DEPTH	AL DEPTH (ft):9 GROUND WATER DEPTH (ft): 7.3							
		G/W ELEV (MSL): NA	SCREEN INTERVAL (MSL): 5					
DEPTH (FT)		UNIFIED CLASSIFICATION  DESCRIPTION	•	OVA	COMMENTS	PID (PPM)		
0-2	BROWN MO	IST SAND WITH LITTLE CLAY	Y	<1	GRASS			
2-9	GRAYISH OF	RANGE MOIST CLAY		<1				
				-				
				1				

	BOI	RING LOG	BOI	RING NO: 1	BORING - TMW-3 PAG	GE OF
	MEGGS EXXON FLORENCE SC	DATE COMPLETED: 1-12-09	PROJECT NAME: MEGGS EXXON			
TOTAL DEPTI	H (ft):9	(ft):9 GROUND WATER DEPTH (ft): 8		REEN DEP	ΓH (ft):4	
		G/W ELEV (MSL): NA	SCREEN INTERVAL (MSL): 5			
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION	1	OVA	COMMENTS	PID (PPM)
0-2	BROWN MO	DIST SAND WITH LITTLE CLA	Y	<1	DIRT DRIVE WAY	
2-9	GRAYISH C	GRAYISH ORANGE MOIST CLAY				



	BOR	ING LOG	BORI	NG NO: I	BORING - TMW-4 PA	GE 0F	
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 1-12-09	PROJ	ECT NAN	ME: MEGGS EXXON		
TOTAL DEPTH	(ft):9	t):9 GROUND WATER DEPTH (ft): 7		SCREEN DEPTH (ft):4			
		G/W ELEV (MSL): NA	SCRE	EEN INTE	RVAL (MSL): 5		
DEPTH	1	UNIFIED CLASSIFICATION	<u> </u>	OVA	COMMENTS	PID	
(FT)		DESCRIPTION				(PPM)	
0-2	BROWN MO	IST SAND WITH LITTLE CLAY		<1	GRASS		
2-9	GRAYISH OF	RANGE MOIST CLAY		<1			
	LAB	DATA W/ SAMPLE					

	DOMING NO. 1	BORING - TMW-5 PAC	GE OF		
ATE COMPLETED: 1-12-09	PROJECT NAM	ME: MEGGS EXXON			
ND WATER DEPTH (ft): 6.35					
LEV (MSL): NA	SCREEN INTE	RVAL (MSL): 5			
D CLASSIFICATION	OVA	COMMENTS	PID		
DESCRIPTION			(PPM)		
ND WITH LITTLE CLAY	<1	GRASS			
E MOIST CLAY	<1				
	ID WATER DEPTH (ft): 6.35 EV (MSL): NA D CLASSIFICATION ESCRIPTION ND WITH LITTLE CLAY	ID WATER DEPTH (ft): 6.35 SCREEN DEPTE EV (MSL): NA SCREEN INTERESTRICTION OVA ESCRIPTION OVA SCREEN LITTLE CLAY <1	ID WATER DEPTH (ft): 6.35   SCREEN DEPTH (ft):4   EV (MSL): NA   SCREEN INTERVAL (MSL): 5   O CLASSIFICATION   OVA   COMMENTS   ESCRIPTION   OVA   GRASS		

	BOR	ING LOG	BORI	NG NO: I	BORING - TMW-6	PAGE 0F
LOCATION: M FI	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-12-09	PROJECT NAME: MEGGS EXXON			ON
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft): 4.91	SCRE	EEN DEPT	ΓH (ft):4	
		G/W ELEV (MSL): NA	SCRE	EEN INTE	RVAL (MSL): 5	
DEPTH		UNIFIED CLASSIFICATION		OVA	COMMENTS	PID
(FT)		DESCRIPTION				(PPM
0-2	BROWN MO	IST SAND WITH LITTLE CLA	Y	<1	GRASS	
2-9	GRAYISH OF	RANGE MOIST CLAY		<1		
		-				



	BOR	ING	LOG				70,222.10	AGE 0F
	DCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 1-12-0			09	PROJ	ECT NAM	ME: MEGGS EXXON	
TOTAL DEPTH	(ft):9		OUND WATER DEPTH (ft): 4. V ELEV (MSL): NA	20		EN DEPT	TH (ft):4 RVAL (MSL): 5	
DEPTH (FT)			FIED CLASSIFICATION  DESCRIPTION			OVA	COMMENTS	PID (PPM)
0-2	BROWN MO	IST	SAND WITH LITTLE CI	LAY		<1	GRASS	
2-9	GRAYISH O	RA	NGE MOIST CLAY			<1		
	ı							

	BORII	NG LOG				Ozene -	AGE 0F
LOCATION: ME	GGS EXXON ORENCE SC	NCE SC					
TOTAL DEPTH (		GROUND WATER DEPTH (ft)	: 4.10		EN DEPT		
À	(	G/W ELEV (MSL): NA		SCRE	EN INTE	RVAL (MSL): 5	
DEPTH	J	JNIFIED CLASSIFICATION			OVA	COMMENTS	PID (PPM)
(FT)		DESCRIPTION					(1111)
0-2	BROWN MOI	ST SAND WITH LITTLE	CLAY		<1	GRASS	
2-9	GRAYISH OR	ANGE MOIST CLAY			<1		
	WA	ΓER LAB DATA					

	BOR	LING LOG			BORING - TMW-9	PAGE 0F
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 1-1	2-09	PROJECT NA	ME: MEGGS EXXC	)N
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft) G/W ELEV (MSL): NA	: 4.20	SCREEN DEP	TH (ft):4 ERVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS	PID (PPM)
0-2	BROWN MC	DIST SAND WITH LITTLE	CLAY	<1	GRASS	
2-4	GRAYISH O	RANGE MOIST CLAY				
4-9	GRAYISH O	RANGE WET SAND CLA	Y	>10		



	BORIN	NG LOG		BORING	NO: BORING - TMW-I	0 PAGE 0F
LOCATION: ME FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-12	2-09	PROJECT	r name: MEGGS EX	XON
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft):	1.15	SCREEN	DEPTH (ft):4	
	(	G/W ELEV (MSL): NA		SCREEN	INTERVAL (MSL): 5	
DEPTH	U	INIFIED CLASSIFICATION		0	VA COMMEN	TS PID
(FT)		DESCRIPTION				(PPM)
0-2	BROWN MOIS	ST SAND WITH LITTLE	CLAY	<1	FIELD	
2-8	GRAYISH OR	ANGE MOIST CLAY		5		
8-9	WHITE SAND	WITH LITTLE CLAY		5		
	PURGED BEF	ORE SAMPLING				

		BOR	ING	LOG		BOR	ING NO: B	ORING - TMW-11	PAGE 0F	
LO	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 1-12			2-09	PRO.	JECT NAM	E: MEGGS EXXO	ON		
TO	TAL DEPTH (	(ft):9	GR	OUND WATER DEPTH (ft):	1.95	SCRI	EEN DEPT	H (ft):4		
			G/V	V ELEV (MSL): NA		SCRI	EEN INTE	RVAL (MSL): 5		
	DEPTH		UNI	FIED CLASSIFICATION			OVA	COMMENTS	PID	)
	(FT)			DESCRIPTION					(PPM	<b>A</b> )
	0-2	BROWN MO	IST	SAND WITH LITTLE (	CLAY		<1	FIELD		
	2-8	GRAYISH O	RAI	NGE MOIST CLAY			<1			
	8-9	WHITE SAN	D W	/ITH LITTLE CLAY			<1			
		PURGED BE	FOI	RE SAMPLING – LAB I	ATA					

	BOI	RINC	LOG		BOR	ING NO: I	BORING - TMW-12	PAGE	0F
LOCATION: M	EGGS EXXON LORENCE SC		DATE COMPLETED: 1-12	2-09	PRO	DJECT NAME: MEGGS EXXON			
TOTAL DEPTH	(ft):9	GR	OUND WATER DEPTH (ft):	5.0	SCR	EEN DEPT	TH (ft):4		
		G/V	W ELEV (MSL): NA		SCR	EEN INTE	RVAL (MSL): 5		
DEPTH (FT)		UN	IFIED CLASSIFICATION			OVA	COMMENTS	1 -	PID
(11)			DESCRIPTION					1)	PPM)
0-2	BROWN MO	DIST	SAND WITH LITTLE O	CLAY		<1	GRASS		
2-9	GRAYISH C	RA	NGE MOIST CLAY			<1			
	LAB	AT.	A W/ WATER SAMPLE						
1	l .						ţ	i	



	BOF	RING LOG		BORING NO: 1	BORING - TMW-13	PAGE OF
LOCATION:	MEGGS EXXON FLORENCE SC	DATE COMPLETED: 1-12	-09	PROJECT NAM	ME: MEGGS EXXO	N
TOTAL DEP	TH (ft):9	GROUND WATER DEPTH (ft):	3.65	SCREEN DEP	ΓH (ft):4	
		G/W ELEV (MSL): NA		SCREEN INTE	RVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS	PID (PPM)
0-2	BROWN MC	DIST SAND WITH LITTLE C	LAY	<1	GRASS	
2-9	GRAYISH O	RANGE MOIST CLAY		<1		
	PURGED BE	FORE SAMPLING/ LAB DA	ATA			

	BORING	GLOG		BORING NO: E	BORING - TMW-14	PAGE 0F
LOCATION: MI FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-12	-09	PROJECT NAM	IE: MEGGS EXXO	N
TOTAL DEPTH	(ft):9 GR	ROUND WATER DEPTH (ft): :	2.60	SCREEN DEPT	H (ft):4	· · · · · · · · · · · · · · · · · · ·
	G/'	W ELEV (MSL): NA		SCREEN INTE	RVAL (MSL): 5	
DEPTH	UN	IFIED CLASSIFICATION		OVA	COMMENTS	PID
(FT)		DESCRIPTION				(PPM)
0-2	BROWN MOIST	SAND WITH LITTLE C	LAY	<1	GRASS	
2-9	<b>GRAYISH ORA</b>	NGE MOIST CLAY		30		
	PURGED BEFO	RE SAMPLING	<del> </del>			**************************************

	BOR	RING LOG		BORING NO:	BORING - TMW-15	PAGE 0F
LOCATION: MI FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-1:	2-09	PROJECT NA	ME: MEGGS EXXO	)N
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft):	3.0	SCREEN DEP	TH (ft):4	
		G/W ELEV (MSL): NA		SCREEN INTI	ERVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION	:	OVA	COMMENTS	PID (PPM)
0-2	BROWN MO	DIST SAND WITH LITTLE	CLAY	<1	GRASS	
2-9	GRAYISH O	RANGE MOIST CLAY		>100		
	PURGED BE	FORE SAMPLING				



	DOD	RING LOG	ВО	RING NO: B	Ortax 10	AGE OF
LOCATION: ME	DATE COMPLETED: 1-12-0		OJECT NAM	IE: MEGGS EXXON		
TOTAL DEPTH (		GROUND WATER DEPTH (ft): 2.5 G/W ELEV (MSL): NA	50 SC SC	REEN DEPT REEN INTE	RVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS	PID (PPM)
0-2	BROWN MO	DIST SAND WITH LITTLE CL	ΑY	<1	GRASS	
2-9	GRAYISH O	RANGE MOIST CLAY		8	SOIL @ 5 FT	
		EFORE SAMPLING				

				DODDIG NO. D	ORING - TMW-17 PA	AGE OF
	BOR	UNG LOG		BOKING NO: B	U1411.0	1010 01
LOCATION: ME	GGS EXXON ORENCE SC	DATE COMPLETED: 1-1	2-09		E: MEGGS EXXON	
TOTAL DEPTH (	(A)·0	GROUND WATER DEPTH (ft)	: 3.00	SCREEN DEPT	H (ft):4	
TOTAL DELTIT	11).5	G/W ELEV (MSL): NA		SCREEN INTE	RVAL (MSL): 5	
DEPTH		UNIFIED CLASSIFICATION		OVA	COMMENTS	PID (PPM)
(FT)	OVIDIA66	DESCRIPTION  NOTE OF AND WITH LITTLE	CLAV	<1	GRASS	
0-2	BROWN MC	DIST SAND WITH LITTLE	CLAI		SOIL @ 5 FT.	
2-9		RANGE MOIST CLAY		20	SOIL @ 311.	
	PURGED BE	EFORE SAMPLING				
l						

		710100	<del> </del>	BORING	NO B	ORING - TMW-18	PAGE 0F
BORING LOG			<u> </u>	DOKING NO. BOIGHT			
LOCATION: MEGGS EXXON FLORENCE SC		DATE COMPLETED: 1	-12-09	PROJECT NAME: MEGGS EXXON			
		GROUND WATER DEPTH (	ft): 2.50	2.50 SCREEN DEPTH (ft):4			
		G/W ELEV (MSL): NA	1/2	SCREEN INTERVAL (MSL): 5			
DEPTH	UNIFIED CLASSIFICATION			OVA	COMMENTS	PID (PPM)	
(FT)	DESCRIPTION					CDACC	
0-2	BROWN MOIST SAND WITH LITTLE CLA GRAYISH ORANGE MOIST CLAY			<1	GRASS		
2-9				1	2	SOIL @ 5 FT	
2-9	PURGED BEFORE SAMPLING						
		<u> </u>					



		RING LOG		BORING	NO: E	BORING - TMW-19	PAGE	0F
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 1-	13-09	PROJEC	T NAN	ME: MEGGS EXX	ON	
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (fi	t): 6.30	SCREEN	DEPT	TH (ft):4		
		G/W ELEV (MSL): NA		SCREEN	INTE	RVAL (MSL): 5		
DEPTH		UNIFIED CLASSIFICATION		(	OVA	COMMENTS		PID
(FT)		DESCRIPTION		İ				(PPM)
0-2	BROWN MO	DIST SAND WITH LITTLE	<b>CLAY</b>	<	1	GRASS		
2-9	GRAYISH C	PRANGE MOIST CLAY		1		SOIL @ 5 FT		
	LAB DA	ATA W/ WATER						
. 1	1			i i		1		

	BOR	ING LOG		BORING NO	: BORING - TMW-20	PAGE 0F
LOCATION: ME FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-13	3-09	PROJECT NA	AME: MEGGS EXXO	N
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft):	5.50	SCREEN DE	PTH (ft):4	
		G/W ELEV (MSL): NA		SCREEN IN	ΓERVAL (MSL): 5	
DEPTH		UNIFIED CLASSIFICATION		OVA	COMMENTS	PID
(FT)		DESCRIPTION				(PPM)
0-2	BROWN MO	IST SAND WITH LITTLE (	CLAY	<1	HEAVY BRUSH	
2-9	GRAYISH OF	RANGE MOIST CLAY		<1		
	LAB DATA	A W/ WATER				

<del>-</del>	BOI	RING	LOG	BOR	RING NO: 1	BORING - TMW-21	PAGE	0F
LOCATION: M F	IEGGS EXXON LORENCE SC		DATE COMPLETED: 1-12-09	PRO	JECT NAM	ME: MEGGS EXX	ON	
TOTAL DEPTH	I (ft):4	GR	OUND WATER DEPTH (ft): 1.5	SCR	EEN DEP	ΓH (ft):4	•	
		G/V	W ELEV (MSL): NA	SCR	EEN INTE	RVAL (MSL): 5		
DEPTH (FT)		UN	IFIED CLASSIFICATION DESCRIPTION	•	OVA	COMMENTS		PID PPM)
0-4	BROWN WE	ЕТ О	RGANIC SANDY CLAY		<1	MUDDY FIELD		
	LAB DATA	W/ \	WATER					



	BORING	GLOG		BOR	ING NO: I	BORING - TMW-22 PA	AGE 0F
LOCATION: MI FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-13	-09			ME: MEGGS EXXON	
TOTAL DEPTH	(ft):4 GR	ROUND WATER DEPTH (ft):	1.3	SCRI	EEN DEPT	ΓH (ft):4	
	G/	W ELEV (MSL): NA		SCRI	EEN INTE	RVAL (MSL): 5	1186-4
DEPTH (FT)	UN	IFIED CLASSIFICATION DESCRIPTION	<b>_</b>		OVA	COMMENTS	PID (PPM)
0-4	BROWN WET C	RGANIC SANDY CLAY	7		<1	MUDDY FIELD	
	LAB DATA V	W/ WATER					***************************************
				10.00			
		***					

		RING LOG		BOR	ING NO: I	BORING - TMW-23   PA	GE 0F
LOCATION: MI FL	EGGS EXXON ORENCE SC	DATE COMPLETED: 1-13	-09			ME: MEGGS EXXON	
TOTAL DEPTH	(ft):9	GROUND WATER DEPTH (ft):	2.65	SCR	EEN DEPT	TH (ft):4	
		G/W ELEV (MSL): NA				RVAL (MSL): 5	
DEPTH		UNIFIED CLASSIFICATION	:		OVA	COMMENTS	PID
(FT)		DESCRIPTION			<u> </u> 		(PPM)
0-2	BROWN MC	DIST SAND WITH LITTLE O	LAY		<1	GRASS	
2-8	GRAYISH O	RANGE MOIST CLAY			<1	7	
8-9	WHITE WET	SAND WITH LITTLE CLA	Y		<1		
	PURGED BE	FORE SAMPLING/ LAB DA	ATA			The State of	



		UNG LOG		BOR	ING NO: 1	BORING - TMW-24	PAGE 0F
1	OCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19-0			PRO	JECT NAM	ME: MEGGS EXXO	N
TOTAL DEPTH	(ft):5	GROUND WATER DEPTH (ft):	2.5	SCR	EEN DEP	ΓH (ft): 5	, , , , , , , , , , , , , , , , , , , ,
		G/W ELEV (MSL): NA		SCR	EEN INTE	RVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION			OVA	COMMENTS	PID (PPM)
0-1	BLACK ORC	SANIC SOIL				WOODS	
1-5	GRAYISH W	ET SANDY CLAY			5	7.24 42 (	

		IG LOG	BOI	RING NO: 1	BORING - TMW-25	PAGE	0F
	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19-0			DJECT NAM	ME: MEGGS EXXO	ON	
TOTAL DEPTH (ft):5 GROUND WATER DEPTH (ft): 1.				REEN DEP	ΓH (ft):5		
	C	G/W ELEV (MSL): NA	SCR	REEN INTE	ERVAL (MSL): 5		
DEPTH (FT)	Ü	NIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS		PID (PPM)
0-1	BLACK ORGA	NIC SOIL			WOODS		`
1-5	GRAYISH WE	T SANDY CLAY		<1	-		

	BOI	RING LOG	В	ORING NO: I	BORING - TMW-26	PAGE 0F
	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19-09				ME: MEGGS EXXO	ON
TOTAL DEPTH (ft):5 GROUND WATER DEPTH (ft): 2				CREEN DEPT	ΓH (ft):5	
		G/W ELEV (MSL): NA	S	CREEN INTE	RVAL (MSL): 5	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS	PID (PPM)
0-1	BLACK ORG	GANC SOIL			WOODS	
1-5	GRAYISH W	/ET SANDY CLAY		<1		



		RING LOG		BOR	ING NO: I	BORING - TMW-27	PAGE	0F
1	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19-0			PRO	JECT NAN	Æ: MEGGS EXXO	ON	
TOTAL DEPTH	TOTAL DEPTH (ft):5 GROUND WATER DEPTH (f			SCR	EEN DEPT	TH (ft): 5		
		G/W ELEV (MSL): NA	<del></del>	SCR	EEN INTE	RVAL (MSL): 5		
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		- I	OVA	COMMENTS		PID PPM)
0-1	BLACK ORC	GANIC SOIL				WOODS		
1-5	GRAYISH W	ET SANDY CLAY	*******		<1			

		NG LOG	BOR	ING NO: 1	BORING - TMW-28	PAGE	0F
i e	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19-0				ME: MEGGS EXXO	DN	-
TOTAL DEPTH	FOTAL DEPTH (ft):5 GROUND WATER DEPTH (ft): 0.8		SCRI	EEN DEPT	ΓH (ft):5		
		G/W ELEV (MSL): NA			RVAL (MSL): 5		,
DEPTH (FT)		JNIFIED CLASSIFICATION		OVA	COMMENTS		PID
(		DESCRIPTION				(	PPM)
0-1	BLACK ORG	ANIC SOIL			WOODS		
1-5	GRAYISH WI	ET SANDY CLAY		3			<del></del>

		RING LOG	BOF	UNG NO:	BORING - TMW-29	PAGE	0F
LOCATION: M F	IEGGS EXXON LORENCE SC	DATE COMPLETED: 2-19-09	PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	I (ft):5	GROUND WATER DEPTH (ft): 0.99	SCR	EEN DEP	ΓH (ft):5		
		G/W ELEV (MSL): NA			ERVAL (MSL): 5	,	
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION		OVA	COMMENTS		PID (PPM)
0-1	BLACK OR	GANC SOIL			WOODS		·
1-5	GRAYISH V	VET SANDY CLAY		<1			



	BOR	ING LOG		BORI	NG NO: I	BORING - TMW-30	PAGE	0F
	LOCATION: MEGGS EXXON FLORENCE SC DATE COMPLETED: 2-19				ECT NAM	ME: MEGGS EXXO	N	,
TOTAL DEPT	GROUND WATER DEPTH (ft):	0.60	SCRE	EN DEP	ГН (ft): 5			
		G/W ELEV (MSL): NA		SCRE	EN INTE	ERVAL (MSL): 5		
DEPTH (FT)		UNIFIED CLASSIFICATION DESCRIPTION			OVA	COMMENTS	(	PID (PPM)
0-1	BLACK ORG	SANIC SOIL				WOODS		
1-5	GRAYISH W	ET SANDY CLAY			<1			

	BORING	GLOG	-	BORING NO: BORING - TMW-31 PAGE 0F					
LOCATION: M FI	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-2	7-09	PROJECT NAME: MEGGS EXXON					
TOTAL DEPTH	OTAL DEPTH (ft):5 GROUND WATER DEPTH (ft): 1.0			SCR	EEN DEPT	ΓH (ft):5			
	G/	W ELEV (MSL): NA		SCR	EEN INTE	RVAL (MSL): 5			
DEPTH (FT)	UN	IFIED CLASSIFICATION DESCRIPTION		-	OVA	COMMENTS	1	PID PPM)	
0-5	BROWNISH OR	ANGE WET SANDY C	AY		<1	GRASS			

	BOR	ING LOG	F	BORING NO: BORING - TMW-32 PAGE 0F				
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-19-0	)9 F	PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	(ft):5	GROUND WATER DEPTH (ft): 0.	95 5	SCREEN DEPT	ΓH (ft):5			
		G/W ELEV (MSL): NA	S	SCREEN INTE	RVAL (MSL): 5			
DEPTH		UNIFIED CLASSIFICATION		OVA	COMMENTS	PID		
(FT)		DESCRIPTION				(PPM)		
0-5	BROWNISH	ORANGE SANDY CLAY		<1	GRASS			



		NG LOG	BOI	RING NO:	BORING - TMW-33	PAGE	0F
1	IEGGS EXXON LORENCE SC	DATE COMPLETED: 2-27-09	PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	I (ft):5	GROUND WATER DEPTH (ft): 0.77	SCR	EEN DEP	ΓH (ft): 5	,	
	(	G/W ELEV (MSL): NA	SCR	EEN INTE	ERVAL (MSL): 5		
DEPTH (FT)	U	NIFIED CLASSIFICATION DESCRIPTION	<b>.</b>	OVA	COMMENTS	1	PID (PPM)
0-5	BROWNISH C	PRANGE WET SANDY CLAY		<1	GRASS		

		ING LOG	BOI	RING NO:	BORING - TMW-34	PAGE	0F
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-27-09	PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	(ft):5	GROUND WATER DEPTH (ft): 1.00	SCR	REEN DEP	ΓH (ft):5		
		G/W ELEV (MSL): NA			ERVAL (MSL): 5		
DEPTH		UNIFIED CLASSIFICATION	<b></b>	OVA	COMMENTS		PHO
(FT)		DESCRIPTION				(	(PPM)
0-5	BROWNISH	ORANGE WET SANDY CLAY		<1	GRASS		

		RING	LOG	BORING NO: BORING - TMW-35   PAGE 0F				
LOCATION: M F	IEGGS EXXON LORENCE SC		DATE COMPLETED: 2-27-09	PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	I (ft):5		OUND WATER DEPTH (ft): 1.60	SCR	EEN DEP	ΓH (ft):5		
		G/V	V ELEV (MSL): NA	SCR	EEN INTE	ERVAL (MSL): 5		•
DEPTH (FT)	CIVIL IED CEROSII ICATION			OVA	COMMENTS		PID PPM)	
0-5	BROWNISH	OR	ANGE SANDY CLAY		<1	GRASS		· · · · ·



	ВО	RING	LOG		BORING NO: BORING - TMW-36 PAGE 0F				
	IEGGS EXXON LORENCE SC		DATE COMPLETED: 2-2	27-09	9 PROJECT NAME: MEGGS EXXON			N	
TOTAL DEPTH	I (ft):5	GR	OUND WATER DEPTH (ft)	): 1.10 SCREEN DEPTH (ft): 5				· · · · · · · · · · · · · · · · · · ·	
		G/V	W ELEV (MSL): NA		SCRE	EEN INTE	ERVAL (MSL): 5		
DEPTH (FT)		UN	FIED CLASSIFICATION DESCRIPTION			OVA	COMMENTS	PID (PPM	
0-5	BROWNISH	I OR	ANGE WET SANDY C	LAY		<1	GRASS		

	BORI	NG LOG	1	BORING NO: I	BORING - TMW-37	PAGE 0F	
LOCATION: M FI	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-27-0	)9 1	PROJECT NAME: MEGGS EXXON			
TOTAL DEPTH	(ft):5	GROUND WATER DEPTH (ft): 1.2	22 5	SCREEN DEPT	ΓH (ft):5		
	(	G/W ELEV (MSL): NA		SCREEN INTE	RVAL (MSL): 5		
DEPTH (FT)	U	INIFIED CLASSIFICATION DESCRIPTION	, <b>'</b>	OVA	COMMENTS	PID (PPM)	
0-5	BROWNISH C	DRANGE WET SANDY CLA	Υ	<1	GRASS		

	BORIN	G LOG		BOR	ING NO: I	BORING - TMW-38	PAGE 0F	
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-27	7-09	9 PROJECT NAME: MEGGS EXXON				
TOTAL DEPTH	(ft):5 Gl	ROUND WATER DEPTH (ft):	1.26	SCR	EEN DEPT	TH (ft):5		
	G/	W ELEV (MSL): NA		SCR	EEN INTE	RVAL (MSL): 5		
DEPTH (FT)	UN	IIFIED CLASSIFICATION DESCRIPTION			OVA	COMMENTS	PID (PPM)	
0-5	BROWNISH OF	RANGE SANDY CLAY			<1	GRASS		



	BOR	ING LOG	BOI	RING NO: 1	BORING - TMW-39	PAGE	0F
i	IEGGS EXXON LORENCE SC	DATE COMPLETED: 2-27-09	PROJECT NAME: MEGGS EXXON		ON		
TOTAL DEPTH	I (ft):5	GROUND WATER DEPTH (ft): 2.10	SCR	REEN DEP	ΓH (ft): 5		
		G/W ELEV (MSL): NA	SCR	REEN INTE	ERVAL (MSL): 5		• .
DEPTH (FT)		UNIFIED CLASSIFICATION  DESCRIPTION		OVA	COMMENTS		PID PPM)
0-5	BROWNISH	ORANGE WET SANDY CLAY	-	<1	FIELD		
				1.			

	BORI	NG LOG	BORING NO: BORING - TMW-40 PAGE 0F					
LOCATION: M	EGGS EXXON LORENCE SC	DATE COMPLETED: 2-27-09	PROJECT NAME: MEGGS EXXON					
TOTAL DEPTH	TH (ft):5 GROUND WATER DEPTH (ft): 2.0		SCREEN DEPTH (ft):5					
		G/W ELEV (MSL): NA	SCR	REEN INTE	ERVAL (MSL): 5			
DEPTH (FT)		UNIFIED CLASSIFICATION	<u> </u>	OVA	COMMENTS		PID	
(F1)		DESCRIPTION				(	(PPM)	
0-5	BROWNISH (	ORANGE WET SANDY CLAY		<1	FIELD			

## APPENDIX B

PO Box 15038 Quinby, SC 29506

(843) 665-6746 FAX: (843) 629-1444

#### **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

12-Jan-09

SDG #:

SDG-064758

Lab Sample ID: LSID-142890 Sample ID:

TMW 4

Approved By:

Van Ward

		Reporting	;				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:05	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:05	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:05	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	15:05	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	15:05	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	15:05	CLH

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

**Sample Date:** 

12-Jan-09

SDG #:

SDG-064758

Lab Sample ID: LSID-142891 Sample ID:

TMW 8

Approved By:

Van Ward

		Reporting	5				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:27	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:27	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	15:27	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	15:27	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	15:27	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	15:27	CLH
•			U				

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

#### **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

12-Jan-09

SDG #:

SDG-064758 Lab Sample ID: LSID-142892

Sample ID:

**TMW 11** 

Approved By:

Van Ward Van Ward

Lab Director

Reporting **Parameter** Result Limit Unit Method Flag Date Time Analyst 5035/8260B Benzene < 0.005 0.005 S11 1/20/2009 15:50 CLH ppm 5035/8260B BTEX, Total (Liquids) < 0.025 0.025 ppm 1/20/2009 WSF Ethylbenzene < 0.005 5035/8260B S11 1/20/2009 15:50 0.005 CLH ppm 5035/8260B Toluene < 0.005 S11 1/20/2009 15:50 CLH 0.005 ppm 5035/8260B Xylene, Total < 0.010 S11 1/20/2009 15:50 CLH 0.01 ppm EPA 8260 Methyl tert-Butyl Ether < 0.005 0.005 S11 1/20/2009 15:50 CLH mg/L Napthalene < 0.005 EPA 8260 S11 1/20/2009 15:50 CLH 0.005 mg/L

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

#### Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

12-Jan-09

SDG #:

SDG-064758

Sample ID:

TMW 12

Lab Sample ID: LSID-142893

Approved By:

Van Ward

		Reporting	;				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:12	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:12	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:12	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	16:12	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:12	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:12	CLH

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09

Report Date: 03-Feb-09

Approved By: Van Wand

Sample Date:

12-Jan-09

SDG #:

SDG-064758

Sample ID:

Lab Sample ID: LSID-142894 TMW 13

Van Ward

South Carolina Certification Number: 21117

Davamatar	Result	Reporting Limit	Unit	Method	Flag Date	Time	Analyst
Parameter				5035/8260B	S11 1/20/2009	16:34	CLH
Benzene	< 0.005	0.005	ppm				WSF
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		,
	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:34	CLH
Ethylbenzene	•		• •	5035/8260B	S11 1/20/2009	16:34	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:34	CLH
Xylene, Total	< 0.010	0.01	ppm		511 11-11-11		
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:34	CLH
•	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:34	CLH
Napthalene	<0.003	0.003	mg B				

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

13-Jan-09

SDG #:

SDG-064758

Lab Sample ID: LSID-142895 Sample ID:

TMW 19

Approved By:

Van Ward

Parameter	Result	Reporting Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	0.0572	0.005	ppm	5035/8260B	S11 1/20/2009	16:57	CLH
BTEX, Total (Liquids)	0.0572	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:57	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	16:57	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	16:57	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:57	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	16:57	CLH

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09

South Carolina Certification Number: 21117

Report Date: 03-Feb-09

Sample Date:

13-Jan-09

SDG #:

SDG-064758

Lab Sample ID: LSID-142896 Sample ID:

TMW 20

Approved By:

Van Ward

		Reporting	Ī				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	18:49	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	18:49	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	18:49	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	18:49	CLH
Methyl tert-Butyl Ether	0.0195	0.005	mg/L	EPA 8260	S11 1/20/2009	16:57	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	18:49	CLH

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#### Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

13-Jan-09

SDG #:

SDG-064758

Lab Sample ID: LSID-142897 Sample ID:

TMW 21

Approved By:

Van Ward

_		Reporting	ξ				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	19:11	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	19:11	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	19:11	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	19:11	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	19:11	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	19:11	CLH

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

Sample Date:

13-Jan-09

SDG #:

SDG-064758

Sample ID:

**TMW 22** 

Lab Sample ID: LSID-142898

Approved By:

Van Ward

Parameter		Reporting	,		TI D (	70	A IA
rarameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	20:42	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	20:42	CLH
Toluene	< 0.005	0.005	ppm	5035/8 <b>2</b> 60B	S11 1/20/2009	20:42	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	20:42	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	20:42	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	20:42	CLH

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#### **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 19-Jan-09 Report Date: 03-Feb-09

South Carolina Certification Number: 21117

**Sample Date:** 

13-Jan-09

SDG #:

SDG-064758 Lab Sample ID: LSID-142899

Sample ID:

TMW 23

Approved By:

Van Ward Lab Director

		Reporting					
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	21:04	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	1/20/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11_1/20/2009	21:04	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11 1/20/2009	21:04	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11 1/20/2009	21:04	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	21:04	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 1/20/2009	21:04	CLH
,			_		211 11201200		

Receive Date/Time Collect Date/Time Matrix GCAL ID Client ID 01/20/2009 09:10 01/12/2009 16:15 Water 20901201701 142890

SW-846 8260B

/-846 8260	0B					A Indianal Boto	
Prep Date	Prep Batch	Prep Method	Dilution 1	Analyzed 01/20/2009 15:05	<b>By</b> CLH	Analytical Batc 404748	
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2 108-88-3 100-41-4 1330-20-7 91-20-3 1634-04-4	Benzene Toluene Ethylbenzene Xylene (total) Naphthalene tert-Butyl methyl ether (N	ITBE)	0.065U 0.076U 0.065U 0.183U 1.62J 0.077U	5.00 5.00 5.00 10.0 5.00 5.00		0.065 0.076 0.065 0.183 0.118 0.077	ug/l ug/l ug/l ug/l ug/l
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	ovo.,	ec Limit
460-00-4 1868-53-7 2037-26-5 17060-07-0	4-Bromofluorobenzene Dibromofluoromethane Toluene d8 1,2-Dichloroethane-d4	50 50 50 50	48.5 59.5 50.2 49.4	ug/L		97 119 100 99	78 - 130 77 - 12 76 - 13 71 - 12

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20901201702	142891	Water	01/12/2009 17:00	01/20/2009 09:10

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 15:27	By Analytica CLH 404748	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.172J	5.00	0.065	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		4.09J	10.0	0.183	ug/L
91-20-3	Naphthalene		1.58J	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether	(MTBE)	0.228J	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.4	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	50	59.9	ug/L	120	77 - 127
2037-26-5	Toluene d8	50	51.4	ug/L	103	76 - 134
17060-07-0	1.2-Dichloroethane-d4	50	48.1	ug/L	96	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

**NOTE:** Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is **SCDHEC certified lab # 73006**, NELAP certification # 01955

GCAL ID	Client ID	The State of the S	Matrix	Collect Date/Time	Receive Date/Time
20901201703	142892		Water	01/12/2009 10:10	01/20/2009 09:10

V-040 0Z0	UB						
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 15:50	By CLH	Analytical 404748	Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	48.6	ug/L		97	78 - 130
1868-53-7	Dibromofluoromethane	50	59.5	ug/L		119	77 - 127
2037-26-5	Toluene d8	50	50	ug/L		100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.5	ug/L		99	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time
20901201704	142893	Water 01/12/2009 10:20	01/20/2009 09:10

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 01/20/2009 16:12	By Anal CLH 4047	ytical Batch 48
CAS#	Parameter		Result	RDL	MD	L Units
71-43-2	Benzene		0.065U	5.00	0.0	65 ug/L
108-88-3	Toluene		0.076U	5.00	0.0	76 ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.0	65 ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.1	83 ug/L
91-20-3	Naphthalene		0.118U	5.00	0.1	18 ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.077U	5.00	0.0	77 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	60.6	ug/L	121	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51	ug/L	102	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20901201705	142894	Water	01/12/2009 10:25	01/20/2009 09:10

010 020							
Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By A	nalytical Bat	ch
			1	01/20/2009 16:34	CLH 4	04748	
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		2.33J	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20-3	Naphthalene		1.76J	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M7	ſBE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ry F	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.2	ug/L		98	78 - 130
1868-53-7	Dibromofluoromethane	50	59.5	ug/L	1	19	77 - 127
2037-26-5	Toluene d8	50	50.6	ug/L	1	01	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.7	ug/L		99	71 - 127
				_			

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

**NOTE:** Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is **SCDHEC certified lab # 73006**, NELAP certification # 01955

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20901201706	142895	Water	01/13/2009 11:30	01/20/2009 09:10

	0.002008						
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 16:57	<b>By</b> CLH	Analytical Bate 404748	ch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		57.2	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		1.67J	10.0		0.183	ug/L
91-20-3	Naphthalene		2.35J	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (f	MTBE)	3.30J	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Red	covery R	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L		99	78 - 130
1868-53-7	Dibromofluoromethane	50	58.6	ug/L		117	77 - 127
2037-26-5	Toluene d8	50	50	ug/L		100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50	ug/L		100	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time	1
20901201707	142896	Water 01/13/2009 11:45	01/20/2009 09:10	

010020							
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 18:49	<b>By</b> CLH	Analytical 404748	Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20-3	Naphthalene		1.77J	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	19.5	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.5	ug/L		101	78 - 130
1868-53-7	Dibromofluoromethane	50	59.6	ug/L		119	77 - 127
2037-26-5	Toluene d8	50	50.8	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.4	ug/L		99	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

 GCAL ID
 Client ID
 Matrix
 Collect Date/Time
 Receive Date/Time

 20901201708
 142897
 Water
 01/13/2009 12:00
 01/20/2009 09:10

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 19:11	<b>By</b> CLH	Analytical 404748	Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20-3	Naphthalene		1.63J	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M7	ΓBE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.5	ug/L		99	78 - 130
1868-53-7	Dibromofluoromethane	50	53.2	ug/L		106	77 - 127
2037-26-5	Toluene d8	50	51.1	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L		97	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

**NOTE:** Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is **SCDHEC certified lab # 73006**, NELAP certification # 01955

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time	٦
20901201709	142898	Water 01/13/2009 12:15	01/20/2009 09:10	

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 01/20/2009 20:42	By Analytic CLH 404748	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	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	59.9	ug/L	120	77 - 127
2037-26-5	Toluene d8	50	50.7	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.8	ug/L	100	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID Client ID Matrix Collect Date/Time Receive Date/Time 20901201710 142899 Water 01/13/2009 13:40 01/20/2009 09:10

#### SW-846 8260B

Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytical	Batch
		1	01/20/2009 21:04	CLH	404748	
Parameter		Result	RDL		MDL	Units
Benzene		0.065U	5.00		0.065	ug/L
Toluene		0.076U	5.00		0.076	ug/L
Ethylbenzene		0.065∪	5.00		0.065	ug/L
Xylene (total)		0.183U	10.0		0.183	ug/L
Naphthalene		0.118U	5.00		0.118	ug/L
tert-Butyl methyl ether (M	ITBE)	0.077U	5.00		0.077	ug/L
Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	/ery	Rec Limits
4-Bromofluorobenzene	50	49.8	ug/L		100	78 - 130
Dibromofluoromethane	50	59.6	· ·		119	77 - 127
Toluene d8	50	50	•		100	76 - 134
1,2-Dichloroethane-d4	50	52.8	ug/L		106	71 - 127
	Parameter  Benzene Toluene Ethylbenzene Xylene (total) Naphthalene tert-Butyl methyl ether (Notational Content of the Content	Parameter  Benzene Toluene Ethylbenzene Xylene (total) Naphthalene tert-Butyl methyl ether (MTBE)  Surrogate  Conc. Spiked  4-Bromofluorobenzene Dibromofluoromethane 50 Toluene d8 50	Parameter   Result	Parameter   Result   RDL	1	Result   RDL   MDL

Second Tier Data Review By:

Ashley B. Amick, Project Manager

namick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

# **DAVIS & BROWN**

# **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the Numbers for those laboratories.

S	South Carolina Lab Certification Number: 23101
$\frac{S}{S1}$	South Carolina Lab Certification Number: 93013
$\frac{S1}{S2}$	South Carolina Lab Certification Number: 23105
S3	South Carolina Lab Certification Number: 10120
S4	South Carolina Lab Certification Number: 84002
S5	South Carolina Lab Certification Number: 32117
S6	A gricultural Service Laboratory Clemson University
S7	South Carolina Lab Certification Number: 36001
S8	*****
	South Carolina Lab Certification Number: 94014001; 94014002
S10	2 1 G 1' Lab Contification Number: 84009
S10 S11	South Carolina Lab Certification Number: 96023; 96026; 96031; 98001; 73006
$\frac{S11}{S12}$	AASHTO R18 Certified
S12 S13	South Carolina Lab Certification Number: 96012
S13 S14	South Carolina Lab Certification Number: 89002
S14 S15	******
$\frac{S15}{S16}$	South Carolina Lab Certification Number: 84004
S10_ S17	South Carolina Lab Certification Number: 96037001
S17_ S18	South Carolina Lab Certification Number: 95005
S19	South Carolina Lab Certification Number: 23104
S19 S20	South Carolina Lab Certification Number: 96027001
S20 S21	South Carolina Lab Certification Number: 21005
$\frac{S21}{S22}$	South Carolina Lab Certification Number: 24110
S22 S23	South Carolina Lab Certification Number: 84001001
$\frac{S23}{S24}$	South Carolina Lab Certification Number: 82014001
$\frac{324}{S25}$	Grands was analyzed by Microseens Inc Laboratory
$\frac{S23}{S26}$	North Carolina Lab Certification Number: 21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 40569
321	Bouil Curolina 200 Co.



# CHAIN OF CUSTODY RECORD

**DAVIS & BROWN** 

124 West McIver Road Florince, South Carolina 29501 Post Office Box 15038 124 We Cuinby, South Carolina 29508 Florince, Sc Telephone (843) 665-6746

boxes to indicate	filtered or preserved.	H <sub>2</sub> SO <sub>4</sub> = D NA <sub>2</sub> S <sub>2</sub> O <sub>3</sub> = E FILTRATION = F	LABID	CIPBZM	142891	142.892	22-893	142.094	142.895	142041	MEDRI	142008	Habary		Date Time	dory ogulakury	
Use Codes in the boxes to indicate	whether sample was filtered or preserved.	Code: HNO, = A HCl. = B NAOH = C	REMARKS	(A)	超过						·		<b>₩</b>	Relinquished by (SIGNATURE)*	Received by (SIGNATURB)*	C) Regulatory C) Non Regulatory	D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPLN:S / O - Uther
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She Man Belliu Name		Collected by 72	SAMPLE ID	4=	71.11.18	Tretta 11	7/11/12	1/4/1/3	61 MM/	Tid18 20	1211	72 111/	1 23	Relinquished by (SIGNATURE)	5	O YES	
N Total		Collected	٧S.	三五	7	1/2	1/2	1	E	100	7	1/2	E	Relinqui	Received	ICED	

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

#### Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 26-Feb-09 Report Date: 11-Mar-09

South Carolina Certification Number: 21117

Sample Date:

19-Feb-09

SDG #:

SDG-065458

Lab Sample ID: LSID-144408 Sample ID:

O.H. MEGGS-MW 24

Approved By:

Van Ward

Parameter		Reporting	,		***	m.	
rarameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Acid Digestion (Liquids)	YES			EPA 200.2	3/4/2009	1:00	DH
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260	3/3/2009		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11 3/3/2009	14:33	CLH
Lead, Total	< 0.002	0.002	mg/L	SM 3113B	3/4/2009	19:52	JR

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## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 26-Feb-09 Report Date: 11-Mar-09

South Carolina Certification Number: 21117

Sample Date:

19-Feb-09

SDG #:

SDG-065458

**Lab Sample ID:** LSID-144409 **Sample ID:** O.H. MEGGS-MW 30

Approved By:

Van Ward Lab Director

_		Reporting	3				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260	3/3/2009		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11 3/3/2009	15:02	CLH
Aylenes, Total	<0.010	0.01	mg/L	B171 0200	511 5/5/2009	13.02	CLII

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Report Date: 11-Mar-09

Receipt Date: 26-Feb-09

South Carolina Certification Number: 21117

**Sample Date:** 

19-Feb-09

SDG #:

SDG-065458

Sample ID:

Lab Sample ID: LSID-144410

O.H. MEGGS-NORTH DITCH

Approved By:

Van Ward Lab Director

		ğ				
Result	Ĺimit	Unit	Method	Flag Date	Time	Analyst
< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
< 0.025	0.025	mg/L	EPA 8260	3/3/2009		WSF
< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
< 0.005	0.005	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
< 0.010	0.01	mg/L	EPA 8260	S11 3/3/2009	15:27	CLH
	<0.005 <0.025 <0.005 <0.005 <0.005 <0.005	<0.005	<ul> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>&lt;0.025</li> <li>0.025</li> <li>mg/L</li> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> </ul>	<ul> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>EPA 8260</li> <li>&lt;0.025</li> <li>0.025</li> <li>mg/L</li> <li>EPA 8260</li> <li>&lt;0.005</li> <li>0.005</li> <li>mg/L</li> <li>EPA 8260</li> <li>&lt;0.005</li> <li< td=""><td>&lt;0.005</td>       0.005       mg/L       EPA 8260       S11 3/3/2009         &lt;0.025</li<></ul>	<0.005	<0.005

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20902272003	144408	Water	02/19/2009 13:30	02/27/2009 09:43

			i			
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/03/2009 14:33	By Analytica CLH 407159	l Batch
CAS#	Parameter		Result	RDL	MDL	Unit
71-43-2	Benzene		0.065U	5.00	0.065	ug/
108-88-3	Toluene		0.076U	5.00	0.076	ug/
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/
1634-04-4	tert-Butyl methyl ether (f	/ITBE)	1.66J	5.00	0.077	ug/
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limit
460-00-4	4-Bromofluorobenzene	50	45.7	ug/L	. 91	78 - 13
1868-53-7	Dibromofluoromethane	50	47.1	ug/L	94	77 - 12
2037-26-5	Toluene d8	50	50.5	ug/L	101	76 - 13
17060-07-0	1,2-Dichloroethane-d4	50	48.8	ug/L	98	71 - 12

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time
20902272004	144409	Water 02/19/2009 13:45	02/27/2009 09:43

	· • —	i							
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/03/2009 15:02	<b>By</b> CLH	Analytical 407159	Batch		
CAS#	Parameter		Result	RDL		MDL	Units		
71-43-2	Benzene		0.065U	5.00		0.065	ug/L		
108-88-3	Toluene		0.076U	5.00		0.076	ug/L		
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L		
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L		
91-20-3	Naphthalene		0.118U	5.00		0.118	ug/L		
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00		0.077	ug/L		
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits		
460-00-4	4-Bromofluorobenzene	50	45.1	ug/L		90	78 - 130		
1868-53-7	Dibromofluoromethane	50	47.6	ug/L		95	77 - 127		
2037-26-5	Toluene d8	50	51.1	ug/L		102	76 - 134		
17060-07-0	1.2-Dichloroethane-d4	50	48.6	ua/L		97	71 - 127		

 GCAL ID
 Client ID
 Matrix
 Collect Date/Time
 Receive Date/Time

 20902272005
 144410
 Water
 02/19/2009 14:05
 02/27/2009 09:43

## SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/03/2009 15:27	<b>By</b> CLH	Analytical Ba 407159	itch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	ITBE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.6	ug/L		91	78 - 130
1868 <b>-</b> 53-7	Dibromofluoromethane	50	47.8	ug/L		96	77 - 127
2037-26-5	Toluene d8	50	51.5	ug/L		103	76 - 134
17060-07-0	1.2-Dichloroethane-d4	50	49.2	ua/l		98	71 - 127

## **DAVIS & BROWN**

## **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

S	South Carolina Lab Certification Number:	23101
S1	South Carolina Lab Certification Number:	93013
S2	South Carolina Lab Certification Number:	23105
S3	South Carolina Lab Certification Number:	10120
S4	South Carolina Lab Certification Number:	84002
S5	South Carolina Lab Certification Number:	32117
S6	Agricultural Service Laboratory Clemson U	Iniversity
S7	South Carolina Lab Certification Number:	36001
S8	******	
_ S9	South Carolina Lab Certification Number:	94014001; 94014002
S10	South Carolina Lab Certification Number:	
S11	South Carolina Lab Certification Number:	96023; 96026; 96031; 98001; 73006
S12	AASHTO R18 Certified	
S13	South Carolina Lab Certification Number:	96012
S14	South Carolina Lab Certification Number:	89002
S15	******	
S16	South Carolina Lab Certification Number:	84004
S17	South Carolina Lab Certification Number:	96037001
S18	South Carolina Lab Certification Number:	95005
S19	South Carolina Lab Certification Number:	23104
S20	South Carolina Lab Certification Number:	96027001
S21	South Carolina Lab Certification Number:	21005
S22	South Carolina Lab Certification Number:	24110
S23	South Carolina Lab Certification Number:	84001001
S24	South Carolina Lab Certification Number:	82014001
S25	Sample was analyzed by Microseeps, Inc L	aboratory
S26	North Carolina Lab Certification Number:	21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 4	40569

# CHAIN OF CUSTODY RECORD

- of

DAVIS & BROWN

Post Office Box 15038 Quinby, South Carolina 28506

Florence, South Carolina 29501 Telephone (843) 665-6746

**66458** 

HSO = D NA\$0 = E FILTRATION = F ZINCACETATE = 0 LAB ID 89777 whether sample was filtered or preserved. (प्रमाठ 144409 Use Codes in the boxes to indicate Code: HNO, = A HCL = B NAOH = C REMARKS 8 S and margord's シ MIBE × X 又 X SAMPLE ANALYSIS REQUIRED (1) - use remarks urea to specify specific com × LKN METALS - Spec 204 Mirrate COD BOD 122 2 P of containers 2 COMB ZOIT MEIT STOKES / DHINAMS 2/19/09/1345 2/19/08/1330 NORTH DERH |2/19/09 |1405 TIME Collected by Social PICKS DATE Client Name / Facility Name 141730 42 riwi SAMPLE ID

\* Program Area: D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other

13 250

O Non Regulatory O'Regulatory

Relinquished by (SIGNATURE)

Relinquished by (SIGNATURE)

eccived by (SIGNATURE)

2/24/09/1630

Relinquished by (SIGNATURE).

SOPY RELXS

Recorded by (SIGNATURE

Land

Z S

Received by (SIGNATURE)

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 02-Mar-09 Report Date: 11-Mar-09

South Carolina Certification Number: 21117

**Sample Date:** 

27-Feb-09

SDG #:

SDG-065476

Lab Sample ID: LSID-144438 Sample ID:

TMW 32

Approved By:

Van Ward

Parameter	Result	Reporting Limit	g Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260	3/4/2009		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11 3/4/2009	20:31	ADI

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Report Date: 11-Mar-09

Receipt Date: 02-Mar-09

South Carolina Certification Number: 21117

**Sample Date:** 

27-Feb-09

SDG #:

SDG-065476

Lab Sample ID: LSID-144439 Sample ID:

**TMW 34** 

Approved By:

Van Ward

_		Reporting	g	i 	-		
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260	3/4/2009		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11 3/4/2009	20:56	ADI
				i			

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 02-Mar-09 Report Date: 11-Mar-09

South Carolina Certification Number: 21117

Sample Date:

27-Feb-09

SDG #:

SDG-065476

Lab Sample ID: LSID-144440 Sample ID:

TMW 36

Approved By:

Van Ward

imit         Unit           005         mg/L           025         mg/L	Method EPA 8260 EPA 8260	Flag Date S11 3/4/2009 3/4/2009	21:21	Analyst ADI
_			21:21	ADI
025 mg/L	EPA 8260	2/4/2000		
		3/4/2009		WSF
005 mg/L	EPA 8260	S11 3/4/2009	21:21	ADI
005 mg/L	EPA 8260	S11 3/4/2009	21:21	ADI
005 mg/L	<b>EPA 8260</b>	S11 3/4/2009	21:21	ADI
005 mg/L	EPA 8260	S11 3/4/2009	21:21	ADI
).01 mg/L	EPA 8260	S11 3/4/2009	21:21	ADI
(	005 mg/L 005 mg/L 005 mg/L	005 mg/L EPA 8260 005 mg/L EPA 8260 005 mg/L EPA 8260	005 mg/L EPA 8260 S11 3/4/2009 005 mg/L EPA 8260 S11 3/4/2009 005 mg/L EPA 8260 S11 3/4/2009	005 mg/L EPA 8260 S11 3/4/2009 21:21 005 mg/L EPA 8260 S11 3/4/2009 21:21 005 mg/L EPA 8260 S11 3/4/2009 21:21

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 02-Mar-09 Report Date: 11-Mar-09

South Carolina Certification Number: 21117

Sample Date:

27-Feb-09

SDG #:

SDG-065476

Lab Sample ID: LSID-144441 Sample ID:

**TMW 38** 

Approved By:

Van Ward

Parameter	Result	Reporting Limit	g Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI
BTEX, Total	< 0.025	0.025	mg/L	EPA 8260	3/4/2009		WSF
Ethylbenzene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI
Toluene	< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI
Xylenes, Total	< 0.010	0.01	mg/L	EPA 8260	S11 3/4/2009	21:45	ADI

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## Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

SDG #:

Sample Date:

1688

27-Feb-09

SDG-065476

Report Date: 11-Mar-09

Approved By:

Receipt Date: 02-Mar-09

South Carolina Certification Number: 21117

Van Ward

Lab Director

Lab Sample ID: LSID-144442 Sample ID: TMW 40

Result	Reporting Limit	g Unit	Method	Flag Date	Time	Analyst
< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
< 0.025	0.025	mg/L	EPA 8260	3/4/2009		WSF
< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
< 0.005	0.005	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
< 0.010	0.01	mg/L	EPA 8260	S11 3/4/2009	22:10	ADI
	<0.005 <0.025 <0.005 <0.005 <0.005 <0.005	Result         Limit           <0.005	<0.005	Result         Limit         Unit         Method           <0.005	Result         Limit         Unit         Method         Flag         Date           <0.005	Result         Limit         Unit         Method         Flag         Date         Time           <0.005

GCAL ID	Client ID	 Matrix	Collect Date/Time	Receive Date/Time
20903043101	144438	 Water	02/27/2009 14:00	03/04/2009 09:35

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/04/2009 20:31	By Analytica ADI 407227	I Batch
CAS#	Parameter		Result	RDL	MDL	Units
71 <b>-</b> 43-2	Benzene		0.065U	5.00	0.065	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43.5	ug/L	87	78 - 130
1868-53-7	Dibromofluoromethane	50	46.1	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	46.2	ug/L	92	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46	ug/L	92	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge,
LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID Client ID Matrix Collect Date/Time **Receive Date/Time** 20903043102 144439 Water 02/27/2009 14:40 03/04/2009 09:35

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/04/2009 20:56	By Analytica ADI 407227	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.1	ug/L	92	78 - 130
1868-53-7	Dibromofluoromethane	50	46.1	ug/L	92	77 - 127
2037-26-5	Toluene d8	50	46	ug/L	92	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.3	ug/L	93	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID **Client ID** Matrix Collect Date/Time Receive Date/Time 20903043103 144440 02/27/2009 15:10 03/04/2009 09:35 Water

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/04/2009 21:21	By Analytica ADI 407227	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	46.9	ug/L	94	78 - 130
1868-53-7	Dibromofluoromethane	50	45.6	ug/L	91	77 - 127
2037-26-5	Toluene d8	50	49.9	ug/L	100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	45.6	ug/L	91	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID Client ID Matrix Collect Date/Time Receive Date/Time 20903043104 144441 Water 02/27/2009 15:40 03/04/2009 09:35

## SW-846 8260B

ytical Batch 27
L Units
65 ug/L
76 ug/L
65 ug/L
83 ug/L
18 ug/L
77 ug/L
Rec Limits
78 - 130
77 - 127
76 - 134
70 - 134
1

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID Client ID Matrix Collect Date/Time 20903043105 Receive Date/Time 144442 Water 02/27/2009 16:10 03/04/2009 09:35

## SW-846 8260B

0 70 02							
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 03/04/2009 22:10		Analytical Batch 407227	
<b>CAS#</b> 71-43-2	Parameter		Result	RDL		MDL	Uni
108-88-3 100-41-4 1330-20-7 91-20-3	Benzene Toluene Ethylbenzene Xylene (total) Naphthalene tert-Butyl methyl ether	MTBE)	0.065U 0.076U 0.065U 0.183U 0.118U 0.077U	5.00 5.00 5.00 10.0 5.00 5.00		0.065 0.076 0.065 0.183 0.118	ug ug ug
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	0.077	ug <b>Rec Limi</b> :
868-53-7 868-53-7 8037-26-5 7060-07-0	4-Bromofluorobenzene Dibromofluoromethane Toluene d8 1,2-Dichloroethane-d4	50 50 50 50	43.4 45.9 45.7 45.4	ug/L ug/L ug/L ug/L	; 9 9	92 91 91	78 - 13 77 - 12 76 - 13 71 - 12

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

## **DAVIS & BROWN**

## **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

S	South Carolina Lab Certification Number:	23101
S1	South Carolina Lab Certification Number:	93013
S2	South Carolina Lab Certification Number:	23105
S3	South Carolina Lab Certification Number:	10120
S4	South Carolina Lab Certification Number:	84002
S5	South Carolina Lab Certification Number:	32117
S6	Agricultural Service Laboratory Clemson U	Jniversity
S7	South Carolina Lab Certification Number:	
S8	******	
S9	South Carolina Lab Certification Number:	94014001; 94014002
S10	South Carolina Lab Certification Number:	84009
S11	South Carolina Lab Certification Number:	96023; 96026; 96031; 98001; 73006
S12	AASHTO R18 Certified	
S13	South Carolina Lab Certification Number:	96012
S14	South Carolina Lab Certification Number:	89002
S15	******	į ·
S16	South Carolina Lab Certification Number:	84004
S17	South Carolina Lab Certification Number:	96037001
S18	South Carolina Lab Certification Number:	95005
<u>S</u> 19	South Carolina Lab Certification Number:	23104
S20	South Carolina Lab Certification Number:	96027001
S21_	South Carolina Lab Certification Number:	21005
S22	South Carolina Lab Certification Number:	24110
S23	South Carolina Lab Certification Number:	84001001
S24	South Carolina Lab Certification Number: 8	\$2014001
S25	Sample was analyzed by Microseeps, Inc La	aboratory
S26	North Carolina Lab Certification Number:	21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 4	40569

# CHAIN OF CUSTODY RECORD #1

124 West McIver Road DAVIS & BROWN

Post Office Box 15038 Quinby, South Carolina 29508

Florence, South Carolina 29501 Telephone (843) 665-6746

144442 044441 ।त्त्वत्। 44438 144439 Use Codes in the boxes to indicate whether sample was filtered or preserved. E I LAB ID O Non Regulatory **A**Regulatory REMARKS Relinquished by (SIGNATURE)\* teceived by (SIGNATURE)\* × R R × × × SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify LKM Relinquished by (SIGNATURE) MELVE? - 2bec Received by (SIGNATURE) Nitrate σop BOD 32/29 1120 J 7 araniamos to a N COMB COMB 20IT 2/27/09 1440 1 0151/24/1510 2/27/09/1540 2/27/09 1400 0131/60/12/2 JOBY RICKS Client Name / Facility Name DATE Relinquished by (SIGINATURE).

SOVY KEUKS

Breefed by (SIGINATURE). MI 32 Apr 70 SAMPLE ID 11 34 ANIA 38 JE 11/11/11/20 O NO

• Program Area: D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Report Date: 14-Apr-09

Receipt Date: 30-Mar-09

South Carolina Certification Number: 21117

**Sample Date:** 

27-Mar-09

SDG #:

SDG-065972 Lab Sample ID: LSID-145407

Sample ID:

SB-8

Approved By:

Van Ward Van Ward

	Reporting	2				
Result	Limit	Unit	Method	Flag Date	Time	Analyst
< 0.00547	0.0055	ppm	5030\8021B	S11 4/1/2009	17:42	RJU
< 0.0273	0.0273	ppm	5030\8021B	4/1/2009		WSF
< 0.00547	0.0055	ppm	5030\8021B	S11 4/1/2009	17:42	RJU
< 0.00547	0.0055	ppm	5030\8021B	S11 4/1/2009	17:42	RJU
< 0.0109	0.0109	ppm	5030\8021B	S11 4/1/2009	17:42	RJU
< 0.00547	0.0055	mg/kg	EPA 8260	S11 4/1/2009	17:42	RJU
	<0.00547 <0.0273 <0.00547 <0.00547 <0.0109	Result         Limit           <0.00547	<0.00547	Result         Limit         Unit         Method           <0.00547	Result         Limit         Unit         Method         Flag         Date           <0.00547	Result         Limit         Unit         Method         Flag         Date         Time           <0.00547

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 30-Mar-09

South Carolina Certification Number: 21117

Report Date: 14-Apr-09

Sample Date:

27-Mar-09

SDG #:

SDG-065972

Sample ID:

Lab Sample ID: LSID-145408

Approved By:

Van Ward Van Ward

		Reporting	,			<b>-</b>	
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	43.4	37.5	ppm	5030\8021B	S11 4/1/2009	14:51	ADI
BTEX, Total (Soils)	1586.4	187.5	ppm	5030\8021B	4/1/2009		WSF
Ethylbenzene	156	37.5	ppm	5030\8021B	S11 4/1/2009	17:42	ADI
Toluene	602	37.5	ppm	5030\8021B	S11 4/1/2009	17:42	ADI
Xylene, Total	785	75	ppm	5030\8021B	S11 4/1/2009	17:42	ADI
Napthalene	82.5	37.5	mg/kg	EPA 8260	S11 4/1/2009	14:51	ADI

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 30-Mar-09 Report Date: 14-Apr-09

South Carolina Certification Number: 21117

Sample Date:

27-Mar-09

SDG#:

SDG-065972 Lab Sample ID: LSID-145409

Sample ID:

SB-10

Approved By:

Van Ward

Van Ward Lab Director

		Reporting		!			
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	20.9	10	ppm	5030\8021B	S11 4/1/2009	15:15	ADI
BTEX, Total (Soils)	716.2	50	ppm	5030\8021B	4/1/2009		WSF
Ethylbenzene	68.3	10	ppm	5030\8021B	S11 4/1/2009	15:15	ADI
Toluene	256	10	ppm	5030\8021B	S11 4/1/2009	15:15	ADI
Xylene, Total	371	20	ppm	5030\8021B	S11 4/1/2009	15:15	ADI
Napthalene	43.4	10	mg/kg	EPA 8260	S11 4/1/2009	15:15	ADI

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

**Contact:** 

Receipt Date: 30-Mar-09 Report Date: 14-Apr-09

**Sample Date:** 

27-Mar-09

SDG #:

SDG-065972 Lab Sample ID: LSID-145410

Sample ID:

SB-11

Approved By:

Van Ward Van Ward

South Carolina Certification Number: 21117

		Reporting	5				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	51.1	24.4	ppm	5030\8021B	S11 4/1/2009	15:39	ADI
BTEX, Total (Soils)	1423.1	121.9	ppm	5030\8021B	4/1/2009		WSF
Ethylbenzene	129	24.4	ppm	5030\8021B	S11 4/1/2009	15:39	ADI
Toluene	563	24.4	ppm	5030\8021B	S11 4/1/2009	15:39	ADI
Xylene, Total	680	48.7	ppm	5030\8021B	S11 4/1/2009	15:39	ADI
Napthalene	77.1	24.4	mg/kg	EPA 8260	S11 4/1/2009	15:39	ADI

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 30-Mar-09 Report Date: 14-Apr-09

South Carolina Certification Number: 21117

Sample Date:

27-Mar-09

SDG#:

SDG-065972 Lab Sample ID: LSID-145411

Sample ID:

SB-12

Approved By:

Van Ward Van Ward

		Reporting	g				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.0043	0.0043	ppm	5030\8021B	S11 4/3/2009	15:22	JCK
BTEX, Total (Soils)	< 0.0215	0.0215	ppm	5030\8021B	4/3/2009		WSF
Ethylbenzene	< 0.0043	0.0043	ppm	5030\8021B	S11 4/3/2009	15:22	JCK
Toluene	< 0.0043	0.0043	ppm	5030\8021B	S11 4/3/2009	15:22	JCK
Xylene, Total	< 0.00859	0.0086	ppm	5030\8021B	S11 4/3/2009	15:22	JCK
Napthalene	< 0.0043	0.0043	mg/kg	EPA 8260	S11 4/3/2009	15:22	JCK

PO Box 15038 Quinby, SC 29506 (843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 30-Mar-09

South Carolina Certification Number: 21117

Report Date: 14-Apr-09

Sample Date:

27-Mar-09

SDG #:

SDG-065972 Lab Sample ID: LSID-145412

Sample ID:

SB-13

Approved By:

Van Ward

Van Ward Lab Director

_		Reporting	<u> </u>				
Parameter	Result	Limit	Unit	Method	Flag Date	Time	Analyst
Benzene	< 0.287	0.287	ppm	5030\8021B	S11 4/1/2009	11:51	AGC
BTEX, Total (Soils)	0.605	1.435	ppm	5030\8021B	4/1/2009		WSF
Ethylbenzene	0.605	0.287	ppm	5030\8021B	S11 4/1/2009	11:51	AGC
Toluene	< 0.287	0.287	ppm	5030\8021B	S11 4/1/2009	11:51	AGC
Xylene, Total	< 0.574	0.574	ppm	5030\8021B	S11 4/1/2009	11:51	AGC
Napthalene	2.44	0.287	mg/kg	EPA 8260	S11 4/1/2009	11:51	AGC

# CHAIN OF CUSTODY RECORD

DAVIS & BROWN 65072 124 West McIver Road Fiorence, South Carolina 29501

Post Office Box 15038 Quinby, South Carolina 29506

Telephone (843) 665-6746

res to indicate	ered or preserved.	H,SO, = D NA,S,O; = E FILTRATION = F	LAB ID	laschol	क्रिश्ति ।	145481	or Styl	14541	CASA.							Date Time	Dete	25	
Use Codes in the boxes to indicate	whether sample was filtered or preserved.	Code: HNO <sub>3</sub> = A HCL = B NAOH = C	REMARKS	OVA CI	0x4 > 1000	DXA > 1000	0 VM > 1000	0 xx ~1	O V# 3							Relinquished by (SIGNATURE)*	Roccived by (SIGNATURE)*	O Regulatory O Non Regulatory	G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other
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Client Name / Facility Name	Bild. STOK≡S	Collected by PECKS	SAMPLE ID	SB-8 3	SB - 9 3	SB-10 3	58-11 3	58-12 3	58-13 3							Relinquished by (SIGNATURE)*	red by (SIGNATURE)*	ICED QYES	

PO Box 15038 Quinby, SC 29506

(843) 665-6746 FAX: (843) 629-1444

# **Certificate of Analysis**

**Client:** 

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

**South Carolina Certification Number: 21117** 

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By:

Van Wad

		Reporting	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
LSID-146116 MW 1								
Benzene	7.01	2.5	ppm	5035/8260B	S11	4/23/2009	13:25	CLH
BTEX, Total (Liquids)	42.42	12.5	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 2.50	2.5	ppm	5035/8260B	S11	4/23/2009	13:25	CLH
Toluene	26.5	2.5	ppm	5035/8260B	S11	4/23/2009	13:25	CLH
Xylene, Total	8.91	5	ppm	5035/8260B	S11	4/23/2009	13:25	CLH
1,2-Dichloroethane	< 2.50	2.5	ppm	8260B	S11	4/23/2009	13:25	CLH
Diisopropyl Ether (DIPE)	< 2.50	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Ethanol	< 50.0	50	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Ethyl tert-butanol (ETBA)	< 5.00	5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Ethyl tert-butyl ether (ETBE)	< 2.50	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Methyl tert-Butyl Ether	12.3	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Napthalene	< 2.50	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Tert-amyl alcohol (TAA)	27.4	10	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Tert-amyl methyl ether (TAME)	< 2.50	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Tert-butyl alcohol (TBA)	< 5.00	5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
Tert-butyl formate (TBF)	< 2.50	2.5	mg/L	EPA 8260	S11	4/23/2009	13:25	CLH
EDB	0.487	0.01	ug/L	SW 846 8011	S11	4/25/2009	5:51	SMH
LSID-146117 MW 2								
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	13:50	CLH

LSID-146117	MW 2								
Benzene		< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	13:50	CLH

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## Certificate of Analysis

**Client:** 

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Report Date: 07-May-09

Receipt Date: 21-Apr-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By:

Van Ward Van Ward

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	13:50	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	13:50	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	13:50	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	13:50	CLH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	13:50	CLH
EDB	< 0.010	0.01	ug/L	\$W 846 8011	S11	4/25/2009	6:12	SMH
LSID-146118 MW 3		· · · · · · · · · · · · · · · · · · ·						
Benzene	<1.00	1	ppm	5035/8260B	S11	4/23/2009	14:14	CLH
BTEX, Total (Liquids)	23.62	5	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	1.58	1	ppm	5035/8260B	S11	4/23/2009	14:14	CLH

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FLORENCE, S.C. 29503

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1688

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SDG#:

SDG-066357

Approved By: Van Wand

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Toluene	9.64	1	ppm	5035/8260B	S11	4/23/2009	14:14	CLH
Xylene, Total	12.4	2	ppm	5035/8260B	S11	4/23/2009	14:14	CLH
1,2-Dichloroethane	<1.00	1	ppm	8260B	S11	4/23/2009	14:14	CLH
Diisopropyl Ether (DIPE)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Ethanol	<20.0	20	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Ethyl tert-butanol (ETBA)	< 2.00	2	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Ethyl tert-butyl ether (ETBE)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Methyl tert-Butyl Ether	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Napthalene	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Tert-amyl alcohol (TAA)	<4.00	4	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Tert-amyl methyl ether (TAME)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Tert-butyl alcohol (TBA)	< 2.00	2	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
Tert-butyl formate (TBF)	< 1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:14	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	6:34	SMH
LSID-146119 MW 4								
Benzene	3.93	1	ppm	5035/8260B	S11	4/23/2009	14:39	CLH
BTEX, Total (Liquids)	19.32	5	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	<1.00	1	ppm	5035/8260B	S11	4/23/2009	14:39	CLH
Toluene	11.3	1	ppm	5035/8260B	S11	4/23/2009	14:39	CLH
Xylene, Total	4.09	2	ppm	5035/8260B	S11	4/23/2009	14:39	CLH
				1				

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20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
1,2-Dichloroethane	<1.00	1	ppm	8260B	S11	4/23/2009	14:39	CLH
Diisopropyl Ether (DIPE)	1.10	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Ethanol	<20.0	20	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Ethyl tert-butanol (ETBA)	< 2.00	2	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Ethyl tert-butyl ether (ETBE)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Methyl tert-Butyl Ether	1.92	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Napthalene	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Tert-amyl alcohol (TAA)	10.2	4	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Tert-amyl methyl ether (TAME)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Tert-butyl alcohol (TBA)	< 2.00	2	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
Tert-butyl formate (TBF)	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	14:39	CLH
EDB	0.019	0.01	ug/L	SW 846 8011	S11	4/25/2009	6:55	SMH
LSID-146120 MW 5								
Benzene	0.0872	0.005	ppm	5035/8260B	S11	4/23/2009	15:04	CLH
BTEX, Total (Liquids)	0.0943	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	0.00708	0.005	ppm	5035/8260B	S11	4/23/2009	15:04	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	15:04	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	15:04	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	15:04	CLH
Diisopropyl Ether (DIPE)	0.0262	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH

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20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Methyl tert-Butyl Ether	0.0392	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Napthalene	0.136	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Tert-amyl alcohol (TAA)	0.323	0.02	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Tert-amyl methyl ether (TAME)	0.010	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	7:17	SMH
LSID-146121 MW 6								
Benzene	0.0695	0.02	ppm	5035/8260B	S11	4/23/2009	15:28	CLH
BTEX, Total (Liquids)	1.545	0.1	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	0.502	0.02	ppm	5035/8260B	S11	4/23/2009	15:28	CLH
Toluene	0.0377	0.02	ppm	5035/8260B	S11	4/23/2009	15:28	CLH
Xylene, Total	0.936	0.04	ppm	5035/8260B	S11	4/23/2009	15:28	CLH
1,2-Dichloroethane	< 0.020	0.02	ppm	8260B	S11	4/23/2009	15:28	CLH
Diisopropyl Ether (DIPE)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	15:28	CLH
Ethanol	< 0.400	0.4	mg/L	EPA 8260	S11	4/23/2009	15:28	CLH
Ethyl tert-butanol (ETBA)	< 0.040	0.04	mg/L	EPA 8260	S11	4/23/2009	15:28	CLH

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FLORENCE, S.C. 29503

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1688

20-Apr-09

SDG#:

Sample Date:

SDG-066357

South Carolina Certification Number: 21117

Receipt Date: 21-Apr-09

Report Date: 07-May-09

Approved By: \_

Van Wand

		Reporting	Unit	Method	Flag	Date	Time	Analys
Parameter	Result	Limit			S11	4/23/2009	15:28	CLH
Ethyl tert-butyl ether (ETBE)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	15:28	CLH
Methyl tert-Butyl Ether	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	15:28	CLH
Napthalene	0.594	0.02	mg/L	EPA 8260	S11	4/23/2009	15:04	CLH
Tert-amyl alcohol (TAA)	0.124	0.08	mg/L	EPA 8260	S11	4/23/2009	15:04	CLE
Tert-amyl methyl ether (TAME)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	15:04	CLF
Tert-butyl alcohol (TBA)	< 0.040	0.04	mg/L	EPA 8260	S11	4/23/2009	15:04	CLF
Tert-butyl formate (TBF)	< 0.020	0.02	mg/L	EPA 8260	S11	4/25/2009	7:38	SM
EDB	< 0.010	0.01	ug/L	SW 846 8011	211			
LSID-146122 MW 7						4/20/2009	15:15	JR
Iron,Ferrous	1.04	0	ppm	5035/8260B	S11	4/23/2009	15:53	CL
Benzene	< 0.005	0.005	ppm	5035/8260B	511	4/23/2009		W
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	S11	4/23/2009	15:53	CI
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B 5035/8260B	S11	4/23/2009	15:53	CI
Toluene	< 0.005	0.005	ppm	5035/8260B 5035/8260B	S11	4/23/2009	15:53	S CI
Xylene, Total	< 0.010	0.01	ppm	8260B	S11			S CI
1,2-Dichloroethane	< 0.005	0.005	ppm	8200B EPA 300.0	511	4/21/2009		3 D
Nitrogen, Nitrate- IC	8.0	1	mg/L			4/21/2009		3 D
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0	S11			3 C
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S1:			
Ethanol	< 0.100	0.1	mg/L	EPA 8260	51	1 -1/25/2009		

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FLORENCE, S.C. 29503

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SDG#:

SDG-066357

Approved By:

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	15:53	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	8:00	SMH
LSID-146123 MW 8								
Iron,Ferrous	1.65	0	ppm			4/20/2009	12:00	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:18	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:18	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:18	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	16:18	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	16:18	CLH
Nitrogen, Nitrate- IC	< 0.50	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	6.9	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH

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SDG-066357

Approved By: Van Wand

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:18	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	8:22	SMH
LSID-146124 MW 9								
Iron,Ferrous	0.09	0	ppm			4/20/2009	11:45	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:43	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:43	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	16:43	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	16:43	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	16:43	CLH
Nitrogen, Nitrate- IC	< 0.50	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH

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SDG-066357

Approved By: Van Wand

						Lab I	JII CCTOI	
		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	16:43	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	9:05	SMH
LSID-146125 MW 10								
Iron,Ferrous	1.74	0	ppm			4/20/2009	11:15	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:07	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:07	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:07	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	17:07	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	17:07	CLH
Nitrogen, Nitrate- IC	4.6	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH

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SDG#:

SDG-066357

Approved By:

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:07	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	10:32	SMH
LSID-146126 MW 11								* * * * * * * * * * * * * * * * * * * *
Iron,Ferrous	2.26	0	ppm			4/20/2009	11:30	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:32	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:32	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:32	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	17:32	CLH
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	17:32	CLH

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## **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 21-Apr-09 Report Date: 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Ward

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Nitrogen, Nitrate- IC	0.86	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:32	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	10:54	SMH
LSID-146127 MW 12								
Iron,Ferrous	0.21	0	ppm		-	4/20/2009	12:52	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:57	CLH
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:57	CLH
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/23/2009	17:57	CLH
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/23/2009	17:57	CLH

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# **Certificate of Analysis**

Client:

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FLORENCE, S.C. 29503

Client #:

1688

Contact:

**Report Date:** 07-May-09

Receipt Date: 21-Apr-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: \_\_\_\_\_ Wan\_\_ Wand

Van Ward

	••	Reportin	g				-	
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analys
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/23/2009	17:57	CLH
Nitrogen, Nitrate- IC	4.6	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/23/2009	17:57	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	11:16	SMH
LSID-146128 MW 13								
Iron,Ferrous	2.50	0	ppm			4/20/2009	13:45	JR
Benzene	0.288	0.05	ppm	5035/8260B	S11	4/23/2009	13:00	CLH
BTEX, Total (Liquids)	0.288	0.25	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.050	0.05	ppm	5035/8260B	S11	4/23/2009	13:00	CLH
Toluene	< 0.050	0.05	ppm	5035/8260B	S11	4/23/2009	13:00	CLH

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## **Certificate of Analysis**

Client:

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FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Ward

		Reporting	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Xylene, Total	< 0.100	0.1	ppm	5035/8260B	S11	4/23/2009	13:00	CLH
1,2-Dichloroethane	< 0.050	0.05	ppm	8260B	S11	4/23/2009	13:00	CLH
Nitrogen, Nitrate- IC	2.2	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	29.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	0.138	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Ethanol	<1.00	1	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Ethyl tert-butanol (ETBA)	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Ethyl tert-butyl ether (ETBE)	< 0.050	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Methyl tert-Butyl Ether	1.15	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Napthalene	< 0.050	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Tert-amyl alcohol (TAA)	0.609	0.2	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Tert-amyl methyl ether (TAME)	0.0631	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Tert-butyl alcohol (TBA)	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
Tert-butyl formate (TBF)	< 0.050	0.05	mg/L	EPA 8260	S11	4/23/2009	13:00	CLH
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	11:38	SMH
LSID-146129 MW 14								
Iron,Ferrous	1.08	0	ppm			4/20/2009	14:20	JR
Benzene	0.281	0.1	ppm	5035/8 <b>2</b> 60B	S11	4/23/2009	21:38	CLH
BTEX, Total (Liquids)	0.281	0.5	ppm	5035/8260B		4/23/2009		WSF
Ethylbenzene	< 0.100	0.1	ppm	5035/8260B	S11	4/23/2009	21:38	CLH

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**Client:** 

B.W. STOKES OIL CO.

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FLORENCE, S.C. 29503

Client #:

1688

**Contact:** 

Receipt Date: 21-Apr-09 Report Date: 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Ward

		Reportin	σ	<del>!</del>				
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Toluene	< 0.100	0.1	ppm	5035/8260B	S11	4/23/2009	21:38	CLH
Xylene, Total	< 0.200	0.2	ppm	\$035/8260B	S11	4/23/2009	21:38	CLH
1,2-Dichloroethane	< 0.100	0.1	ppm	8260B	S11	4/23/2009	21:38	CLH
Nitrogen, Nitrate- IC	1.1	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	5.6	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	0.234	0.1	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Ethanol	< 2.00	2	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Ethyl tert-butanol (ETBA)	< 0.200	0.2	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Ethyl tert-butyl ether (ETBE)	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Methyl tert-Butyl Ether	2.42	0.1	mg/L	EPA 8260	S11	4/23/2009	21:38	CLH
Napthalene	< 0.100	0.1	mg/L	EPA 8260	S11	4/23/2009	21:38	CLH
Tert-amyl alcohol (TAA)	1.08	0.4	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Tert-amyl methyl ether (TAME)	0.125	0.1	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Tert-butyl alcohol (TBA)	< 0.200	0.2	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
Tert-butyl formate (TBF)	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	12:34	AGC
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	11:59	SMH
LSID-146130 MW 15					-			
Iron,Ferrous	2.26	0	ppm			4/20/2009	14:35	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	1:57	JCK
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/28/2009		WSF

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# **Certificate of Analysis**

Client:

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FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: \_\_\_\_ Wan\_\_ Wand

Van Ward

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	1:57	JCK
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	1:57	JCK
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	1:57	JCK
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/28/2009	1:57	JCK
Nitrogen, Nitrate- IC	< 0.50	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	6.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	0.0153	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Methyl tert-Butyl Ether	0.0738	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Tert-amyl alcohol (TAA)	0.208	0.02	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Tert-amyl methyl ether (TAME)	0.0051	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Tert-butyl alcohol (TBA)	0.0132	0.01	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	1:57	JCK
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	12:21	SMH
LSID-146131 MW 16								
Iron,Ferrous	0.62	0	ppm			4/20/2009	13:34	JR
Benzene	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	2:24	JCK

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FLORENCE, S.C. 29503

Client #:

Contact:

1688

**Report Date:** 07-May-09

Receipt Date: 21-Apr-09

Sample Date:

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

South Carolina Certification Number: 21117

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analys
BTEX, Total (Liquids)	< 0.050	0.05	ppm	5035/8260B		4/28/2009		WSF
Ethylbenzene	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	2:24	JCK
Toluene	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	2:24	JCK
Xylene, Total	< 0.020	0.02	ppm	5035/8260B	S11	4/28/2009	2:24	JCK
1,2-Dichloroethane	< 0.010	0.01	ppm	8260B	S11	4/28/2009	2:24	JCK
Nitrogen, Nitrate- IC	4.1	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	0.0254	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Ethanol	< 0.200	0.2	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Ethyl tert-butanol (ETBA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Ethyl tert-butyl ether (ETBE)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Methyl tert-Butyl Ether	0.320	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Napthalene	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Tert-amyl alcohol (TAA)	< 0.040	0.04	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Tert-amyl methyl ether (TAME)	0.0109	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Tert-butyl alcohol (TBA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
Tert-butyl formate (TBF)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	2:24	JCK
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	13:04	SMH

LSID-146132	MW 17						
Iron,Ferrous		0.77	0	ppm	4/20/2009	13:40	JR

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FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 21-Apr-09 Report Date: 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG #:

SDG-066357

Approved By: Van Wand

Lab Director

		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	12:09	AGC
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/28/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	12:09	AGC
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	12:09	AGC
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	12:09	AGC
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/28/2009	12:09	AGC
Nitrogen, Nitrate- IC	5.2	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:09	AGC
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	13:26	SMH

LSID-146133

MW 18

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FLORENCE, S.C. 29503

Client #:

1688

Contact:

20-Apr-09

SDG#:

**Sample Date:** 

SDG-066357

South Carolina Certification Number: 21117

Receipt Date: 21-Apr-09

**Report Date:** 07-May-09

Approved By: Van Wand

Van Ward Lab Director

		Reporting	Ţ				mot	4 levo4
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
	>3.30	0	ppm			4/20/2009	13:50	JR
Iron, Ferrous	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	10:10	AGC
Benzene	<0.005	0.025	ppm	5035/8260B		4/28/2009		WSF
BTEX, Total (Liquids)		0.025	ppm	5035/8260B	S11	4/28/2009	10:10	AGC
Ethylbenzene	< 0.005	0.005	* *	5035/8260B	S11	4/28/2009	10:10	AGC
Toluene	< 0.005		ppm	5035/8260B	S11	4/28/2009	10:10	AGC
Xylene, Total	< 0.010	0.01	ppm	8260B	S11	4/28/2009	10:10	AGC
1,2-Dichloroethane	< 0.005	0.005	ppm		DII	4/21/2009	12:13	DH
Nitrogen, Nitrate- IC	3.2	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0	011	4/21/2009	10:10	AGC
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11			
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	10:10	
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	10:10	
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	10:10	
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	10:10	
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	10:10	
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	10:10	
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	10:10	AGC
	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	10:10	AGC
Tert-butyl alcohol (TBA)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	10:10	AGC
Tert-butyl formate (TBF)	< 0.003	0.003	ug/L	SW 846 8011	S11	4/25/2009	13:47	SMH
EDB	<0.010	0.01	ug/L	5,, 0,00011				

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 21-Apr-09 Report Date: 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Ward

Van Ward

	Reporting							
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
LSID-146134 MW 19								
Iron,Ferrous	1.13	0	ppm			4/20/2009	13:05	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:33	ADI
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8 <b>2</b> 60B		4/24/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:33	ADI
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:33	ADI
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/24/2009	5:33	ADI
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/24/2009	5:33	ADI
Nitrogen, Nitrate- IC	2.9	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	5:33	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	5:33	ADI
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	12:59	AGC
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	14:09	SMH

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

**Receipt Date:** 21-Apr-09 **Report Date:** 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

Van Ward

		Reporting						
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
SID-146135 MW 20								
Iron,Ferrous	0.83	0	ppm			4/20/2009	15:05	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:58	ADI
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/24/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:58	ADI
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	5:58	ADI
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/24/2009	5:58	ADI
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/24/2009	5:58	ADI
Nitrogen, Nitrate- IC	3.4	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	5.5	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	5:58	ADI
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	5:58	ADI
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:24	AGC
				1				

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# Certificate of Analysis

**Client:** 

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

				i				
		Reportin	g					
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analys
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	14:31	SMH
LSID-146136 MW 21								
Iron,Ferrous	2.23	0	ppm			4/20/2009	10:35	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	13:49	AGC
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/28/2009		WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	13:49	AGC
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	13:49	AGC
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	13:49	AGC
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/28/2009	13:49	AGC
Nitrogen, Nitrate- IC	5.2	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:49	AGC
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	13:49	AGC
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
• • • •			-					

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# Certificate of Analysis

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

Contact:

1688

Receipt Date: 21-Apr-09

**Report Date:** 07-May-09

Approved By: Van Wand

SDG#:

**Sample Date:** 

SDG-066357

20-Apr-09

Van Ward Lab Director

South Carolina Certification Number: 21117

		Reporting	;			TD 4	Time	Analyst
Parameter	Result	Limit	Unit	Method	Flag	Date		-
	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:20	RJU
Tert-butyl formate (TBF) EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	14:53	SMH
LSID-146137 MW 22						4/20/2009	10:45	JR
Iron,Ferrous	1.79	0	ppm	7027/02/OD	S11	4/28/2009	14:14	AGC
Benzene	< 0.005	0.005	ppm	5035/8260B	511	4/28/2009	1	WSF
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B	011	4/28/2009	14:14	AGC
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	14:14	AGC
Toluene	< 0.005	0.005	ppm	5035/8260B	S11		14:14	AGC
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009 4/28/2009	14:14	AGC
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11		12:13	DH
Nitrogen, Nitrate- IC	5.2	0.5	mg/L	EPA 300.0		4/21/2009 4/21/2009	12:13	DH
Sulfate- IC	< 5.0	5	mg/L	EPA 300.0	~		16:45	RJU
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:45	
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/24/2009		
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	16:45	
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:45	
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11		14:14	
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11			
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11			
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:45	s RJU
			i					

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# **Certificate of Analysis**

Client:

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

**Contact:** 

1688

Receipt Date: 21-Apr-09 Report Date: 07-May-09

**South Carolina Certification Number: 21117** 

Sample Date:

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Ward

Van Ward Lab Director

Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	16:45	RJU
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	16:45	RJU
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/27/2009	23:44	TLS
LSID-146138 MW -1-D								
Iron,Ferrous	1.05	0	ppm			4/20/2009	16:32	JR
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:09	RJU
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/24/2009	17.05	WSF
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:09	RJU
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:09	RJU
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/24/2009	17:09	RJU
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/24/2009	17:09	RJU
Nitrogen, Nitrate- IC	< 0.50	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Sulfate- IC	25.8	5	mg/L	EPA 300.0		4/21/2009	12:13	DH
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU
Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU

Reporting

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# **Certificate of Analysis**

**Client:** 

B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

**Contact:** 

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

**South Carolina Certification Number: 21117** 

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

Van Ward Lab Director

					Lab Director				
		Reportin	g				W 41 - W 1		
Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analys	
Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU	
Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU	
Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:09	RJU	
EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	15:36	SMH	
LSID-146139 MW 2-I	)								
Iron,Ferrous	0.68	0	ppm			4/20/2009	14:45	JR	
Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	14:38	AGC	
BTEX, Total (Liquids)	< 0.025	0.025	ppm	5035/8260B		4/28/2009		WSF	
Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	14:38	AGC	
Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/28/2009	14:38	AGC	
Xylene, Total	< 0.010	0.01	ppm	5035/8260B	S11	4/28/2009	14:38	AGC	
1,2-Dichloroethane	< 0.005	0.005	ppm	8260B	S11	4/28/2009	14:38	AGC	
Nitrogen, Nitrate- IC	5.5	0.5	mg/L	EPA 300.0		4/21/2009	12:13	DH	
Sulfate- IC	7.6	5	mg/L	EPA 300.0		4/21/2009	12:13	DH	
Diisopropyl Ether (DIPE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Ethanol	< 0.100	0.1	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Ethyl tert-butanol (ETBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Ethyl tert-butyl ether (ETBE)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Methyl tert-Butyl Ether	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	14:38	AGC	
Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/28/2009	14:38	AGC	

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# **Certificate of Analysis**

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B.W. STOKES OIL CO.

P.O. BOX 274

FLORENCE, S.C. 29503

Client #:

1688

Contact:

Receipt Date: 21-Apr-09 **Report Date:** 07-May-09

South Carolina Certification Number: 21117

**Sample Date:** 

20-Apr-09

SDG#:

SDG-066357

Approved By: Van Wand

Van Ward

Tert-amyl alcohol (TAA)							Lab Director			
Tert-amyl alcohol (TAA)			Reportin	g				-		
Tert-amyl methyl ether (TAME)	Parameter	Result	Limit	Unit	Method	Flag	Date	Time	Analyst	
Tert-butyl alcohol (TBA)	Tert-amyl alcohol (TAA)	< 0.020	0.02	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Tert-butyl formate (TBF)	Tert-amyl methyl ether (TAME)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
EDB <	Tert-butyl alcohol (TBA)	< 0.010	0.01	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
LSID-146140   DITCH	Tert-butyl formate (TBF)	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:34	RJU	
Benzene         <0.005         0.005         ppm         5035/8260B         S11         4/24/2009         17:59         RJU           BTEX, Total (Liquids)         0.0193         0.025         ppm         5035/8260B         4/24/2009         WSF           Ethylbenzene         <0.005	EDB	< 0.010	0.01	ug/L	SW 846 8011	S11	4/25/2009	15:57	SMH	
BTEX, Total (Liquids)  0.0193  0.025  ppm  5035/8260B  4/24/2009  WSF  Ethylbenzene  <0.005  0.005  ppm  5035/8260B  S11  4/24/2009  17:59  RJU  Toluene  <0.005  0.0193  0.010  ppm  5035/8260B  S11  4/24/2009  17:59  RJU  Xylene, Total  0.0193  0.01  ppm  5035/8260B  S11  4/24/2009  17:59  RJU  Methyl tert-Butyl Ether  0.155  0.005  mg/L  EPA 8260  S11  4/24/2009  17:59  RJU	LSID-146140 DITCH									
Ethylbenzene         <0.005         0.005         ppm         5035/8260B         S11         4/24/2009         17:59         RJU           Toluene         <0.005	Benzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:59	RJU	
Toluene <0.005 0.005 ppm 5035/8260B S11 4/24/2009 17:59 RJU Xylene, Total 0.0193 0.01 ppm 5035/8260B S11 4/24/2009 17:59 RJU Methyl tert-Butyl Ether 0.155 0.005 mg/L EPA 8260 S11 4/24/2009 17:59 RJU	BTEX, Total (Liquids)	0.0193	0.025	ppm	5035/8260B		4/24/2009		WSF	
Xylene, Total       0.0193       0.01       ppm       5035/8260B       S11       4/24/2009       17:59       RJU         Methyl tert-Butyl Ether       0.155       0.005       mg/L       EPA 8260       S11       4/24/2009       17:59       RJU	Ethylbenzene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:59	RJU	
Methyl tert-Butyl Ether 0.155 0.005 mg/L EPA 8260 S11 4/24/2009 17:59 RJU	Toluene	< 0.005	0.005	ppm	5035/8260B	S11	4/24/2009	17:59	RJU	
	Xylene, Total	0.0193	0.01	ppm	5035/8260B	S11	4/24/2009	17:59	RJU	
Napthalene <0.005 0.005 mg/L EPA 8260 S11 4/24/2009 17:59 RJU	Methyl tert-Butyl Ether	0.155	0.005	mg/L	EPA 8260	S11	4/24/2009	17:59	RJU	
	Napthalene	< 0.005	0.005	mg/L	EPA 8260	S11	4/24/2009	17:59	RJU	

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223201	146116	Water	04/20/2009 15:27	04/22/2009 09:30
2000.	146117	Water	04/20/2009 15:30	04/22/2009 09:30
20904223202	146117	Water	04/20/2009 16:05	04/22/2009 09:30
20904223203	146119	Water	04/20/2009 16:10	04/22/2009 09:30
20904223204		Water	04/20/2009 16:32	04/22/2009 09:30
20904223205	146120	Water	04/20/2009 16:15	04/22/2009 09:30
20904223206	146121	Water	04/20/2009 15:15	04/22/2009 09:30
20904223207	146122	Water	04/20/2009 12:00	04/22/2009 09:30
20904223208	146123	Water	04/20/2009 11:45	04/22/2009 09:30
20904223209	146124	Water	04/20/2009 11:15	04/22/2009 09:30
20904223210	146125	Water	04/20/2009 11:30	04/22/2009 09:30
20904223211	146126	Water	04/20/2009 12:52	04/22/2009 09:30
20904223212	146127	Water	04/20/2009 13:45	04/22/2009 09:30
20904223213	146128	Water	04/20/2009 14:20	04/22/2009 09:30
20904223214	146129	Water	04/20/2009 14:35	04/22/2009 09:30
20904223215	146130	Water	04/20/2009 13:34	04/22/2009 09:30
20904223216	146131	Water	04/20/2009 13:40	04/22/2009 09:30
20904223217	146132	Water	04/20/2009 13:50	04/22/2009 09:30
20904223218	146133	Water	04/20/2009 13:05	04/22/2009 09:30
20904223219	146134		04/20/2009 15:05	04/22/2009 09:30
20904223220	146135	Water∃ Water	04/20/2009 10:35	04/22/2009 09:30
20904223221	146136	water	04/20/2009 10:45	04/22/2009 09:30
20904223222	146137		04/20/2009 16:32	04/22/2009 09:30
20904223223	146138	Water	04/20/2009 10:32	04/22/2009 09:30
20904223224	146139	Water	04/20/2009 14:45	04/22/2009 09:30
20904223225	146140	Water	04/20/2009 10.43	0 1/LL/2000 00:00

# 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
	minimum and record made rick belooked at the opcomed ribe

DO Indicates the result was Diluted Out

ΜI 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** Method Detection Limit MDL RDL Reporting Detection Limit

00:00 Reported as a time equivalent to 12:00 AM

#### Reporting Flags Utilized in this Report

Indicates an estimated value

U Indicates the compound was analyzed for but not detected

В (ORGANICS) Indicates the analyte was detected in the associated Method Blank

В (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 ISO Guide 25 and 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.

Robyn Migues

Technical Director **GCAL REPORT** 209042232

THIS REPORT CONTAINS \_\_\_\_\_ PAGES.

GCAL ID	Client ID	· "· · · · · · · · · · · · · · · · · ·	Matrix	Collect Date/Time	Receive Date/Time
20904223201	146116	deservice for	Water	04/20/2009 15:27	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 500	<b>Analyzed</b> 04/23/2009 13:25	•	Analytical B 410212	Batch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		44.9U	2500		44.9	ug/L
71-43-2	Benzene		7010	2500		32.5	ug/L
100-41-4	Ethylbenzene		1670J	2500		32.6	ug/L
91-20-3	Naphthalene		1070J	2500		59.1	ug/L
108-88-3	Toluene		26500	2500		37.8	ug/L
1330-20-7	Xylene (total)		8910	5000		91.7	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	12300	2500		38.5	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	25000	22400	ug/L		90	78 - 130
1868-53-7	Dibromofluoromethane	25000	25900	ug/L		104	77 - 127
2037-26-5	Toluene d8	25000	25000	ug/L		100	76 - 134
17060-07-0	1,2-Dichloroethane-d4	25000	26900	ug/L		108	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 500	Analyzed 04/23/2009 13:25	By Analytica CLH 410213	Il Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17 <b>-</b> 5	Ethanol		20200U	50000	20200	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	130U	2500	130	ug/L
108-20-3	diisopropyl Ether (DIF	PE)	2260J	2500	265	ug/L
624-95-3	ethyl tert-butanol (ETB/	٨)	2180U	5000	2180	ug/L
75-65-0	t-Butanol (TBA)		2060U	5000	2060	ug/L
994-05-8	t-amyl methyl ether (T	AME)	1880J	2500	174	ug/L
75-85-4	tert-amyl alcohol (TAA	١)	27400	10000	7800	ug/L
762-75-4	tert-butyl formate (TBF)		179U	2500	179	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	25000	22400	ug/L	90	50 - 150
1868-53-7	Dibromofluoromethane	25000	25900	ug/L	104	50 - 150
2037-26-5	Toluene d8	25000	25000	ug/L	100	50 - 150
17060-07-0	1,2-Dichloroethane-d4	25000	26900	ug/L	108	50 - 150

### SW-846 8011

Prep Date 04/23/2009 0	<b>Prep Batch</b> 09:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 05:51	<b>By</b> SMH	Analytical Bate 410465	ch .
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.487	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

 GCAL ID
 Client ID
 Matrix
 Collect Date/Time
 Receive Date/Time

 20904223202
 146117
 Water
 04/20/2009 15:30
 04/22/2009 09:30

# SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 13:50	By Analyst CLH 41021	t <b>ical Batch</b> 2
CAS#	Parameter	****	Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	) ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	5 ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	3 ug/L
108-88-3	Toluene		0.076U	5.00	0.076	s ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	3 ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.4	ug/L	83	78 - 130
1868-53-7	Dibromofluoromethane	50	56.2	ug/L	112	77 - 127
2037-26-5	Toluene d8	50	51.4	ug/L	103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	55.7	ug/L	111	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 13:50	<b>By</b> CLH	Analytica 410213	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIPE	i)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB/	<b>A)</b>	4.36U	10.0		4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05-8	t-amyl methyl ether (TA	ME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA)		15.6U	20.0		15.6	ug/L
762-75-4	tert-butyl formate (TBF)		0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.4	ug/L		83	50 - 150
1868-53-7	Dibromofluoromethane	50	56.2	ug/L		112	50 - 150
2037-26-5	Toluene d8	50	51.4	ug/L		103	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	55.7	ug/L		111	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 09	<b>Prep Batch</b> 9:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 06:12	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time	
20904223203	146118	Water 04/20/2009 16:05	04/22/2009 09:30	

Prep Date	Prep Batch	Prep Method	Dilution 200	<b>Analyzed</b> 04/23/2009 14:14	By Analytic CLH 410212	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		18.0U	1000	18.0	ug/L
71-43-2	Benzene		822J	1000	13.0	ug/L
100-41-4	Ethylbenzene		1580	1000	13.0	ug/L
91-20-3	Naphthalene		685J	1000	23.6	ug/L
108-88-3	Toluene		9640	1000	15.1	ug/L
1330-20-7	Xylene (total)		12400	2000	36.7	ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	15.4U	1000	15.4	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	9150	ug/L	92	78 - 130
1868-53-7	Dibromofluoromethane	10000	11100	ug/L	111	77 - 127
2037-26-5	Toluene d8	10000	9930	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	10000	11300	ug/L	113	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 200	Analyzed 04/23/2009 14:14	<b>By</b> CLH	Analytical 410213	Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17 <b>-</b> 5	Ethanol		8060U	20000		8060	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	51.8U	1000		51.8	ug/L
108-20-3	diisopropyl Ether (DIPI	Ξ)	106U	1000		106	ug/L
624-95-3	ethyl tert-butanol (ETB	A)	872U	2000		872	ug/L
75-65-0	t-Butanol (TBA)		824U	2000		824	ug/L
994-05-8	t-amyl methyl ether (T/	AME)	69.6U	1000		69.6	ug/L
75-85-4	tert-amyl alcohol (TAA	)	3120U	4000		3120	ug/L
762-75-4	tert-butyl formate (TBF	()	71.4U	1000		71.4	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Red	covery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	9150	ug/L		92	50 - 150
1868-53-7	Dibromofluoromethane	10000	11100	ug/L		111	50 - 150
2037-26-5	Toluene d8	10000	9930	ug/L		99	50 - 150
17060-07-0	1,2-Dichloroethane-d4	10000	11300	ug/L		113	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 0	<b>Prep Batch</b> 19:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 06:34	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID	Matrix Collect Date/Time	Receive Date/Time
20904223204	146119	Water 04/20/2009 16:10	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 200	<b>Analyzed</b> 04/23/2009 14:39	-	Analytical 410212	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		18.0U	1000		18.0	ug/L
71-43-2	Benzene		3930	1000		13.0	ug/L
100-41-4	Ethylbenzene		92.8J	1000		13.0	ug/L
91-20-3	Naphthalene		478J	1000		23.6	ug/L
108-88-3	Toluene		11300	1000		15.1	ug/L
1330-20-7	Xylene (total)		4090	2000		36.7	ug/L
1634-04-4	tert-Butyl methyl ether (N	MTBE)	1920	1000		15.4	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	8710	ug/L		87	78 - 130
1868-53-7	Dibromofluoromethane	10000	10500	ug/L		105	77 - 127
2037-26-5	Toluene d8	10000	10100	ug/L		101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	10000	11100	ug/L		111	71 - 127

#### SW-846 8260B

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Prep Date	Prep Batch	Prep Method	Dilution 200	<b>Analyzed</b> 04/23/2009 14:39	By Analytic CLH 410213	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		8060U	20000	8060	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	51.8U	1000	51.8	ug/l
108-20-3	diisopropyl Ether (DIF	PE)	1100	1000	106	ug/L
624-95-3	ethyl tert-butanol (ETBA	<b>A)</b>	872U	2000	872	ug/l
75-65-0	t-Butanol (TBA)		824U	2000	824	ug/l
994-05-8	t-amyl methyl ether (T	AME)	781J	1000	69.6	ug/L
75-85-4	tert-amyl alcohol (TAA	<b>A</b> )	10200	4000	3120	ug/L
762-75-4	tert-butyl formate (TBF)		71.4U	1000	71.4	ug/l
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	10000	8710	ug/L	87	50 - 150
1868-53-7	Dibromofluoromethane	10000	10500	ug/L	105	50 - 150
2037-26-5	Toluene d8	10000	10100	ug/L	101	50 - 150
17060-07-0	1,2-Dichloroethane-d4	10000	11100	ug/L	111	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 0	<b>Prep Batch</b> 9:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 06:55	•	nalytical Batch 0465	:
CAS#	Parameter		Result	RDL	N	/IDL	Units
106-93-4	1,2-Dibromoethane		0.019	0.010	0.00	350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223205	146120	Water	04/20/2009 16:32	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 15:04	By Analyt CLH 410212	ical Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		87.2	5.00	0.065	ug/L
100-41-4	Ethylbenzene		7.08	5.00	0.065	ug/L
91-20-3	Naphthalene		136	5.00	0.118	ug/L
108-88-3	Toluene		1.67J	5.00	0.076	ug/L
1330-20-7	Xylene (total)		8.75J	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	39.2	5.00	0.077	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	51.3	ug/L	103	77 - 127
2037-26-5	Toluene d8	50	48.2	ug/L	96	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	54.6	ug/L	109	71 - 127

#### SW-846 8260B

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Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 15:04	By Analytica CLH 410213	ıl Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		40.3U	100	40.3	ug/L
637-92-3	Ethyl tert-butyl ether (	ETBE)	0.259U	5.00	0.259	ug/L
108-20-3	diisopropyl Ether (Di	IPE)	26.2	5.00	0.529	ug/L
624-95-3	ethyl tert-butanol (ETE	BA)	4.36U	10.0	4.36	ug/L
75-65-0	t-Butanol (TBA)		7.42J	10.0	4.12	ug/L
994-05-8	t-amyl methyl ether (	(TAME)	10.0	5.00	0.348	ug/L
75-85-4	tert-amyl alcohol (TA	AA)	323	20.0	15.6	ug/L
762-75-4	tert-butyl formate (TBI	F)	0.357U	5.00	0.357	ug/l
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	47.5	ug/L	95	50 - 150
1868-53-7	Dibromofluoromethane	50	51.3	ug/L	103	50 - 150
2037-26-5	Toluene d8	50	48.2	ug/L	96	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	54.6	ug/L	109	50 - 150
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#### SW-846 8011

	•						
Prep Date 04/23/2009 0	<b>Prep Batch</b> 9:00 410180	Prep Method SW-846 8011	Dilution 1	Analyzed 04/25/2009 07:17	By SMH	Analytical Bat 410465	ch
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID Client ID Matrix Collect Date/Time Receive Date/Time 20904223206 146121 Water 04/20/2009 16:15 04/22/2009 09:30

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 4	<b>Analyzed</b> 04/23/2009 15:28	-	Analytical E	Batch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		0.359U	20.0		0.359	ug/L
71-43-2	Benzene		69.5	20.0		0.260	
100-41-4	Ethylbenzene		502	20.0		0.261	ug/L
91-20-3	Naphthalene		594	20.0		0.472	ug/L
108-88-3	Toluene		37.7	20.0			ug/L
1330-20-7	Xylene (total)		936	40.0		0.302	ug/L
1634-04-4	tert-Butyl methyl ether (f	MTBE)	2.86J	20.0		0.733 0.308	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	erv	Rec Limits
460-00-4	4-Bromofluorobenzene	200	194	ug/L		97	78 - 130
1868 <b>-</b> 53-7	Dibromofluoromethane	200	194	ug/L		97	
2037-26-5	Toluene d8	200	199	•	,		77 - 127
17060-07-0	1,2-Dichloroethane-d4	200	203	ug/L ug/L		100 102	76 - 134 71 - 127

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 4	<b>Analyzed</b> 04/23/2009 15:28	<b>By</b> CLH	Analytica 410213	l Batch
CAS#	Parameter		Result	RDL	···	MDL	Units
64-17-5	Ethanol		161U	400		161	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	1.04U	20.0		1.04	ug/L ug/L
108-20-3	diisopropyl Ether (DI	PE)	4.09J	20.0		2.12	-
624-95-3	ethyl tert-butanol (ETB	(A)	17,4U	40.0		17.4	ug/L
75-65-0	t-Butanol (TBA)	,	16.5U	40.0		16.5	ug/L
994-05-8	t-amyl methyl ether (	TAME)	11.4J	20.0		1.39	ug/L
75-85-4	tert-amyl alcohol (TA		124	80.0		62.4	ug/L
762-75-4	tert-butyl formate (TBF	, ,	1.43U	20.0		1.43	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overv	Rec Limits
460-00-4	4-Bromofluorobenzene	200	194	ug/L		97	50 - 150
1868 <b>-</b> 53-7	Dibromofluoromethane	200	194	-		97 97	
2037-26-5	Toluene d8	200	199	ug/L			50 - 150
17060-07-0	1,2-Dichloroethane-d4	200	203	ug/L ug/L		100 102	50 - 150 50 - 150

### SW-846 8011

Prep Date 04/23/2009 0	<b>Prep Batch</b> 09:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 07:38	<b>By</b> SMH	Analytical Bat 410465	ch
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix Co	llect Date/Time	Receive Date/Time	
20904223207	146122	Water 04	/20/2009 15:15	04/22/2009 09:30	

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 15:53	<b>By</b> CLH	Analytical 410212	Batch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
71-43 <b>-</b> 2	Benzene		0.065U	5.00		0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
91-20-3	Naphthalene		2.48J	5.00		0.118	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	50	45.6	ug/L		91	78 - 130
1868-53-7	Dibromofluoromethane	50	49.9	ug/L		100	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L		99	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 1	<b>Analyzed</b> 04/23/2009 15:53	By Analytica CLH 410213	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		40.3U	100	40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	0.259U	5.00	0.259	ug/L
108-20-3	diisopropyl Ether (DIPE	Ξ)	0.529U	5.00	0.529	ug/L
624-95 <b>-</b> 3	ethyl tert-butanol (ETB	A)	4.36U	10.0	4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0	4.12	ug/L
994-05-8	t-amyl methyl ether (TA	ME)	0.348U	5.00	0.348	ug/L
75-85-4	tert-amyl alcohol (TAA)		15.6U	20.0	15.6	ug/L
762-75-4	tert-butyl formate (TBF	)	0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.6	ug/L	91	50 - 150
1868-53-7	Dibromofluoromethane	50	49.9	ug/L	100	50 - 150
2037-26-5	Toluene d8	50	49.7	ug/L	99	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	49	ug/L	98	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 09:00	<b>Prep Batch</b> 3 410180	Prep Method SW-846 8011	<b>Dilution</b> 1	<b>Analyzed</b> 04/25/2009 08:00	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223208	146123	Water	04/20/2009 12:00	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 16:18	By Analyti CLH 410212	ical Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		1.99J	5.00	0.118	-
108-88-3	Toluene		0.076U	5.00	0.076	_
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.3	ug/L	91	78 - 130
1868-53-7	Dibromofluoromethane	50	51.2	ug/L	102	77 - 127
2037-26-5	Toluene d8	50	50.4	ug/L	101	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50.3	ug/L	101	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 16:18	-	nalytical 10213	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIPI	E)	0.529U	5.00		0.529	ug/L
624 <b>-</b> 95-3	ethyl tert-butanol (ETB	SA)	4.36U	10.0		4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05-8	t-amyl methyl ether (T/	AME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA	)	15.6U	20.0		15.6	ug/L
762 <b>-</b> 75-4	tert-butyl formate (TBF	<del>.</del> )	0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.3	ug/L		91	50 - 150
1868-53 <b>-</b> 7	Dibromofluoromethane	50	51.2	ug/L	1	02	50 - 150
2037-26-5	Toluene d8	50	50.4	ug/L	1	01	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	50.3	ug/L	1	01	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 09	<b>Prep Batch</b> 9:00 410180	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 08:22	<b>By</b> SMH	Analytical Batch 410465	1
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID	Matrix Collect Date/Time Recei	ve Date/Time
20904223209	146124	Water 04/20/2009 11:45 04/22/	/2009:09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 16:43	By Analytic CLH 410212	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (M	ГВЕ)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43.9	ug/L	88	78 <b>-</b> 130
1868-53-7	Dibromofluoromethane	50	51.9	ug/L	104	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.4	ug/L	103	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 16:43	<b>By</b> CLH	Analytica 410213	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17 <b>-</b> 5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIPI	Ε)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB	A)	4.36U	10.0		4.36	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05 <b>-</b> 8	t-amyl methyl ether (TA	AME)	0.348U	5.00		0.348	ug/L
75 <b>-</b> 85-4	tert-amyl alcohol (TAA)	)	15.6U	20.0		15.6	ug/L
762-75-4	tert-butyl formate (TBF	·)	0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	50	43.9	ug/L		88	50 - 150
1868-53-7	Dibromofluoromethane	50	51.9	ug/L		104	50 - 150
2037-26-5	Toluene d8	50	49.7	ug/L		99	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	51.4	ug/L		103	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 09	Prep Batch 9:00 410180	Prep Method SW-846 8011		Dilution 1	<b>Analyzed</b> 04/25/2009 09:05	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter			Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		(	.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223210	146125	Water	04/20/2009 11:15	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 17:07	-	Analytical Batch 10212	
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
71-43-2	Benzene		0.828J	5.00		0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
91-20-3	Naphthalene		2.02J	5.00		0.118	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	2.58J	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ery Rec	Limits
460-00-4	4-Bromofluorobenzene	50	42.3	ug/L		85 78	8 - 130
1868-53-7	Dibromofluoromethane	50	52.4	ug/L	1	05 77	7 - 127
2037-26-5	Toluene d8	50	50.2	ug/L	1	00 76	6 - 134
17060-07-0	1,2-Dichloroethane-d4	50	53	ug/L	1	06 7	1 - 127
				-			

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	Analyzed 04/23/2009 17:07	By Analytica	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		40.3U	100	40.3	ug/l
637-92-3	Ethyl tert-butyl ether (	ETBE)	0.259U	5.00	0.259	ug/l
108-20-3	diisopropyl Ether (Di	IPE)	1.62J	5.00	0.529	ug/l
624-95-3	ethyl tert-butanol (ETE	BA)	4.36U	10.0	4.36	ug/l
75-65-0	t-Butanol (TBA)	4.12U	10.0	4.12	ug/l	
994 <b>-</b> 05-8	t-amyl methyl ether (T	AME)	0.348U	5.00	0.348	ug/l
75-85-4	tert-amyl alcohol (TAA	<b>(</b> )	15.6U	20.0	15.6	ug/l
762-75-4	tert-butyl formate (TBF	=)	0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.3	ug/L	85	50 - 150
1868-53-7	Dibromofluoromethane	50	52.4	ug/L	105	50 - 150
2037-26-5	Toluene d8	50	50.2	ug/L	100	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	53	ug/L	106	50 - 150
				-		

#### SW-846 8011

Prep Date 04/23/2009 10	<b>Prep Batch</b> 0:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 10:32	<b>By</b> SMH	Analytical Batc 410465	h
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223211	146126	Water	04/20/2009 11:30	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 17:32	•	Analytical E 410212	Satch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
91-20-3	Naphthalene		0.118U	5.00		0.118	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.077U	5.00		0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.1	ug/L		84	78 - 130
1868-53-7	Dibromofluoromethane	50	54.6	ug/L		109	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L		99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	54.1	ug/L		108	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 17:32	<b>By</b> CLH	Analytica 410213	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	TBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIPE	E)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB)	Á)	4.36U	10.0		4.36	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05-8	t-amyl methyl ether (TA	ME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA)		15.6U	20.0		15.6	ug/L
762 <b>-</b> 75-4	tert-butyl formate (TBF)	,	0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.1	ug/L		84	50 - 150
1868-53-7	Dibromofluoromethane	50	54.6	ug/L		109	50 - 150
2037-26-5	Toluene d8	50	49.7	ug/L		99	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	54.1	ug/L		108	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 10	<b>Prep Batch</b> 0:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 10:54	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		Ø.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

 GCAL ID
 Client ID
 Matrix
 Collect Date/Time
 Receive Date/Time

 20904223212
 146127
 Water
 04/20/2009 12:52
 04/22/2009 09:30

### SW-846 8260B

	0.002002					
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/23/2009 17:57	-	alytical Batch 0212
CAS#	Parameter		Result	RDL	M	DL Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.	090 ug/L
71-43-2	Benzene		0.065U	5.00	0.	065 ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.	065 ug/L
91-20-3	Naphthalene		0.118U	5.00	0.	118 ug/L
108-88-3	Toluene		0.076U	5.00	0.	076 ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.	183 ug/L
1634-04-4	tert-Butyl methyl ether (M7	ГВЕ)	0.077U	5.00	0.	077 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	/ Rec Limits
460-00-4	4-Bromofluorobenzene	50	40.6	ug/L	8	1 78 - 130
1868-53-7	Dibromofluoromethane	50	56.5	ug/L	11:	3 77 - 127
2037-26-5	Toluene d8	50	51.1	ug/L	102	2 76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	55.3	ug/L	11	1 71 - 127
			the second secon	-		

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	Analyzed 04/23/2009 17:57	By Analytica CLH 410213	I Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol	40.3U	100	40.3	ug/L	
637-92-3	Ethyl tert-butyl ether (E	TBE)	0.259U	5.00	0.259	ug/L
108-20-3	diisopropyl Ether (DIPE	0.529U	5.00	0.529	ug/L	
624-95-3	ethyl tert-butanol (ETBA	4.36U	10.0	4.36	ug/L	
75-65-0	t-Butanol (TBA)	4.12U	10.0	4.12	ug/L	
994-05-8	t-amyl methyl ether (TA	ME)	0.348U	5.00	0.348	ug/L
75-85-4	tert-amyl alcohol (TAA)		15.6U	20.0	15.6	ug/L
762-75-4	tert-butyl formate (TBF)	•	0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	40.6	ug/L	81	50 - 150
1868-53-7	Dibromofluoromethane	50	56.5	ug/L	113	50 - 150
2037-26-5	Toluene d8	50	51.1	ug/L	102	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	55.3	ug/L	111	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 10:	<b>Prep Batch</b> 00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 11:16	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID			
20904223213	146128	<b>Matrix</b> Water	Collect Date/Time 04/20/2009 13:45	Receive Date/Time 04/22/2009 09:30
SW-846 82	60B			04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 10	Analyzed 04/23/2009 13:00	<b>By</b> CLH	Analytica 410212	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
107-06-2 71-43-2 100-41-4 91-20-3 108-88-3 1330-20-7	1,2-Dichloroethane Benzene Ethylbenzene Naphthalene Toluene Xylene (total) tert-Butyl methyl ether	(MTBE)	0.898U 288 0.652U 27.2J 0.755U 39.4J 1150	50.0 50.0 50.0 50.0 50.0 100 50.0		0.898 0.649 0.652 1.18 0.755 1.83	ug/L ug/L ug/L ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	0.769 /erv	ug/L Rec Limits
160-00-4 1868-53-7 2037-26-5 7060-07-0	4-Bromofluorobenzene Dibromofluoromethane Toluene d8 1,2-Dichloroethane-d4	500 500 500 500	433 537 509 552	ug/L ug/L ug/L ug/L		87 107 102 110	78 - 130 77 - 127 76 - 134 71 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Amalysis	_	
			10	<b>Analyzed</b> 04/23/2009 13:00	By Analyti CLH 410213	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5 637-92-3	Ethanol Ethyl tert-butyl ether (ETBE	)	403U	1000	403	ug/L
108-20-3 624-95-3	diisopropyl Ether (DIPE) ethyl tert-butanol (ETBA)		2.59U 138	50.0 50.0	2.59 5.29	ug/L ug/L
75-65-0	t-Butanol (TBA)		43.6U 41.2U	100 100	43.6	ug/L
994-05-8 75-85-4	t-amyl methyl ether (TAME tert-amyl alcohol (TAA)	;)	63.1	50.0	41.2 3.48	ug/L ug/L
762-75-4	tert-butyl formate (TBF)		609 3.57U	200 50.0	156 3.57	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	ug/L
160-00-4 1868-53-7 2037-26-5 17060-07-0	4-Bromofluorobenzene Dibromofluoromethane Toluene d8 1,2-Dichloroethane-d4	500 500 500 500	433 537 509 552	ug/L ug/L ug/L ug/L ug/L	87 107 102 110	50 - 150 50 - 150 50 - 150 50 - 150 50 - 150

# SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 0:00 410181	Prep Method SW-846 8011	Dilution 1	Analyzed 04/25/2009 11:38	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result				
106-93-4	1,2-Dibromoethane		Result	RDL		MDL	Units
	1,2 Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	
20904223214	146129	Water	04/20/2009 14:20	04/22/2009 09:30	

Prep Date	Prep Batch	Prep Method	Dilution 20	<b>Analyzed</b> 04/23/2009 21:38	<b>By</b> CLH	Analytical Ba	atch
CAS#	Parameter	•	Result	RDL		MDL	Units
107-06-2	1,2-Dichloroethane		1.80U	100		1.80	ug/L
71-43-2	Benzene		281	100		1.30	ug/L
100-41-4	Ethylbenzene		1.30U	100		1.30	ug/L
91-20-3	Naphthalene		50.2J	100		2.36	ug/L
108-88-3	Toluene		1.51U	100		1.51	ug/L
1330-20-7	Xylene (total)		134J	200		3.67	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	2420	100		1.54	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	1000	841	ug/L		84	78 - 130
1868-53-7	Dibromofluoromethane	1000	1100	ug/L		110	77 - 127
2037-26-5	Toluene d8	1000	995	ug/L		100	76 - 134
17060-07 <b>-</b> 0	1,2-Dichloroethane-d4	1000	1130	ug/L		113	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 20	<b>Analyzed</b> 04/28/2009 12:34	By Analytic AGC 410492	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		806U	2000	806	ug/L
637-92 <b>-</b> 3	Ethyl tert-butyl ether (E	TBE)	5.18U	100	5.18	ug/L
108-20-3	diisopropyl Ether (DII	PE)	234	100	10.6	ug/L
624-95-3	ethyl tert-butanol (ETB	A)	87.2U	200	87.2	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)		103J	200	82.4	ug/L
994-05-8	t-amyl methyl ether (1	TAME)	125	100	6.96	ug/L
75-85-4	tert-amyl alcohol (TA	A)	1080	400	312	ug/L
762-75-4	tert-butyl formate (TBF	)	7.14U	100	7.14	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	1000	931	ug/L	93	50 - 150
1868-53-7	Dibromofluoromethane	1000	964	ug/L	96	50 - 150
2037 <b>-</b> 26-5	Toluene d8	1000	1050	ug/L	105	50 - 150 50 - 150
17060-07-0	1,2-Dichloroethane-d4	1000	978	ug/L	98	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	Prep Batch 0:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 11:59	By SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00840J	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix C	ollect Date/Time	Receive Date/Time
20904223215	146130	Water 0	4/20/2009 14:35	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 01:57	By Analyti JCK 410418	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	
1330-20-7	Xylene (total)		4.14J	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (	MTBE)	73.8	5.00	0.077	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	50	44.1	ug/L	88	78 - 130
1868-53-7	Dibromofluoromethane	50	48.6	ug/L	97	70 - 190 77 <b>-</b> 127
2037-26 <b>-</b> 5	Toluene d8	50	54.6	ug/L	109	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.5	ug/L	93	70 - 134

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 01:57	By Analytic JCK 410416	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
64-17-5	Ethanol		40.3U	100	40.3	ug/L
637 <b>-</b> 92-3	Ethyl tert-butyl ether (I	ETBE)	0.259U	5.00	0.259	ug/L
108-20-3	diisopropyl Ether (DI	PE)	15.3	5.00	0.529	ug/L
624-95-3	ethyl tert-butanol (ETE	3A)	4.36U	10.0	4.36	ug/L
75-65-0	t-Butanol (TBA)		13.2	10.0	4.12	ug/L
994-05-8	t-amyl methyl ether (	TAME)	5.10	5.00	0.348	ug/L
75-85-4	tert-amyl alcohol (TA	A)	208	20.0	15.6	ug/L ug/L
762 <b>-</b> 75-4	tert-butyl formate (TBF	<del>-</del> )	0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.1	ug/L	88	50 - 150
1868 <b>-</b> 53-7	Dibromofluoromethane	50	48.6	ug/L	97	50 - 150 50 - 150
2037-26-5	Toluene d8	50	54.6	ug/L	109	50 - 150 50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	46.5	ug/L	93	50 - 150 50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 12:21	<b>By</b> SMH	Analytical Bate 410465	ch
CAS#	Parameter		Result	RDL		MDL.	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223216	146131	Water	04/20/2009 13:34	04/22/2009 09:30

0 10 020						
Prep Date	Prep Batch	Prep Method	Dilution 2	<b>Analyzed</b> 04/28/2009 02:24	By Analytica JCK 410418	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.130U	10.0	0.130	ug/l
108-88-3	Toluene		0.151U	10.0	0.151	ug/l
100-41-4	Ethylbenzene		0.130U	10.0	0.131	ug/L
1330-20-7	Xylene (total)		0.367U	20.0	0.367	ug/l
91-20-3	Naphthalene	0.236U	10.0	0.236	ug/L	
1634-04-4	tert-Butyl methyl ether	(MTBE)	320	10.0		ug/L
107-06 <b>-</b> 2	1,2-Dichloroethane	,	0.180U	10.0	0.154 0.180	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	80.7	ug/L	81	78 - 130
1868 <b>-</b> 53-7	Dibromofluoromethane	100	108	ug/L	108	77 - 127
2037-26 <b>-</b> 5	Toluene d8	100	105	ug/L	105	77 - 127 76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	104	ug/L	104	76 - 134

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 2	<b>Analyzed</b> 04/28/2009 02:24	By Analytica JCK 410416	Il Batch			
CAS#	Parameter		Result	RDL	MDL	Units			
994-05-8	t-amyl methyl ether (	TAME)	10.9	. 10.0	0.696	uo/l			
75-65-0	t-Butanol (TBA)		8.24U	20.0	8.24	ug/L			
108-20-3	diisopropyl Ether (D	PE)	25.4	10.0	1.06	ug/L			
637-92-3	Ethyl tert-butyl ether (i	ETBE)	0.518U	10.0		ug/L			
624-95-3	ethyl tert-butanol (ETE	•	8.72U	20.0	0.518	ug/L			
64-17-5	Ethanol	·· •	80.6U		8.72	ug/L			
75 <b>-</b> 85-4	tert-amyl alcohol (TAA	)	31.2U	200	80.6	ug/L			
762-75-4	tert-butyl formate (TBF	•		40.0	31.2	ug/L			
	tore busyr formato (1D)	,	0.714U	10.0	0.714	ug/L			
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits			
460 <b>-</b> 00-4	4-Bromofluorobenzene	100	80.7	ug/L	81	50 - 150			
1868-53-7	Dibromofluoromethane	100	108	ug/L	108				
2037-26-5	Toluene d8	100	105	<del>-</del>		50 - 150			
17060-07-0	1,2-Dichloroethane-d4	100	103	ug/L	105	50 - 150			
		100	104	ug/L	104	50 - 150			

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 13:04	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0 00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223217	146132	Water	04/20/2009 13:40	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 12:09	· <del>-</del>	Analytica 410493	l Batch
CAS#	Parameter	-	Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)	0.183U	10.0		0.183	ug/L	
91-20-3	Naphthalene	0.118U	5.00		0.118	ug/L	
1634 <b>-</b> 04-4	tert-Butyl methyl ether (N	MTBE)	0,077U	5.00		0.077	ug/L
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43.2	ug/L		86	78 - 130
1868-53-7	Dibromofluoromethane	50	51.3	ug/L		103	77 - 127
2037-26-5	Toluene d8	50	51.2	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.4	ug/L		99	71 - 127

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 12:09	<b>By</b> AGC	Analytica 410492	Batch
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (T.	AME)	0.348U	5.00		0.348	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
108-20-3	diisopropyl Ether (DIP	E)	0.529U	5.00		0.529	ug/L
637-92-3	Ethyl tert-butyl ether (I	ETBE)	0.259U	5.00		0.259	ug/L
624-95-3	ethyl tert-butanol (ETE	4.36U	10.0		4.36	ug/L ug/L	
64 <b>-</b> 17-5	Ethanol	,	40.3U	100		40.3	ug/L ug/L
75-85 <b>-</b> 4	tert-amyl alcohol (TAA	.)	15.6U	20.0		15.6	
762-75-4	tert-butyl formate (TBF	· <del>-</del> )	0.357U	5.00		0.357	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	50	43.2	ug/L		86	50 - 150
1868-53-7	Dibromofluoromethane	50	51.3	ug/L		103	50 - 150
2037-26-5	Toluene d8	50	51.2	ug/L		103	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	49.4	ug/L		99	50 - 150

### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 13:26	By SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223218	146133	Water	04/20/2009 13:50	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By Analytica	l Batch
			1	04/28/2009 10:10	AGC 410493	
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		0,118U	5.00	0.118	-
108-88-3	Toluene		0.076U	5.00	0.116	ug/L
1330-20-7	Xylene (total)		0.183U	10.0	0.076	ug/L
1634-04-4	tert-Butyl methyl ether (l	MTBE)	2.72J	5.00	0.077	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	50	42.6	ug/L	85	78 - 130
1868-53-7	Dibromofluoromethane	50	52		104	
2037 <b>-</b> 26-5	Toluene d8	50	51.4	ug/L		77 - 127
17060-07-0	1,2-Dichloroethane-d4	50	49.5	ug/L ug/L	103 99	76 - 134 71 - 127

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 10:10	<b>By</b> AGC	Analytica 410492	al Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.259U	5.00		0:259	- ·
108-20-3	diisopropyl Ether (DIPI	Ε)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB	A)	4.36U	10.0		4.36	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)	,	4.12U	10.0		4.12	ug/L
994-05-8	t-amyl methyl ether (T/	AME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA	· ·	15.6U	20.0		15.6	ug/L
762-75 <b>-</b> 4	tert-butyl formate (TBF	•	0.357U	5.00		0.357	ug/L ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	/ery	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	50	42.6	ug/L		85	50 - 150
1868-53-7	Dibromofluoromethane	50	52	ug/L		104	50 - 150
2037 <b>-</b> 26-5	Toluene d8	50	51.4	•		104	
17060-07-0	1,2-Dichloroethane-d4	50	49.5	ug/L ug/L		99	50 <b>-</b> 150 50 - 150

### SW-846 8011

Prep Date 04/23/2009	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 13:47	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350∪	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix (	Collect Date/Time	Receive Date/Time
20904223219	146134	Water (	4/20/2009 13:05	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/24/2009 05:33	By Analytic ADI 410267	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
108-88-3	Toluene		0.076U	5.00	0.076	ug/L
1330 <b>-</b> 20-7	Xylene (total)		0.183U	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	50	43.5	ug/L	87	78 - 130
1868-53-7	Dibromofluoromethane	50	51.9	ug/L	104	77 - 127
2037 <b>-</b> 26-5	Toluene d8	50	50.2	ug/L	100	76 - 134
17060-07 <b>-</b> 0	1,2-Dichloroethane-d4	50	50.5	ug/L	101	70 - 134

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 12:59	<b>By</b> AGC	Analytica 410492	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637 <b>-</b> 92-3	Ethyl tert-butyl ether (f	ETBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIP	E)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB	3A)	4.36U	10.0		4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05-8	t-amyl methyl ether (Ta	AME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA	)	15.6U	20.0		15.6	ug/L
762-75-4	tert-butyl formate (TBF	·)	0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.8	ug/L		86	50 - 150
1868-53 <b>-</b> 7	Dibromofluoromethane	50	53.3	ug/L		107	50 - 150
2037-26-5	Toluene d8	50	51.8	ug/L		104	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	49.6	ug/L		99	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 0:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 14:09	By SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

	-				·		
GCAL ID	Client ID	Matrix		Collect Date/Time		Receive Date/Time	13.5
2000400000	4 4 4 4 4 5 =			Control Dute, Title		INECEIVE Date/ I IIIIe	
20904223220	146135	Water		04/20/2009 15:05		04/22/2009 09:30	1.0
		<del></del>	100	and the state of t			Į.

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/24/2009 05:58	By Analytica ADI 410267	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	
71-43-2	Benzene		0.065U	5.00	0.090	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		ug/L
91-20-3	Naphthalene		0.003U		0.065	ug/L
108-88-3	Toluene			5.00	0.118	ug/L
1330-20-7	Xylene (total)		0.076U	5.00	0.076	ug/L
1634-04-4	, ,	TOE	0.183U	10.0	0.183	ug/L
1034-04-4	tert-Butyl methyl ether (M	IBE)	0.077U	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.5	ug/L	83	78 - 130
1868-53-7	Dibromofluoromethane	50	52.4		105	
2037-26-5	Toluene d8	50	49.7	ug/L		77 - 127
17060-07-0	1,2-Dichloroethane-d4			ug/L	99	76 - 134
	1,2 2101110100tillalie-04	50	53.1	ug/L	106	71 - 127

# SW-846 8260B

Danie Date							
Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytical	l Batch
		M	-1	04/28/2009 13:24	AGC	410492	
CAS#	Parameter		Result	RDL		MDL	Units
64-17-5	Ethanol		40.3U	100		40.3	ug/L
637-92-3	Ethyl tert-butyl ether (F	ETBE)	0.259U	5.00		0.259	ug/L
108-20-3	diisopropyl Ether (DIP	E)	0.529U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETB	3A)	4.36U	10.0		4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
994-05 <b>-</b> 8	t-amyl methyl ether (Ta	AME)	0.348U	5.00		0.348	ug/L
75-85-4	tert-amyl alcohol (TAA	)	15.6U	20.0		15.6	ug/L
762-75-4	tert-butyl formate (TBF	5)	0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	verv	Rec Limits
460-00-4	4-Bromofluorobenzene	50	42.5	ug/L		85	50 - 150
1868-53-7	Dibromofluoromethane	50	53.7				
2037-26-5	Toluene d8	50	53.6	ug/L		107	50 - 150
17060 <b>-</b> 07-0	1,2-Dichloroethane-d4	50	50.6	ug/L ug/L		107 101	50 - 150 50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 14:31	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0 00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223221	146136	Water	04/20/2009 10:35	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 13:49	<b>By</b> AGC	Analytica 410493	l Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/l
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/l
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/l
91-20-3	Naphthalene		0.118U	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	ГВЕ)	0.077U	5.00		0.077	ug/l
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.7	ug/L		83	78 - 130
1868-53 <b>-</b> 7	Dibromofluoromethane	50	54.1	ug/L		108	77 - 127
2037-26-5	Toluene d8	50	51.4	ug/L		103	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	51.8	ug/L		104	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/24/2009 16:20	<b>By</b> RJU	Analytical   410287	Batch
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TAME	)	0.348U	5.00		0.348	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
108-20-3	diisopropyl Ether (DIPE)		0.529U	5.00		0.529	ug/L
637-92-3	Ethyl tert-butyl ether (ETBE	Ξ)	0.259U	5.00		0.259	ug/L
624-95-3	ethyl tert-butanol (ETBA)		4.36U	10.0		4.36	ug/L
64-17 <b>-</b> 5	Ethanol		40.3U	100		40.3	ug/L
75 <b>-</b> 85-4	tert-amyl alcohol (TAA)		15.6U	20.0		15.6	ug/L
762-75 <b>-</b> 4	tert-butyl formate (TBF)		0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very	Rec Limits
460 <b>-</b> 00-4	4-Bromofluorobenzene	50	38.5	ug/L		77	50 - 150
1868-53-7	Dibromofluoromethane	50	59	ug/L		118	50 - 150
2037-26-5	Toluene d8	50	51.8	ug/L		104	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	58.4	ug/L		117	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 14:53	By SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	
20904223222	440407		Concer Date, I fille	Receive Date/Time	
20904223222	146137	Water	04/20/2009 10:45	04/22/2009 09:30	

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 14:14	By Ana	llytical Batch 493
CAS#	Paramete <del>r</del>		Result	RDL	MI	DL Units
71-43-2	Benzene		0.065ป	5.00		
108-88-3	Toluene		0.076U	5.00		
100-41-4	Ethylbenzene		0.065U			)76 ug/L
1330-20-7	Xylene (total)			5.00		)65 ug/L
91-20-3	Naphthalene		0.183U	10.0		183 ug/L
1634-04-4	tert-Butyl methyl ether (	MTDE	0.118U	5.00	0.1	∣18 ug/L
107-06-2	-	WITDE)	0.077U	5.00	0.0	)77 ug/L
107-00-2	1,2-Dichloroethane		0.090U	5.00	0.0	)90 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	40.6	ug/L	81	78 - 130
1868-53-7	Dibromofluoromethane	50	54.7			
2037-26-5	Toluene d8	50	55.4	ug/L	109	77 - 127
17060-07-0	1,2-Dichloroethane-d4			ug/L	111	76 - 134
	.,= 2.5.115.56thane-u4	50	51.9	ug/L	104	71 - 127

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By A	Spoketical Batal	L
		,	1	04/24/2009 16:45		Analytical Batcl 10287	n
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TAME)	1	0.348U	5.00		0.348	
75-65-0	t-Butanol (TBA)		4.12U	10.0		4.12	ug/L
108-20-3	diisopropyl Ether (DIPE)		0.529U	5.00			ug/L
637-92-3	Ethyl tert-butyl ether (ETBE	)	0.259U	5.00		0.529	ug/L
624-95-3	ethyl tert-butanol (ETBA)	,	4.36U			0.259	ug/L
64-17-5	Ethanol		40.3U	10.0		4.36	ug/L
75-85-4	tert-amyl alcohol (TAA)			100		40.3	ug/L
762-75-4	tert-butyl formate (TBF)		15.6U	20.0		15.6	ug/L
	torr bary romate (TBF)		0.357U	5.00		0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ery Re	c Limits
460-00-4	4-Bromofluorobenzene	50	38.2	ug/L		•	0 - 150
1868-53-7	Dibromofluoromethane	50	62.2	ug/L			
2037-26-5	Toluene d8	50	49.6	ug/L		_	0 - 150
17060-07-0	1,2-Dichloroethane-d4	50	59	•			0 - 150
		••	33	ug/L	1	18 5	0 - 150

### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 10:00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/27/2009 23:44	By TLS	Analytical Batch 410546	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0 00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
20904223223	146138	Water	04/20/2009 16:32	04/22/2009 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/24/2009 17:09	By Analytica RJU 410288	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
107-06-2	1,2-Dichloroethane		0.090U	5.00	0.090	ug/L
71-43-2	Benzene		2.00J	5.00	0.065	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
91-20-3	Naphthalene		0.118U	5.00	0.118	ug/L
108-88-3	Toluene		2.92J	5.00	0.076	ug/L
1330-20-7	Xylene (total)		5.04J	10.0	0.183	ug/L
1634-04-4	tert-Butyl methyl ether (I	MTBE)	1.32J	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	39.1	ug/L	78	78 - 130
1868 <b>-</b> 53-7	Dibromofluoromethane	50	58.4	ug/L	117	77 - 127
2037-26-5	Toluene d8	50	52.5	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	57.4	ug/L	115	71 - 127

#### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	Analyzed 04/24/2009 17:09	By Analytica RJU 410287	I Batch
CAS#	Parameter	4	Result	RDL	MDL	Units
64-17-5	Ethanol		40.3U	100	40.3	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.259U	5.00	0.259	ug/L
108-20-3	diisopropyl Ether (DIPI	Ξ)	0.529U	5.00	0.529	ug/L
624-95-3	ethyl tert-butanol (ETB	A)	4.36U	10.0	4.36	ug/L
75-65-0	t-Butanol (TBA)		4.12U	10.0	4.12	ug/L
994-05-8	t-amyl methyl ether (T/	AME)	0.348U	5.00	0.348	ug/L
75 <b>-</b> 85-4	tert-amyl alcohol (TAA	)	15.6U	20.0	15.6	ug/L
762-75-4	tert-butyl formate (TBF	)	0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	50	39.1	ug/L	78	50 - 150
1868-53-7	Dibromofluoromethane	50	58.4	ug/L	117	50 - 150
2037-26-5	Toluene d8	50	52.5	ug/L	105	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	57.4	ug/L	115	50 - 150

#### SW-846 8011

Prep Date 04/23/2009 1	<b>Prep Batch</b> 0:00 410181	Trop mounds		<b>Analyzed</b> 04/25/2009 15:36	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time	$\neg$
20904223224	146139	Water	04/20/2009 14:45	04/22/2009 09:30	

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/28/2009 14:38	•	Analytical 410493	Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.065U	5.00		0.065	ug/L
108-88-3	Toluene		0.076U	5.00		0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00		0.065	ug/L
1330-20-7	Xylene (total)		0.183U	10.0		0.183	ug/L
91-20 <b>-</b> 3	Naphthalene		0.118U	5.00		0.118	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.077U	5.00		0.077	ug/L
107-06-2	1,2-Dichloroethane		0.090U	5.00		0.090	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	41.2	ug/L		82	78 - 130
1868-53 <b>-</b> 7	Dibromofluoromethane	50	56.3	ug/L		113	77 - 127
2037 <b>-</b> 26-5	Toluene d8	50	52	ug/L		104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	52.6	ug/L		105	71 - 127

### SW-846 8260B

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 04/24/2009 17:34	By Analytica RJU 410287	ll Batch
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME	()	0.348U	5.00	0.348	ug/L
75 <b>-</b> 65-0	t-Butanol (TBA)		4.12U	10.0	4.12	ug/L
108-20-3	diisopropyl Ether (DIPE)		0.529U	5.00	0.529	ug/L
637 <b>-</b> 92-3	Ethyl tert-butyl ether (ETBE	≣)	0.259U	5.00	0.259	ug/L
624-95-3	ethyl tert-butanol (ETBA)		4.36U	10.0	4.36	ug/L
64-17-5	Ethanol		40.3U	100	40.3	ug/L
75-85-4	tert-amyl alcohol (TAA)		15.6U	20.0	15.6	ug/L
762-75-4	tert-butyl formate (TBF)		0.357U	5.00	0.357	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00 <b>-</b> 4	4-Bromofluorobenzene	50	37.3	ug/L	75	50 - 150
1868 <b>-</b> 53-7	Dibromofluoromethane	50	64.2	ug/L	128	50 - 150
2037-26-5	Toluene d8	50	49.4	ug/L	99	50 - 150
17060-07-0	1,2-Dichloroethane-d4	50	60.4	ug/L	121	50 - 150

### SW-846 8011

Prep Date 04/23/2009 10:0	<b>Prep Batch</b> 00 410181	Prep Method SW-846 8011	Dilution 1	<b>Analyzed</b> 04/25/2009 15:57	<b>By</b> SMH	Analytical Batch 410465	
CAS#	Parameter		Result	RDL		MDL	Units
106-93-4	1,2-Dibromoethane		0.00350U	0.010		0.00350	ug/L

Second Tier Data Review By:

Ashley B. Amick, Project Manager

aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955

GCAL ID Client ID Matrix Collect Date/Time Receive Date/Time 20904223225 146140 Water 04/20/2009 16:45 04/22/2009 09:30

### SW-846 8260B

0.002						
Prep Date	Prep Batch	Prep Method	Dilution 1	Analyzed 04/24/2009 17:59	By Analytica RJU 410288	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.065U	5.00	0.065	ug/L
108-88-3	Toluene		1.03J	5.00	0.076	ug/L
100-41-4	Ethylbenzene		0.065U	5.00	0.065	ug/L
1330-20-7	Xylene (total)		19.3	10.0	0.183	ug/L
91-20-3	Naphthalene		1.93J	5.00	0.118	ug/L
1634-04-4	tert-Butyl methyl ether (	(MTBE)	155	5.00	0.077	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50 `	41.6	ug/L	83	78 - 130
1868 <b>-</b> 53-7	Dibromofluoromethane	50	49.4	ug/L	99	77 - 127
2037 <b>-</b> 26-5	Toluene d8	50	52.7	ug/L	105	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	56	ug/L	112	71 - 127

Second Tier Data Review By:

Ashley B. Amick, Project Manager aamick@accessanalyticalinc.com

NOTE: Unless otherwise noted on report all samples analyzed at: GCAL, 7979 CSRI Ave., Baton Rouge, LA 70820-7402. GCAL is SCDHEC certified lab # 73006, NELAP certification # 01955



### **ANALYTICAL REPORT**

### **CLIENT**

Davis & Brown 124 W McIver Rd Florence, SC 29501

### **ATTENTION**

Scott Fields

### **PROJECT ID**

29-0-591

### LABORATORY REPORT NUMBER

209042232

DATE

04/29/2009

Primary Data Review By

Secondary Data Review By

Curtis Ekker

Data Validation Manager, GCAL

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 Rd. 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.

### DAVIS & BROWN

### **Data Qualifiers**

Within the attached report, some analytical data may be reported as "Qualified Data" as indicated by a "Data Qualifier" or "flag" next to the result. The data qualifier "S" indicates that the analysis was performed by another SC certified Lab. This table summarizes the South Carolina Lab Certification Numbers for those laboratories.

S	South Carolina Lab Certification Number: 23101
S1	South Carolina Lab Certification Number: 93013
S2	South Carolina Lab Certification Number: 23105
S3	South Carolina Lab Certification Number: 10120
S4	South Carolina Lab Certification Number: 84002
S5	South Carolina Lab Certification Number: 32117
S6	Agricultural Service Laboratory Clemson University
S7	South Carolina Lab Certification Number: 36001
S8	******
S9	South Carolina Lab Certification Number: 94014001; 94014002
S10	South Carolina Lab Certification Number: 84009
S11	South Carolina Lab Certification Number: 96023; 96026; 96031; 98001; 73006
S12	AASHTO R18 Certified
S13	South Carolina Lab Certification Number: 96012
S14	South Carolina Lab Certification Number: 89002
S15	******
S16	South Carolina Lab Certification Number: 84004
S17	South Carolina Lab Certification Number: 96037001
S18	South Carolina Lab Certification Number: 95005
S19	South Carolina Lab Certification Number: 23104
S20	South Carolina Lab Certification Number: 96027001
S21	South Carolina Lab Certification Number: 21005
S22	South Carolina Lab Certification Number: 24110
S23	South Carolina Lab Certification Number: 84001001
S24	South Carolina Lab Certification Number: 82014001
S25	Sample was analyzed by Microseeps, Inc Laboratory
S26	North Carolina Lab Certification Number: 21 (Wilson Division NC00120)
S27	South Carolina Lab Certification Number: 40569

# CHAIN OF CUSTODY RECORD

DAVIS & BROWN 66357 Post Office Box 15038 124 West McIver Road Quinby, South Carolina 29501 Florence, South Carolina 29501

Telephone (843) 665-6746

	whether sample was filtered or preserved.	Code: HNC <sub>3</sub> = A H <sub>2</sub> SO <sub>4</sub> = D H <sub>2</sub> SO <sub>6</sub> = E	NAOH = C FILTRATION ZINCACETATE	REMARKS LABID	1- BTEX MAY 146116	MIBE, EDB, 146117	<u>.</u>	<del> </del>	(d) 9h1		+ NO3 146177			521 9/11	146 126	Relinquished by (SIGNATURE)* Date Time	Received by (SIGNATURE)*	(L) Regulatory
SAMPLE ANALYSIS REOURED (x) — use remarks area to specify specific commonants or markeds	Other 5 canding areas of the state of the st	-	olitom olitom KN Vanide								Fe 11.04	Fe 1.65	Fc 0.09	Fe 1,74	Fe 2,26	Relinquished by (SIGNATURE)* Date Time Relinqu	Received by (SIGNATURE)*  Date Time Received	
	STOKES (MEG(IS EXCOL)	SOUY PICKS PVAN DAVES	SAMPLE ID DATE TIME 125 OOF COLUMN STATE OOL COLUMN STATE	# 90 00 00 00 00 00 00 00 00 00 00 00 00	MIL 1 4/20 00 1527 7	1/11/2 4/2009 15301 7	144 3 4/20/09/605/1 7	MIL 4 4/20/09 16/0 / 7	Mul 5 420/09/16221 7	1411 6 4/2609 1615 1 7	MW 7 4/20/09/1515 1 18	HIJ 8 420/09/1200 / B	MIL 9 4/20/09 1145 / 8	MILLIO 4/2004/115/1 B	Hzgog 1130	Date Date Of Time	wed by (SIGNATURE).  (AZI   SI   OBER	V YES

<sup>\*</sup> Program Area: D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other

# CHAIN OF CUSTODY RECORD

Page 2 of

DAVIS & BROWN 6635 Florence, South Carolina 29501 124 West McIver Road Post Office Box 15038 Quinby, South Carolina 29506

Telephone (843) 665-6746

 $H_2SO_4 = D$   $NA_2S_2O_3 = E$  FILTRATION = F ZINCACETATE = G14(6-132 38.97 146 136 (c/h. 130 JUG (33) 146 131 146 131 14(5,134 146.135 whether sample was filtered or preserved. FIG. 128 146 129 LAB ID Use Codes in the boxes to indicate ★87878年 C Non Regulatory B. OXYGEHATES C Regulatory MIBELEDE NO3 504 Code:  $HNO_3 = A$ HCL = BNAOH = C REMARKS FORESCS 1,2 DCA Relinquished by (SIGNATURE Received by (SIGNATURE) \*Program Area SAMPLE ANALYSIS REQUIRED (x) - use remarks area to specify specific compounds or methods 20 20 20 Date <u>О</u>м <u>و</u> ۷ N ನ ಲ <u>ර</u> ග M O N Oil & Grease 0 0 0 LKN <u>U</u> <u>D</u> The state of 17 7 METALS - Spec Received by (SIGNATURE)\* OOA Nitrate COD BOD SST (18.ca) 07/51 Polo3/P @ B Ø  $\phi$ **Q** 0 Ø Ø 0 Ø 0 GRAB COMP MECGS EXXON RVAIN DAVES MELL 142904 1632 (252) 120 pg 103/ \$129011334 12dod 1420 1305 5,051/bobz 42009 10d5 4/24 09/12/45 12409 1435 1/20/18/20 TIME 1200911350 12400 12909 DATE SODY RICKS ( - ) 22 20 SAMPLE ID 4 7 □ YES Received by (SIGN) ر ا ا 三 ∑ 7

<sup>\*</sup> Program Area: D - Drinking Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other

# CHAIN OF CUSTODY RECORD

DAVIS & BROWN 66357 Post Office Box 15038 124 West McIver Road Quinby, South Carolina 29506 Florence, South Carolina 29501

Telephone (843) 665-6746

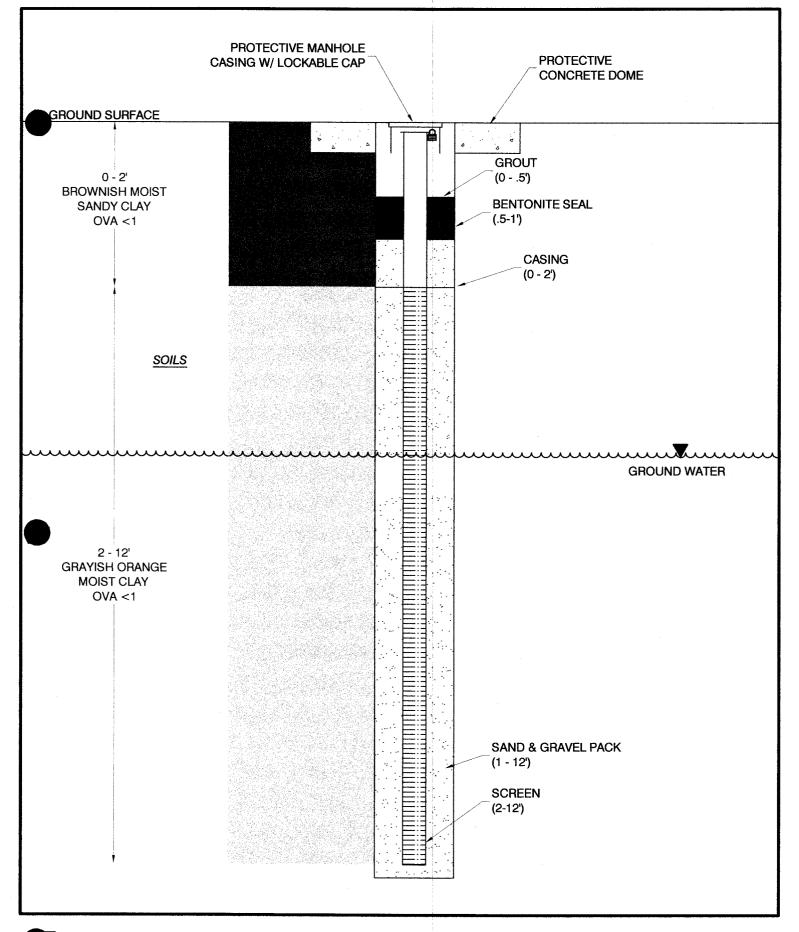
xes to indicate	Red or preserved.  H <sub>2</sub> SO <sub>4</sub> = D  NA <sub>2</sub> S <sub>2</sub> O <sub>3</sub> = E  FILTRATION = F  ZINCACETATE = G	3 14(2) 39	,						Date Time	Date Time	10,100	
Use Codes in the boxes to indicate	o duran	Bren, ANDTHINTER	Bres Nath Mins						Relinquished by (SIGNATURE)*	GNATURE)+	O Regulatory O Non Regulatory	0 - Other
ds or methods.	Program Area	1							Relinquished by	Received by (SIGNATURE)*		N-NPDES /
ійс сопрочп			3						Time	Time	· · · · · · · · · · · · · · · · · · ·	te Water
specify spec	Oliform - Fecal		NO						Date	Date		W - Was
SAMPLE ANALYSIS REQUIRED (x) – use remarks area to specify specific compounds or methods	Vitrate  VOC  Vyanide  Cyanide  TKN  Dil & Grease	Fe 0168							Relinquished by (SIGNATURE)*	Received by (SIGNATURE)*		Water / G - Groundwater / S - Solid / W - Waste Water / N - NPDES / O - Other
	BOD  # of containers  COMP  COMP  WELL  WELL  WELL	∞ \	2/2						9	Date Time Received to Trime Accived to Trime Accident to Trime A		* Program Area: D - Drinking Water /
OKES (MECCS EXXOLA	3	2-D 4/2/09 1445	H 4/20/09/1645					A STABLET AND A	By ARCKS	Col Cals	S	
Client Name / Facility Name	Collected by CCC SAMPLE ID	M11-2-D	DETC					Relinensished by (SIGNATITIDE)	7000	ICEN (SIGNAL)	©YES □ NO	

### APPENDIX C



B ureau of Water (803) 898-4300 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:			
Name: BIJ STOKES	- 0t1	Ca.	6. PERMIT NUMBER: 03423
Y	•	<u>.</u>	7. USE:
Address: Po Box 2	14		7. USE:  Residential Public Supply Process
City: FLOREHUE State: S			Air Conditioning Emergency
Telephone: Work: 843 - 669	- 6818	3	Test Well   Monitor Well   Replacement  8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-25-09
2. LOCATION OF WELL: COU	NTY: FLOO	FITE	
Name: OH MEGGS E		ميد المدح	9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 Fam	~=== 1/1	1.4	Dug Air Rotary Driven
City: FLORENCE SC	796	53	Cable tool other  10. CASING: Threaded Welded
1		<u> </u>	Diam.: 8" Height Above/Below
Latitude: Longitu			Type: RPVC Galvanized Surfaceft
3. PUBLIC SYSTEM NAME:			O in. to 2 other Weight lb./ft.
PUBLIC SYSTEM NUMBER:		<u>-</u> _	in. toft. depth
4. ABANDONMENT: Yes	No		11. SCREEN
Grouted Depth: from	ft. to	44-	Type: schedule 40 PVC Diam.: 3"
	*Thickness	Depth to	S lot/Gauge: 0.010" Length:/O'
Formation Description	of	Bottom of	Set Between: ft and St ft NOTE: MULTIPLE SCREENS ft and ft USE SECOND SHEET
see horing log	Stratum	S tratum	S leve Analysis Yes (please enclose) X No
see boring log			12. STATIC WATER LEVEL 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
	٠		Yield:
			14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
			P lease enclose lab results.  15. ARTIFICIAL FILTER (filter pack) Yes No
			Installed from ft to ft
,			Effective size #3 Uniformity Coefficient
			16. WELL GROUTED? Yes No
			Neat Cement ☐Bentonite ☐Bentonite/Cement ☐Other ☐ ft. to ☐ ft.
		ŀ	17 MEADECT COURCE OF POSCION - AND
			Туре:
			Well Disinfected: Yes No Type: Amount
			18. PUMP: Date installed (MM/DD/YYYY): Not installed 🗶
	<u> </u>		Mfr. Name: Model No.: H.P Volts Length of drop pipeft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			Jet (deep) Reciprocating Centrifugal
			19. WELL DRILLER: CERT.NO.: 1921
			Name: Josh Register c/o ARM Environmental Sycs  Address: P.O. Box 50285  City: Columbia
			State: South Carolina Zip: 29250
Start Market D			Telephone No.: (803) 783-3314 Fax No.: (803) 783-2587
Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)		1	. /
. REMARKS:	· .		1,11
- 7 3/8" Bentonite pellets f	romto	-5'	Signed: John 14/ Date: 3-31-09
• .			Authorized Representative (MM/DD/YYYY)

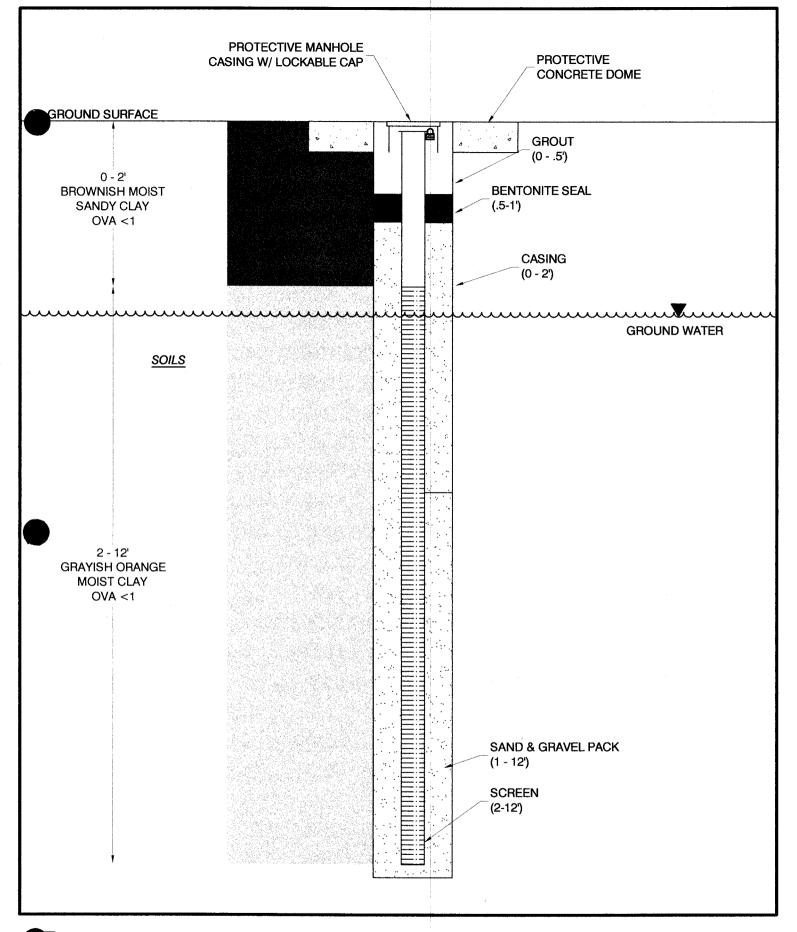






B ureau of Water (\$303) 898-4300 801 Street, Columbia, S © 29201-1708; (803) 898-4300

, FROMOTE PROTECT PROSPER			11017 10111111111, 2 2 2 2 2 0 1 1 1 0 0 1 1 2 0 0
1. WELLOWNER INFORMATION: Name: BIJ STOKES	OFL C	coi.	6. PERMIT NUMBER: 03423
Address: PO BOX 2	•	·······	7. USE: Residential Public Supply Process
City: FLOREINCE State: S		7962	Residential Public Supply Process  Imigation Air Conditioning Emergency
		<del></del>	Test Well X Monitor Well Replacement
Telephone: Work: 843-66	9-681	18	8. WELL DEPTH (completed) Date Started (MMDD/YYYY): 3-25-09
2. LOCATION OF WELL: COL	JNTY: FLO	ZENCE	Date Completed (MM/DD/YYY): 3-35-09
Name: OH MEGGS	EXYO	L/	9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 PA	MAN ST IN	NIN	Dug Air Rotary 🔀 Driven
City: FLOIREITE SL	79×	(A) 2	Cable tool © Other  10. CASING: Threaded Welded.
<u>}</u>			Diam.: A Height Above/Below
Latitude: Longitu			Type: XPVC Galvanized Surfaceft.  Steel Other Weightlb_/ft.
3. PUBLIC SYSTEM NAME:			O in. to 2' ft. depth Drive Shoe? Yes No
PUBLIC SYSTEM NUMBER:	7	<del></del>	in. toft. depth
4. ABANDONMENT: Yes X	No.		11. SCREEN
Grouted Depth: from	ft to	4	Type: schedule 40 PVC Diam.: 2"
Grouted Depth: from	*Thickness	Depth to	S lot/Gauge: 0.010" Length: /O'  S et Between: 12' ft. NOTE: MULTIPLE SCREENS
Formation Description	of	Bottom of	Set Between; ft and d'ft NOTE: MULTIPLE SCREENS  ft and ft USE SECOND SHEET
	Stratum	Stratum	Sieve Analysis Yes (please enclose) X No
see boring log		,	12. STATIC WATER LEVEL ft. below land surface after 24 hours
·			13. PUMPING LEVEL Below Land Surface.
	<del></del>		ft. after hrs. Pumping G.P.M. Pumping test: Yes (please enclose) No
	·	. •	Yield:
			14. WATER QUALITY
	<u>.</u>		Chemical Analysis: Yes No Bacterial Analysis: Yes No
			P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No
			Installed from ft to ft ft to ft
	,		16. WELL GROUTED? XYes No
			Neat Cement Bentonite ✓ Bentonite/Cement Other
			Depth: Fromft. toft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Well Disinfected: Yes No Type:Amount
	•	· ·	
		<u> </u>	18. PUMP: Date installed (MM/DD/YYYY): Not installed X  Mfr. Name: Model No.:
			H.P. Volts Length of drop pipe ft Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
	.		Jet (deep) Reciprocating Centrifugal
	<del></del>		19. WELL DRILLER: CERT. NO.: 1921 Name: Josh Register c/o ARM Environmental Svcs
			Address: P.O. Box 50285 City: Columbia
			State: South Carolina Zip: 29250
			Telephone No.: (803) 783–3314 Fax No.: (803) 783-3597
Indicate Water Bearing Zones	. T		20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
_REMARKS:			
- 8 3/8" Bentonite pellets t	from 11 to	31	5 / hala 1/1
2,0 Signation poners		١	Signed: Date: 3-31-09 (MM/DD/YYY)
			V (viivijoo)(111)

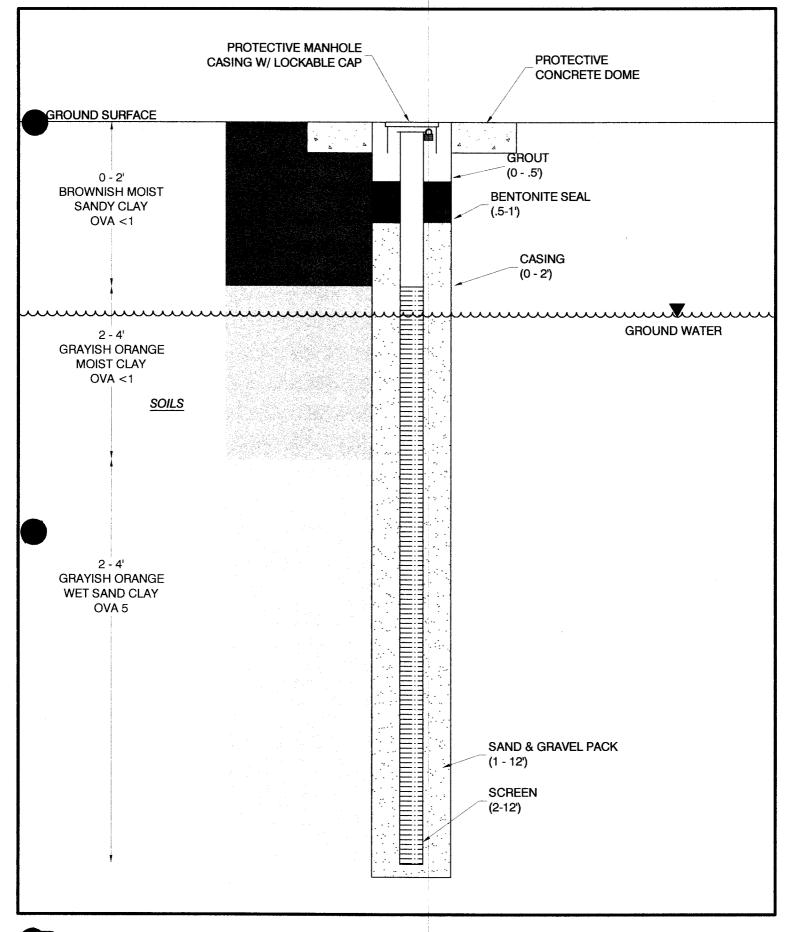






B ureau of Water 25, 2600 Bull S treet, Columbia, S C 29201-1708; (803) 898-4300

Name: BIJ STOKES	S OTL C	0:	6. PERMIT NUMBER: 03423
Address: Po TSox		· · · · · · · · · · · · · · · · · · ·	7. USE:
		-0/2	Residential Public Supply Process  Imagation Air Conditioning Emergency
City: FLONZEITCE State:			☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement
Telephone: Work: 843 - 6			8. WELL DEPTH (completed) Date Started (MM/DD/YYY): 3-25-09
2. LOCATION OF WELL: C	QUNTY: FLOT	ZEHLF	Date Completed (MM/DD/YYY): 3-35-09
Name: 01-1 14=66			9. TYPE Mud Rotary Jetted Bored
Street Address: 4925	AMPLICO	14197	Dug Air Rotary ☑ Driven  Cable tool ☑ Other
City: FLOREHLES SC		63	10. CASING: KThreaded Welded Height Above/Relow
Latitude:Long	_		Type: XPVC Galvanized Surfaceft
3. PUBLIC SYSTEM NAME:			Steel Other Weight — lb.//t
PUBLIC SYSTEM NUMBER:		<del></del>	in. tofr. depth   Drive Shoe? Yes Noin. tofr. depth
4. ABANDONMENT: Yes	No		11. SCREEN
Grouted Depth: from	ft. <sub>:</sub> to	ft.	Type: schedule 40 PVC Diam.: 3"  Slot/Gauge: 0.010" Length: 10'
Formation Description	*Thickness of	Depth to Bottom of	Set Between: 12' ft and 2' ft NOTE: MULTIPLE SCREENS
	S tratum	S tratum	ft. andft. USE SECOND SHEET  Sieve AnalysisYes (please enclose)
see boring log		,	12. STATIC WATER LEVEL 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
	<del></del>		Chemical Analysis: Yes No Bacterial Analysis: Yes No Pilease enclose lab results.
•			15. ARTIFICIAL FILTER (filter pack) Yes No
			Installed from ft. to ft.
	1		Effective size #3 Uniformity Coefficient
		·	16. WELL GROUTED? Yes No Neat Cement Bentonite Bentonite/Cement Other
			Depth: From
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type:
· · · · · · · · · · · · · · · · · · ·			Well Disinfected: Yes No Type: Amount
		. [	18. PUMP: Date installed (MM/DD/YYYY): Not installed x
			Mfr. Name: Model No.: H.P Volts Length of drop pipeft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
•			Jet (deep) Reciprocating Centrifugal
	1		19. WELL DRILLER: CERT. NO.: 1921 Name: Josh Register c/o ARM Environmental Svcs
-	<u> </u>		Address: P.O. Box 50285 City: Columbia
			State: South Carolina Zip: 29250 Telephone No.: (803) 783-3314 Fax No.: (803) 783-3587
Indicate Water Bearing Zones	1.		20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheetif needed)			my direction and this report is true to the best of my knowledge and belief.
S. REMARKS:			
9 3/8" Bentonite pellets	from _ / to	.5'	Signed: 151 731-09
	•		Date: 3-31-09 (MM/DD/YYY)

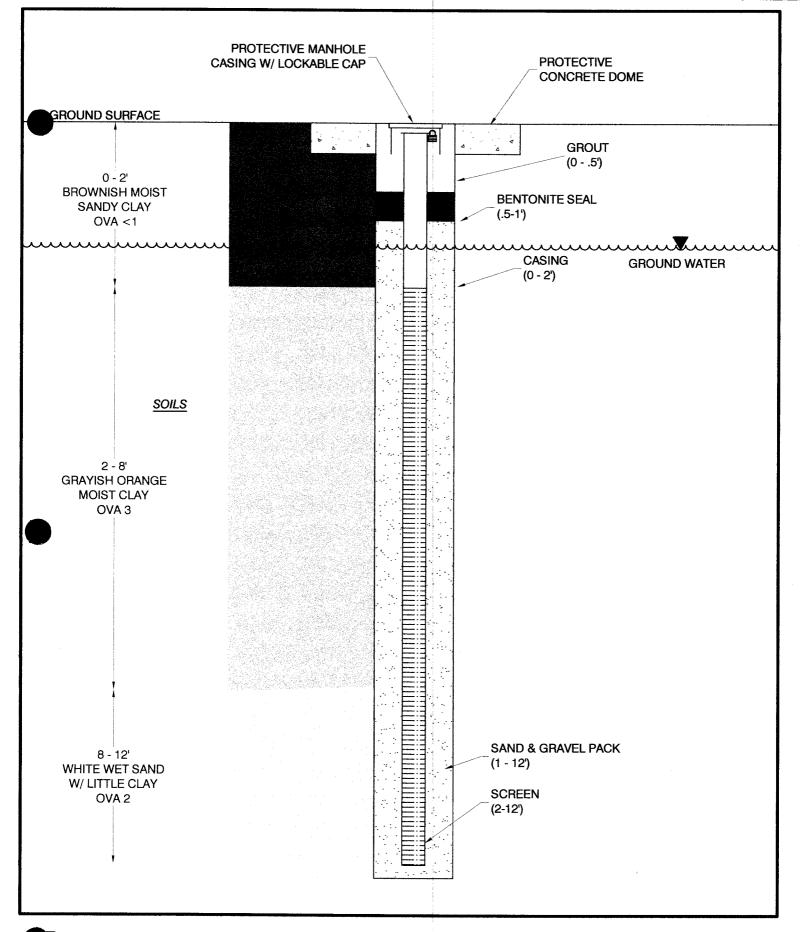






B ureau of Water (\$200.000) 898-4300 Bull Street, Columbia, S C 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION	M-		
		13	6. PERMIT NUMBER: 03423
Name: Bld Stok	<u> </u>	<i>U</i> .	
Address: Po Box	774		7. USE:
Address. 10 30%	4:7		Residential Public Supply Process
city: FLORENTE Sta		2062	
Telephone: Work: 843 - (	669-6818	?	
Telephone: Work: 012	Home:	/	8. WELL DEPTH (completed) Date Started (MM/DD/YYY): 3 - 25 - 69
2. LOCATION OF WELL:	COUNTY: FLOR	ZIHLE	12 ft. Date Completed (MM/DD/YYY): 3 - 35-09
Name: 0H 14=66	S EX XON	<i>J</i> :	
10036	· · · · · · · · · · · · · · · · · · ·	1	
Street Address: 4925	MAMDLEO	HUY.	
City: MORETHE SC	70	502	
. 6.3. 7.6 1.0	Zip <u>: ~~~</u>	205	<b>3</b> " —
Latitude:Lo	onaitude:		
<del></del>			
3. PUBLIC SYSTEM NAME:		<del></del>	O in. to 2' ft. depth   Drive Shoe? Yes Villa
PUBLIC SYSTEM NUMBER:			
4. ABANDONMENT: Yes	X No	<del>_</del>	in. toft. depth
The second secon			H. SCREEN
Grouted Depth: from	; . ft +^		Type: schedule 40 PVC Diam.: 2"
Topan nom	ft. to	ft.	S lot/Gauge: 0.010" Length: /O' Set Between; /2' ft. and &' ft. NOTE: MULTIPLE SCREENS
Formation Description	*Thickness	Depth to	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
, similar pagarpaon	of Stratum	Bottom of Stratum	ft and ft USE SECOND SHEET
	- C ·	Statum	Sieve Analysis Yes (please enclose) X No
see boring log		, ,	12. STATIC WATER LEVEL ft. below land surface after 24 hours
			13. PUMPING LEVEL Below Land Surface.
/	<del></del>		ft. after hrs. Pumping G.P.M.  Pumping test: Yes (please enclose)
			Yield:
	- 1	i	14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
		1	P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) X Yes No
	· · · · · · · · · · · · · · · · · · ·		Installed fromft toft
	,	1	Effective size #3 Uniformity Coefficient
			16. WELL GROUTED? Yes No
			Nest Compatible To
•			Neat Cement Bentonite Bentonite Cement Other  Depth: From
•		ļ.	
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ftdirection
	<u> </u>		Type:
			Well Disinfected: Yes No Type: Amount
•		I	18. PUMP: Date installed (MM/DD/YYYY): Not installed x
<del></del>			Mfr. Name: Model No.:
•			H.P. Volte
			TYPE: Submersible Jet (shallow) Turbine
			Lijet (deep) Reciprocating Centrifugal
		<u> </u>	Final Control of the
•			Name: Josh Register c/o ARM Environmental Svcs
· · · · · · · · · · · · · · · · · · ·			
_	<del></del>		
		1	State: South Carolina zip: 29250
findiente Meteun	<del></del>	<del> </del>	Telephone No.: (803) 783–3314 Fax No.: (803) 783–2587
Indicate Water Bearing Zones	1		20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Henn and shorts ! "	.   .	1	my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			
5. REMARKS:			
/O 3/8" Bentonite pelle	ets from	<u>-5'</u>	16/2 1671
= = = = intermed being	- 10 HOM 1 10		Signed: Date: 3-31-09
	•	1	Authorized Representative (MM/DD/YYY)
		{	

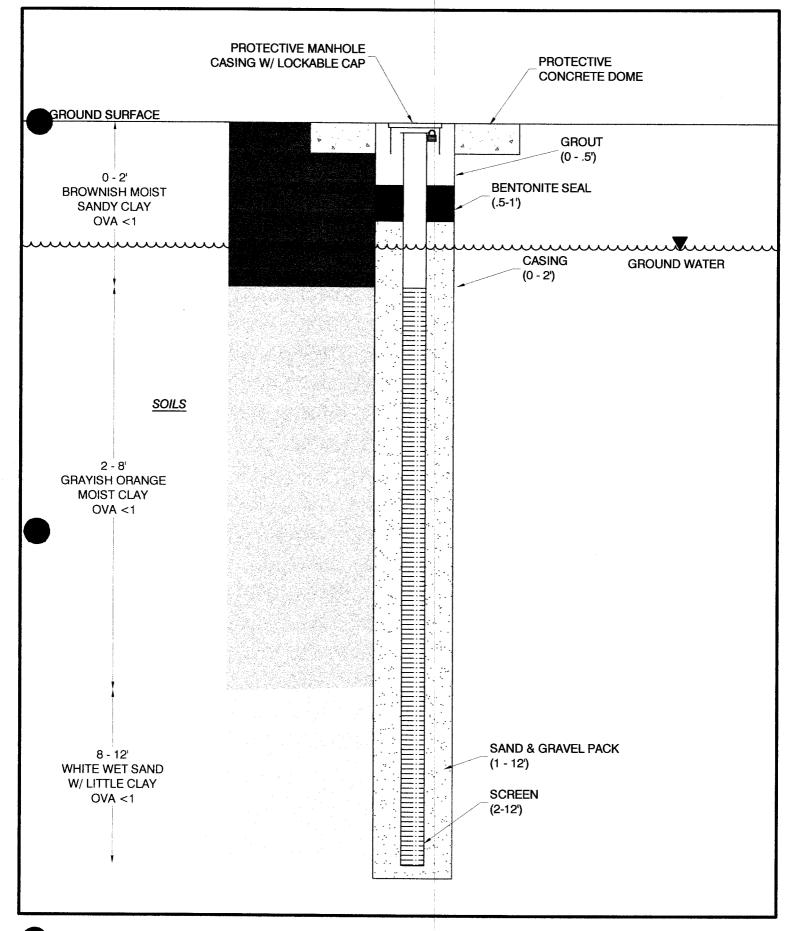






### Water Well Record B ureau of Water (803) 898-4300 Bull S treet, Columbia, S C 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:			6. PERMIT NUMBER: 03423
Name: BIJ STOKES OSL CO.			
Address: Po Box 274			7. USE:  Residential Public Supply Process
city: FLOREITE State: SC zip: 29503			Irrigation Air Conditioning Emergency
Telephone: Work: 843-669-6818  2. LOCATION OF WELL: COUNTY: FWENCE			Test Well X Monitor Well Replacement
2. LOCATION OF WELL: CO	Home:	OEN(F	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-09
Name: 01+ 14=465	EXYON	-1163	Date Completed (WW/DD/1111): 3 47 61
Street Address: 4975 F		HUV	Dug Air Rotary Driven
City: FLORANCE SC	7in 295	53	Cable tool  Other  10. CASING: Threaded Welded
Latitude:Longit		<del>'</del>	Diam.: Height Above/Below
3. PUBLIC SYSTEM NAME:			Type: PVC Galvanized Surfaceft USteel Other Weightft
PUBLIC SYSTEM NUMBER:			in. toft. depth   Drive Shoe?Yes X No
4. ABANDONMENT: Yes	<u> </u>	<del></del>	in. toft. depth
	The state of the s	•	Time schedule 40 DVC
Grouted Depth: from	ft. to	ft.	Type: schedule 40 PVC Diam.: 2"  S lot/Gauge: 0.010" Length: 10'
Formation Description	*Thickness of	Depth to Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
	Stratum	S tratum	ft. and ft. USE SECOND SHEET  S leve Analysis Yes (please enclose) No
see boring log	+		12. STATIC WATER LEVEL
			13. PUMPING LEVEL Below Land Surface.
,			ft. after hrs. Pumping G.P.M.
, ·			Pumping test: Yes (please enclose) No
	<del> </del>		14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
	1.		P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No Installed from 12' ft. to 1'
			Effective size #3 Uniformity Coefficient
			16. WELL GROUTED? Yes No
•	<u> </u>		Neat Cement Bentonite ✓ Bentonite/Cement Other  Depth: From 5 ft. to 6 ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Туре:
• •		· · ·	Well Disinfected: Yes No Type: Amount
· · · · · · · · · · · · · · · · · · ·			18. PUMP: Date installed (MM/DD/YYYY): Not installed X  Mfr. Name: Model No.:
			H.P. Volts Length of drop pipe ft. Capacity gpm
	<del></del>		TYPE: Submersible Jet (shallow) Turbine
		ŀ	
			Name: Josh Register c/o ARM Environmental Svcs
			Address: P.O. Box 50285 City: Columbia
			5 tate: South Carolina       Zip: 29250         Telephone No.: (803) 783-3314       Fax No.: (803) 783-2587
*Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
7-// 3/8" Bentonite pellets	from 1 to	.5'	Signed: John M. 3-31-09
- Politicus			Authorized Representative Date: 37789 (MM/DD/YYYY)
	<u> </u>		

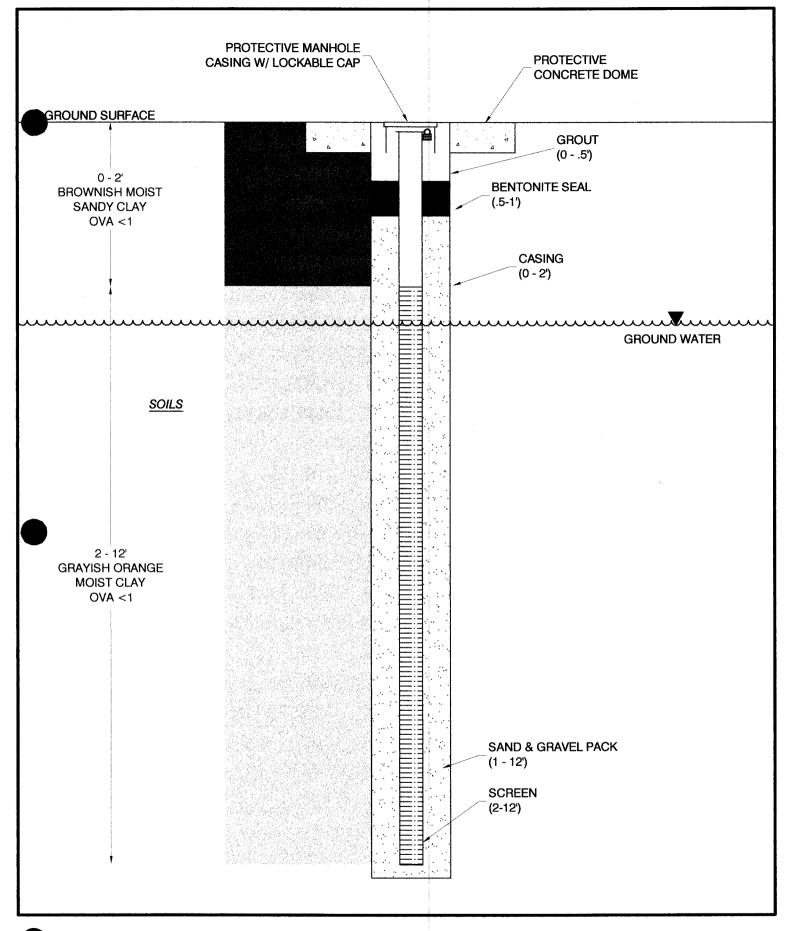






B ureau of Water (\$200.000) 898-4300

1. WELL OWNER INFORMATION:	
Name: B. Id. STOKES OIL CO.	6. PERMITNUMBER: $03423$
Address: PO Box 274	7. USE:  Residential Public Supply Process
City: FLOREILCE State: SC Zip: 29503	Residential   Public Supply   Process     Imigation   Air Conditioning   Emergency
Telephone: Work: 643-669-6818	Test Well Monitor Well Replacement
	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
2. LOCATION OF WELL: COUNTY: FLUZENCE Name: OH MEGGS EXXON	ft. Date Completed (MM/DD/YYYY): 3-27-09
1925 Barrell	9. TYPE: Mud Rotary Jetted Bored Dug Air Rotary Driven
Street Address: 4925 PAMPLICO HILY	Cable tool × Other
city: FLOREHLE SC Zip: 29503	10. CASING: Threaded Welded Diam.: A" Height Above/Below
Latitude:Longitude:	Type: Surface
- 3. PUBLIC SYSTEM NAME:	Steel Other Weight — lb./ft
4. ABANDONMENT: Yes X No.	in. toft. depth   Drive Shoe? Yes Noin. toft. depth
The state of the s	Time schodule 40 DVC
Grouted Depth: fromft.toft	Type: schedule 40 PVC Diam.: 3" Slot/Gauge: 0.010" Length: 10'
Formation Description of Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Stratum Stratum	ft. and ft. USE SECOND SHEET  Sieve Analysis Yes (please enclose) No
see boring log	12. STATIC WATER LEVEL 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)
	Yield:
	14. WATER QUALITY :  Chemical Analysis: Yes No Bacterial Analysis: Yes X No
	Chemical Analysis: Yes No Bacterial Analysis: Yes No Pilease enclose lab results.
	15. ARTIFICIAL FILTER (filter pack) Yes No
	Installed from 12' ft to 1 ft Effective size #3 Uniformity Coefficient
	16. WELL GROUTED? X Yes No
	Neat Cement Bentonite Bentonite Other  Depth: From ft. to
	17. NEAREST SOURCE OF POSSIBLE COMMUNICATION
	iype:
	Well Disinfected: Yes No Type: Amount:
	18. PUMP: Date installed (MM/DD/YYYY): Not installed X  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: CEPT NO. 1021
	Name: Josh Register c/o ARM Environmental Svcs Address: P.O. Box 50285 City: Columbia
	State: South Carolina Zin: 29250
*Indicate Water Bearing Zones	Telephone No.: (803) 783–3314 Fax No.: (803) 783–2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
	my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheetif needed) 5REMARKS:	/-
[-10] 3/8" Pentonito mallata C	11 ft
To substitute poincies from 1 to 3	Authorized Representative Date: 3-31-09 (MM/DD/YYYY)
	V (www./DD/YYYY)

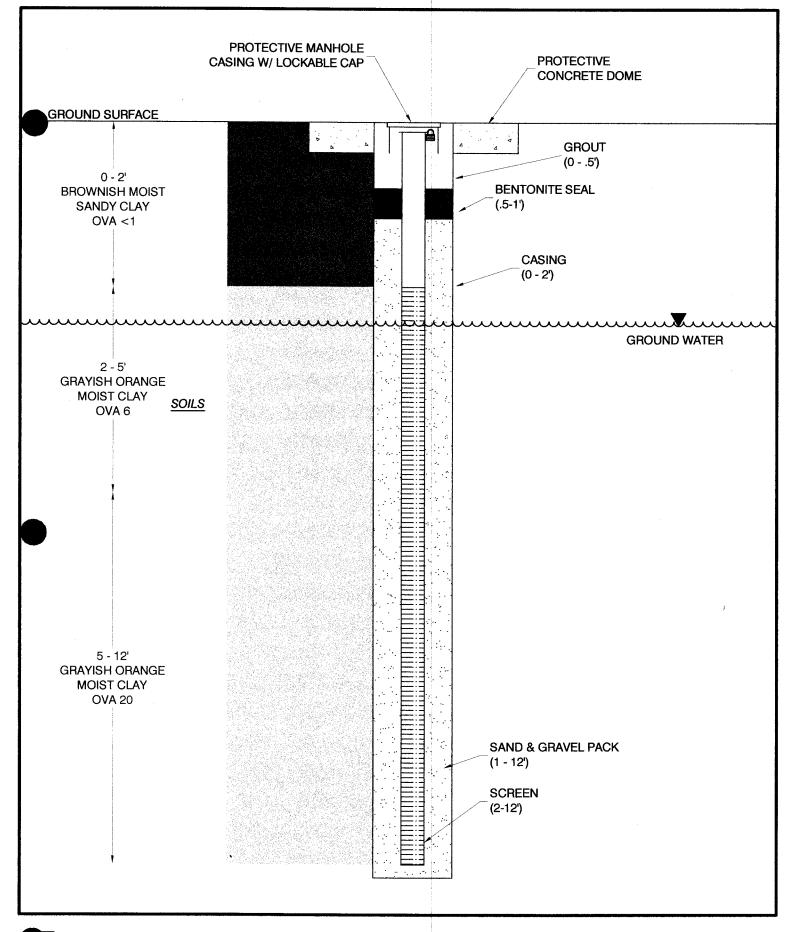






B ureau of Water 25 2000 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:	03/54
Name: BIN STOKES OFL CO.	6. PERMIT NUMBER: 03423
Address: Po Box 274	7. USE:
City: FLORE(HE State: SC zip: 2950	Residential Public Supply Process  Air Conditioning Emergency
	Test Well X Monitor Well Replacement
Telephone: Work: 843-669-6818	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
2. LOCATION OF WELL: COUNTY: FLORE ITO  Name: OH MECKS EAXON	Date Completed (MM/DD/YYYY): 3-07-04
	9. TYPE: Mud Rotary Jetted Bored Dug Air Rotary Driven
Street Address: 4925 PAMPLICO HIL	☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool      Other
City: FLOREHLE SC Zip: Z4503	
Latitude: Longitude:	Type: PVC Galvanized Surface ft
3. PUBLIC SYSTEM NAME:	Steel Other Weight lb_/ft
PUBLIC SYSTEM NUMBER:	in. toft. depth   Drive Shoe? Yes Noin. toft. depth
4. TABANDONMENT: Yes X No.	11. SCREEN
Grouted Depth: fromft. to	ft Slot/Gauge: 0.010" Length: 10'
*Thickness Depth	to Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Formation Description of Bottom Stratum Stratum	of trand to USESECOND SHEET
see boring log	12. STATIC WATER LEVEL 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 Piease enclose lab results.
	15. ARTIFICIAL FILTER (filter pack) Yes No
	Installed from $\frac{12'}{}$ ft to $\frac{1}{}$
	Effective size #3 Uniformity Coefficient
	16. WELL GROUTED? Yes No Neat Cement Bentonite V Bentonite/Cement Other
	Neat CementBentonite
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Well Disinfected: Yes No Type: Amount
	18. PUMP: Date installed (MM/DD/YYYY): Not installed X
	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: CERT.NO.: 1921
	Name: Josh Register c/o ARM Environmental Svcs  Address: P.O. Box 50285 City: Columbia
	State: South Carolina Zip: 29250
*Indicate Water Bearing Zones	Telephone No.: (803) 783–3314 Fax No.: (803) 783–2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
	my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheetif needed) 5REMARKS:	
	1114
-13 3/8" Bentonite pellets from 1 to 5	Signed: Date: 3-31-09 Authorized Representative
	(WWW.DD)[111]
DHEC 1903 (03/2002) COP P1 MAIL TO: S.C. DEPART	MENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

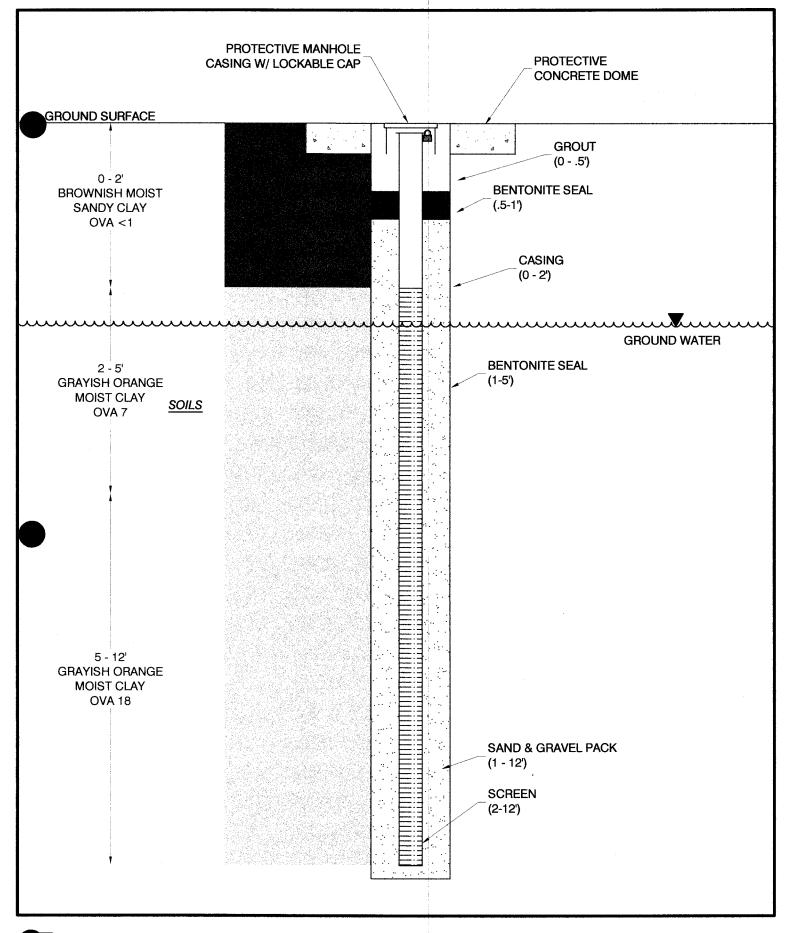






B ureau of Water (803) 898-4300

1. WELL OWNER INFORMATION:			
Name: Bld STOKES OFC CO.			6. PERMITNUMBER: 03423
Address: Po Box 274			7. USE:
			Residential Public Supply Process
city: FLORENTE State: SC Zip: 29503		29503	Irrigation Air Conditioning Emergency
Telephone: Work: 843 - 669-6818			Test Well X Monitor Well Replacement
Telephone: Work: 073	Home: O I	10	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
2. LOCATION OF WELL: CO	UNTY: FLOY	LEHLE	12' ft. Date Completed (MM/DD/YYY): 3-27-09
Name: OH M=GGS			9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 F	AMPLIZO	11114.	Dug Air R otary Driven
City: FLOREITLE SC	Zip: 29	50 Z	10. CASING: X Threaded Welded
Latitude: Longit			Diam.: Height Above/Below
- 3. PUBLIC SYSTEM NAME:			Type: XPVC Galvanized Surfaceft  Steel Other Weightlb_/ft
PUBLIC SYSTEM NUMBER:			in. to 2 other Weightlb./ft.  Drive Shoe? Yes No
4. ABANDONMENT: Yes	J 137		in. to ft. depth
	I INO		11. SCREEN
Grouted Depth: from	ft. to	ft.	Type: schedule 40 PVC Diam.: 2" Slot/Gauge: 0.010" Length:
	*Thickness	Depth to	S lot/Gauge: 0.010" Length: /0' S et Between: /2' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Formation Description	of Stratum	Bottom of Stratum	ft. and ft. USE SECOND SHEET
see boring log		. Juddin	Sieve Analysis Yes (please enclose) X No
		` .	12. STATIC WATER LEVEL ft. below land surface after 24 hours
•		J	13. PUMPING LEVEL Below Land Surface.
/			ft. after hrs. Pumping G.P.M. Pumping test: Yes (please enclose)
			Yield:
			14. WATER QUALITY
·			Chemical Analysis: Yes No Bacterial Analysis: Yes No P lease enclose lab results.
• .		ł	15. ARTIFICIAL FILTER (filter pack) Yes No
			installed from ft. to ft.
*			Effective size #3 Uniformity Coefficient
			16. WELL GROUTED? Yes No
	<u></u>		Neat Cement ☐ Bentonite ✓ Bentonite/Cement ☐ Other  Depth: From
		F	ft. to C ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction Type:
		·	Well Disinfected: Yes No Type: Amount
		ſ	18. PUMP: Date installed (MM/DD/YYYY): Not installed ×
	<del></del>		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: CERT NO - 1921
<del>-</del>			Name: Josh Register c/o ARM Environmental Svcs
	<del></del>		Address: P.O. Box 50285 City: Columbia  State: South Carolina Ziv: 29250
			Telephone No.: (803) 783–3314 Fax No.: (803) 783-3597
Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheetif needed)			my direction and this report is true to the best of my knowledge and belief.
. REMARKS:			/_
14 2/911 Domtonito 11 11 11 1			and the
1 510 Pointourie beneix from 1 10 • 5			Signed: Date: 3-31-09 Authorized Repulsantative (MM/DD/YYY)
		L	(MM/DD/YYY)
FC 1003 (03 /2003)	· -		

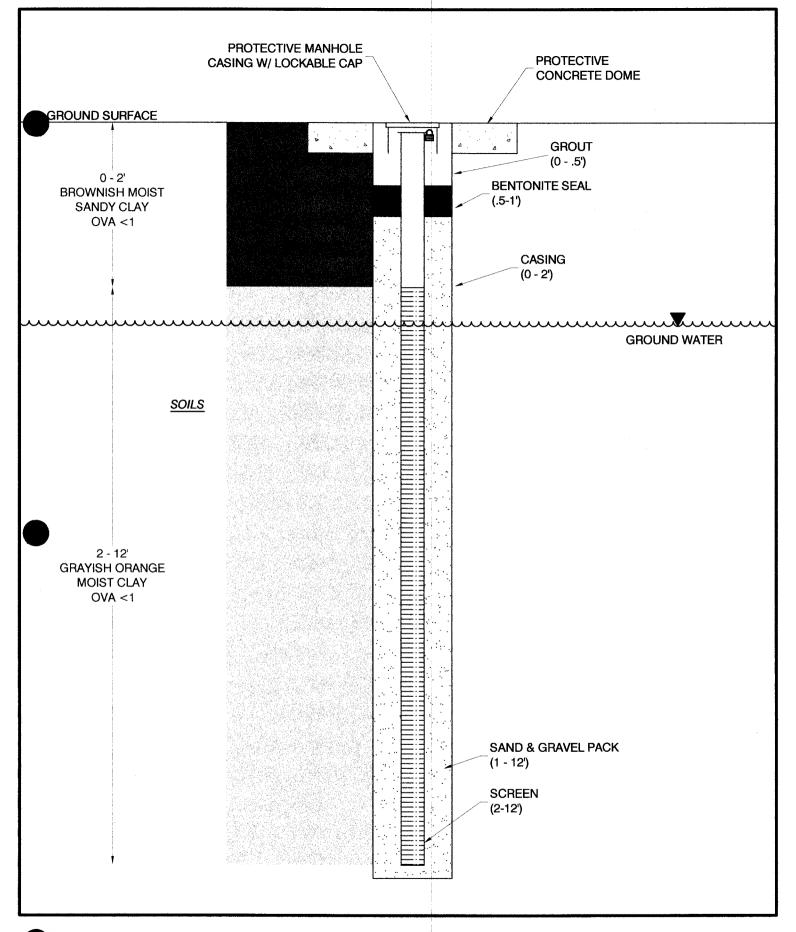






B ureau of Water (\$25.00 Bull S treet, Columbia, S C 29201-1708; (803) 898-4300

Name: Bid STOKES OTL CO.			6. PERMIT NUMBER: 03423
Address: Po Box 274			7. USE:
city: FLOR SHOE State: SC Zip: 29503		7962	Residential Public Supply Process  Air Conditioning Emergency
Telephone: Work: 843-669-6818			Test Well X Monitor Well Replacement
Telephone: Work: 045 Wolfer 018  2. LOCATION OF WELL: COUNTY: FLOWEITCE			8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
Name: OH MEGO	5 EXX	OU/	9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 PA	PLICO H	luy.	Dug Air Rotary Driven
City: FLOREIYCE SC	Zip: Z95	3	10. CASING: XThreaded Welded
Latitude: Longit			Diam.: A"  Height Above/Below  Type: XPVC  Galvanized  Surface  ft
3. PUBLIC SYSTEM NAME:			Steel Other Weight
PUBLIC SYSTEM NUMBER:			in. toft. depth Yes No No
4. ABANDONMENT: Yes X	No		11. SCREEN
Grouted Depth: from	ft.:to	ft.	Type: schedule 40 PVC Diam.: 3"  Slot/Gauge: 0.010" Length: /0'
Formation Description	*Thickness	Depth to	S lot/Gauge: 0.010" Length: /0' S et Between; /2' ft. and 2' ft. NOTE: MULTIPLE SCREENS
1 offitation Description	of Stratum	Bottom of Stratum	ft and ft USE SECOND SHEET
see boring log	- : : ]		Sieve Analysis Yes (please enclose) No  12. STATIC WATER LEVEL ft. below land surface after 24 hours
			13. PUMPING LEVEL Below Land Surface.
<del> </del>			ft. after hrs. Pumping G.P.M.
	.		Pumping test: Yes (please enclose) No
			14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No
			Installed from 12' ft to 1' ft  Effective size #3 Uniformity Coefficient
•••			16. WELL GROUTED? X Yes No
			Neat Cement ☐ Bentonite ✓ Bentonite/Cement ☐ Other  Depth: From
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		•	Type:
		· · · · · · · · · · · · · · · · · · ·	Well Disinfected: Yes No Type: Amount  18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			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: CERT. NO.: 1921 Name: Josh Register c/o ARM Environmental Sycs
	·		Address:P.O. Box 50285 City: Columbia
•			State: South Carolina Zip: 29250
*Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	•		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
- 15 3/8" Bentonite pellets from 1' to 5'			Signed: John M. Date: 3-31-09
			Authorized Representative Date: (MM/DD/YYY)
FC 1903 (03 D002)			

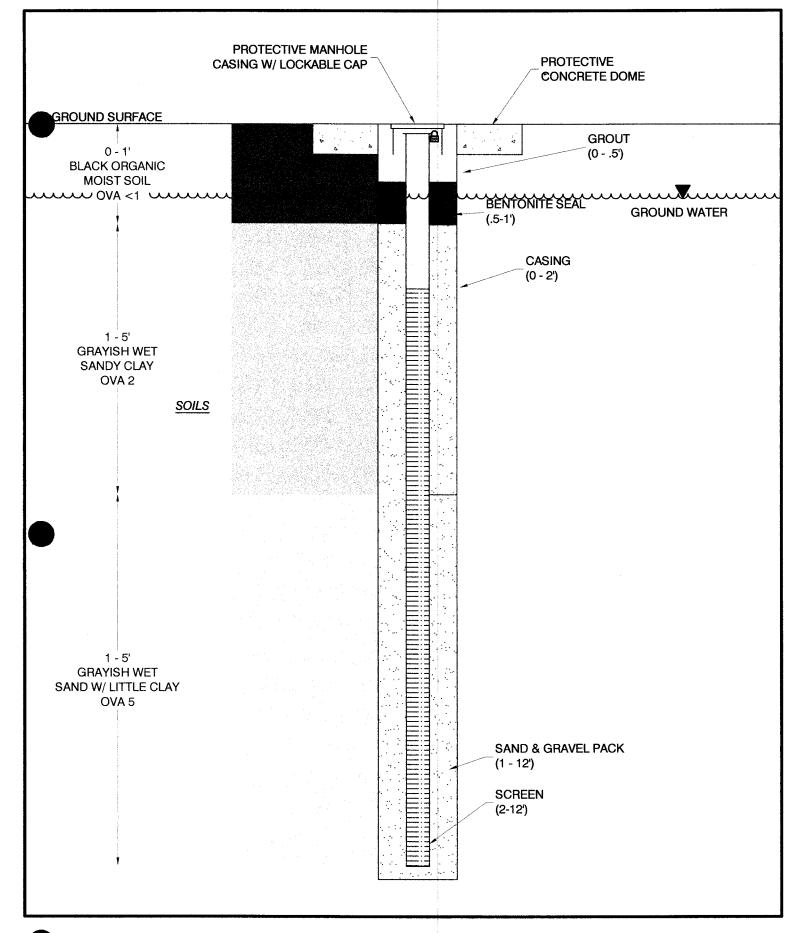






B ureau of Water (803) 898-4300 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:	<u> </u>	<del></del>	7
Name: BIJ STOKES	art.	<i>/ ^</i> :	6. PERMIT NUMBER: $03423$
BIG SIDES	Of C		
Address: PO TSOX 2	71		7. USE:
			Residential Public Supply Process
city: FLORENCE State:	درخ	7967	Irrigation Air Conditioning Emergency
Telephone: Work: 843-669-6818		B	
			8. WELL DEPTH (completed) Date Started (MMDD/YYYY): 3-26-69
2. LOCATION OF WELL: COI	UNTY: Fle	W=14le	12 ft. Date Completed (MM/DD/YYY): 3-27-09
Name: OH HEGGS	EXXO	M	9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 P	Andri -	11.11	Dug Air Rotary Driven
Street Address: 1123 11	HAPTO	HIJY	Cable tool × Other
City: FLOTZEHLE SC	Zip: 295	03	10. CASING: X Threaded Welded
			Diam.: Height Above/Below
Latitude: Longit	ude:		Type: XPVC Galvanized Surfaceft
3. PUBLIC SYSTEM NAME:			Steel Other Weight
PUBLIC SYSTEM NUMBER:		<del></del>	in. to 2 ft. depth Drive Shoe? Yes No
	3	<del></del>	in. toft. depth
4. ABANDONMENT: Yes	INO		11. SCREEN
Constant Downt	_		Type: schedule 40 PVC Diam.: 2"
Grouted Depth: from	ft. to	ft.	S lot/Gauge: 0.010" Length: /0'
Enmostan Director	*Thickness	Depth to	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Formation Description	of	Bottom of	ft andft USE SECOND SHEET
	Stratum	S tratum	Sieve Analysis Yes (please enclose) No
see boring log	1	,	12. STATIC WATER LEVEL ft. below land surface after 24 hours
			13. PUMPING LEVEL Below Land Surface.
	]		l la
1	<u> </u>		ft. after hrs. Pumping G.P.M. Pumping test: Yes (please enclose)
<b>L</b>			Yield:
	<del></del>		· .
		I	14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
	. [	1	P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No
" 1	:		Installed from 12' ft to 1'
			Effective size #3 Uniformity Coefficient
	,		16. WELL GROUTED? XYES TING
		1	Neat Cement ☐ Bentonite ✓ Bentonite/Cement ☐ Other
			Depth: From
		F	17. NEAREST SOURCE OF POSCIPLE COMMUNICATION
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Well Disinfected: Yes No Type: Amount
	<del></del>		TO PULL
	1		18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			Mfr. Name: Model No.:
•	• • • •	1	H.P. Volts Length of drop pipe ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
		L	Jet (deep) Reciprocating Centrifugal
			19. WELL DRILLER: CERT.NO.: 1921
<del></del> . ∤.			Name: Josh Register c/o ARM Environmental Svcs
	<del></del>		Address: P.O. Box 50285 City: Columbia
•		1	State: South Carolina Zip: 29250
	· · · · · · · · · · · · · · · · · · ·		Telephone No.: (803) 783-3314 Fax No.: (803) 783-3314
*Indicate Water Bearing Zones	1.	1	20. WAI ER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
	.		my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			
5. REMARKS:	• .		
/6 3/8" Bentonite pellets f	rom 1 +-	.5'	and the
	.om <u>1                                    </u>	ا د	Signed: 101 M/ Date: 3-31-09
·		1	Authorized Repulsentative (MM/DD/YYYY)
HFC 1903 (03/2002)	=		

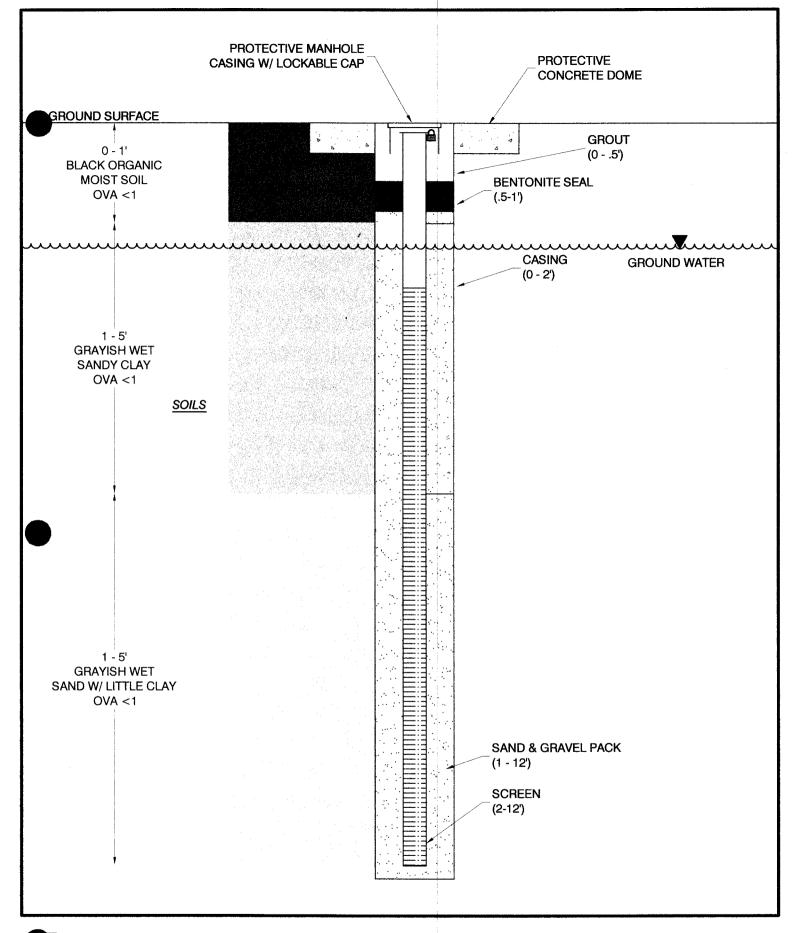






## Water Well Record B ureau of Water (\$200 Bull S treet, Columbia, S © 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:	
Name: BIJ STOKES OF CO.	6. PERMIT NUMBER: 03423
Address: PO BOX 274-	7. USE:  Residential Public Supply Process
timester en 2000	
city: FLORENTCE State: SC Zip: 29503	
Telephone: Work: 843 - 669-6818	
2. LOCATION OF WELL: COUNTY: FLORE ITLE	10'
Name: OH MEGGS EXXON	Date Completed (MM/DD/YYYY): 3-2/-04
10000	9. TYPE: Mud Rotary Jetted Bored Dug Air Rotary Driven
Street Address: 4925 PAMPLICO HUY.	☐ Dug ☐ Air Rotary ☐ Driven☐ Cable tool ☑ Other
city: FLORESTE SC Zip: 29503	10. CASING: Threaded Welded
	Diam.: Height Above/Below
Latitude:Longitude:	Type: PVC Galvanized Surfaceft
3. PUBLIC SYSTEM NAME:	Steel Other Weight lb./ft
PUBLIC SYSTEM NUMBER:	in. toft. depth Drive Shoe?Yes Noin. toft. depth
4: ABANDONMENT: Yes X No.	11. SCREEN
Constant Density &	Type: schedule 40 PVC Diam.: 2"
Grouted Depth: fromft_toft	Slot/Gauge: 0.010" Length:
*Thickness Depth to Formation Description of Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
S tratum S tratum	ft. andft. USE SECOND SHEET
see boring log	Sleve Analysis Yes (please enclose) No
	12. STATIC WATER LEVEL 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)
	Yield:
	14. WATER QUALITY
	Chemical Analysis: Yes No Bacterial Analysis: Yes No
	P lease enclose lab results.
	15. ARTIFICIAL FILTER (filter pack) Yes No
· · · · · · · · · · · · · · · · · · ·	Installed from 12' ft to 1'
	Effective size #3 Uniformity Coefficient
	16. WELL GROUTED? Yes No
	Neat Cement Bentonite ✓ Bentonite/Cement Other  Depth: From 5 ft. to 6 ft.
	· · · · · · · · · · · · · · · · · · ·
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Well Disinfected: Yes No Type: Amount:
	10 DUMP D
	Mfr. Name: Model No.:
	H.P. Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	Jet (deep)ReciprocatingCentrifugal
	19. WELL DRILLER: CERT. NO.: 1921  Name: Josh Register c/o ARM Environmental Svcs
	Address: P.O. Box 50285 City: Columbia Zip: 29250
	Telephone No.: (803) 783–3314 Fax No.: (803) 783-3507
*Indicate Water Bearing Zones	10. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheetif needed)	my direction and this report is true to the best of my knowledge and belief.
(Use a Zha sheetii needed)  5REMARKS:	/
	10.14
17 3/8" Bentonite pellets from 1 to 5	igned: Josle 3-31-09
	Authorized Repulsentative (MM/DD/YYY)
15.5.1000 (00 100 100 100 100 100 100 100 100	

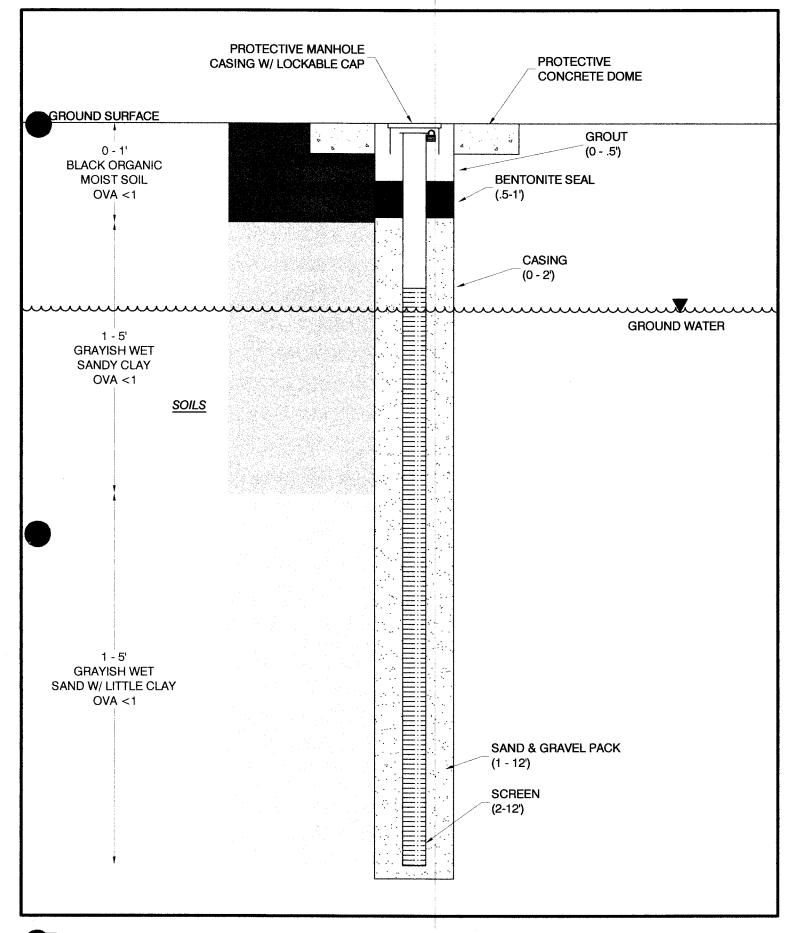






## Water Well Record B ureau of Water (803) 898-4300 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION: Name: BIJ STOKES OF CO.	6. PERMIT NUMBER: 03423
	7. USE:
Address: PO BOX 274	
City: FLO (25) + LE State: SC Zip: 29503	Irrigation Air Conditioning Emergency
Telephone: Work: 843-669-6818	
2. LOCATION OF WELL: COUNTY: two FHC	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 4-/3-09
Name: Megg's Exxon	
497E PA HULL	9. TYPE:   Mud Rotary   Jetted   Bored   Driven
Street Address: 4925 PAUPLICO HILY City: FCOR=HL= SC Zip: 29503	Cable tool 🗗 Other
City: PW12=17LE 3C Zip: 29303	10. CASING: Threaded Welded Diam.: Height Above/Below
Latitude:Longitude:	Diam.: Height Above/Below Type: PVC Galvanized Surface ft
3. PUBLIC SYSTEM NAME:	S teel Other Weight — lb./ft
PUBLIC SYSTEM NUMBER:  4: ABANDONMENT: Yes No	in. toft. depth Drive Shoe?Yes Noin. toft. depth
4. ABANDONMENT: Yes X No	11. SCREEN
Grouted Depth: fromft.toft	Type: schedule 40 PVC Diam.: 2"
*Thickness Depth to	S lot/Gauge: 0.010" Length: /O'  Set Between; /2' ft and 2' ft NOTE: MULTIPLE SCREENS
Formation Description of Bottom of	ft andft USE SECOND SHEET
see boring log Stratum Stratum	S leve Analysis Yes (please enclose) No
bee boing log	12. STATIC WATER LEVEL ft. below land surface after 24 hours
	13. PUMPING LEVEL Below Land Surfaceft. after hrs. Pumping G.P.M.
/	Pumping test: Yes (please enclose) No
	Yield:
	14. WATER QUALITY  Chemical Analysis: Yes No Bacterial Analysis: Yes No
	Chemical Analysis: Yes No Bacterial Analysis: Yes No P lease enclose lab results.
	15. ARTIFICIAL FILTER (filter pack) Yes No
	Installed from 12' ft toft
	Effective size #3 Uniformity Coefficient  16. WELL GROUTED? Yes No
	Neat Cement Bentonite Bentonite/Cement Other
	Depth: From 5 ft. to 0' ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ftdirection
	Type: Amount: Amount:
	18. PUMP: Date installed (MM/DD/YYYY):  Not installed X
	Mfr. Name: Model No.:
	H.P. Volts Length of drop pipe ft. Capacity gpm  TYPE: Submersible Jet (shallow) Turbine
	TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal
	19. WELL DRILLER: : CERT NO - 1921
	Name: Josh Register c/o ARM Environmental Svcs
	Address: P.O. Box 50285 City: Columbia  State: South Carolina Zip: 29250
	Telephone No.: (803) 783-3314 Fax No.: (803) 783-2587
*indicate Water Bearing Zones	20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)	
5. REMARKS:	
- / 8 3/8" Bentonite pellets from / to 65	Signed: 15-09
	Authorized Regresentative (MM/DD/YYYY)
DHEC 1903 (03/2002) COPŶ1 MAIL TO: S.C. DEPARTME	NT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

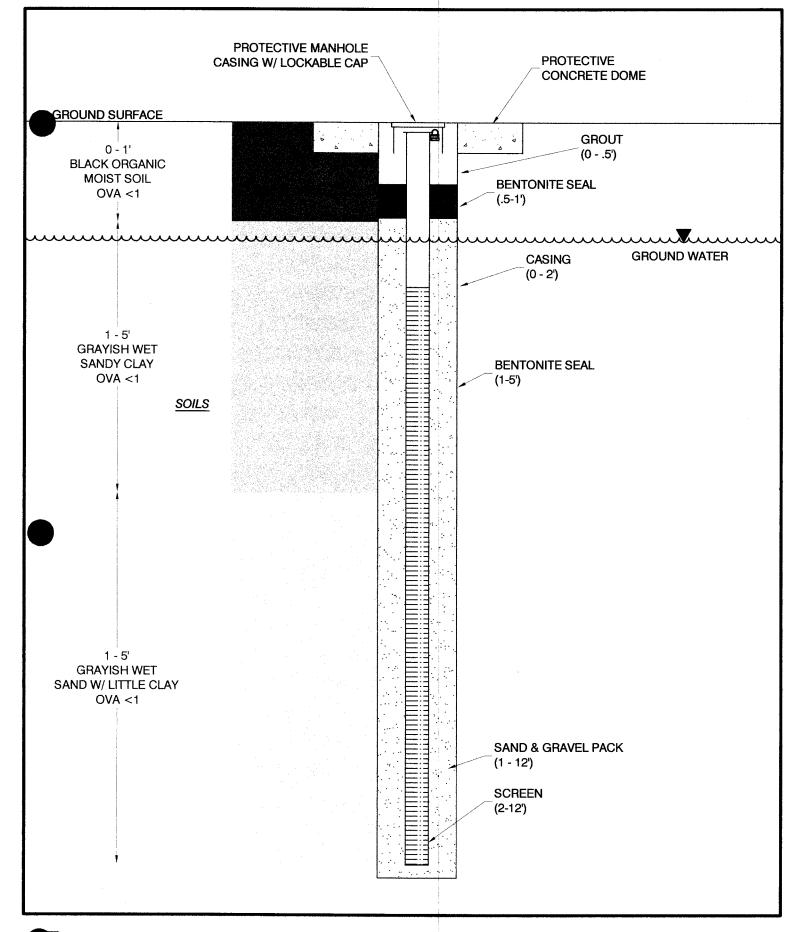






B ureau of Water (5.2) 2600 Bull Street, Columbia, S C 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION: Name: BIJ STOKES OFC CO.			6. PERMIT NUMBER: 03 4 2.3
Address: Po Box 274.			7. USE:
			Residential Public Supply Process Air Conditioning Emergency
City: FLORE STATE: SC zip: 29503			Irrigation
Telephone: Work: 643 - 669 - 6818			8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 4-/3-09
2. LOCATION OF WELL: COL	INTY: FLOI	25 HC15	
Name: Megg's Exxor		·	9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 Pu		HUY	Dug Air Rotary Driven Cable tool 7 Other
City: FLOREITLE SC			10. CASING: Threaded Welded
Latitude:Longit			Diam.: Height Above/Below
3. PUBLIC SYSTEM NAME:			Type: XPVC Galvanized Surfaceft  Steel Other Weight
PUBLIC SYSTEM NUMBER:			in. toft. depth   Weight lb./ft.
4. ABANDONMENT: Yes	No	<del></del>	in. toft. depth
	4		Type: schedule 40 PVC Diam.: 2"
Grouted Depth: from	ft. to	ft.	Slot/Gauge: 0.010"
Formation Description	*Thickness of	Depth to Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
	S tratum	Stratum	ft. and ft. USE SECOND SHEET  Sieve Analysis Yes (please enclose) No
see boring log			12. STATIC WATER LEVEL 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
			14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes No
•			P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No  Installed from 12 ft to 1
		.]	Effective size #3 Uniformity Coefficient
· ·			16. WELL GROUTED? Yes No
			Neat Cement Bentonite Bentonite/Cement Other  Depth: From ft. to
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type:
			Well Disinfected: Yes No Type: Amount
			18. PUMP: Date installed (MM/DD/YYY): Not installed X
			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: CERT.NO.: 1921 Name: Josh Register c/o ARM Environmental Sycs
	<u> </u>		Address: P.O. Box 50285 City: Columbia
· •	1	1	State: South Carolina Zip: 29250
*Indicate Water Bearing Zones	<del></del>		Telephone No.: (803) 783–3314 Fax No.: (803) 783–2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
• • •		• •	my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)  5. REMARKS:			
			10 84
- 19 3/8" Bentonite pellets f	rom /to	25	Signed: Date: 4-13-09.  Authorized Representative Date:
•			<i>U</i>
HEC 1903 (03/2002) COP P	1 MAIL TO: S.C.	DEPARTMENT	OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

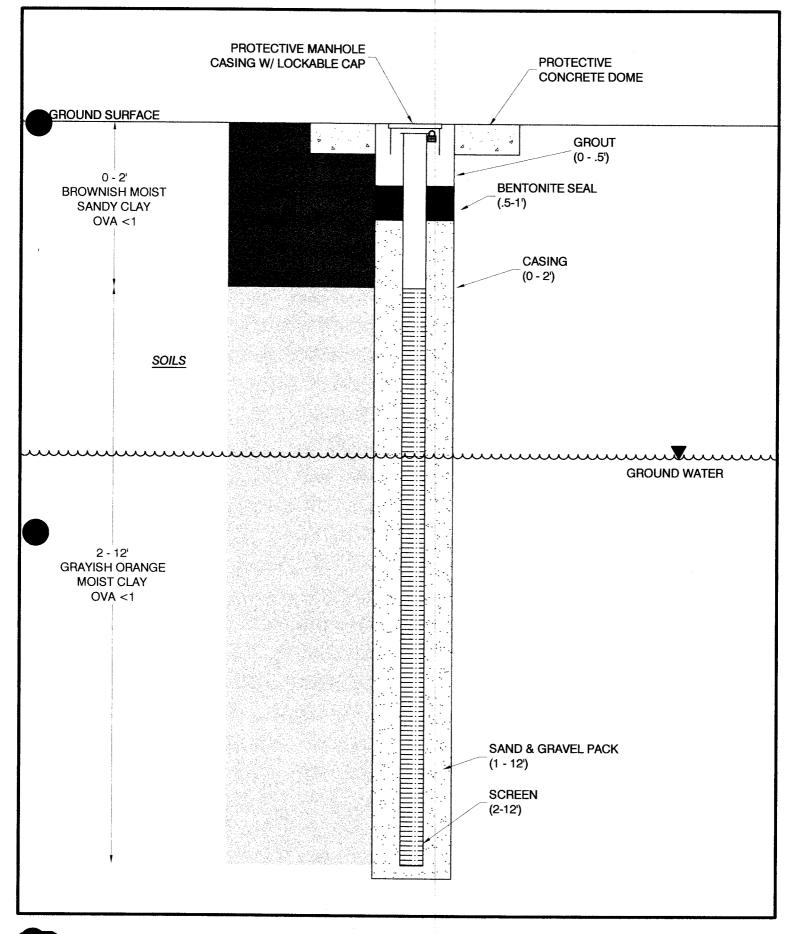






B ureau of Water (\$2.2000 Bull Street, Columbia, S © 29201-1708; (803) 898-4300

1. WELL OWNER INFORMATION:	
Name: Bld STOKES OIL CO.	6. PERMITINUMBER: 03423
Address: PO Box 274	7. USE:
	Residential Public Supply Process
city: TLOUEHLE State: SC Zip: 29503	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: 843-669-6818	8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
2. LOCATION OF WELL: COUNTY: FLO12-HCE	10
Name: OH MEGGS EXXXX	Date Completed (MM/DD/YYYY): 3-0.7-04
Street Address: 4925 PAMPLIC HILY,	Jetted Bored  Dug Air Rotary Driven
City: FLOREHCE S.C. Zip: 29503	Cable tool × Other
	10. CASING: Threaded Welded Diam: A Welded Noise Melan
Latitude:Longitude:	Type: RPVC Galvanized Surface ft
3. PUBLIC SYSTEM NAME:	Steel Other Weight
PUBLIC SYSTEM NUMBER:	in. tofr. depth   Drive Shoe?Yes No
4. ABANDONMENT: Yes X No.	in. toft. depth
Grouted Depth: fromft. toft	Type: schedule 40 PVC Diam.:
Grouted Depth: fromft_ toft_   #Thickness   Depth to	Slot/Gauge 0.010"
Formation Description of Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Stratum Stratum	ft. andft. USESECOND SHEET  Sieve Analysis Yes (please enclose) No
see boring log	12. STATIC WATER LEVEL 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
	14. WATER QUALITY
	Chemical Analysis: Yes No Bacterial Analysis: Yes No
	P lease enclose lab results.
	15. ARTIFICIAL FILTER (filter pack) Yes No
	Installed from Q' ft. to
	16. WELL GROUTED? XYes No
	Neat Cement Bentonite Abentonite/Cement Other
	1. 0 O
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Well Disinfected: Yes No Type: Amount
	18. PUMP: Date installed (MM/DDMYYY):  Not installed  x
	Mfr. Name: Model No.:
	H.P. Volts Length of drop pipe ft. Capacity gpm  TYPE: Submersible let (shallow) Typhine
	TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal
	19. WELL DRILLER: CEPT NO. 1021
	Name: Josh Register c/o ARM Environmental Svcs
	Address: P.O. Box 50285 City: Columbia  State: South Carolina Zin: 29250
	Telephone No.: (803) 783–3314 Fax No.: (803) 783-3507
*Indicate Water Bearing Zones	20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheetif needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	-/-
- 20 3/8" Bentonite pellets from 1 to .5'	LIA IA
2. 2 2 months from 1 10 • 2	judici de la proposición dela proposición de la proposición de la proposición dela proposición de la proposición dela proposición dela proposición de la proposición dela proposición de la proposición del proposición dela proposi
	(MM/DD/YYY)



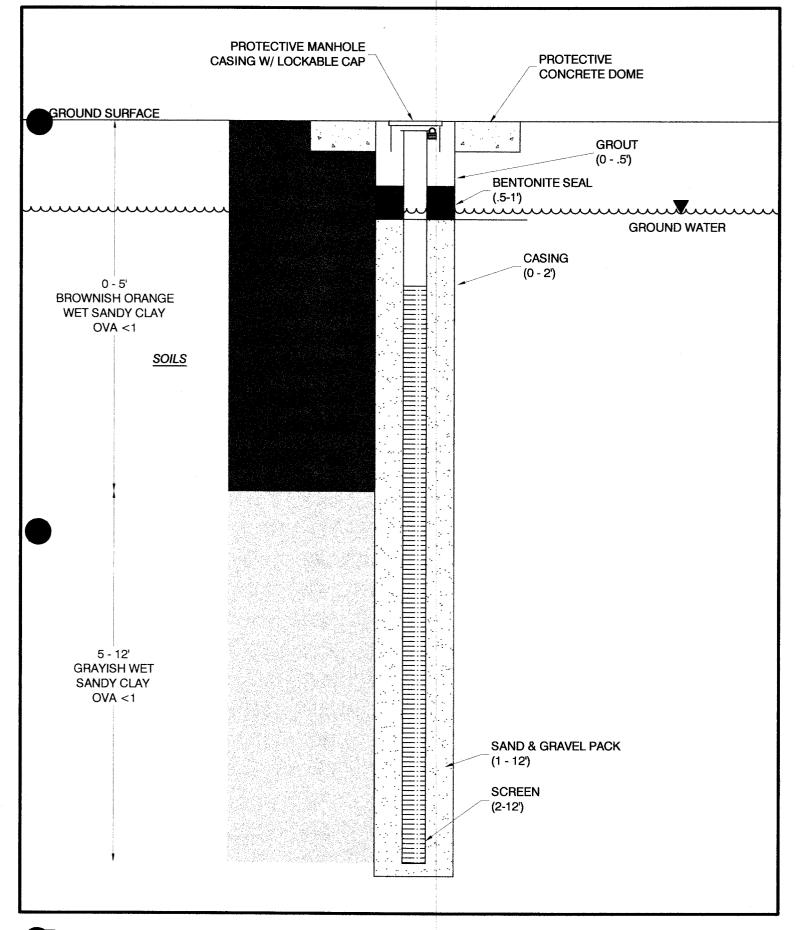




# Water Well Record

B ureau of Water (50) 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

<ol> <li>WELL OWNER INFORMATION:</li> </ol>	,		
Name: BIJ STOKES	5 -0±L	CO.	6. PERMIT NUMBER: 03423
	•	<u>-</u>	7. USE:
Address: PO BOX 2	74-		7. USE:  Residential Public Supply Process
city: FLOREITE State: 4		701602	Irrigation Air Conditioning Emergency
			Test Well X Monitor Well Replacement
Telephone: Work: 843-66	768	18	8. WELL DEPTH (completed) Date Started (MM/DD/YYY): 3-26-69
2. LOCATION OF WELL: CO	INTY: EL	DEHLE	1 101
Name: OH MEGGS &	EXXXIV	1	
1025 0		. 1 1	9. TYPE: Mud Rotary Jetted Bored Dug Air Rotary Driven
Street Address: 4925 P	AMPLICO	14144,	Cable tool TOther
City: FLOIRENCE SC	zip: Z 45	03	10. CASING: Threaded Welded
Latitude: Longit		-	Diam.: Height Above/Below
			Type: Surfaceft
3. PUBLIC SYSTEM NAME:	*	<del></del> -	Steel Other Weight lb./ft  in. to ft. depth
PUBLIC SYSTEM NUMBER:			in. toft. depth   Drive Shoe? Yes X No
4. ABANDONMENT: Yes X	No		1). SCREEN
Grouted Dowth, from			Type: schedule 40 PVC Diam.: 2"
Grouted Depth: from	ft.to	ft.	S lot/Gauge: 0.010" Length: /0'
Formation Description	*Thickness of	Depth to . Bottom of	Set Between: 12' ft. and 2' ft. NOTE: MULTIPLE SCREENS
	Stratum	5 tratum	ft. and ft. USE SECOND SHEET  Sieve Analysis Yes (please enclose) No
see boring log		,	
			12. STATIC WATER LEVEL ft. below land surface after 24 hours  13. PUMPING LEVEL Below Land Surface.
	1		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
• ,		- 1	P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No
			Installed from 12' ft to 1' ft  Effective size #3 Uniformity Coefficient
	<del></del>		16. WELL GROUTED? Yes No
		·	Neat Cement Bentonite Bentonite Other
•			Depth: From ft. to ft.
			17 NEADECT GOUDGE OF DOCUMENT
			Type:
*	· · · · · ·		Well Disinfected: Yes No Type: Amount
· .			18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			Mfr. Name: Model No.:
· . ·	•	1	H.P. Volts Length of drop pipe ft. Capacity gpm  TYPE: IS upmersible let (shallow) Turbing
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal
		- 1	Land 1. Francis English and 1.
			Name: Josh Register c/o ARM Environmental Svcs
- '	<u> </u>		Address: P.O. Box 50285 City: Columbia
	. 1		State: South Carolina Zip: 29250
-	·		Telephone No.: (803) 783–3314 Fax No.: (803) 783-2597
*Indicate Water Bearing Zones			20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
(Use a 2nd sheetif needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
2/ 3/8" Bentonite pellets t	j1.	۲/	1111
210 perronte berteit 1	rom 1 to	<u>.5</u> '	Signed: John Tyl Date: 3-31-09
*.			Authorized Replasentative (MM/DD/YYYY)



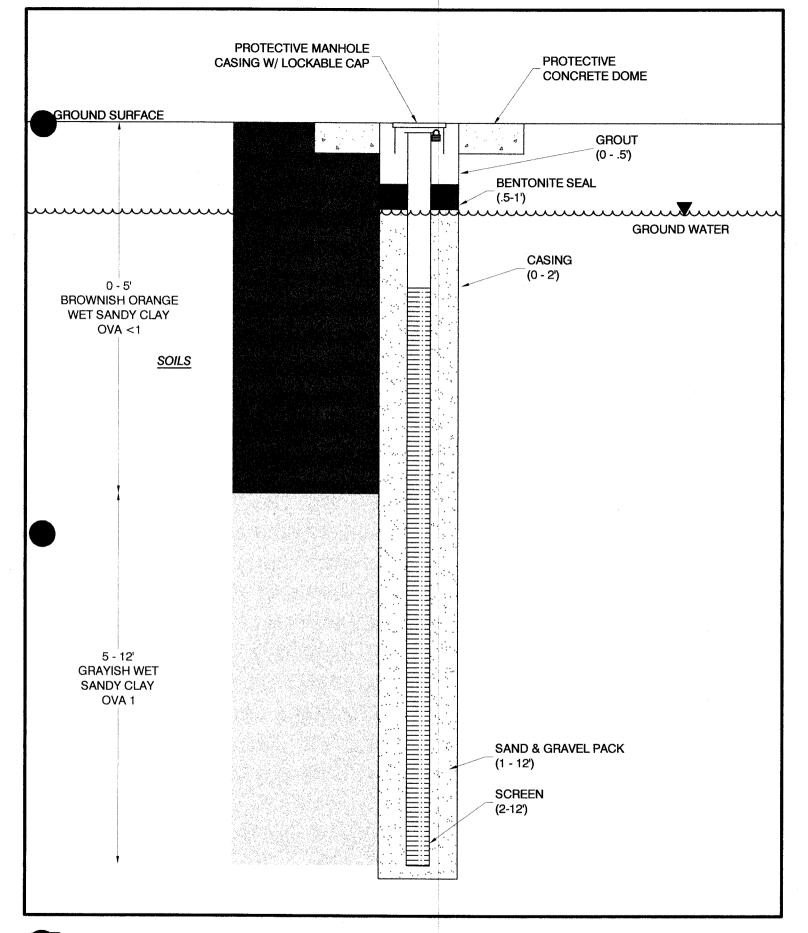




# Water Well Record

B ureau of Water (803) 898-4300 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

T MELL CHAIR DE CRIMER	L		124 2520, 1700, (203, 658, 4300
1. WELL OWNER INFORMATION: Name: SIOKS	5 OIC	Co.	6. PERMIT NUMBER: 03423
Address: Po Box'	274		7. USE:
City: FLONTINE State:		796n3	Residential Public Supply Process Irrigation Air Conditioning Emergency
- T			☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☑ Monitor Well ☐ Replacement
Telephone: Work: 843-66			8. WELL DEPTH (completed) Date Started (MM/DD/YYYY): 3-26-69
2. LOCATION OF WELL: CO	UNTY: FLOR	C= HCVE	12
Name: OH HEGGS			9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 PA			☐ Dug ☐ Air Rotary ☐ Driven☐ Cable tool 🗷 Other
city: FLORETHLE 3C	-zip: <u>299</u>	503	10. CASING: Threaded Welded
Latitude: Longit	ude:	· .	Diam.: Height Above/Below  Type: Galvanized Surface ft
3. PUBLIC SYSTEM NAME:			Steel Other Weightlb_/ft
PUBLIC SYSTEM NUMBER:		<u> </u>	in. toft. depth   Drive Shoe? Yes Noin. toft. depth
4. ABANDONMENT: Yes X	No		II. SCREEN
Grouted Depth: from	ft. to	ft.	Type: schedule 40 PVC Diam.: 2"
	*Thickness	Depth to	S lot/Gauge: 0.010" Length: //O'  S et Between: //2' ft. and 2' ft. NOTE: MULTIPLE SCREENS
Formation Description	of Stratum	Bottom of Stratum	ft and ft USE SECOND SHFFT
see boring log	-		Sleve Analysis Yes (please enclose) No  12. STATIC WATER LEVEL 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
			14. WATER QUALITY
			Chemical Analysis: Yes No Bacterial Analysis: Yes X No
•		-	P lease endlose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No  Installed from 1/2 ft to 1/2 ft
		· · · · ·	Effective size #3 Uniformity Coefficient
			16. WELL GROUTED? Yes No
			Neat Cemerit Bentonite Bentonite Other  Depth: From
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Туре:
			Well Disinfected: Yes No Type: Amount:  18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			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: CEPT NO. 1921
			Name: Josh Register c/o ARM Environmental Svcs Address: P.O. Box 50285  City: Columbia
•	.		State: South Carolina Zip: 29250
Andiento Water Persia			Telephone No. (803) 783-3314 Fax No. (803) 783-3597
Indicate Water Bearing Zones	.   '		20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			
T. REMARKS:	11	//	1014
22 3/8" Bentonite pellets f	romto	<u>.5'</u>	Signed: 101 107 Date: 3-31-09
	· · · · · · · · · · · · · · · · · · ·		Authorized Replesentative (MM/DD/YYYY)





MEGGS EXXON MW# 22

WELL TYPE 2 SCHEMATIC



### Water Well Record Bureau of Water

PROMOTE PROTECT PROSPER		2600 Bı	ıll Street, Columbia, SC 29201-1708; (803) 898-4300
1. WELL OWNER INFORMATION:		_	6. PERMIT NUMBER: 03423
Name: BIJ STOKES		<u>co.</u>	7. USE:
Address: PO Box 2	74		Residential Public Supply Process
City: FLORE HUE State: SC	2 zip: 2	9503	☐ Irrigation ☐ Air Conditioning ☐ E mergency
Telephone: Work: 843-669-			Test Well  8. WELL DEPTH (completed)  Date Started (MM/DD/YYYY): 4-6-69
2. LOCATION OF WELL: COUNTY		= H (==	40.00 ft. Date Completed (MM/DD/YYYY): 4-7-09
Name: OH MEGGS EXX	***************************************		9. TYPE: Mud Rotary Jetted Bored
Street Address: 4925 PAMPLECO HIJY.			☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool
city: FLORZALE SC	zip: <b>295</b>	03	10. CASING: Threaded Welded
Latitude: Longitu	de:		Diam.: 2"  Height Above/Below  Type: KPVC Galvanized Surface ft
3. PUBLIC SYSTEM NAME:			Steel Other Weight lb./ft.
PUBLIC SYSTEM NUMBER:			5 in. to 25 ft. depth Drive Shoe? Yes KNo
4. ABANDONMENT: Yes 🕱			11 COPEN
Caratted Daniela France	<b>6</b>		Type: PVC Diam.:
Grouted Depth: from f	*Thickness	Depth to	S lot/Gauge: $10$ Length: $5'$ Set 8etween: $35$ ft. and $40$ ft. NOTE: MULTIPLE SCREENS
Formation Description	of	Bottom of	ft. andft USE SECOND SHEET
	S tratum	S tratum	Sieve Analysis 🔲 Yes (please enclose) 🔀 No
			12. STATIC WATER LEVEL 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)
			Yield:
			14. WATER QUALITY Chemical Analysis: X Yes No Bacterial Analysis: Yes No
			P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes XNo
			Installed from 40 ft to 33 ft  Effective size #2 Uniformity Coefficient
			16. WELL GROUTED? X Yes No
			Neat Cement ☐ Bentonite ✓ Bentonite/Cement ☐ Other
			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ftdirection  Type:
			Well Disinfected: Yes No Type: Amount
			18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			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: CERT.NO.: 1505
·			Name: Billy Ewing Address: 1210 1st Street South Ext. City: Columbia
	<del>-</del>		State: South Carolina zip: 29109
			Telephone No.: 783-3314 Fax No.: 783-2587
*Indicate Water Bearing Zones		A) and a)	<ol> <li>WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction aind this report is true to the best of my knowledge and belief.</li> </ol>
(Use a 2nd sheet if needed)			, 1
5. REMARKS:			A hen lul (4/352) 5/12/09
MIJ 1-D			Signed: Authorized Representative Date (MM/DIDNYYY)

Project No:

UST Permit # 03423

Log of Borehole: MIL 1-D

Project: OH MEGGS EXXON

Client: BILL STOKES OFL CO.

Driller: ARM

Location: FLOREHLE SC

inspector:

		S	UBSURFACE PROFILE	************	<del></del>	SAMP	1 5			
Depth	ì	Symbol	Description	Elev.	Number	Type	Recovery	Volatile Organic Concentration ppm 100 300 500 700 900	Well Data	Remarks
ft m	b		Ground Surface	0				A STATE OF THE STA		
2-			BROWN MOIST							Manhole Cover
44_			SAHD LLAY	4						
6 - 2 8 - 10 - 12 - 4 14 - 16 - 18 - 18 - 18 - 18 - 18 - 18 - 18			LIGHT ORAHGE GRAY HET SANDY LLAY							6" PVC Casing
20 - 6 22 - 24 - 26 - 8 28 - 30 - 32 - 1			BLACKISH GRAY NET SAND W	20	*. *					Cement Grout Bentonite Seal
34-			TILE CLAY				!			2" PVC Casing
36-	-	1	- 1 1 1 m							Gravel Pack
38-										2" PVC Screen
40-1-12	2	+	End of Borehole	-40						End Cap
42-			clid of potentie						ni nati	
44-				400	-	ļ	:	PA (Albidosenes	and a state of the second	
46 - 14	4			100		and the same		* Annuagement		
48-					-			Mark - Angelon -	TO A THIRD WAY PERSON AS A SECOND	
50										
	1				C-1. 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					

Drill Method: AUGER Drill Date: 4/6-7/09

Casing Diameter:

Total Depth of Well: 40 FT.

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water:

Latitude:

Longitude:



### Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

PROMOTE PROTECT PROSPER		2000 00	18 3 (1884, Cold, 1881a, 3 C 29201-1700, (003) 078 4300
1. WELL OWNER INFORMATION:			6. PERMIT NUMBER: 03423
Name: BIJ STOKES	OFLC	0.	
i			7. USE:
Address: PO BOX 27	4		Residential Public Supply Process
Transition 1		0500	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: FLORZENCE State: S			Test Well X Monitor Well Replacement
Telephone: Work: 843- 66	9- 681	a	
Telephone: Work: 043 04	_Home:	0	
2. LOCATION OF WELL: COU			40.00 ft. Date Completed (MM/DD/YYYY): 4-7-09
Name: OH MEGGS	EXXON		9. TYPE: Mud Rotary Jetted Bored
	•		Dug Air Rotary Driven
Street Address: 4925 Pm			Cable tool K Other
City: FLOREITLE SC	Zip: 299	503	10. CASING: X Threaded Welded
			Diam.: 2" Height: Above/Below
Latitude: Longitu	ude:		Type: XPVC Galvanized Surfaceft.
3. PUBLIC SYSTEM NAME:	***************************************		Steel Other Weight — Ib./ft.
			5 in to 25 ft. depth Drive Shoe? Yes X No 2 in to 35 ft. depth
PUBLIC SYSTEM NUMBER:			2 in. to 35 ft. depth
4. ABANDONMENT: Yes 🗶	No		11. SCREEN 2"
			Type: PVC Diam.:
Grouted Depth: from			Slot/Gauge: $\underline{10}$ Length: $\underline{5'}$
	*Thickness	Depth to	Set Between: 35 ft. and 40 ft. NOTE: MULTIPLE SCREENS
Formation Description	of	Bottom of	ft. andft. USE SECOND SHEET
	S tratum	Stratum	Sieve Analysis 🔲 Yes (please enclose) 🔀 No
			12. STATIC WATER LEVEL 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) X No
			Yield:
			14. WATER QUALITY
•			Chemical Analysis: X Yes No Bacterial Analysis: Yes X No
	<b></b>		P lease enclose lab results.
			15. ARTIFICIAL FILTER (filter pack) Yes No
	<del> </del>		Installed from $40$ ft to $33$ ft
			Effective size #2 Uniformity Coefficient
	<del> </del>		16. WELL GROUTED? XYes No
			Neat Cement Bentonite V Bentonite/Cement Other
			Depth: From ft. to ft.
	<b> </b>		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ftdirection
			Type:
	-		Well Disinfected: Yes No Type: Amount
			18. PUMP: Date installed (MM/DD/YYYY): Not installed X
			Mfr. Name: Model No.:
			H.P. Volts Length of drop pipe ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587
*Indicate Water Bearing Zones			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under
*Indicate Water Bearing Zones			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed) 5. REMARKS:			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 Ist Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.
(Use a 2nd sheet if needed)			TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal  19. WELL DRILLER: CERT. NO.: 1505  Name: Billy Ewing  Address: 1210 1st Street South Ext. City: Columbia  State: South Carolina Zip: 29109  Telephone No.: 783-3314 Fax No.: 783-2587  20. WATER WELL CONTRACTOR'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Project No:

UST Permit # 03423

Project: OH NEGGS EXXON

Client: B. Id. STOKES OIL LO.

Location: FLORENCE

Log of Borehole: MW Z-D

Driller: ARM

inspector:

		S	UBSURFACE PROFILE		T	SAMP	LE			
1	Deptin	Symbol	Description	Elev.	Number	Туре	Recovery	Volatile Organic Concentration ppm 100 300 500 700 900	Well Data	Remarks
0 <del>ft</del>	mo		Ground Surface	0						
2-			7	2						Manhole Cover
4- 6- 8- 10- 12- 14-	<b>-</b> 2	-	CBROWHISH MOIST SANDY CLAY							6" PVC Casing
20- 22- 24- 26- 30-	<del>-</del> 6		GRAYISH LIET SAHDY CLHY	20	200	. gray.				Cement Grout
32- 34- 36- 38- 40- 42- 44-	<b>-</b> 10		BLACK CRAY SAND IN LETTLE CLAY End of Borehole	-40						Bentonite Seal 2" PVC Casing Gravel Pack 2" PVC Screen End Cap
46 48 50	- 14								nesidos pomo Platicias pon massa sensi	

Drill Method: AUGER
Drill Date: 4/6-7/09

Casing Diameter:

Total Depth of Well: 40 FT

ARM ENVIRONMENTAL SERVICES, INC.

Depth to Water.

Latitude:

Longitude:

# APPENDIX D

# OH MEGGS EXXON HISTORICAL FIELD DATA

UST	44	00	400
USI	#	US	4/3

MW #	1	1	1	<b>1.16</b>	2	2	2	3	, 3	
DATE	7\25\02	1\06\03	7\24\08	4120109	1\06\03	7\24\08	4\20\09	1\06\03	7\24\08	AUNE:
PH	4.51	4.92	4.25	<b>5.01</b>	3.73	4.43	4.46	5.62	5.33	5.61
TEMP	28.1	18.2	27.6	23.7	19.5	26.7	20	17.6	25.8	19.1
COND	78.90	60.00	68.60	66.30	75.90	56.60	53.60	139.40	128.70	161.00
DO	1.50		0.84	1.08		2.23	2.34		1.00	136
FE		2.54			<0.03			>3.30		

MW #	4	4	4	5	3	6	6	7 .	
DATE	1\06\03	7\24\08	4\20\09	1\06\03	<b>ANDRO</b>	7\24\08	4180109	A DENO	
PH	4.67	4.66	5,96	6.22	6.20		5.66		
TEMP	18.1	27.6	22.7	24.6	20.0	25.2	19.6	19.1	(Feb 196
COND	74.00	92.10	99,20	398.20	350.46	128.90	129.70	100.00	<b>28,00 34,00</b>
DO		1.17	1.55	0.98	1.00	1.28	1.04	3.8	1.96 2.24
FE	1.43			. "#				1.04	145 50

MW #	: 0   11	12	23	14	. 15	16	17	10 / 19
DATE	A Committee of the Comm	4\20\09	4\20\09	432702	4189109	4120109		
PH	4.0	4.99	434	464	5.07	4.55	4.93	
TEMP		19,2	20.8	20.6	80.3	19.4	18.8	15.77.8 17.18 <b>(E.</b> .7)
COND		00.80	480,00	75.20	75.00	75.60	139.05	
DO	120 430	3.80	1.9	1.47	3.14	3.31	3.29	
FE								23.88 T.13

MW #	21 22 1-0 2-D
DATE	A 20109 4120109 4120109 4120109 4120109
PH	49 73 607
TEMP	38.4 16.9 16.8 22.4 21.6
COND	\$80,50 107,50 88.50 195,60 357.50
DO	\$39 5.46 6.56 1.00 1.62
FE	0.66 2.2 1.79 1.06 0.66

SITE CONDITIONS: CONVIENCE STORE IN RURAL AREA

FIELD PERSON: JODY RICKS / RYAN DAVIS

DATE: 4/20/09

WEATHER: CLOUDY / WARM 80 F

NOTE: 1,2, AND ALL NEW WELLS WERE PURGED BEFORE SAMPLING

# APPENDIX E

## MONITORING WELL WATER COLLECTION AND DISPOSAL

OH MEGGS EXXON

FLORENCE SC

DEVELOPMENT SAMPLING

DATE'S COLLECTED: 4\16\09 4\20\09

DATE DISPOSED:

4\17\09 5\01\09

4\24\09 5\8\09

# OF GALLONS DISPOSED TO FLORENCE POTW

130 GALLON

# OF GALLONS DRUMED ON SITE

140 GALLON

WELL WATER DRUMED ON SITE

MW'S 13,14,15,16,1-D, AND 2-D

WERE DRUMED IN (3)55GAL. DRUMS FOR DISPOSAL

NOTE:

THE CITY OF FLORENCE PERMISSION

LETTER FOR DISPOSING OF WELL WATER

IS ATTACHED IN REPORT

# CITY OF FLORENCE · S C ·



Wastewater
Treatment Division
City-County Complex EE
Florence, South Carolina
29501-3456
(843) 665-3240
Fax (843) 665-3245

06 April 2009

Mr. Van Ward, P.E. Laboratory Director Davis & Brown Labs, Inc. PO Box 15038 Quinby, SC 29506

#### RE: Discharging to City Sewer System

We are in receipt of your letter dated September 1, 1999. After reviewing the concentration and volume of petroleum contaminated groundwater desired to be discharged into the City's wastewater treatment facility, Davis and Brown is hereby granted permission to discharge.

The amount of petroleum-contaminated groundwater to be discharged cannot exceed 60 gallons per week and the concentration of total BTEX must be less than 10 mg/l,

The City of Florence maintains the option to discontinue Davis and Brown from discharging to the sewer system should the wastewater treatment facility experience any adverse reactions.

If you have any questions or need further information, please call me at 665-3240.

Sincerely,

Michael Hemingway, Manager Wastewater Treatment Division

Mosaeldanunga

Cc: Andrew H. Griffin, Director of Public Works and Utilities Forrest M. Whittington, P.E., Utility Department Manager



# APPENDIX F

## **SUMMARY of SLUG TEST**

## **SOUTH CAROLINA Department of Health and Environmental Control (DHEC)**



S Data				
SITE ID: # <u>03423</u>	COUNT	Y FLORENC	<u>E</u>	_
FACILITY NAME	Megg's I	Exxon		
Slug Data				
See Appendix <u>D</u> TableF (water Water Level Recovery Data was measured (Hermit Data Logger, Mar	level logs, etc. by <u>Water Le</u>	.) (Complete as app evel Indicator	propriate).	_
Complete the following table for each well to	ested.			
COMPLETE A SECOND	SHEET IF MO	RE THAN FOUR V	VELLS ARE TESTE	D
Slug Test Conducted in well(s) number	MW-15	MW-2D		
Initial Rise/Drawdown in well (feet)	8.28	19.62		
Radius of Well Casing (feet)	0.083	0.083		
ctive Radius of Well (feet)	0.33	0.33		
Static Saturated Aquifer Thickness (feet)	40	40		
Length of Well Screen (feet)	10	5		
Static Height of Water Column in Well (ft)	3.72	3.38		
Calculations See Appendix D Table Fi				
The method for aquifer calculations was Calculated values by well were as follows:	Bouwe	er-Rice	(i.e. l	3ouwer-Rice, Cooper
•				
Slug Test Conducted in well(s) number	MW-15	MW-2D		
Hydraulic Conductivity (ft/day)	0.032	0.35		
Γhickness of the aquifer used to calculate h	nvdraulic condu	uctivity was 40	feet.	
The aquifer is confined	-			heck as appropriate).
The estimated seepage velocity ishydraulic conductivity of0.2	<u>19</u> , a hydra	ulic gradient of	0.014	<del></del>
a porosity of 25 per cent for <u>cla</u>	iyey sand	soil (list typ	e i.e., silty sand ,cla	y, etc).

#### **AQTESOLV for Windows**

Data Set: C:\DOCUME~1\ALLUSE~1\DESKTOP\DAVIS\MEGGS\STMW15.AQT

Date: 05/09/09 Time: 18:37:01

#### PROJECT INFORMATION

Company: Davis & Brown Client: Megg's Exxon Test Well: MW 15

#### **AQUIFER DATA**

Saturated Thickness: 40. ft Anisotropy Ratio (Kz/Kr): 1.

#### **OBSERVATION WELL DATA**

Number of observation wells: 1

Observation Well No. 1: MW 15

X Location: 0. ft Y Location: 0. ft

No. of observations: 19

#### **Observation Data**

Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	8.28	10.	7.19	60.	5.36
0.1667	7.78	15.	6.98	70.	5.01
1.	7.73	20.	6.73	80.	4.71
2.	7.6	25.	6.63	90.	4.31
3.	7.56	30.	6.43	120.	3.36
4.	7.52	40.	6.03		
5.	7.48	50.	5.66		

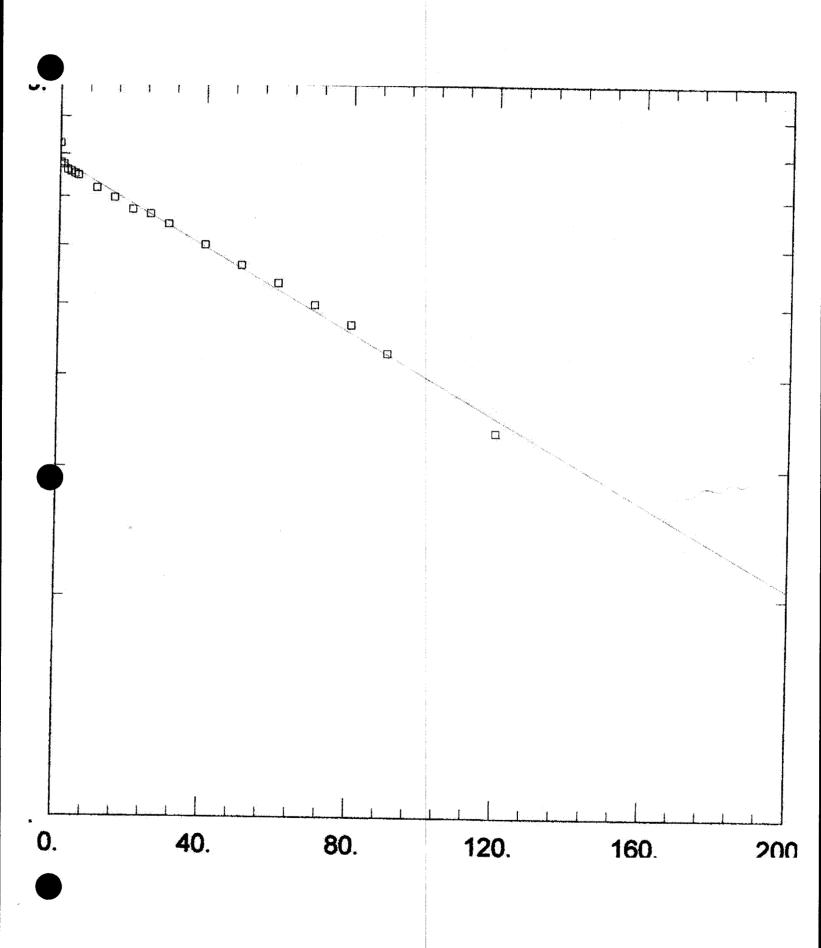
#### SOLUTION

Aquifer Model: Unconfined Solution Method: Bouwer-Rice

#### **VISUAL ESTIMATION RESULTS**

#### **Estimated Parameters**

Parameter	Estimate	
K	2.265E-05	ft/min
v0:	7.82	ft



#### **AQTESOLV** for Windows

Data Set: C:\DOCUME~1\ALLUSE~1\DESKTOP\DAVIS\MEGGS\ST2D.AQT

Date: 05/09/09 Time: 18:21:26

#### PROJECT INFORMATION

Company: Davis & Brown Client: Megg's Exxon Test Well: MW 2D

#### **AQUIFER DATA**

Saturated Thickness: 40. ft Anisotropy Ratio (Kz/Kr): 1.

#### **OBSERVATION WELL DATA**

Number of observation wells: 1

Observation Well No. 1: MW 2D

X Location: 0. ft Y Location: 0. ft

No. of observations: 44

#### **Observation Data**

			der do state in the state of th		
Time (min)	Displacement (ft)	Time (min)	Displacement (ft)	Time (min)	Displacement (ft)
0.	19.62	3.5	16.72	15.	10.67
0.1667	19.47	4.	16.47	16.	10.33
0.333	19.3	4.5	16.2	17.	11.03
0.5	19.12	<b>5</b> .	16.02	22.	8.72
0.6667	18.97	5.5	15.76	<b>27</b> .	7.52
0.8333	18.8	6.	15.47	32.	6.52
1.	18.62	6.5	15.24	37.	5.57
1.167	18.47	<b>7</b> .	15.04	42.	4.82
1.333	18.25	8.	14.57	52.	3.52
1.5	18.07	9.	12.82	62.	2.67
1.667	17.92	10.	12.42	72.	1.92
1.833	17.77	11.	12.06	82.	1.42
2.	17.57	12.	11.7	92.	1.06
2.5	17.24	13.	11.34	102.	1.02
3.	17.	14.	11.		

#### SOLUTION

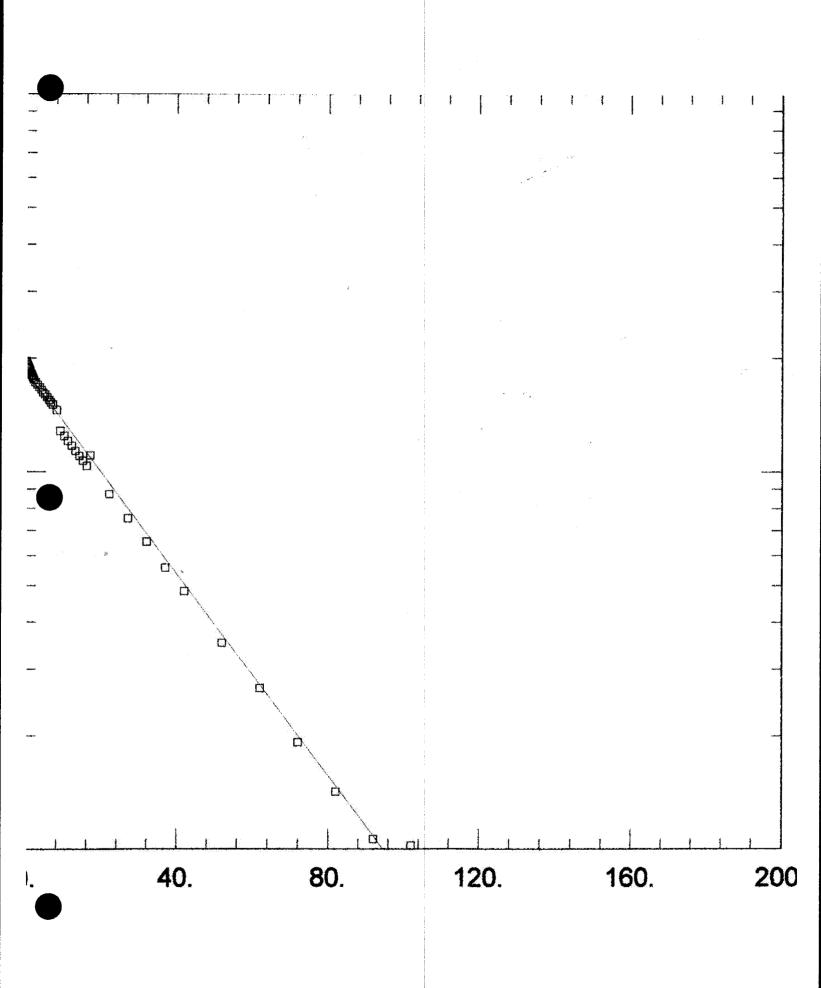
Aquifer Model: Unconfined Solution Method: Bouwer-Rice

#### **VISUAL ESTIMATION RESULTS**

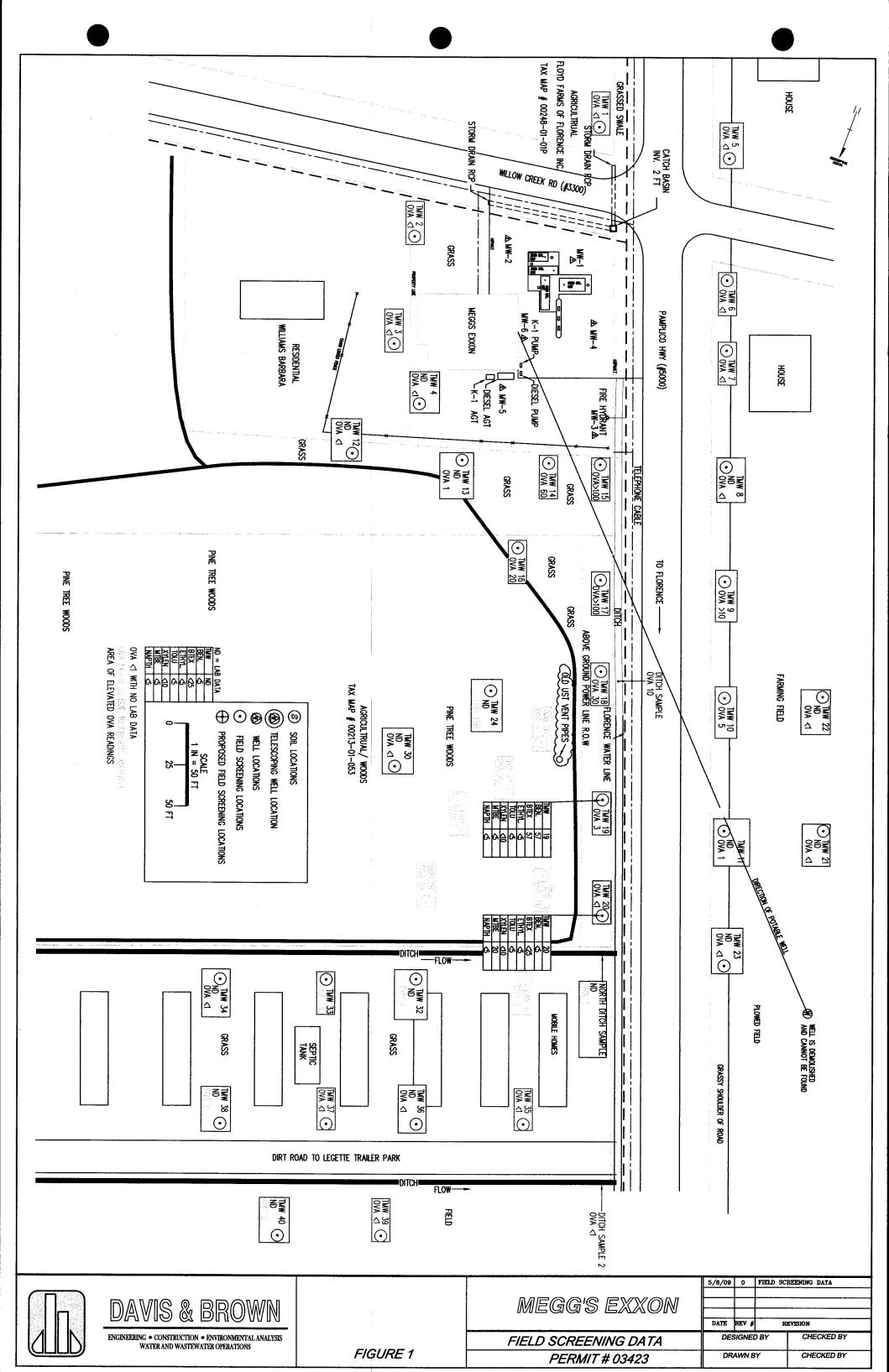
#### **Estimated Parameters**

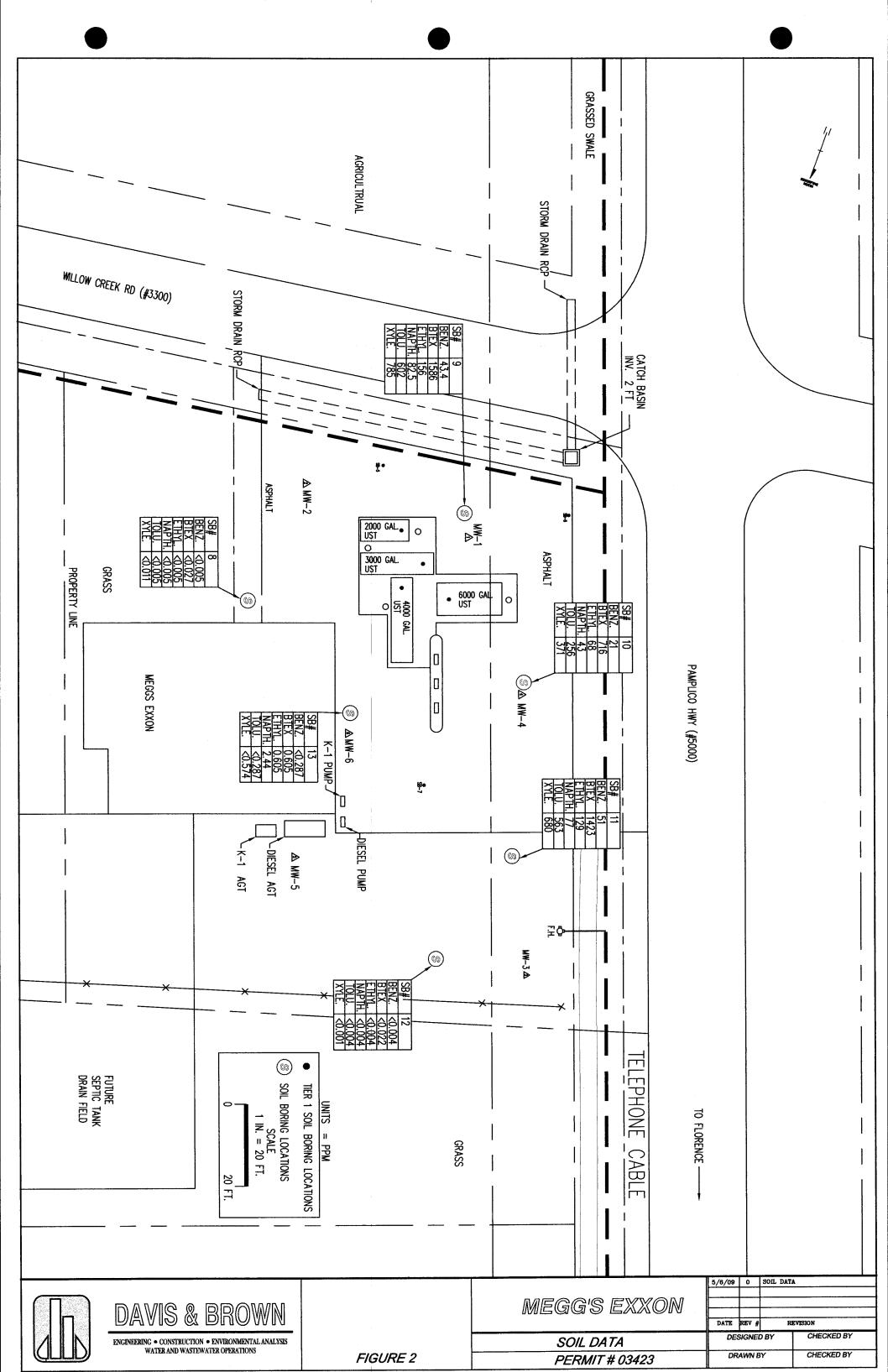
# AQTESOLV for Windows

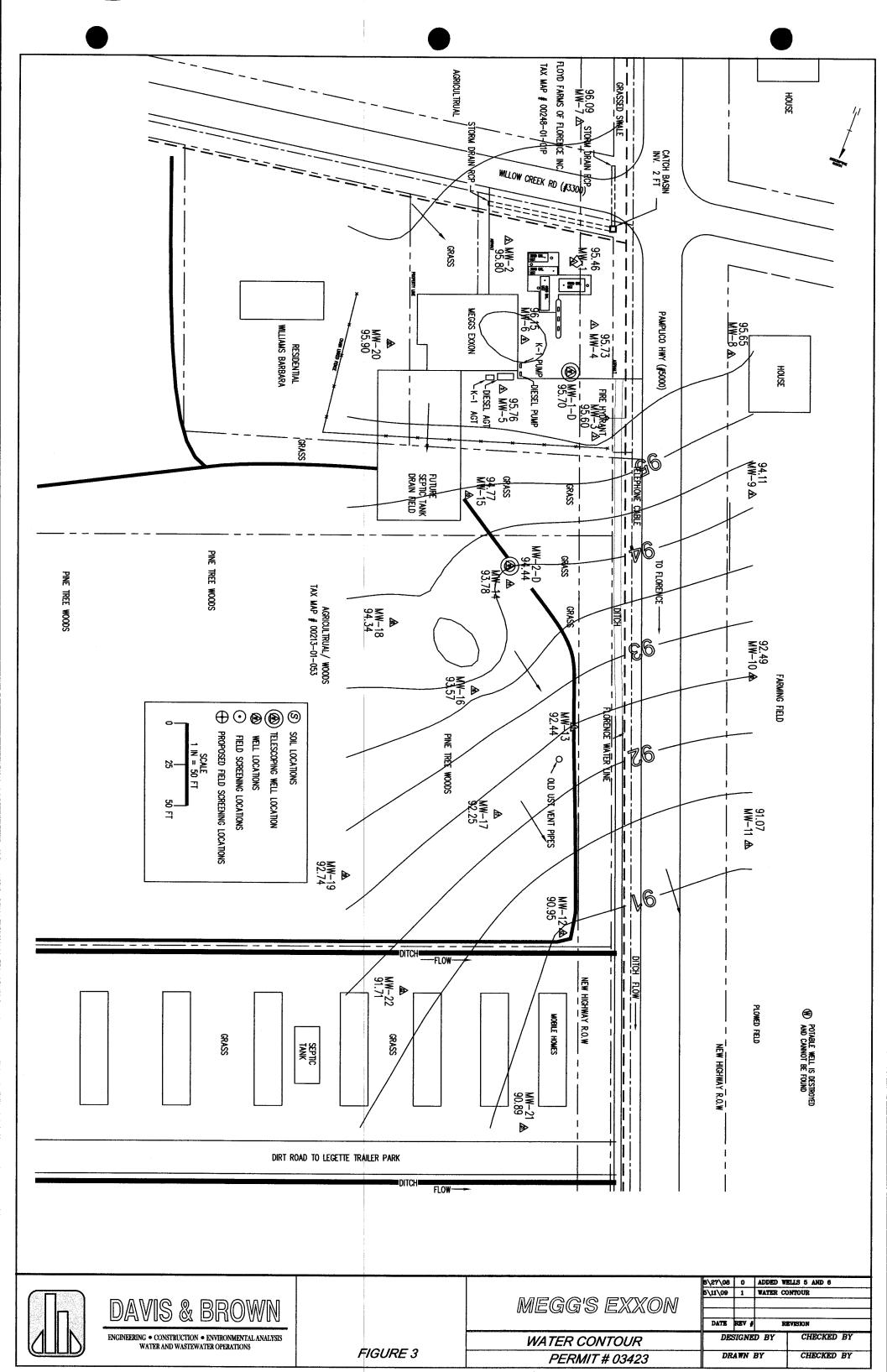
	Parameter	Estimate	
	K	0.0002438	ft/mir
	V۸	18 31	ft

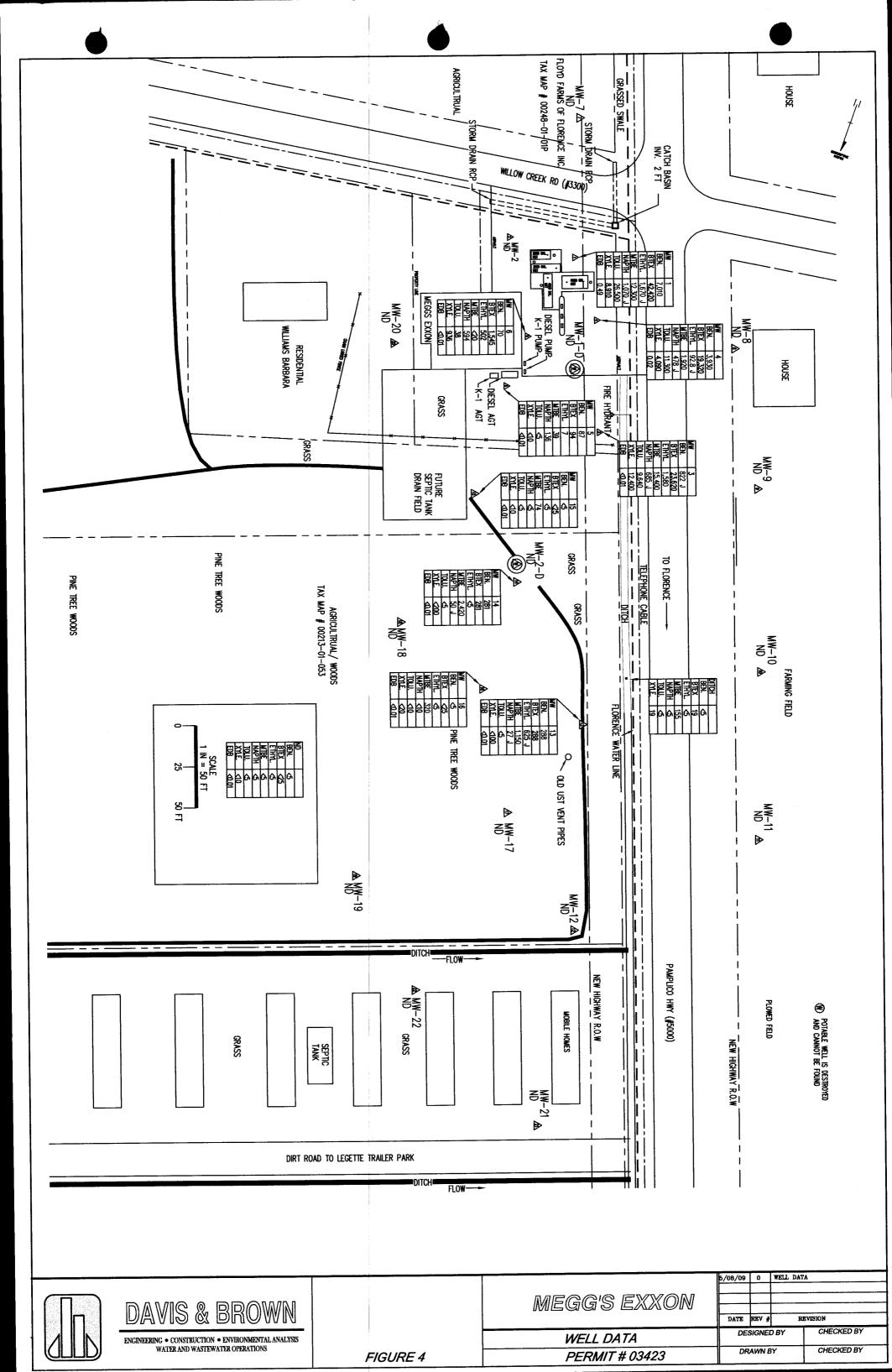


Maps and Figures









## MONITORING WELL WATER COLLECTION AND DISPOSAL

OH MEGGS EXXON

FLORENCE SC DEVELOPMENT SAMPLING

DATE'S COLLECTED: 4\16\09 4\20\09

DATE DISPOSED: 4\17\09 5\01\09

4\24\09 5\8\09

# OF GALLONS DISPOSED TO FLORENCE POTW 130 GALLON

# OF GALLONS DRUMED ON SITE 140 GALLON

WELL WATER DRUMED ON SITE

MW'S 13,14,15,16,1,1-D, AND 2-D

WERE DRUMED IN (3)55GAL. DRUMS FOR DISPOSAL

NOTE:

THE CITY OF FLORENCE PERMISSION

LETTER FOR DISPOSING OF WELL WATER

IS ATTACHED IN REPORT

REVISED

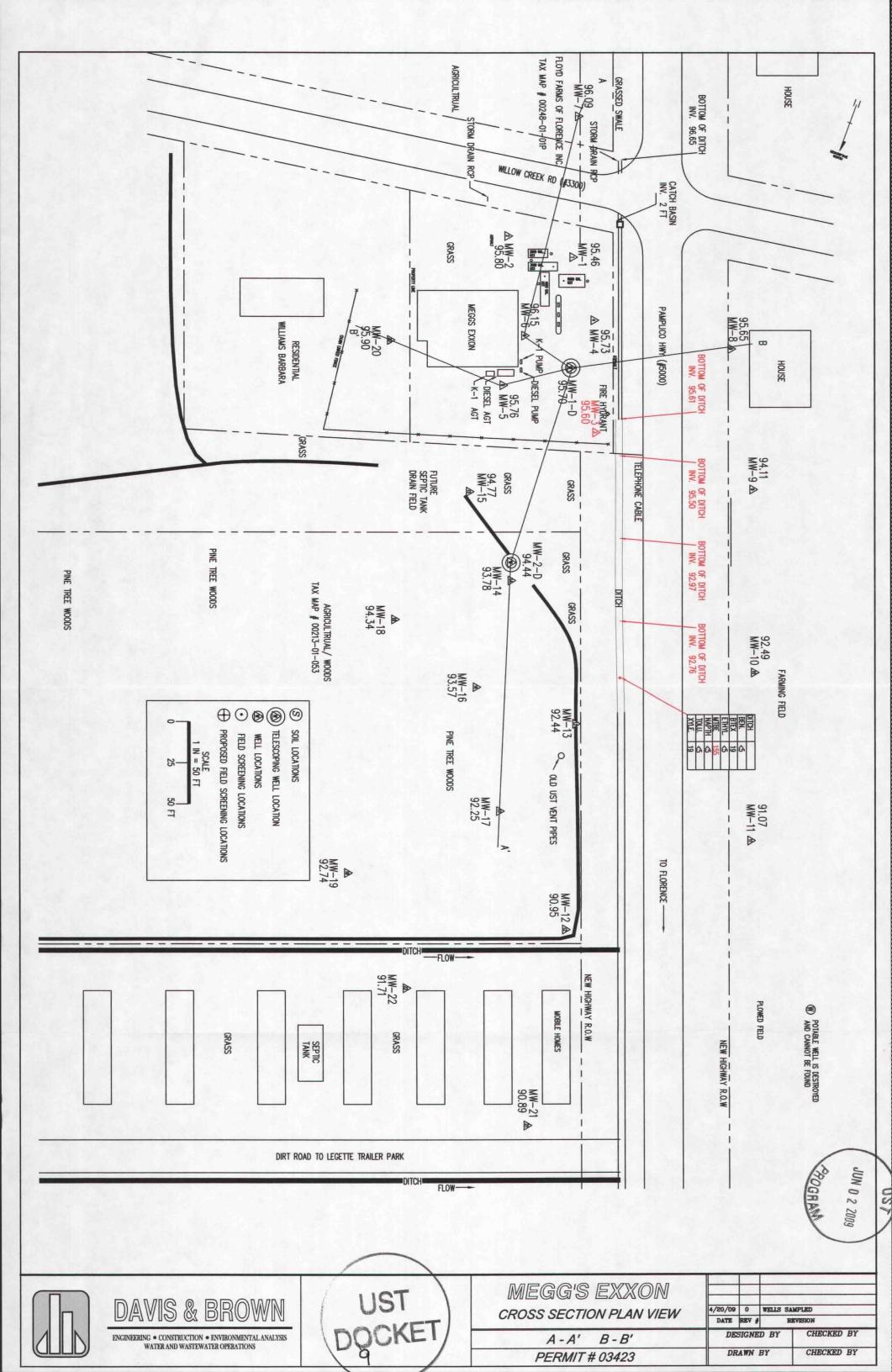
DATE 5/28/09 BY 2/2 2/2/

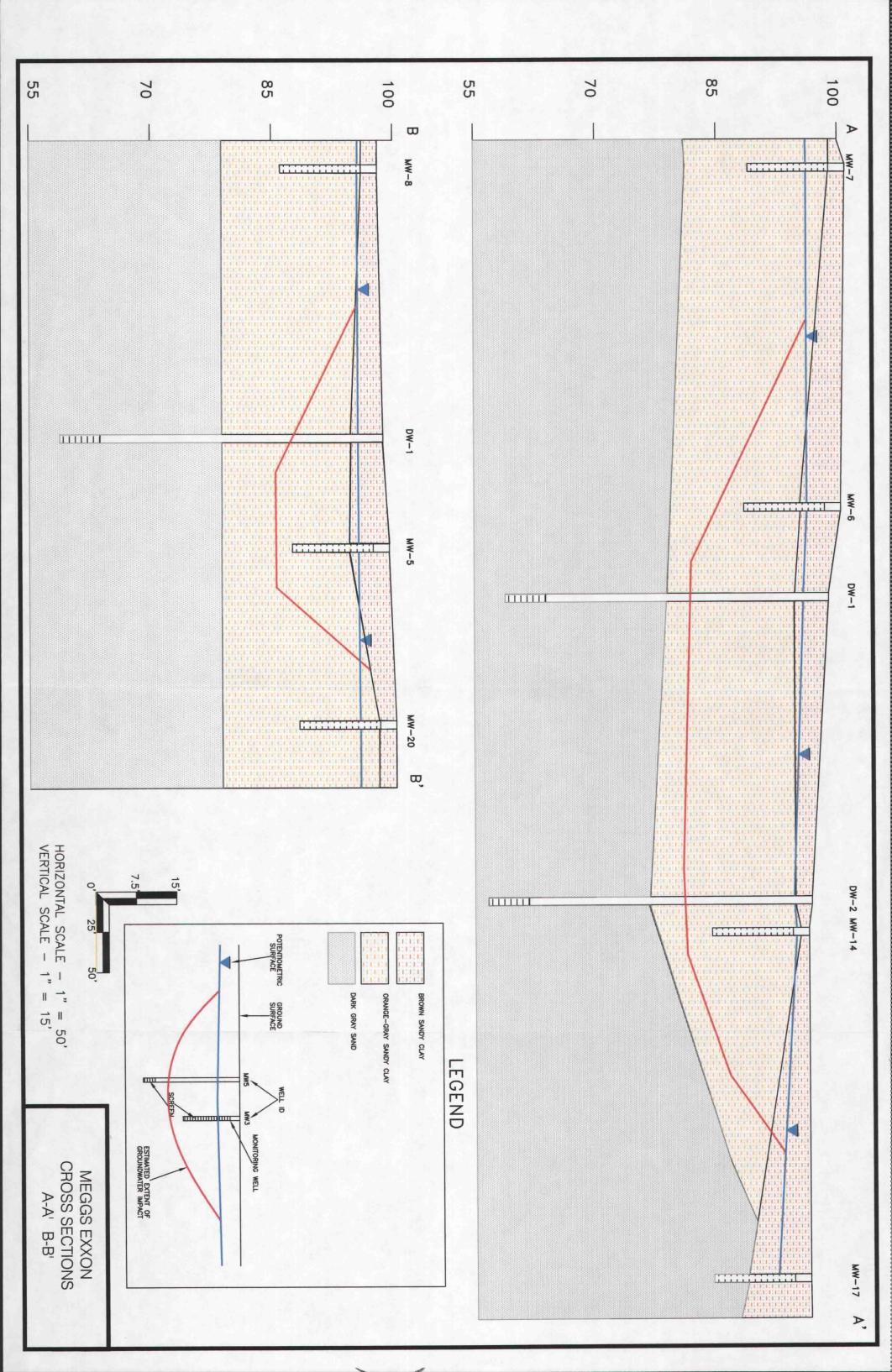
SITE IN# 03423

OH MEGGS EX				TORICAL D				TE ID# 034		A	10111			
COC	RBSL	MW1	MW1	MW1	MW1	MW2	MW2	MW2	WW3	WW3	WW3			
DATE	ug/l	7\25\02	1\06\03	7\24\08	4\20\09	1\06\03	7\24\08	4\20\09	1\06\03	7\24\08	4\20\09			
I,2 DCA			19.1	<180	<2.50	281	<0.090	-5	157	<45	<1,000			
BENZENE	5	3,690	7,810	14,100	7,010	14.6	<0.065	√5	8,190	1,730	822			
BTEX	N/A	21,170	47,280	84,090	42,420	14.6	0.793	<25	31,750	38,220	23,620			
DIPE					<2,500			رة.			<1,000			
EDB	<0.03	1.2	4.6	0.183	0.487	<0.02	<0.003	<10	<0.02	<0.003	<0.01			
ETHANOL					<50,000			<100			<20,000			
ETBA					<5,000			<10			<2,000			
ETBE					<2,500			<5			<1,000			
ETHYLBENZENE	700	804	2,430	2,990	1670 J	<1	<0.065	<5	1,920	2,090	1,580			
FERROUS										0.500	4 000			
MTBE	40	2,770	68.7	37,800	12,300	9	-(5	-5	1,670	<2,500	<1,000			
NAPTHALENE	25	218	615	<236	1070 J	- 4	<0.118	<b>45</b>	715	2,130	685 J			
NITRATE			<500			4,500			<500					
SULFATE			<2,000		27 100	<2,000		-00	3,100		-1.000			
TAA TAME					27,400			<20 <5			<4,000 <1,000			
TBA					<2,500 <5,000			<10	-		<2,000			
TBF					<2,500			<5			<1,000			
TOLUENE	1,000	10,500	25,000	46,500	26,500	4	0.793	<5	13,600	18,200	9,640			
XYLENE	10,000	6,180	12,040	20,500	8,910	<2	<0.183	<10	8,040	16,200	12,400			
РЬ	15	6	17	5		14	<1		5	1				
PAH		285	213	-		BDL			628			7		
METHANE		200	<10			<10			10					
COC	MW4	MW4	MW4	MW5	MW5	MW6	MW6	MW7	MW8	MW9	MW10	MW11	MW12	
DATE	1\03	7\24\08	4\20\09	7\24\08	4\20\09	7\24\08		400000	4\20\09	100000	4\20\09	4\20\09	4\20\09	11.
1,2 DCA	272	<5,000	4\20\09	<25	4\20\09	<250	<20	4\20\09	<5	<5	4 (20 (0)	<5	<5	1111
BENZENE	11,900	13,900	3,930	686	87	2,870	70	- 6	-5	-(5	<5	-(5	<5	
BTEX	42,920	69,600	19,320	954	94	16,390	1,545	<25	<25	<25	<25	<25	<25	
DIPE	46,960	09,000	1,100	754	26		<20	<5	<b>45</b>	45	<5	<b>45</b>	(5	100
EDB	0.1	0.1	0.019	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	
ETHANOL	0.1	0.1	<20,000	10.01	<100	10.01	<400	<100	<100	<100		<100	<100	
ETBA			<2,000		<10		<40	<10	<10	<10	<10	<10	<10	
ETBE			<1,000		<5		<20	<5	<5	<5	<5	<5	<5	
ETHYLBENZEN	1,960	<5,000	92.8 J	118	7	2,050	502	<5	<5	<5	<5	<b>&lt;</b> 5	<5	
FERROUS								1,040		90	1,740			
MTBE	9,490	11,600	1,920	828	39	690	<20	<5	<5	<5	<5	<5	<5	
NAPTHALENE	695	<5,000	478	255	136	650	594	<5	-5	-5	<b>&lt;</b> 5	<5	<b>₹</b> 5	
NITRATE	<500							8,000	<500	<500	4,600	<5,000	4,600 <5,000	
SULFATE	<2,000		40.000		202		404	<5,000 <20	6,900	<20	<5,000 <20	<20	<20	
TAA TAME			10,200		323		<20	<5	<5	<5	<5	<5	<5	
TBA			<2,000		<10		<40	<10	<10	<10	<10	<10	<10	
TBF			<1,000		<5		<20	<5	<5	<5	<5	<5	<5	
TOLUENE	18,900	40,400	11,300	31	<5	3,760	38	√5	<5	<b>45</b>	حة.	<b>45</b>	<b>45</b>	
XYLENE	10,160	15,300	4,090	119	<10	7,710	936	<10	<10	<10	<10	<10	<10	
Pb	9	<1	1 1 1	<1		<1								
PAH	480													
METHANE	<10								11111					
coc	MW13	MW14	MW15	MW16	MW17	MW18	MW19	MW20	MW21	MW22	MW1-D	MW2-D	DITCH	DITCH
DATE	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	4\20\09	1\06\03	4\20\0
1,2 DCA	<50	<100	<b>45</b>	<10	<5	<5	<b>√</b> 5	<5	<5	<5	-5	<b>&lt;</b> 5		
BENZENE	288	281	<b>&lt;</b> 5	<10	<5	<5	∢5	-5	<5	<5	-5	<5	4	<5
BTEX	288	281	<25	⊲50	<25	<25	<25	<25	<25	<25	<25	<25	15	19
DIPE	138	234	15	25	<b>45</b>	ري.	<b>45</b>	<b>45</b>	<b>45</b>	<5	<b>45</b>	<5		1 - 1
EDB	<0.01	<0.01	<0.01	<0.01	<10	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.06	
ETHANOL	<1,000	<2,000	<100	<200	<10	<100	<100	<100	<100	<100	<100	<100		-
ETBA	<100	<200	<10	<20	<5	<10	<10	<10	<10	<10	<10	<10		
ETBE	<50	<100	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5 <5	2	<5
ETHYLBENZEN		<5	<5	<10	<5	<5	<5	<5 000	<5	4 700	<5 1,050			45
FERROUS	2,500					>3,300	1,190		2,230 <5	1,790	1,050 <5	<5	<1	155
MTBE	1,150	2,420	74	320	<5 -	-5	<5	-5		45	45	<5	<1	<5
NAPTHALENE	27 J	50 J	<5	<10	<5	<5	<5	<5	<5		<500	5,500	-1	,5
NITRATE	2,200	1,100	<500	4,100	<5,000	3,200	2,900	3,400	5,200	5,200		-		
	29,000		-	<5,000	<20	<5,000	<5,000		<5,000	<5,000	25,800	7,600		
		1,080	208	<40	<5	<20	<20	<20	<20	<20	<20	<20		-
TAA	609	200			-40		1.00	-6						
TAA TAME	63		_		<10	<5	<5	<5	<5	<5	<5	<5		
TAME TBA	63 <100	<200	13	<20	<5	<10	<10	<10	<10	<10	<10	<10		
TAA TAME TBA TBF	63 <100 <50	<200 <100	13 <5	<20 <10	<5 <5	<10 <5	<10 <5	<10 <5	<10 <5	<10 <5	<10 <5	<10 <5		-5
TAA TAME TBA	63 <100	<200	13	<20	<5	<10	<10	<10	<10	<10	<10	<10	4 9	

# Grandall

(6)	as a profer type rm designed for use on eare (12 - pilon) typewnieg				918, 42					
	NON-HAZARDOUS WASTE MANIFEST	1. Generator's US El	PA ID No.	Manifest Document No. • 39596	2. Page 1 of			ioe, ay tana		
4	3. Generator's Name and Mailing Address Oh 4925 Pamplico Hwy Florence, 3C 29595	Meggs Exxon								
	4. Generator's Phone ( (843) 665-674 5. Transporter 1 Company Name Crandall Corporation	) 791-4800	3							
	7. Transporter 2 Company Name									
	9. Designoted Facility Name and Site Address Crandall Corporation 100 Rich-Lex Drive Lexington, 3C 29072	Cuandall Corporation 100 Righ-Lex Drive								
	11. Waste Shipping Name and Description		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		12. Cont		13. Total	14. Unit		
	o. Non - Hazardous Waste, Pe	troleum Con	taminated Soi	1	No.	Type DM	Quantity EST	Wt./Vol.		
GHZHR	b. Non Hazardous Waste Water,	/Fuel			(x) 3	DM	- 600.	p		
RATOR	c.						. 600.			
	d.									
	D. Additional Descriptions for Materials Listed Above		SEAL	ID NICE	E. Handling Codes for	or Waste	s Listed Above			
	15. Special Handling Instructions and Additional Inform	nation								
	Service Call ID: GLB0139	596								
	Emergency Response: Infoto Caller must ID Crandall as		= 11 AP60	hir; pa	4V018-6	07	C			
-	16. GENERATOR'S CERTIFICATION: 1 certify the ma		on this manifest are not s Signature	ubject to federal regu	ulations for reporting p	oroper dis	Month Day			
RAZOP	17. Transporter 1 Acknowledgement of Receipt of Mate Pined/Typed Name  18. Transporter 2 Acknowledgement of Receipt of Mate	e	Signature	de	stic-e		Month Dox	(b).q		
	Printed/Typed Name		Signature				Month Day	Year		
FACI	19. Discrepancy Indication Space									
LITY	20. Facility Owner or Operator: Certification of receipt of	f waste materials cover	/	ot as noted in item 19	9.					
	Ver Craps		Signature	X			Month Pay	0.		
			INALTO OFFICE				12 BL			





#### C. Earl Hunter, Commissioner

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

FEB 1 5 2012

SCANNED

MR JERRY ANDREWS 4925 PAMPLICO HIGHWAY FLORENCE SC 29505

Re:

**Letter of Concern** 

O. H. Meggs, 4925 Pamplico Highway, Florence, SC

UST Permit #03423

Release No. 1 reported February 26, 2002 Release No. 2 reported September 17, 2002

Request received February 13, 2012

Florence County

Dear Mr. Andrews:

You requested that this office provide you with an update on the environmental conditions at the above referenced facility.

The Underground Storage Tank Management Division (UST Division) of the South Carolina Department of Health and Environmental Control (SCDHEC) received reports on February 26, 2002 and September 17, 2002 documenting subsurface contamination in the vicinity of the underground storage tank system. Our records reveal that four gasoline underground storage tank (USTs) owned by B. W. Stokes Oil Company, Inc. are currently in operation and that one kerosene UST also owned by B. W. Stokes Oil Company, Inc. was removed on May 20, 2002. In response to the initial reports of contamination, the SCDHEC directed B. W. Stokes Oil Company, Inc., as the party responsible for performing this activity under state and federal law, to assess the extent and severity of the contamination. In the future a groundwater sampling event will be required.

The UST Division would also like to clarify for you the financial and liability issues surrounding the petroleum chemicals of concern at this facility. For Release No. 1, the release of petroleum products from the gasoline USTs is qualified to receive funding from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. For Release No. 2, the release of petroleum product from the kerosene UST is qualified to receive funding from the SUPERB Account once the \$25,000 deductible has been met. This means that reasonable costs up to \$1,000,000 can be paid by the SUPERB Account for site rehabilitation actions associated with each release.

In 1997, the General Assembly amended Section 80 (B) of the SUPERB Act to clarify that persons who hold "indicia of ownership" primarily to protect a security interest in property impacted by a release from a UST are exempt from the requirements to conduct site rehabilitation activities other

Mr. Jerry Andrews O. H. Meggs; UST Permit #03423 Page 2

than necessary abatement actions to eliminate any imminent threat to human health or the environment. The "indicia of ownership" exemption includes those persons who acquire title to property through foreclosure or other means necessary to protect their security interest, provided that person does not participate in the management of the UST and is not otherwise engaged in petroleum production, marketing, or refining. This applies equally to subsequent lenders who acquire the USTs and property through foreclosure in the future.

Section 80(C) of the SUPERB Act provides that a subsequent purchaser of property from which an UST has been removed is not responsible for site rehabilitation activities other than abatement actions necessary to eliminate any imminent threat to human health or the environment. This exemption applies to the extent that the release is eligible for compensation from the SUPERB Account, provided that the person allows reasonable access to the property for rehabilitation activities, and does not or has not had any familial, financial, or other interest with the person who owned or operated the UST. This applies equally to subsequent lenders or to those who would acquire this property through foreclosure in the future.

The UST Division is not aware of any laws or regulations that prohibit the use or development of properties where a petroleum release has occurred. Any future work required by the SCDHEC should not cause any damage to the building, disrupt deliveries, prevent access to customers, or block main access routes. To further assure you, any required activities associated with the petroleum release would be performed by a SC Certified Site Rehabilitation Contractor who maintains specific levels of insurance coverage for General and Professional Liability and Pollution/Property Damage. Such coverage is required by Section IV of the SUPERB Site Rehabilitation and Fund Access Regulations R. 61-98.

If you have any questions, please contact me by telephone at (803) 896-4078, by fax at (803) 896-6245, or by e-mail to RIVERSMS@dhec.sc.gov.

Sincerely,

Michael (Mike) Rivers, Hydrogeologist

Corrective Action Section

Underground Storage Tank Management Division

Bureau of Land and Waste Management

cc: B. W. Stokes Oil Company, Inc., P.O. Box 274, Florence, SC 29503-0274 Davis & Brown, P.O. Box 15038, Florence, SC 29506 Technical File

#### April 28, 2014



Mr. Tim Hunter SCDOT 955 Park Street Columbia, South Carolina 29202

Re: Limited Environmental Site Assessment

SC Highway 51 Widening Project

SC-51 PIN 38191 RD01; Sections 1, 3, & 4

Florence County, South Carolina Terracon Project No. 73138143

Dear Mr. Hunter:



Terracon Consultants, Inc. (Terracon) is pleased to submit this report of Limited Environmental Site Assessment at 23 Right of Way (ROW) sites in Florence County, South Carolina. The sites were identified by the SCDOT to have potential environmental concerns that may affect the above referenced road-widening project along Florence Highway (Highway 51) near Pamplico and Effingham, South Carolina. The results of our assessments placed each site into one of five categories, set based on the predicted level of effort that may be needed during site ROW expansion activities.

Category 1 - Regulated USTs & dispensers; SCDHEC-registered USTs identified to be within the proposed ROW should be should be closed-out under the SCDHEC UST Closure Guidelines at the following sites:

```
Site 4 Tract 271 The Outpost/O H Meggs (UST # 03423), 4925 Pamplico Hwy; in the Site 9 Tract 397 Midway Supply( UST Nos. 16808 & 03429), 6402 Pamplico Hwy, Effingham; With Site 10 Tract 402 Former Webb's Grocery (UST # 03563), 6412 Pamplico Hwy; in the Site 12 Tract 536 Hyman Oil Car Wash (UST # 03462), 963 N. Pamplico Hwy.; Daniels Brothers, (UST # 03418), 3732 S. Pamplico Hwy.
```

Category 2 - Non-regulated USTs; Unregistered petroleum or heating oil USTs were identified to be within the proposed ROW, and should be removed prior to or as a part of the ROW expansion at the below sites:

```
Site 3 Tract 238 'Sunflower Store"; 4109 Pamplico Hwy;
Site 15 Tract 566 Old Junque Shop, 853 N. Pamplico Hwy;
Site 18 Tract 831 Edwards Road Store, 1570 S. Pamplico Hwy.
Site 20 Tract 863 Mt. Zion Store, 1863 S. Pamplico Hwy.;
Site 21 Tract 916 Former Cross Roads Grocery, 3032 S. Pamplico Hwy.
```

Terracon Consultants, Inc 521 Clemson Rd. Columbia, SC 29229 P (803) 741-9000 F (803) 741-9900 terracon com

# Limited Environmental Site Assessment

SC Highway 51 Widening SC-51 PIN 38191 RD01 Sections 1, 3, & 4 Florence County, South Carolina



Terracon Project No. 73138143 April 28, 2014

## **Prepared for:**

South Carolina Department of Transportation Columbia, South Carolina

## Prepared by:

Terracon Consultants, Inc. Columbia, South Carolina

Offices Nationwide Employee-Owned Established in 1965 terracon.com





Mr. Tim Hunter SCDOT 955 Park Street Columbia, South Carolina 29202

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Site 10 Tract 402 Former Webb's Grocery (UST # 03563), 6412 Pamplico Hwy;
Site 12 Tract 536 Hyman Oil Car Wash (UST # 03462), 963 N. Pamplico Hwy.;
Site 22 Tract 967 Daniels Brothers, (UST#03418), 3732 S. Pamplico Hwy.
```

Category 2 - Non-regulated USTs; Unregistered petroleum or heating oil USTs were identified to be within the proposed ROW, and should be removed prior to or as a part of the ROW expansion at the below sites:

```
Site 3 Tract 238 'Sunflower Store"; 4109 Pamplico Hwy;
Site 15 Tract 566 Old Junque Shop, 853 N. Pamplico Hwy;
Site 18 Tract 831 Edwards Road Store, 1570 S. Pamplico Hwy.
Site 20 Tract 863 Mt. Zion Store, 1863 S. Pamplico Hwy.;
Site 21 Tract 916 Former Cross Roads Grocery, 3032 S. Pamplico Hwy.
```



Terracon Consultants, Inc. 521 Clemson Rd. Columbia, SC 29229 P (803) 741-9000 F (803) 741-9900 terracon.com

#### **Limited Environmental Site Assessment**

SC Hwy 51 Widening Project

51 PIN 38191 RD01-Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Category 3 - Sites with monitoring wells to abandon; Existing monitoring wells affected by the widening should be abandoned in accordance with the SC Well Standards and Regulations. Further, special handling and disposal of soils impacted by petroleum-contaminated ground water may be necessary as part of ROW expansion activities.

Site 4 Tract 271 The Outpost/O H Meggs (UST # 03423), 4925 Pamplico Hwy;

Site 13 Tract 565 Gibb's Grocery (UST # 03463), 863 N. Pamplico Hwy;

Site 22 Tract 967 Daniels Brothers, (UST#03418), 3732 S. Pamplico Hwy.

Category 4 - Low to moderately impacted soils and/or ground water with in proposed ROW; Low to moderate impact to ground water above allowable levels were identified at the edge of the right of way at the following sites. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

Site 1 Tract 123 Fluorescent Light Site, 2650 Pamplico Hwy;

Site 7 Tract 353 Vacant Evergreen Store between 6309 & 6315 Pamplico Hwy:

Site 8 Tract 356 Evergreen Express (UST # 03428), 6331 Pamplico Hwy;

Category 5 - No environmental conditions expected to impact ROW widening activities; No USTs, piping, or environmental conditions were identified to impact the ROW widening activities;

Site 2 Tract 139 Corbett Shopping Center, 2630 Pamplico Hwy:

Site 5 Tract 315 Poston Packing (UST No. 03278), 5810 Pamplico Hwy.;

Site 6 Tract 334 Feed & Seed Store, 6114 Pamplico Hwy.;

Site 11 Tract 411 Vacant Cypress Creek Store, 6806 Pamplico Hwy;

Site 14 Tract 584 Raider Station (UST # 19301), 848 N. Pamplico Hwy;

Site 16 Tract 673 Pantry 3326 (UST #13244) 103 N. Pamplico Hwy.;

Site 17 Tract 792 Baggett's Gulf (UST #s 03542 & 03556)105 S. Walnut St.;

Site 19 Tract 851 Dunk Road Store, 1570 S. Pamplico Hwy.;

Site 23 Tract 975 Evans Grocery (UST #03475) 3801 Sandpit Rd.;

Terracon appreciates the opportunity to provide this proposal and look forward to working with you on this project. If you should have any questions or comments regarding this report, please contact the undersigned.

Sincerely,

lerracon

Regan Morris

**Environmental Scientist** 

P. Michael Hudgins, PG

P. Zibal Hulguns

**UST Services Manager** 

Terracon Consultants, Inc. 521 Clemson Rd.

Columbia, SC 29229



#### LIMITED ENVIRONMENTAL SITE ASSESSMENT

SC Highway 51 Widening Project 51 PIN 38191 RD01 Sections 1, 3, & 4 Florence County, South Carolina Terracon Project No. 73138143 April 28, 2014

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#### 2.0 SCOPE OF SERVICES

#### 3.0 FIELD INVESTIGATION

- 3.1 Plan Review
- 3.2 Site and Adjacent Property Reconnaissance
- 3.3 Regulatory Well Approval
- 3.4 UST Locating and Gauging
- 3.5 Soil Borings and Temporary Well Installation
- 3.6 Groundwater Sample Collection

#### 4.0 RESULTS OF THE FIELD INVESTIGATION

# **SITE 1 THROUGH SITE 23**

- 1.0 Site Description
- 2.0 Assessment Activities
- 3.0 Results and Findings

Table # - Analytical Data Summary Of Detected Compounds Figure # - Site Map Well Logs

#### 5.0 APPENDICIES

Appendix A – Monitoring Well Approvals
Appendix B - Laboratory Analytical Data Report

# LIMITED ENVIRONMENTAL SITE ASSESSMENT SC Highway 51 Widening Project 51 PIN 38191 RD01 Sections 1, 3, & 4 Florence County, South Carolina Terracon Project No. 73138143 April 28, 2014

#### 1. PROJECT INFORMATION

Terracon Consultants, Inc. (Terracon) has conducted a Limited Environmental Site Assessment (LESA) at 25 sites in Florence County, South Carolina. The sites were previously identified by the SCDOT to have potential environmental concerns that may affect a road-widening project along Florence Highway (Highway 51) near Pamplico and Effingham, South Carolina (Sections 1, 3, and 4). The following sections provide an outline of the project, Terracon's scope of services, findings and conclusions.

### 2. SCOPE OF SERVICES

The scope of work was based on the potential or known underground storage tank (UST) or other suspected environmental conditions at 23 potential sites, as derived from information furnished by SCDOT. The proposed scope of work was prepared to evaluate the soil and groundwater conditions affected by potential releases from the UST systems that may impact the currently proposed roadway expansion activities. The sites were identified in Initial Site Assessments (ISAs) conducted by the SCDOT and in a Phase I Environmental Site Assessment (ESA) conducted by S&ME in 2011 (S&ME Project No. 1614-11-132 dated July 26, 2011).

The LESA was conducted to determine the presence or absence of indicator contaminants associated with suspected environmental conditions as it may affect the road widening activities. The scope of services was not intended to identify every chemical possibly associated with the site or to determine the extent or magnitude of any existing contamination.

#### 2.1 Standard of Care

Terracon's services were performed in a manner consistent with generally accepted practices of the profession undertaken in similar studies in the same geographical area during the same time. Terracon makes no warranties, either express or implied, regarding the findings, conclusions, or recommendations. Please note that Terracon does not warrant the work of laboratories, regulatory agencies, or other third parties supplying information used in the preparation of the report. These services were performed in accordance with the scope of work agreed with you, our client, as reflected in our proposal and were not restricted by ASTM E1903-11.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# 2.2 Additional Scope Limitations

Findings, conclusions, and recommendations resulting from these services are based upon information derived from the on-site activities and other services performed under this scope of work; such information is subject to change over time. Certain indicators of the presence of hazardous substances, petroleum products, or other constituents may have been latent, inaccessible, unobservable, nondetectable, or not present during these services. We cannot represent that the site contains no hazardous substances, toxic materials, petroleum products, or other latent conditions beyond those identified during this LESA. Subsurface conditions may vary from those encountered at specific borings or wells or during other surveys, tests, assessments, investigations, or exploratory services. The data, interpretations, findings, and our recommendations are based solely upon data obtained at the time and within the scope of these services.

#### 2.3 Reliance

This report has been prepared for the exclusive use of the SCDOT, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the site) is prohibited without the express written authorization of SCDOT and Terracon. Any unauthorized distribution or reuse is at SCDOT's sole risk. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions, and limitations stated in the proposal, LESA report, and Terracon's Agreement for Services. The limitation of liability defined in the terms and conditions is the aggregate limit of Terracon's liability to SCDOT and all relying parties unless otherwise agreed in writing.

#### 3.0 FIELD INVESTIGATION

Terracon conducted the fieldwork under a safety plan developed for this project. Work was performed using United States Environmental Protection Agency (USEPA) Level D work attire consisting of hard hats, safety glasses, protective gloves, and protective boots.

#### **Plan Review**

Review of the proposed right-of-way expansion plans and site property surveys provided by the SCDOT to evaluate potential environmental concerns that may affect the proposed work. A site reconnaissance was conducted to identify concerns or suspect site features. The reconnaissance consisted of visual observations of the site from the boundaries and selected interior portions of the site as related to the proposed highway widening project plans.

# **Regulatory Well Approval**

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Prior to well installation, Terracon obtained monitoring well approval from the South Carolina Department of Health and Environmental Control (SCDHEC). This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71, South Carolina Well Standards and Regulations, dated April 26, 2002.

#### **UST Locating and Gauging**

Terracon contacted the state public utility locator (811) to arrange for underground utility location and marking of public utilities (gas, water, electric, etc.) at the sites. Further, Terracon subcontracted a private utility locator to locate potential USTs in areas of suspected locations. The locator outlined areas of suspected USTs and distribution lines using conductivity (EM) equipment. The temporary wells were located based on the utility locates as identified and marked by the utility locators.

## **Soil Borings and Temporary Well Installation**

Terracon advanced one to three borings at 20 sites utilizing a truck-mounted direct-push (Geoprobe<sup>®</sup>) drilling rig to evaluate subsurface conditions. The borings were located based on the area of potential impact, the vicinity of the USTs/ASTs, subsurface utilities as marked by utility locator, and equipment access. The drilling services were conducted by a South Carolina licensed monitoring well driller.

Soil samples were collected continuously from Macrocore sampling equipment in 4-foot sections using acetate sleeves to document lithology, color and relative moisture content. Samples collected from the cores were field screened for organic vapor analysis (OVA) using a flame ionization detector (FID) to detect the presence of volatile organic compounds (VOCs).

Based on the highest FID reading, field evidence of impact, or the judgment of the field professional, Terracon submitted one soil sample per site for laboratory analyses of benzene, toluene, ethylbenzene, and xylenes (BTEX), MTBE, and naphthalene per EPA Method 8260. If Polynuclear Aromatic Hydrocarbons (PAHs) were suspected to be present, the samples will also be analyzed for PAHs per EPA Method 8270. The soil samples were placed in laboratory prepared containers, labeled, and placed on ice in a cooler and secured with a custody seal.

#### **Groundwater Sample Collection**

All soil borings were converted into temporary groundwater monitoring wells to allow collection of groundwater quality samples. Samples were collected through a clean Geoprobe<sup>®</sup> stainless steel screen point water sampler, placed in laboratory prepared containers, labeled, and placed on ice in a cooler and secured with a custody seal in accordance with proper environmental sampling protocol. The samples and completed chain-of-custody forms were transported to a SC certified analytical laboratory for analysis. After sample collection, the borings were abandoned in accordance with state regulations.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



All ground water samples were analyzed for BTEX, 1,2 DCA, oxygenates, and naphthalene per EPA Method 8260. If PAHs were suspected to be present, a ground water sample was also analyzed for PAHs per EPA Method 8270.

#### 4.0 RESULTS OF THE FIELD INVESTIGATION

A summary of assessment results are presented for each site individually below. The summary includes a site description, assessment summary, and results and findings. An analytical table of detected compounds is included, if soils and ground water samples were collected. A site map showing the site features and temporary well locations is included, along with temporary well logs and water well records (D-1903 Form) for each well. The following lists the sites in order by SCDOT Tract # and address:

Site 1	Tract 123	Fluorescent Light Site, 2650 Pamplico Hwy;
Site 2	Tract 139	Corbett Shopping Center, 2630 Pamplico Hwy;
Site 3	Tract 238	'Sunflower Store"; 4109 Pamplico Hwy;
Site 4	Tract 271	The Outpost/O H Meggs (UST # 03423) 4925 Pamplico Hwy;
Site 5	Tract 315	Poston Packing (UST No. 03278), 5810 Pamplico Hwy.;
Site 6	Tract 334	Feed & Seed Store, 6114 Pamplico Hwy.;
Site 7	Tract 353	Vacant Evergreen Store between 6309 & 6315 Pamplico Hwy;
Site 8	Tract 356	Evergreen Express (UST # 03428) 6331 Pamplico Hwy;
Site 9	Tract 397	Midway Supply, UST Nos. 16808 6402 Pamplico Hwy, Effingham
Site 10	Tract 402	Former Webb's Grocery (UST # 03563) 6412 Pamplico Hwy;
Site 11	Tract 411	Vacant Cypress Creek Store, 6806 Pamplico Hwy;
Site 12	Tract 536	Hyman Oil Car Wash (UST # 03462), 963 N. Pamplico Hwy.;
Site 13	Tract 565	Gibb's Grocery (UST # 03463), 863 N. Pamplico Hwy;
Site 14	Tract 584	Raider Station (UST # 19301), 848 N. Pamplico Hwy;
Site 15	Tract 566	Old Junque Shop, 853 N. Pamplico Hwy;
Site 16	Tract 673	Pantry 3326 (UST #13244),103 N. Pamplico Hwy.;
Site 17	Tract 792	Baggett's Gulf (UST #s 03542 & 03556)105 S. Walnut St.;
Site 18	Tract 831	Edwards Road Store, 1570 S. Pamplico Hwy.
Site 19	Tract 851	Dunk Road Store, 1570 S. Pamplico Hwy.;
Site 20	Tract 863	Mt. Zion Store, 1863, S. Pamplico Hwy.;
Site 21	Tract 916	Former Cross Roads, Grocery, 3032 S. Pamplico Hwy.
Site 22	Tract 967	Daniels Brothers, 3732 S. Pamplico Hwy.
Site 23	Tract 975	Evans Grocery (UST #03475), 3801 Sandpit Rd.;

Following the individual summaries, the monitoierng well approvals and the soil and ground water laboratory data report for all sites are included the Appendix a and B, respectively

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# SITE 1 - TRACT 123 FLUORESCENT LIGHT SITE, 2650 PAMPLICO HWY

#### 1.0 Site Description

This site is an abandoned former gas station property with a dispenser island located within five feet of the proposed new ROW. A storm ditch is located approximately 22 feet from the dispenser within the proposed ROW.

No evidence of a UST was observed, and no records of a UST system were available from the SCDHEC UST registry. Due to the site layout, a UST (if present), was not suspected to be located in the proposed ROW, therefore an EM survey was not conducted at this site.

#### 2.0 Assessment Activities

Two temporary wells were advanced using direct-push sampling equipment in the vicinity of the dispenser islands. Soil samples were collected from each boring and analyzed for OVA using a Foxboro Century 128 Flame Ionization Detector (FID). The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-2 was submitted for laboratory analysis for petroleum compounds per EPA Method 8260 and Polynuclear Aromatic Hydrocarbons (PAHs) per EPA Method 8270. Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 1, below. A site layout with boring/temporary well locations is attached as Figure 1.

#### 3.0 Results and Findings

Elevated OVA reading (2,760 ppm) was recorded at soil boring SB-2. The depth to ground water was recorded at depths ranging from 10- 12 feet, and is suspected to discharge to the adjacent storm water ditch. Ground water was impacted above Risk-Based Screening Levels (RBSLs) in temporary well TW-2.

The UST (if present) and dispenser system are located outside of new ROW. Low to moderate impact to ground water was detected above allowable levels at the edge of the right of way.

Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary during ROW expansion activities.



#### Site 1 - Tract 123 - Fluorescent Light Site, 2650 Pamplico Hwy

Table 1 - Analytical Data Summary of Detected Compounds

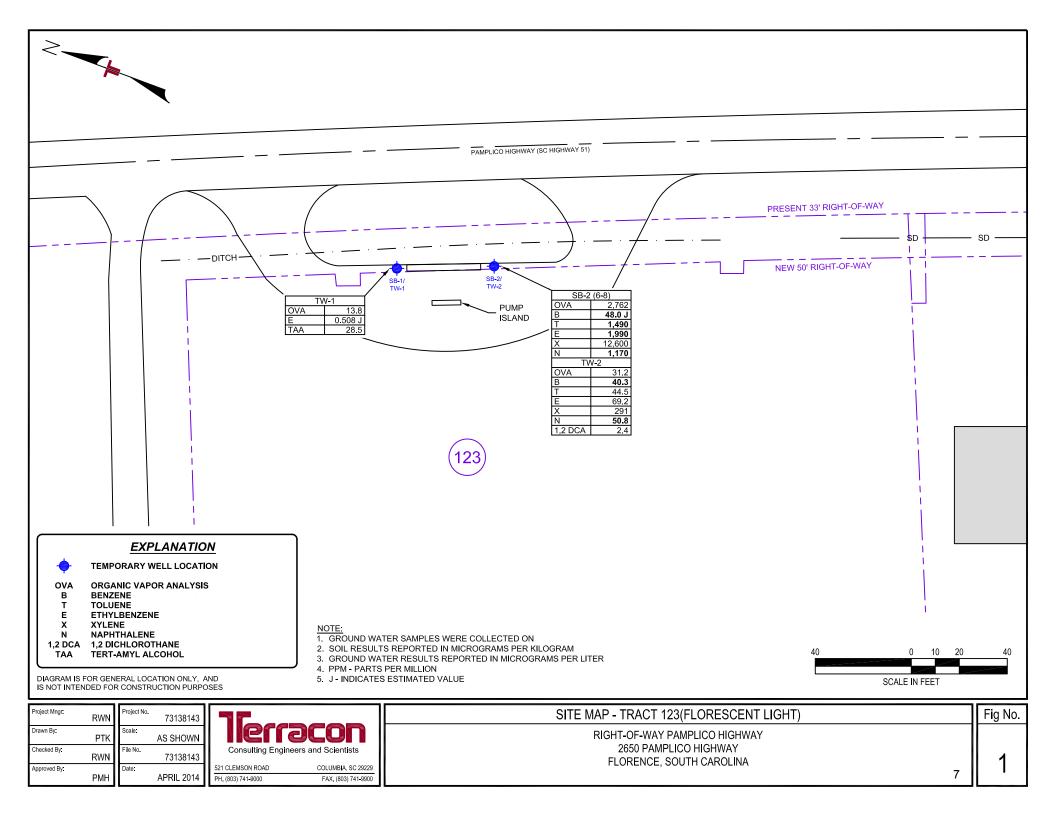
	SOI (ug/k		GROUND WATER (ug/l)				
Sample	SB-2	RBSL	TW-1	TW-2	RBSL / AL		
(Sample Depth, ft.)	(6 - 8)	NBSL	(13 - 18)	(13 - 18)	NBSL/AL		
OVA (ppm)	2,762	ne	13.8	31.2	ne		
Benzene	48.0J	7	< 0.111	40.3	5		
Toluene	1,490	1,450	< 0.122	44.5	1,000		
Ethylbenzene	1,990	1,150	0.508J	69.2	700		
Xylene	12,600	14,500	< 0.179	291	10,000		
Naphthalene	1,170	36	< 0.176	50.8	25		
MTBE	na	ne	< 0.078	< 0.078	40		
1,2 DCA	na	ne	< 0.116	2.4	5		
Tert-amyl Alcohol (TAA)	na	ne	< 1.01	28.5	240		

#### **NOTES:**

- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane
- 1) All samples collected on February 10,2014 8) RBSL/AL SCDHEC Risk Based Screening Levels or Action Level
  - 9) Concentrations in bold represent RBSL or Al exceedance
  - 10) ne no regulatory action level established
  - 11) J indicates an estimated value
  - 12) NA Not Analyzed

# **Attachments**

Figure 1 – Site Map Well Logs



PR	OJECT: SC-51 PIN 38191 - Right of	CLI	ENT: SCDOT	_				
SIT	Way Expansion Hwy 51							
311	E: Site 1 - Tract 123 Florence, South Carolina							
90	LOCATION See Figure 1	+	INSTALLATION	ON DETAILS		NS NS	PE	_
GRAPHIC LOG					DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
BRAP			Well Comple	tion:	DEP	ATEF SSER'	AMPL	;
- 1	DEPTH MATERIAL I	DESCRIPTION				>8	S	_
	SAND (SP), medium grained, orange, moist, loose						$ \cdot $	١.
	1.5				-			
	SAND (SP), trace clay, fine to coarse grained, light to	an and orange, moist, de	ise		-	+	$\left\langle \cdot \right\rangle$	_
					_	1	V	8
							$/\backslash$	ı
	4.5	ad (mmax rad are the tree	and aday majet days			1		_
	<u>CLAYEY SAND (SC)</u> , fine to medium grained, mottle to very dense	eu (gray, red, orange), die	sei vaor, moist, dense		5 -	+	X	ć
					-		$\square$	_
			Not Grouted	to			$\mathbb{N}/\mathbb{I}$	ı
			Surface		-		$ \lambda $	2
					-	-	(-)	_
	9.0				_		V	1
	<b>LEAN CLAY (CL)</b> , medium plasticity, mottled (gray,	red, orange), no odor, mo	ist, very dense				/	•
					10-			_
					-	-	X	2
					_			_
							$\mathbb{N}$	ı
					-	1	X	4
	14.0 SAND (SP), coarse grained, gray to tan, saturated, le	0000	13.5' to 14.5	-	-	$\downarrow$	-	_
	<u>onio (or ),</u> coarse grained, gray to tail, saturated, in	0030	#2 Filter Sal		15-			ı
			44.51+-401		. 15			ı
			14.5' to 18' - (0.010) Slot PVC	ed	-	-		ı
					-	4		ı
	18.0							ı
	Macro Core Terminated at 18 Feet		•		1 -			-
	The stratification lines represent the approximate transition between	ween differing soil types and/	or rock Hammer Type: Direct Pu	sh				
	types; in-situ these transitions may be gradual or may occur at o	αιπerent depths than shown.	T.v.					
	cement Method: ct Push		Notes:					
Borir	onment Method: ngs backfilled with cement-bentonite grout upon							
	pletion.			<u> </u>				_
Z	WATER LEVEL OBSERVATIONS 13.8 ' on 2/10/2014	Terra	Well Started: 2/10/2014	Well (	Complete	ed: 2/10	0/2014	
		521 Clemson Ro		Driller	r: J. Chio	orazzi		_
		Columbia, South Ca	rolina Project No.: 73138143	Exhib	it: B-	-1		



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18474, MW-09481
Name: SCDOT	510 15 110 17 1, 111 17 05 101
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City. Columbia Glate. SC 24. 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/10/14
2. LOCATION OF WELL: COUNTY: Florence	18 Date Completed: 2/10/14
Name: Tract 123	10. CASING:   Threaded   Welded
Street Address: 2650 Pamplico Hwy	Diam.: 1.5" Height: Above Below
	Type: D PVC D Galvanized Surface ft.
City: Florence Zip:	☑ Steel □ Other Weight — lb./ft.
Latitude: Longitude:	0in. to 14ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude. Longitudo.	in. to ft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
18474 SB-1/TW-1	Type: SS Diam.: 1"
	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: $14$ ft. and $18$ ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 18 ft. to 0 ft.	Sieve Analysis
*Thickness Depth to	12. STATIC WATER LEVEL 14 ft. below land surface after 24 hours
Formation Description of Bottom of Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed ☑           Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm  TYPE:
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. No.: 1790  Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	3/2/14
	Signed: Date: 572/14
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool ☐ Other	

_		6 NO. SB-2/TW-2	<u>Pa</u>	ige 1	of '	1
	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT				
SIT	E: Site 1 - Tract 123 Florence, South Carolina					
00	LOCATION See Figure 1	INSTALLATION DETAILS		SVEL TONS	.YPE	٥
GRAPHIC LOG		Well Completion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
<u>}</u>	DEPTH MATERIAL DESCRIPTION	Well Completion.		WAT	SAM	ľ
	SAND (SP), medium grained, orange, moist, loose					1
	1.5		-		X	
	SAND (SP), fine to medium grained, light tan and orange, moist, dens	e	-		$\angle$	$\downarrow$
					$\bigvee$	1
					$  \wedge $	4
			-		$\left\langle \cdot \right\rangle$	}
//	5.0 CLAYEY SAND (SC), fine to medium grained, mottled (gray, red, orar	oge) petroleum odor mojet	5 -		IX	1
	dense to very dense	Not Grouted to	_		$\langle \cdot \rangle$	
		Surface			$\backslash$	1
			-		IX	2
			-		$\left( -\right)$	$\downarrow$
	9.0		_		$ \bigvee$	
	LEAN CLAY (CL), medium plasticity, mottled (gray, red, orange, tan),	moist, very dense			$ / \rangle$	
			10-	abla		+
			-		IX	٥
			_		$\angle$	L
		12' to 18' - #2 Filter Sand			$\mathbb{N}$	1
			-		X	
			-		_	1
	15.0		15-			
	SAND (SP), coarse grained, gray to tan, saturated, loose	13' to 18' - 2" (0.010) Slotted PVC				
		PVC PVC	-			
	18.0		] -			ļ
	Macro Core Terminated at 18 Feet					
	The stratification lines represent the approximate transition between differing soil ty types; in-situ these transitions may be gradual or may occur at different depths than	pes and/or rock Hammer Type: Direct Push shown.				
	cement Method:	Notes:				
Dire	ct Push					
oand	onment Method:					
Bori com	ngs backfilled with cement-bentonite grout upon pletion.					
	WATER LEVEL OBSERVATIONS	Well Started: 2/10/2014 Well C	Complete	ed: 2/10	)/201	4
<u>Z</u>	10.5' on 2/10/2014	Well Started: 2/10/2014 Well C	: J. Chior	razzi		
	521 Cle	mson Road South Carolina Project No.: 73138143 Exhibi	t: B-:	2 10		
	Solumbia,	EXIIII		10		



1. WELL OWNER INFORMATION:	4 MELL OWNED INCODMATION			7 DEDMITHUMBED.
Address: PO Box 191				Site ID#18474, MW-09481
Address PO Box 191		/fire	, l	
City Columbia   Salete   SC   Zip: 29202-0000     Irrigation	, ,	(iiis	''	
Columbia   State   S	PO Box 191			
Telephone   Work:	City: Columbia State: S	SC Zip: 29	202-0000	
18	Columbia			
Name: Tract 1.23   Street Address: 2650 Pamplico Hwy   Clay: Florence   Zip:   Clay: Florence   Zip:   Sceal   Other	Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/10/14
Name: Tract 1.23   Street Address: 2650 Pamplico Hwy   Clay: Florence   Zip:   Clay: Florence   Zip:   Sceal   Other	,		nce	18 ft. Date Completed: 2/10/14
Street Address: 2,650 Pamplico Huy City:   Florence   150		1 10101		
Specific City   Florence   Cap:		Ции		1 = 11
Store   O				
Latitude:   Longitude:   Long	on riorence			
Note:   Note	Latitude: Longitude:	ıda'		
3. PUBLIC SYSTEM NAME:   SB-2/TW-2   SB-	Longitt	iue.		
SB-2/TW-2	2 DUDUIC EVETER MARKE.	DUDUIC EVETER	A MULMIDED.	
A. ABANDONMENT:         Yes     No			NOWBEK:	Type: SS Diam: 1"
Set Between:				Slot/Gauge: 0.010 Length: 4'
Scrowded Depth: from   18	4. ABANDONMENT:	□ No		Set Between: 14 ft. and 18 ft. NOTE: MULTIPLE SCREENS
Sieve Analysis   ves (please enclose)   No   No   No   No   No   No   No   N				
Thickness of Stratum   Thickness of	Grouted Depth: from 18	ft. to <u>0</u>	ft.	
Sce Geologist's Log				
See Geologist's Log	Formation Description	of	Bottom of	
Pumping Test:   yes (please enclose)	-	Stratum	Stratum	
	See Geologist's Log			
14. WATER QUALITY   Chemical Analysis   Yes   2  No   Please enclose lab results.   15. ARTIFICIAL FILTER (filter pack)   Yes   No   Installed from   15. Effective size   Uniformity Coefficient   Uniformity Coefficient   16. WELL GROUTED?   Yes   No   No   Installed from   Bentonite/Cement   Other   Depth: From   16. to   17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:   16. direction   Type   Well Disinfected   Yes   20 No   Type:   Amount:   Amount:   Not installed   Mfr. Name:   Not installed   Not	211 3000 51010 1105	-		, , _ , _
Chemical Analysis   Yes   No   Bacterial Analysis   Yes   No   Please enclose lab results.				Yield:
Please enclose lab results.				14. WATER QUALITY
15. ARTIFICIAL FILTER (filter pack)   Yes   No   Installed from				Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No
Installed from				Please enclose lab results.
Installed from				15. ARTIFICIAL FILTER (filter pack) ☐ Yes ☐ No
Effective size				. , , , =
16. WELL GROUTED?   Yes   No   Neat Cement   Bentonite/Cement   Other   Depth: From   ft. to   ft. to   ft. to   ft.				Effective size Uniformity Coefficient
Neat Cement				
Depth: From				
17. NEAREST SOURCE OF POSSIBLE CONTAMINATION:ft direction Type		]		
Type				
Well Disinfected   Yes   No   Type:   Amount:				<del></del>
18. PUMP: Date installed:		_		
Mfr. Name:				Well Disintected LI Yes ■ No Type: Amount:
H.P				
TYPE: Submersible Submersible Reciprocating Centrifugal  19. WELL DRILLER: Jason Chiorazzi  Address: (Print)  2047 Industrial Blvd, Lexington, SC  *Indicate Water Bearing Zones  (Use a 2nd sheet if needed)  5. REMARKS:    Signed: Well Driller   Well Driller   Well Driller				Mfr. Name: Model No.:
19. WELL DRILLER: Jason Chiorazzi   CERT. NO.: 1790   Address: (Print)   Level: A B C D Correlation   Centrifugal   Centrifugal   Address: (Print)   Level: A B C D Correlation   Centrifugal   Cent				H.P Volts Length of drop pipe ft. Capacity gpm
19. WELL DRILLER: Jason Chiorazzi  Address: (Print)  2047 Industrial Blvd, Lexington, SC  *Indicate Water Bearing Zones  *Indicate Water Bearing Zones  (Use a 2nd sheet if needed)  5. REMARKS:  Signed:  Well Driller  Well Driller  If D Level Driller, provide supervising driller's name:				TYPE: 🔲 Submersible 📋 Jet (shallow) 🔲 Turbine
*Indicate Water Bearing Zones				
*Indicate Water Bearing Zones				19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
*Indicate Water Bearing Zones				Address: (Print) Level: A B C D (circle one)
*Indicate Water Bearing Zones  (Use a 2nd sheet if needed)  5. REMARKS:  Signed:  Well Driller  Mud Rotary  Dug  Air Rotary  Telephone No.: 803-429-5001  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  If D Level Driller, provide supervising driller's name:			l	
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.  5. REMARKS:  Signed:  Well Driller  Date: 3/2/14  If D Level Driller, provide supervising driller's name:				
(Use a 2nd sheet if needed)  5. REMARKS:  Signed:  Well Driller  Date: 3/2/14  6. TYPE:  Mud Rotary  Jetted  Bored  If D Level Driller, provide supervising driller's name:	*Indicate Water Bearing Zones			Telephone No.: 803-429-3001 Fax No.:
5. REMARKS:  Signed:  Well Driller  Date: 3/2/14  6. TYPE:  Mud Rotary				20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Bored ☐ Bored ☐ Air Rotary ☐ Driven ☐ Drive	(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
6. TYPE:  Mud Rotary	5. REMARKS:			
6. TYPE:  Mud Rotary				
6. TYPE:  Mud Rotary			l	3/2/14
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored If D Level Driller, provide supervising driller's name: ☐ Dug ☐ Air Rotary ☐ Driven				Signed: Date:
□ Dug □ Air Rotary □ Driven				Weil Driller
		_		If D Level Driller, provide supervising driller's name:
☐ Cable tool ☐ Other		•	riven	
	☐ Cable tool	er		

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 2 - TRACT 139 CORBETT SHOPPING CENTER, 2630 PAMPLICO HWY;

#### 1.0 Site Description

This site is an abandoned former gas station property with evidence of four former dispenser islands located within twenty feet of the proposed new ROW. The site has two existing monitoring wells located outside of the proposed new ROW. A storm drain is located within the proposed ROW, approximately 22 feet from the dispenser islands.

No evidence of a UST was observed, and no records of a UST system were available from the SCDHEC UST registry. Due to the site layout, a UST (if present), was not suspected to be located in the proposed ROW, therefore an EM survey was not conducted at this site.

#### 2.0 Assessment Activities

Two temporary wells were advanced using direct-push sampling equipment downgradient from of the dispenser islands. Soil Samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil Sample SB-2 was submitted for laboratory analysis for petroleum compounds per EPA Method. The analytical results are shown on Table 2, below. A site layout with boring/temporary well locations is attached as Figure 2.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil borings SB-1 and SB-2. The depth to ground water was recorded at depths ranging from 9 -10 feet. No petroleum compounds were detected above RBSLs in either of the ground water samples collected.

No USTs, piping, or environmental conditions are expected to impact the ROW widening at this site.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### Site 2 - Tract 139 Corbett Shopping Center, 2630 Pamplico Hwy;

Table 2 - Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)	GRO	ER		
Sample	SB-1	DDCI	TW-1	TW-2	RBSL /
(Sample Depth, ft.)	(2 - 4)	RBSL	(13 - 18)	(13 - 18)	AL
OVA (ppm)	18	ne	13.8	31.2	ne
Benzene			1.48	0.635J	5
Toluene	NO COMPOU DETECTE		0.815J	< 0.122	1,000
Ethylbenzene			0.634J	0.57J	700

#### **NOTES:**

- 1) All samples collected on February 10, 2014
- 2) μg/kg micrograms per kilogram
- 3)  $\mu$ g/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

8) RBSL/AL - SCDHEC Risk Based Screening

Levels or Action Level

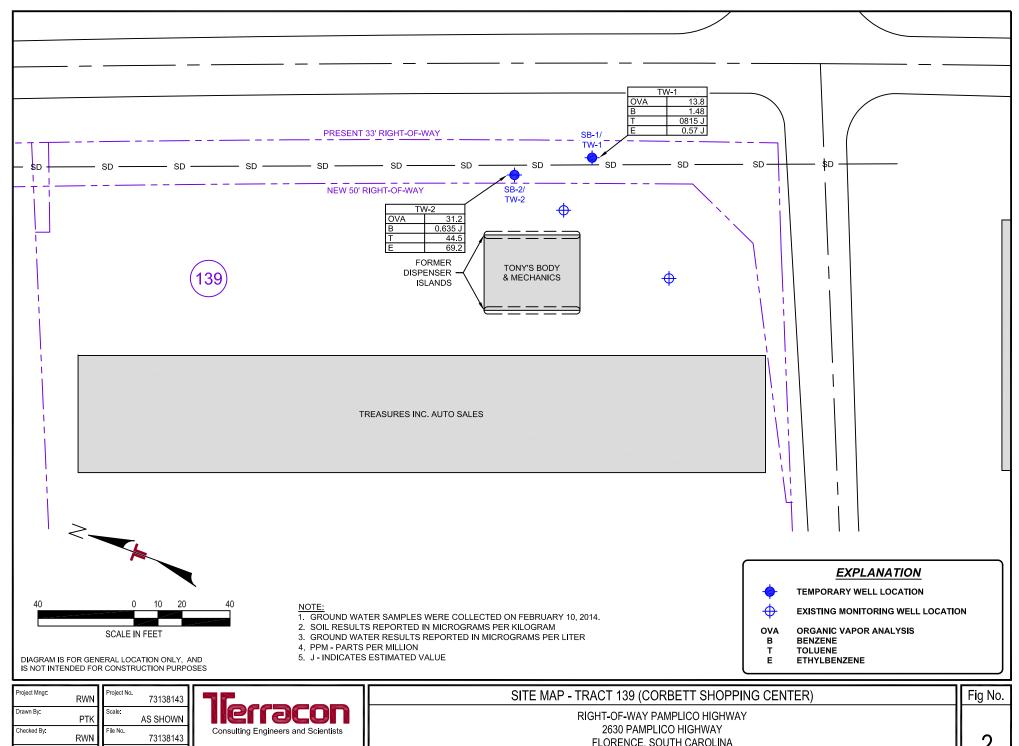
9) Concentrations in bold represent RBSL or

Al exceedance

- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) NA Not Analyzed

#### **Attachments**

Figure 2 – Site Map Well Logs



Approved By: Date: PMH APRIL 2014

521 CLEMSON ROAD COLUMBIA, SC 29229 PH. (803) 741-9000 FAX. (803) 741-9900

FLORENCE, SOUTH CAROLINA

14

		LL LOG NO. SB-1/T		Pa	ge 1	of 1	<u></u>
	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDO	Γ				
SIT	E: Site 2 - Tract 139 Florence, South Carolina						
P00	LOCATION See Figure 2	•	INSTALLATION DETAI		SVEL	-YPE	
GRAPHIC LOG			Well Completion:	DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
	DEPTH MATERIAL DES	SCRIPTION			WA OBS	SAN	
	SAND (SP), medium grained, tan, moist, loose					$\bigvee$	
	20			-			
	SANDY LEAN CLAY (CL), fine to medium grained, tan	nish gray, moist, dense, sticky					t
			Not Grouted to Surface	-		X	
	4.0 SANDY LEAN CLAY (CL), fine to medium grained, tan	nish gray, wet to moist, dense, sticky		-			}
				5 -			
			5.5' to 6.5' - #2	-  -  -		$\backslash \backslash$	1
			Filter Sand			$\bigvee$	
			6.5' to 10' - 2"			//	
			(0.010) Slotted PVC				
////	9.0  SAND (SP), medium grained, tan, saturated, loose			-			
	10.0 Boring Terminated at 10 Feet			10-			•
	-						
	The stratification lines represent the approximate transition betwee types; in-situ these transitions may be gradual or may occur at diffi	en differing soil types and/or rock erent depths than shown.	Hammer Type: Direct Push				
dvan	cement Method:		Notes:				
Dire	ct Push						
	onment Method: ngs backfilled with cement-bentonite grout upon						
	pletion.						
	WATER LEVEL OBSERVATIONS		Vell Started: 2/10/2014 We	II Complete	d: 2/10	)/201	•
$\underline{\angle}$	9.7' on 2/10/2014	llerracon 🛚		ler: J. Chio			
		521 Clemson Road					_
		Columbia, South Carolina F	Project No.: 73138143 Exh	nibit: B-	1 45		



# **Water Well Record**

PROMOTE PROTECT PROSPER		2600 Bu	Bureau of Water ull Street, Columbia, SC 29201-1708; (803) 898-4300
WELL OWNER INFORMATION	<del></del> :		7. PERMIT NUMBER: Site ID#18475, MW-09482
Name: SCDOT			Site ID#18475, MW-09482
(last)	(firs	st)	8. USE:
Address: PO Box 191			☐ Residential ☐ Public Supply ☐ Process
City: Columbia State	e: SC Zip: 29	202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
Columbia			☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/10/14
2. LOCATION OF WELL:	COUNTY: Flore	nce	10 ft. Date Completed: 2/10/14
Name: Site 2 -Tract 139			10. CASING: ☑ Threaded ☐ Welded Diam.: 1.5" Height: Above☐Below ✓
Street Address: 2630 Pampli	ico Hwy Zip:		Type:  PVC  Galvanized  Surface
City: Florence	ΖΙμ.		☑ Steel □ Other Weight
Latitude: Lon	aitude:		0in. to 6ft. depth   Drive Shoe? □ Yes ☑ No
	9		in. toft. depth
3. PUBLIC SYSTEM NAME:	PUBLIC SYSTE	M NUMBER:	11. SCREEN: Type: <u>SS</u> Diam.: <u>1"</u>
18475	SB-1/TW-1		Type: <u>SS</u> Diam.: <u>1</u> Slot/Gauge: <u>0.010</u> Length: <u>4'</u>
4. ABANDONMENT:  Yes	□ No		Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
			ft. andft. USE SECOND SHEET
Grouted Depth: from 18		ft.	Sieve Analysis ☐ Yes (please enclose) ☐ No
	*Thickness	Depth to	12. STATIC WATER LEVEL 8 ft. below land surface after 24 hours
Formation Description	of Stratum	Bottom of Stratum	13. PUMPING LEVEL Below Land Surface.
See Cealeried I	Ottatain	Otratairi	ft. after hrs. Pumping G.P.M.
See Geologist's Log			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)
			Effective size Uniformity Coefficient
			16. WELL GROUTED?
			□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Type
			Well Disinfected ☐ Yes ☑ No Type: Amount:
			18. PUMP: Date installed: Not installed 🖸
			Mfr. Name: Model No.: ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
			19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
			Address: (Print)  Level: A B C D (circle one)
			2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:
indicate Water Bearing Zones			20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
			Signed: Date: 3/2/14
			Well Driller
6. TYPE: ☐ Mud Rotary ☐ .	Jetted 🗖 E	Bored	If D Level Driller, provide supervising driller's name:
	•	Driven	
Cable tool	Other		

	WE	LL LOG NO. SB-2/1		Pa	ge 1	of 1
PRC	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDC	т			
SITE	E: Site 2 - Tract 139 Florence, South Carolina					
L06	OCATION See Figure 2	•	INSTALLATION DETAIL	1	EVEL	'YPE
GRAPHIC LOG			Well Completion:	DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	EPTH MATERIAL DE	SCRIPTION			WA	SAN
	SAND (SP), medium grained, tan, moist, loose				-	M
7///	2.0  SANDY LEAN CLAY (CL), fine to medium grained, ta	nnish arav moist dansa sticky		_		
	ONIO I ELAN OLA (OL), me to medium gramed, ta	milian gray, moiat, dense, sucky	Not Grouted to Surface		-	
	4.0  SANDY LEAN CLAY (CL), fine to medium grained, ta	nnish arav wat dansa sticky				
	<u>OAND I ELAN OLAT (OL)</u> , mie to medium grameu, ta	iniisii gray, wet, derise, suoky		5 –		
			5.5' to 6.5' - #2			
			Filter Sand	-		V
			6.5' to 10' - 2" (0.010) Slotted	-		
	9.0		(0.010) Slotted PVC	_		
1	SAND (SP), medium grained, tan, saturated, loose 0.0			10-	$\overline{\Box}$	
	Boring Terminated at 10 Feet			10		
	The stratification lines represent the approximate transition between	en differing soil types and/or rock	Hammer Type: Direct Push			
	types; in-situ these transitions may be gradual or may occur at di	ferent depths than shown.				
	ement Method: I Push		Notes:			
Direct	t rusii					
Boring	nment Method: gs backfilled with cement-bentonite grout upon					
comp			I			
7	WATER LEVEL OBSERVATIONS 9.5' on 2/10/2014		Well Started: 2/10/2014 Wel	I Completed	d: 2/10	/2014
<u>~</u>	9.5 OH 2/10/2014	llerracon	Drill Rig: Geoprobe Drill	er: J. Chior	azzi	
		521 Clemson Road	Project No.: 73138143 Exh	ibit: B-2	·	
		Columbia, South Carollila	1 10,000 140 10 100 140 EXII	D-2	17	



PROMOTE PROTECT PROSPER			
1. WELL OWNER INFORMATION:			7. PERMIT NUMBER: Site ID#18475, MW-09482
Name: SCDOT			Site 1D#18475, WW-09482
(last)	(first)		8. USE:
Address: PO Box 191			☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC	Zip: 29202	2-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
on, Columbia	P: 2)202	2 0000	☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/10/14
2. LOCATION OF WELL: CO	DUNTY: Florence		10 ft. Date Completed: 2/10/14
Name: Site 2 -Tract 139			10. CASING: ☐ Threaded ☐ Welded
Street Address: 2630 Pamplico H	wv		Diam.: 1.5" Height: Above Below ✓
	Zip:		Type:  PVC  Galvanized  Surface ft.
1000000			Steel Other Weight — Ib./ft.
Latitude: Longitude	ı:		<u>0</u> in. to <u>6</u> ft. depth Drive Shoe? ☐ Yes ☑ No
			in. toft. depth
3. PUBLIC SYSTEM NAME: PU	BLIC SYSTEM NU	UMBER:	11. SCREEN:
18475 SB-2	/TW-2		Type: SS Diam.: 1"
4. ABANDONMENT: ☑ Yes ☐	No		Slot/Gauge: 0.010 Length: 4'  Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
			ft. andft. USE SECOND SHEET
Grouted Depth: from 18f	ft. to <u>0</u>	ft.	Sieve Analysis  Yes (please enclose)  No
	*Thickness De	epth to	12. STATIC WATER LEVEL 8 ft. below land surface after 24 hours
Formation Description		ottom of	Seeds and Seeds to the Control of th
	Stratum St	Stratum	13. PUMPING LEVEL Below Land Surface ft. after hrs. Pumping G.P.M.
See Geologist's Log			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 ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Type
			Well Disinfected ☐ Yes ☑ No Type: Amount:
			18. PUMP: Date installed: Not installed 🖸
			Mfr. Name: Model No.:
			H.P Volts Length of drop pipe ft. Capacity gpm
			TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
			☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
			19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
			Address: (Print) Level: A B C D (circle one)
			2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:
mulcate water bearing zones		- 1	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
			Signadia 3/2/14
			Signed: Date: 5/2/14
. = -			
6. TYPE: Mud Rotary	☐ Bored		If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rot☐ Cable tool ☑ Other	tary 🗖 Driver	211	
Oable tool D Other			

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



## SITE 3 TRACT 238 'SUNFLOWER STORE"; 4109 PAMPLICO HWY;

#### 1.0 Site Description

This site is an abandoned former gas station property with evidence of a former dispenser island located within the proposed new ROW. The site has two existing monitoring wells located outside of the proposed new ROW. A storm drain is located within the proposed ROW, approximately 22 feet from the dispenser islands.

USTs fill ports were noted within 10 feet of the dispensers. No records of a UST system were available from the SCDHEC UST registry. A UST vent pipe was observed at the corner of the building.

#### 2.0 Assessment Activities

An EM survey was conducted at this site to locate the position of the UST with respect to fill ports and vent pipe. The survey indicated four USTs were determined to be located within the proposed ROW. The approximate UST locations are shown on Figure 3.

Two temporary wells were advanced using direct-push sampling equipment in the vicinity of the dispenser islands. Soil Samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil Sample SB-2 and ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. A site layout with boring/temporary well locations is attached as Figure 3.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil boring SB-1 and SB-2. The depth to ground water was recorded at a depth of 6.5 feet, and is suspected to discharge to the adjacent storm drain utility. Petroleum compounds were detected above RBSLs in soil and ground water samples collected from both borings/temporary wells. The analytical results are shown on Table 3.

Four USTs identified to be within the proposed ROW should be removed prior to or as a part of the ROW expansion. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 3 Tract 238 Sunflower Store; 4109 Pamplico Hwy;

Table 3 - Analytical Data Summary of Detected Compounds

	SOI (ug/k		GROUND WATER (ug/l)				
Sample	SB-2	DDCI	TW-1	TW-2	DDCL /AL		
(Sample Depth, ft.)	(2 - 4)	RBSL (13 - 1		(13 - 18)	RBSL / AL		
OVA (ppm)	2,762	ne	1,921	63.4	ne		
Benzene	<6.38	7	188	4.27	5		
Toluene	<13.5	1,450	1.66J	1.85	1,000		
Ethylbenzene	9,220	1,150	8.11	47.4	700		
Xylene	11,100	14,500	2.71J	29.1	10,000		
Naphthalene	9,080	36	36.2	4.61J	25		
MTBE	na	ne	105	0.735J	40		
1,2 DCA	na	ne	< 0.232	< 0.116	5		
Tert-amyl Alcohol (TAA)	na	ne	71	< 1.01	240		
t-butanol (TBA)	na	ne	14.8J	< 0.29	1,400		
Di-isopropyl ether (DIPE)	na	ne	8.11J	< 0.24	150		

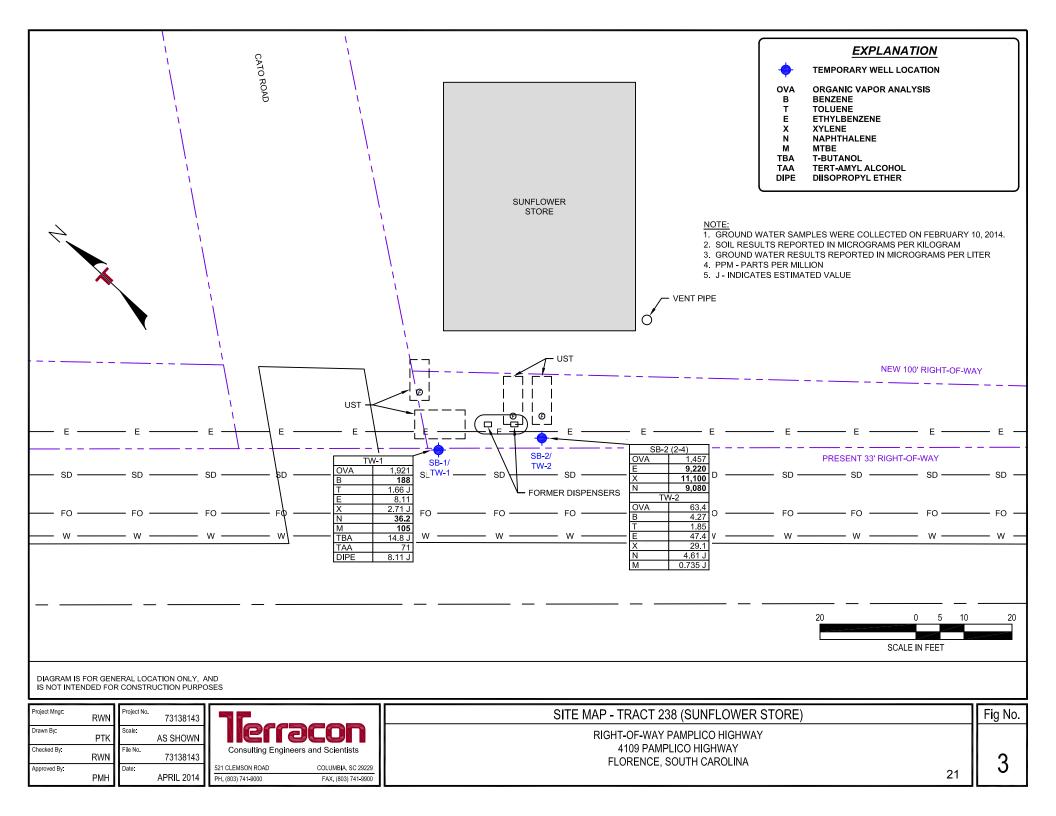
#### **NOTES:**

- 1) All samples collected on February 10, 2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not analyzed

#### **Attachments**

Figure 3 – Site Map Well Logs



		NO. SB-1/TW-1		Pa	ige 1	of 1	<u> </u>
PRO.	JECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT					
SITE							
g Lo	DCATION See Figure 3	+	INSTALLATION DETAIL		II S	PE	
GRAPHIC LOG				DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID
RAP			Well Completion:	DEP	ATER SER\	MPL	8
DE	PTH MATERIAL DESCRIPTION				≥®	S,	
٥	.3\(\text{ASPHALT}\) SAND (SP), medium to coarse grained, orange, moist, loose		1			$\mathbb{N}$	
						X	91
2	.0  CLAYEY SAND (SC), gray, slight petroleum odor, moist, medium dens		4	-		(-)	_
	CLATET SAND (SC), gray, slight petroleum odor, moist, medium dens	ic .	Not Grouted to			$  \bigvee  $	
			Surface	-			26
				-			-
				5-		$ \bigvee$	43
5	.5 CLAYEY SAND (SC), mottled (orange, tan, gray), heavy petroleum odd	or moist medium dense to	-  .			$  \wedge $	-
	dense	or, moist, medium dense to	5.5' to 15' - #2 Filter Sand	-	abla		╁
				<u> </u>			41
7	.5  CLAYEY SAND (SC), mottled (orange, tan, gray), heavy petroleum odd	or, wet, medium dense to dense	6.5' to 10' - 2"			$/ \setminus$	
		, .,,	(0.010) Slotted PVC	-		/	
				-			
10	.0			40			
	Soil Boring Terminated at 10 Feet			10-			
				-			
				<u>.</u>			
			11.5' to 15' - 2"				
			11.5' to 15' - 2" (0.010) Slotted PVC	-			
				l'   _			
	Temporary Well Terminated at 15 Feet			15-			
	The stratification lines represent the approximate transition between differing soil type types; in-situ these transitions may be gradual or may occur at different depths than		ype: Direct Push				
	nent Method:	Notes:					
Direct I	-usn						
oandon:	ment Method:						
	s backfilled with cement-bentonite grout upon						
Jonipic	WATER LEVEL ORSERVATIONS	Well Started	2/10/2014	Complete	M. 0/40	1/204	1
Ζ 6	6.4' on 2/10/2014			Complete		<i>1</i> /∠U14	+
	521 Clen	nson Road		er: J. Chio			
		South Carolina Project No.:	73138143 Exhi	bit: B-	1 22		



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18476, MW-09483
Name: SCDOT	,
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-00	Air Conditioning
City: Columbia State: SC Zip: 29202-00	☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/10/14
2. LOCATION OF WELL: COUNTY: Florence	ft. Date Completed: 2/10/14
Name: Site 3 -Tract 238	10. CASING: ☐ Threaded ☐ Welded
	Diam.: 1.5" Height: Above Below
Street Address: 4109 Pamplico Hwy	Type:  PVC  Galvanized  Surface ft.
City: Florence Zip:	☑ Steel ☐ Other Weight
1 - Maria de la compansa del compansa del compansa de la compansa	0 in. to 11 tt. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	in. toft. depth
O DUDI IO OVOTEM MAME. DUDI IO OVOTEM MUMD	
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMB	Type: SS Diam.: 1"
18476 SB-1/TW-1	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 15 ft. to 0	ft. Sieve Analysis ☐ Yes (please enclose) ☑ No
*Thickness Depth	
Formation Description of Bottom	of
Stratum Stratu	13. PUMPING LEVEL Below Land Surface.  ft. after hrs. Pumping G.P.M.
See Geologist's Log	Pumping Test: Yes (please enclose) INO
	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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed ☑
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
	2047 Illuusiilai Divu, Lexiligioli, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Signed: Date: Date:
	yveli Driller
6. TYPE: Mud Rotary Jetted Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool ☐ Other	

PR	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT				
SIT						
90.	LOCATION See Figure 3	INSTAL	LATION DETAILS	<u></u>	/EL	/PE
GRAPHIC LOG		Well Co	ompletion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH MATERIAL DESCRIPTION 0.5 ASPHALT					<b>"</b>
	1.0 SAND (SP), medium to coarse grained, orange, slight petroleum odor, CLAYEY SAND (SC), medium grained, gray, petroleum oodr, moist, d			-		X
				_		
			routed to	-		$\bigvee$
		Surfac	e	-	_	$\langle - \rangle$
	4.5  CLAYEY SAND (SC), mottled (orange, tan, gray), heavy petroleum oo	dr, moist, very dense		5 -	_	$\bigg $
		6.5' to	15' - #2	_		
	8.0	Filter S				$/ \setminus$
//	CLAYEY SAND (SC), mottled (orange, tan, gray), heavy petroleum oo		441 211	-	1	,
			11' - 2" ) Slotted	-		
				10-		
				_		
		11 51 4	o 15' - 2"	_		
			) Slotted	-		
				-	1	
	15.0			15-		
	Boring Terminated at 15 Feet			13		
		Harman Times Bire	at Durch			
	The stratification lines represent the approximate transition between differing soil tyles; in-situ these transitions may be gradual or may occur at different depths than	pes and/or rock Hammer Type: Dire shown.	CT Push			
	cement Method: ct Push	Notes:				
	onment Method: ngs backfilled with cement-bentonite grout upon					
	pletion.		1			
<u> </u>	WATER LEVEL OBSERVATIONS 6.4' on 2/10/2014	Well Started: 2/10/201 Drill Rig: Geoprobe	4 Well Co	omplete	d: 2/10	/201
			Driller:	J. Chio	razzi	
		mson Road South Carolina Project No.: 73138143	Exhibit:	: B-:	2 24	



# Water Well Record

PROMOTE PROTECT PROSPER	2600 Bu	<b>Bureau of Water</b> ull Street, Columbia, SC 29201-1708; (803) 898-4300					
WELL OWNER INFORMATION:     Name: SCDOT		7. PERMIT NUMBER: Site ID#18476, MW-09483					
(last)	(first)	0.1105					
Address: PO Box 191  City: Columbia State: S	C Zip: 29202-0000	8. USE:  Residential Public Supply Process Irrigation Air Conditioning Emergency Test Well Monitor Well Replacement					
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/10/14					
	COUNTY: Florence	15 ft. Date Completed: 2/10/14					
Name: Site 3 -Tract 238	1 10101100	10. CASING:   Threaded   Welded					
Street Address: 4109 Pamplico	Hwv	Diam.: 1.5" Height: Above Below ✓					
City: Florence	Zip:	Type:         □ PVC         □ Galvanized         Surface					
Latitude: Longitud		in. toft. depth					
	PUBLIC SYSTEM NUMBER:	11. SCREEN: Type: SS Diam.: 1"					
	-2/TW-2	Slot/Gauge: 0.010 Length: 4'					
4. ABANDONMENT:  Yes (	_	Set Between:         11         ft. and 15         ft.         NOTE: MULTIPLE SCREENS           —         ft. and —         ft.         USE SECOND SHEET					
Grouted Depth: from 15	_ft. to <u>0</u> ft.	Sieve Analysis					
Formation Description	*Thickness Depth to of Bottom of	12. STATIC WATER LEVEL 10 ft. below land surface after 24 hours					
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface ft. after hrs. Pumping G.P.M.					
See Geologist's Log		Pumping Test: Yes (please enclose) I 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 ft. to ft.					
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type					
		Well Disinfected ☐ Yes ☑ No Type: Amount:					
	+	18. PUMP: Date installed: Not installed ☑  Mfr. Name: Model No.:					
		H.P Volts Length of drop pipe ft. Capacity gpm					
		TYPE: Submersible Jet (shallow) Turbine  Jet (deep) Reciprocating Centrifugal					
		19. WELL DRILLER: Jason Chiorazzi CERT. No.: 1790					
		Address: (Print) Level: A B C D (circle one)					
		2047 Industrial Blvd, Lexington, SC					
*Indicate Water Bearing Zones	1	Telephone No.: 803-429-5001 Fax No.:					
(1)		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under					
(Use a 2nd sheet if needed)	+	my direction and this report is true to the best of my knowledge and belief.					
5. REMARKS:							
		Signed: Date: 3/2/14					
		Signed: Date:					
6. TYPE:  Mud Rotary  Jetter Dug  Air R Cable tool  Other	otary	If D Level Driller, provide supervising driller's name:					

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# SITE 4 TRACT 271 THE OUTPOST CONVENIENCE STORE, 4925 PAMPLICO HWY

#### 1.0 Site Description

This site is an active gas station convenience store operating as The Outpost, Convenience store (formerly Meggs Exxon), under UST Permit # 03423. The site maintains a UST system consisting of four gasoline USTs, distribution lines, kerosene and diesel USTs, pump islands and canopy. The UST system and majority of the store and is within the proposed ROW, and will require complete demolition and removal. The approximate UST and ROW locations are shown on Figure 4. A septic tank drain field is also located within the proposed ROW.

In 1992, a release was reported from this system. There are as many as 24 monitoring wells on this property and adjacent properties. A site map and ground water quality table obtained from the SCDHEC UST files is attached (Davis & Brown assessment report, 2009). Review of the ground water quality data collected in 2009 indicates significant petroleum impact to soils and ground water in monitoring wells located near the UST system.

#### 2.0 Assessment Activities

Based on the 2009 groundwater data review, and since the entire UST system is within the proposed ROW, no assessment was conducted at this site.

#### 3.0 Results and Findings

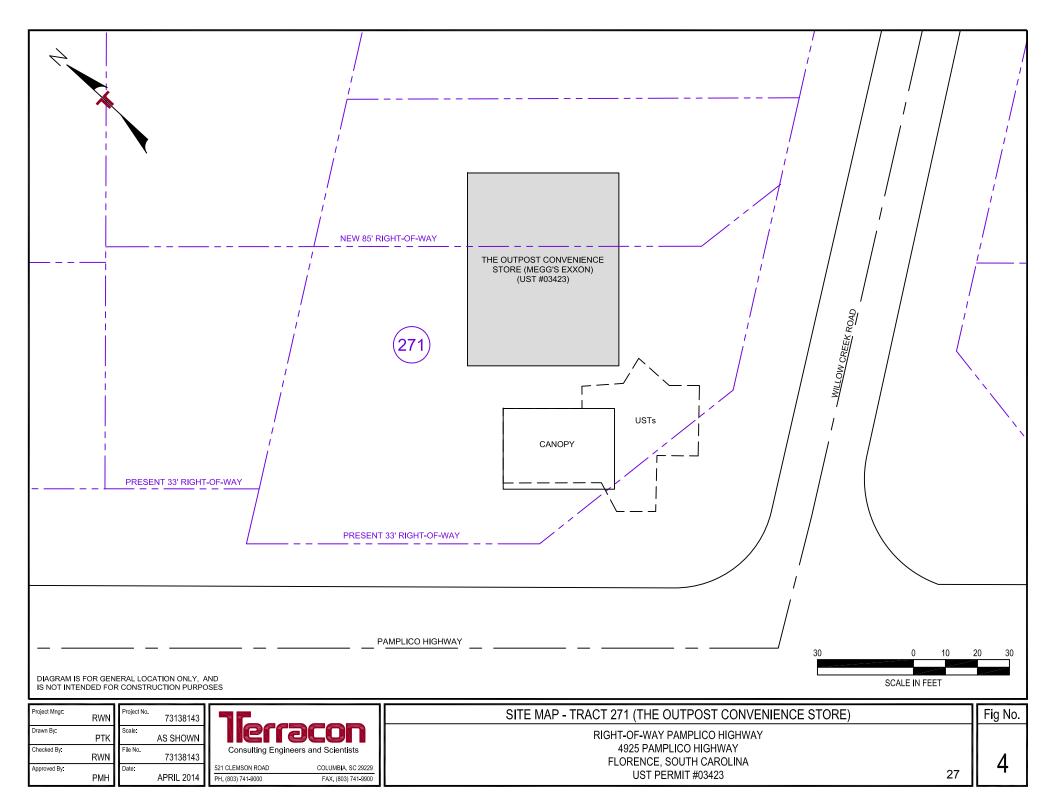
The UST system and majority of the store and is within the proposed ROW, and will require complete demolition and removal. Accordingly, the following activities should be conducted prior to site widening activities:

- Monitoring wells affected by the widening should be abandoned in accordance with the SC Well Standards and Regulations,
- Regulatory notice and assessment activities should be conducted in accordance with the SCDHEC UST Closure Assessment guidelines,
- Special handling and disposal of soils impacted by petroleum contaminated ground water and septic drain field likely may be necessary.

### **Attachments**

#### Figure 4 - Site Map

Site map and historical ground water quality table from previous SCDHEC UST assessment (Davis & Brown assessment report, 2009).





#### SITE 5 TRACT 315 POSTON PACKING (UST NO. 03278), 5810 PAMPLICO HWY.

#### 1.0 Site Description

This site is operated as Poston's Packing, a meat processing facility. Two 1,000 gallon USTs (gasoline and diesel) are listed on the SCDHEC UST Registry (UST Permit # 03278), reportedly abandoned by removal in 1993. Upon interview with the property owner, the location of these former USTs are not known. No evidence of a UST was noted. A septic tank drainage field is located near east front side of the building.

The facility currently operates one large fuel above-ground storage tank (AST) located at the rear of the property 250 feet from the proposed ROW. A storm drain culvert diverts surface runoff from this AST to a storm drain catch basin constructed within the proposed new ROW (Figure 5).

#### 2.0 Assessment Activities

Due to the reported UST removal, a UST is not suspected to be located in the proposed ROW, therefore an EM survey was not conducted at this site.

Two temporary wells were advanced in the vicinity of the surface runoff catch basin and septic drain field. A site layout with boring/temporary well locations is attached as Figure 5. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-2 and ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 5, below.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil boring SB-1 and SB-2. The depth to ground water was recorded at depths ranging from 3.5 - 4 feet, and is suspected to discharge to the adjacent storm drain utility.

No petroleum compounds were detected in the soil or ground water above RBSLs or ALs.

No USTs, piping, or environmental conditions are expected to impact the ROW widening at this site.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Poston Packing (UST No. 03278), 5810 Pamplico Hwy.

Table 5 – Analytical Data Summary of Detected Compounds

	SOIL (ug/kg	GRO	OUND WAT	ΓER	
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL
(Sample Depth, ft.)	(2 - 4)	KBSL	(6.5 - 10)		RBSL/AL
OVA	2.3	ne	3.52		ne
Benzene			4.04	< 0.111	5
Toluene			7.71	< 0.122	1,000
Ethylbenzene	NO COMPO DETECT		0.907J	< 0.109	700
Xylene			3.19	< 0.179	10,000
Naphthalene			4.42J	< 0.176	25

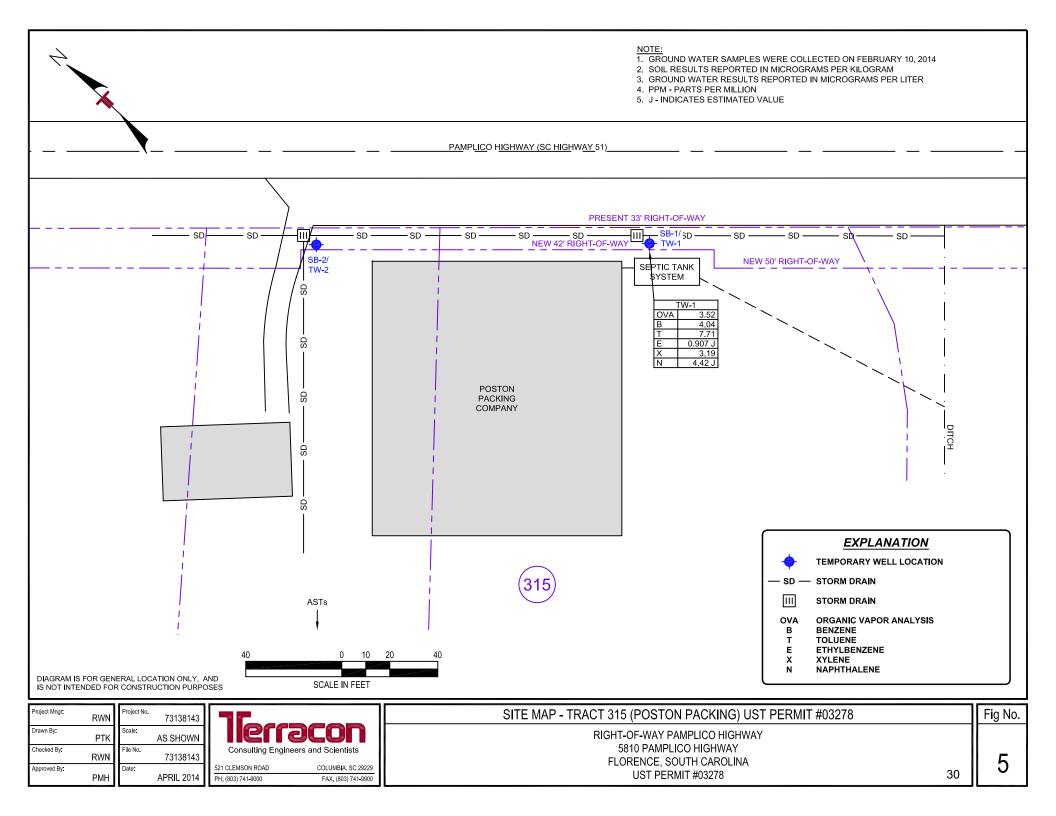
#### **NOTES:**

- 1) All samples collected on February 10, 2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Levels or Action Levels
- 9) ne no regulatory action level established
- 10) J indicates an estimated value
- 11) NA Not Analyzed

#### **Attachments**

Figure 5 - Site Map Well Logs



	WELL L	OG NO. SB-1/TW-	1	Pa	ge 1	of 1	
PR	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT					
SI	TE: Site 5 - Tract 315 (Poston Packing) Florence, South Carolina						
90-	LOCATION See Figure 5	,	INSTALLATION DETAILS	1	/EL ONS	/PE	_
GRAPHIC LOG			Well Organizations	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID
GR/			Well Completion:	l g	WAT	SAM	C
	DEPTH MATERIAL DESCRIPTION 0.5 ASPHALT	l				1	-
	CLAYEY SAND (SC), medium to coarse grained, mottled (tan,	orange, dark orange), moist, dense		-	-	X	2
				_		/	
			Not Grouted to			\	
	3.5		Surface	_	$  \bigcirc  $	X	1
	SAND (SP), medium grained, tan, moist to wet, medium dense			-		/ }	_
				_		$\bigvee  $	<
				5 -		$\bigwedge ]$	`
	6.0  SAND (SP), fine to medium grained, gray with tan, saturated, lo	ose	5.5' to 6.5' - #2 Filter Sand	-	1	$\left\langle \cdot \right\rangle$	_
				-		$\backslash  $ .	<
	8.0		6.5' to 10' - 2"			$/ \setminus$	
	Soil Boring Terminated at 8 Feet		(0.010) Slotted PVC	-	1	7	
				_	- 1		
Dire band Bor	The stratification lines represent the approximate transition between differing types; in-situ these transitions may be gradual or may occur at different dept accement Method:  act Push  donment Method: ings backfilled with cement-bentonite grout upon apletion.		er Type: Direct Push				
Dire band Bor	types; in-situ these transitions may be gradual or may occur at different dept incement Method: Identification and the state of the sta	hs than shown.  Notes:		Complete	d: 2/10/	2014	
Dire band Bor	types; in-situ these transitions may be gradual or may occur at different dept accement Method: act Push  donment Method: ings backfilled with cement-bentonite grout upon appletion.  WATER LEVEL OBSERVATIONS  3.5' on 2/10/2014	Notes:	rted: 2/10/2014 Well	Complete:		2014	<b>-</b> -



PROMOTE PROTECT PROSTER			
1. WELL OWNER INFORMATION:			7. PERMIT NUMBER: Site ID#18477, MW-09484
Name: SCDOT	15	4)	
(last)	(firs	it)	8. USE:
Address: PO Box 191			☐ Residential ☐ Public Supply ☐ Process
City: Columbia State:	SC Zip: 29	202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
Columbia			☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/10/14
2. LOCATION OF WELL:	COUNTY: Flore	nce	10 Date Completed: 2/10/14
Name: Tract 334			10. CASING: Threaded Welded
Street Address: 6114 Pamplic	o Hwy		Diam.: 1.5" Height: Above Below ✓
City: Effingham	Zip:		Type:         □         PVC         □         Galvanized         Surface
			☐ Steel ☐ Other Weight — lb./ft.  O in. to 6 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longi	itude:		in, toft. depth
O. DUDUIO OVOTEM MANE	DUDI IO OVOTE	A AUGSADED.	11. SCREEN:
3. PUBLIC SYSTEM NAME:		W NUMBER:	Type: <u>SS</u> Diam.: <u>1"</u>
	B-1/TW-1		Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT:  Yes	■ No		Set Between: $\underline{6}$ ft. and $\underline{10}$ ft. NOTE: MULTIPLE SCREENS
10	. 0		ft. andft. USE SECOND SHEET
Grouted Depth: from 10	ft. to <u>0</u>		Sieve Analysis 🔲 Yes (please enclose) 🗹 No
Farmatian Danadatian	*Thickness	Depth to	12. STATIC WATER LEVEL 4 ft. below land surface after 24 hours
Formation Description	of Stratum	Bottom of Stratum	13. PUMPING LEVEL Below Land Surface.
	0		ft. after hrs. Pumping G.P.M.
See Geologist's Log			Pumping Test: TYes (please enclose) DNo
			Yield:
			14. WATER QUALITY
			Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
			Please enclose lab results.
			15. ARTIFICIAL FILTER (filter pack)
			Installed from ft. to ft.           Effective size Uniformity Coefficient
			Effective size Uniformity Coefficient
			16. WELL GROUTED? Yes No
			☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
<b>44.</b>			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Type
			Well Disinfected ☐ Yes ☐ No Type: Amount:
			18. PUMP: Date installed: Not installed 🖸
			Mfr. Name: Model No.:
			H.P Volts Length of drop pipe ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
			19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
			Address: (Print)  Level: A B C D (circle one)
			2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:
<b>.</b>			20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
			Signed: Date: 3/2/14
			Well Driller
6. TYPE:  Mud Rotary	atted <b>IT</b> i	Bored	If D. Loval Drillar, provide supervising driller's name:
		Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool	•		

PR	ROJECT: SC-51 PIN 38191 - Right of	CLIENT: SCDOT	•	1 0	age 1	<i>J</i> 1 1
	Way Expansion Hwy 51					
SIT	TE: Site 5 - Tract 315 (Poston Packing) Florence, South Carolina					
8	LOCATION See Figure 5		INSTALLATION DETA		NS NS	PE
GRAPHIC LOG				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
RAP			Well Completion:	DEP.	ATEF SER\	MPL
<u></u>	  DEPTH MATERIAL DESCRIPT	ON			ĕ	SA
	0.5 ASPHALT SAND (SP), medium grained, tan, moist, medium dense					NA
	SAND (SP), medium grained, tan, moist, medium dense			-		X
						$\square$
			Not Grouted to			$\mathbb{N}A$
//	3.0 3.5 CLAYEY SAND (SC), dense		Surface	-		X
	4.0 <b>SAND (SP)</b> , medium grained, tan to orange, moist to wet, me	dium dense			$\Box$	$\square$
	Soil Boring Terminated at 4 Feet					
				5-		
			5.5' to 6.5' - #2			
			Filter Sand			
			6.5' to 10' - 2"			
			(0.010) Slotted PVC			
				10-		
	Temporary Well Terminated at 10 Feet			10		
	The stratification lines represent the approximate transition between differ types; in-situ these transitions may be gradual or may occur at different diffe	ing soil types and/or rock	Hammer Type: Direct Push	'	•	
d			Nata			
	ncement Method: ect Push	[ '	Notes:			
	donment Method:					
	rings backfilled with cement-bentonite grout upon npletion.					
	WATER LEVEL OBSERVATIONS	w	/ell Started: 2/10/2014 W	ell Complete	ed: 2/10	0/2014
<u>Z</u>	4.0' on 2/10/2014	stacou 🖁		riller: J. Chic		
		521 Clemson Road				
		olumbia, South Carolina Pi	roject No.: 73138143	xhibit: B	-2 22	



	Bureau of Water 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300					
1. WELL OWNER INFORMATION:			7. PERMIT NUMBER: Site ID#18477, MW-09484			
Name: SCDOT (last)	(firs	st)	8. USE:			
Address: PO Box 191  City: Columbia State: S	SC Zip: 29	9202-0000	☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement			
Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/10/14			
Name: Tract 334 Street Address: 6114 Pamplico City: Effingham Latitude: Longitu	Zip: de:					
	PUBLIC SYSTE	M NUMBER:	11. SCREEN:  Type: SS Diam.: 1"			
18477 SB <b>4. ABANDONMENT:</b> ☑ Yes	-2/TW-2 □ No		Set Between: 6			
Grouted Depth: from 10	_ ft. to <u>0</u>	ft.	Sieve Analysis 🔲 Yes (please enclose) 🖸 No			
Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum	12. STATIC WATER LEVEL 4 ft. below land surface after 24 hours     13. PUMPING LEVEL Below Land Surface.			
See Geologist's Log			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.			
1127-1111-1111-1111-1111-1111-1111-1111			15. ARTIFICIAL FILTER (filter pack) Yes No Installed from ft. to ft. to ft. to ft. to ft. to ft.			
			16. WELL GROUTED?       ☐ Yes       ☐ No         ☐ Neat Cement       ☐ Bentonite       ☐ Bentonite/Cement       ☐ Other			
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type  Well Disinfected  Yes  No Type: Amount:			
			18. PUMP:       Date installed: Not installed			
			19. WELL DRILLER: Jason Chiorazzi  Address: (Print)  2047 Industrial Blvd, Lexington, SC  CERT. NO.: 1790  Level: A B C D (circle one)			
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:			
(Use a 2nd sheet if needed)  5. REMARKS:		.H-3	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: 3/2/14			
6. TYPE:	Rotary 🔲 🛭	Bored Oriven	If D Level Driller, provide supervising driller's name:			

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# SITE 6 TRACT 334 FEED & SEED STORE, 6114 PAMPLICO HWY.

#### 1.0 Site Description

This site is an operating as the Evergreen Feed & Produce. No evidence of USTs are present. An Initial Site Assessment conducted by the SCDOT in 2012 recommended that the site be checked for the presence of USTs or environmental impact.

#### 2.0 Assessment Activities

An EM survey was conducted in the driveway and parking areas in front of the store as the most likely location of USTs or dispenser islands. No evidence of a UST was observed.

Two temporary wells were advanced using direct-push sampling equipment in the front of the store. Soil Samples were collected from each boring and analyzed for Organic Vapor Analysis (OVA) using a Foxboro Century 128 Flame Ionization Detector (FID). The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-1 was submitted for laboratory analysis for petroleum compounds per EPA Method 8260. Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 1, below. A site layout with boring/temporary well locations is attached as Figure 1.

#### 3.0 Results and Findings

Background OVA readings (12 ppm) was recorded at soil boring SB-1. The depth to ground water was recorded at depths ranging from 2.5 – 3 feet. No petroleum compounds were detected above Risk-Based Screening Levels (RBSLs).

No USTs, piping, or environmental conditions are expected to impact the ROW widening at this site.

#### **Limited Environmental Site Assessment**

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 6 Tract 334 Feed & Seed Store, 6114 Pamplico Hwy.

Table 6 - Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)		GROUND WATER (ug/l)			
Sample	SB-2	RBSL	TW-1	TW-2	RBSL / AL	
(Sample Depth, ft.)	(0 - 2)	KBSL	(4.5 - 8)	(4.5 - 8)	KBSL/AL	
OVA (ppm)	12	ne	<0.1	2.3	ne	
Benzene	< 0.034	7	0.963J	0.871J	5	
Toluene	< 0.071	1,450	0.631J	< 0.122	1,000	
Ethylbenzene	2.91J	1,150	4.31	6.61	700	
Xylene	14.7	14,500	7.56	20.9	10,000	
Naphthalene	< 0.258	36	3.91J	5.76	25	
MTBE	NA	ne	< 0.078	< 0.078	40	
1,2 DCA	NA	ne	< 0.116	< 0.116	5	

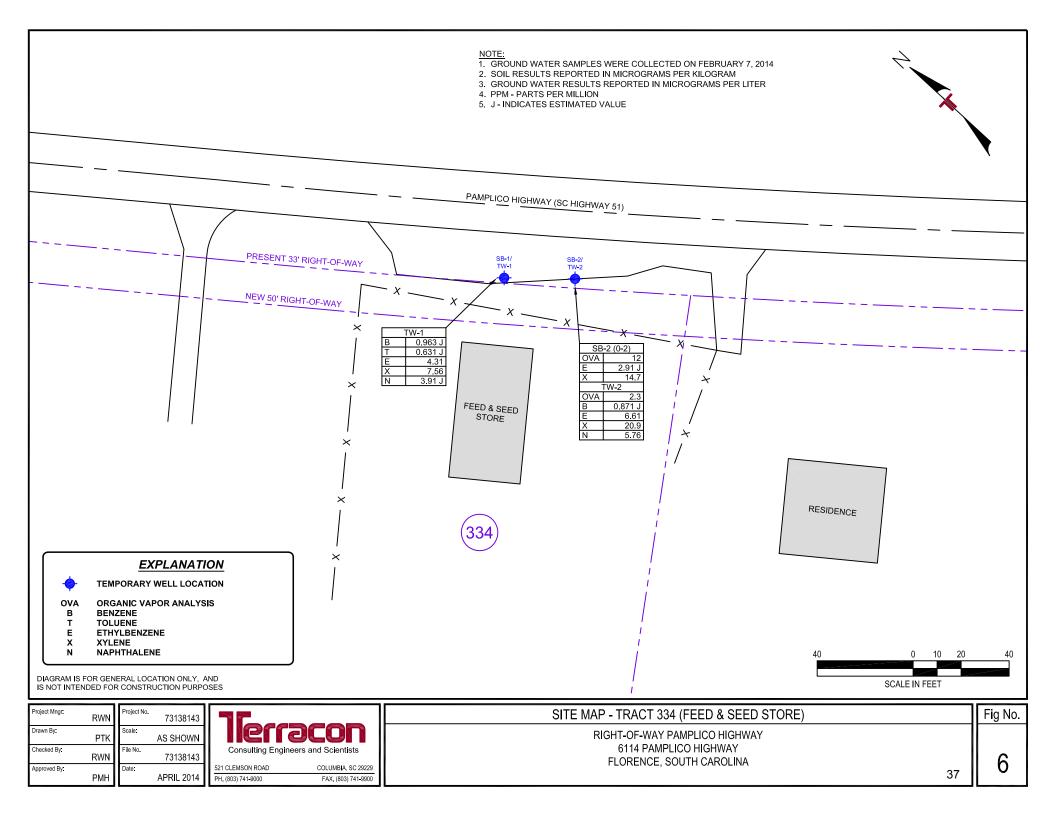
#### **NOTES:**

- 1) All samples collected on February 7, 2014 8) RBSL/AL SCDHEC Risk Based Screening
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Levels or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) NA Not Analyzed

## **Attachments**

Figure 6 – Site Map Well Logs



PR	ROJECT: SC-51 PIN 38191 - Right of	CLIENT: SCDOT						
	Way Expansion Hwy 51	OLILITI: OODOT						
SIT	TE: Site 6 - Tract 344							
	Florence, South Carolina							Г
GRAPHIC LOG	LOCATION See Figure 6		INSTALLATION DE	TAILS		WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
)HC					DEРТН (ft)	R LE	LET	
GRAF			Well Completion:			VATE BSEF	AMP	
	DEPTH MATERIAL DESCRIPTION 0.5 ASPHALT	I				>0	S	-
	SAND (SP), fine to medium grained, gray, moist, medium dense	<u> </u>					$\setminus / \mid$	l
	1.5				_		M	
	SAND (SP), fine to medium grained, tan, moist, medium dense		Not Grouted to Surface		_		$\langle - \rangle$	
							$\backslash /  $	
	3.5				_		M	
	4.0 SAND (SP), fine to medium grained, tan, wet, medium dense  Soil Boring Terminated at 4 Feet		3.5' to 8' - #2 Filter Sand		_		_	
	Con Zoning Forminated at 47 cet		Filter Sand		_			
					5-			
			4.5' to 8' - 2"		-			
			(0.010) Slotted PVC		_			
Dire band Bori	The stratification lines represent the approximate transition between differing types; in-situ these transitions may be gradual or may occur at different dept neement Method: ect Push  donment Method: rings backfilled with cement-bentonite grout upon mpletion.	y soil types and/or rock Hamm hs than shown.	er Type: Direct Push					
Dire band Bori	types; in-situ these transitions may be gradual or may occur at different dept  ncement Method: ect Push  donment Method: rings backfilled with cement-bentonite grout upon mpletion.	hs than shown.  Notes:	er Type: Direct Push	Well Co	omplete	d: 2/7/2	2014	
Dire band Bori	types; in-situ these transitions may be gradual or may occur at different dept neement Method: ect Push  donment Method: rings backfilled with cement-bentonite grout upon mpletion.  WATER LEVEL OBSERVATIONS  2.3' on 2/7/2014	Notes:			omplete J. Chior		2014	



PROMOTE PROTECT PROSPER	The second secon
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25376
Name: SCDOT	1111 20070
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
011 - 1 00000	□ Irrigation □ Air Conditioning □ Emergency
City: Columbia State: SC Zip: 29202	2-0000 ☑ Test Well ☐ Monitor Well ☐ Replacement
	9. WELL DEPTH (completed) Date Started: 2/7/14
Telephone: Work: Home:	
2. LOCATION OF WELL: COUNTY: Florence	
Name: Site 6-Tract 315	10. CASING: Threaded Welded
Street Address: 5810 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Florence Zip:	Type:  PVC Galvanized Surface ft.
	Steel Other Weight — lb./ft.
Latitude: Longitude:	0 in. to 4 ft. depth Drive Shoe? ☐ Yes ☑ No
· ·	in. to ft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM N	IMBER: 11. SCREEN:
SB-1/TW-1	Type: SS Diam.: 1"
	Slot/Gauge: _0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: $\frac{4}{}$ ft. and $\frac{8}{}$ ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from $8$ ft. to $0$	ft. Sieve Analysis 🗖 Yes (please enclose) 🗹 No
*Thickness D	epth to 12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
	ottom of
Stratum S	tratum 13. PUMPING LEVEL Below Land Surface.
See Geologist's Log	ft. after hrs. Pumping G.P.M.
See Georgian Dog	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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 80 <i>3-</i> 429-5001 Fax No.:
mulcate water bearing zones	Telephone No.: 803-429-3001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
	my direction and this report is true to the best of my knowledge and benefi.
5. REMARKS:	
	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
	Signed: Date: 3/2/14
	Well Driller Date.
6 TVPE: Flavor Peters Flavor Flavor	
6. TYPE: Mud Rotary Jetted Borec	ii b Ecver briller, provide sapervising driller a name.
□ Dug □ Air Rotary □ Drive	il
☐ Cable tool ☐ Other	

PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT: \$	SCDOT					
SIT	Way Expansion Hwy 51 TE: Site 6 - Tract 344							
311	Florence, South Carolina							
စ္က	LOCATION See Figure 6	-		INSTALLATION D	ETAILS		H S	Ä
GRAPHIC LOG						DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
(APH				Well Completion:		EPT	TER	APLE
GR	DEPTH MATERIAL DESCR	OTION					WA	SAI
	0.5 ASPHALT	TION						
	SAND (SP), fine to medium grained, gray, moist, medium	lense				-	-	l V
	1.5 SAND (SP), fine to medium grained, tan, moist, medium of	ense		Not Grouted to				/ \
	=,,			Surface		-	$\nabla$	$\vdash$
						_		$  \rangle$
	3.5 4.0 SAND (SP), fine to medium grained, tan, wet, medium der	se		$\dashv$				/\
	Soil Boring Terminated at 4 Feet			3.5' to 8' - #2 Filter Sand		-	1	
						5 -		
				4.5' to 8' - 2"		-	-	
				(0.010) Slotted PVC		_		
Dire band Bori	The stratification lines represent the approximate transition between d types; in-situ these transitions may be gradual or may occur at differencement Method: Extract Push  Conment Method: Ings backfilled with cement-bentonite grout upon apletion.	fering soil types and/or rock depths than shown.	Hammer Notes:	Гуре: Direct Push				
Dire band Bori	types; in-situ these transitions may be gradual or may occur at differencement Method: corporated Push  conment Method: ings backfilled with cement-bentonite grout upon inpletion.	depths than shown.	Notes:		Well C	complete	d: 2/7/2	2201
Dire band Bori	types; in-situ these transitions may be gradual or may occur at differencement Method: corporated Push  conment Method: ings backfilled with cement-bentonite grout upon inpletion.	fering soil types and/or rock depths than shown.	Notes:	I: 2/7/2014		Complete: J. Chio		2001-



1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: NOV. 05076
Name: SCDOT	MW-25376
(last) (first)	
Address: PO Box 191	8. USE:
PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
Columbia BC	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	8 ft. Date Completed: 2/7/14
Name: Site 6-Tract 315	10. CASING: ☑ Threaded ☑ Welded
	Diam.: 1.5" Height: Above Below
Street Address: 5810 Pamplico Hwy	
City: Florence Zip:	Type:         □         PVC         □         Galvanized         Surface
	0 in. to 4 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	
	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-2/TW-2	Type: <u>SS</u> Diam.: <u>1"</u>
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'
TADANDONNICHI.	Set Between: 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS
Crouted Donthy from 8 # to 0	ft. and ft. USE SECOND SHEET
Grouted Depth: from 8 ft. to 0 ft.	Sieve Analysis 🗖 Yes (please enclose) 🗹 No
*Thickness Depth to	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
Formation Description of Bottom of Stratum	13. PUMPING LEVEL Below Land Surface.
	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? ☐ Yes ☐ No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
	2077 maustrar Diva, Leanigron, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	<b>~</b>
	2/0/14
	Signed: Date: 3/2/14
	Well Dhiller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
■ Dug Air Rotary □ Driven	
☐ Cable tool         Other	

## **Limited Environmental Site Assessment**

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# SITE 7 TRACT 353 VACANT EVERGREEN STORE BETWEEN 6309 & 6315 PAMPLICO HWY

## 1.0 Site Description

This site is vacant, rural store with a vent pipe located on the northwest corner of the abandoned building. Further, a UST fill pipe was observed in the vicinity of the pipe. There is no evidence of a dispensing island in front of the store.

Due to the possibility of an underground storage tank associated with the vent pipes two borings were advanced to a depth of ten in front of the store inside of the proposed new ROW.

#### 2.0 Assessment Activities

An EM survey was conducted in areas in front of the store. No evidence of a UST was detected by the survey. The fill port and vent pipe are suspected to be associated with a heating oil UST.

Two temporary wells (TW-1, TW-2) were advanced using direct-push sampling equipment at the edge of the proposed ROW. TW-1 was located closest to the fill port, and TW-2 was located downgradient from this area. Soil Samples were collected from each boring and analyzed for Organic Vapor Analysis (OVA) using a Foxboro Century 128 Flame Ionization Detector (FID). The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-1 was submitted for laboratory analysis for petroleum compounds per EPA Method 8260 and Polynuclear Aromatic Hydrocarbons (PAHs) per EPA Method 8270. Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260, and TW-1 was also sampled for PAHs per Method 8270. The analytical results are shown on Table 7, below. A site layout with temporary well locations is attached as Figure 7.

## 3.0 Results and Findings

An elevated OVA reading (1,232 ppm) was recorded in a ground water sample collected from TW-1. The depth to ground water was recorded at depths ranging from 2 - 3 feet, and is suspected to discharge to the adjacent storm drain.

Elevated petroleum compounds ( > 100,000 ppb) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

Low to moderate impact to ground water was detected above allowable levels at the edge of the right of way. Special handling and disposal of soils impacted by petroleum-contaminated ground water may be necessary.



## Site 7 Tract 353 Vacant Evergreen Store between 6309 & 6315 Pamplico Hwy

Table 7 - Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)		GROUND WATER (ug/l)			
Sample	SB-1		TW-1	TW-2		
(Sample Depth, ft.)	(0 - 2)	RBSL	(2 - 6)	(2 - 6)	RBSL / AL	
OVA (ppm)	> 10,000	ne	1,232	1,023	ne	
Benzene	< 146	7	12.9J	11.6	5	
Toluene	109,000	1,450	31.9	139	1,000	
Ethylbenzene	170,000	1,150	950	1,570	700	
Xylene	899,000	14,500	3,750	3,150	10,000	
Naphthalene	66,500	36	639	533	25	
MTBE	NA	ne	< 1.94	< 0.777	40	
1,2 DCA	NA	ne	< 2.9	< 1.16	5	
Acenaphthene	NA	ne	0.935J	NA	ne	
Fluorene	NA	ne	0.7J	NA	ne	
Naphthalene	NA	ne	596	NA	25	

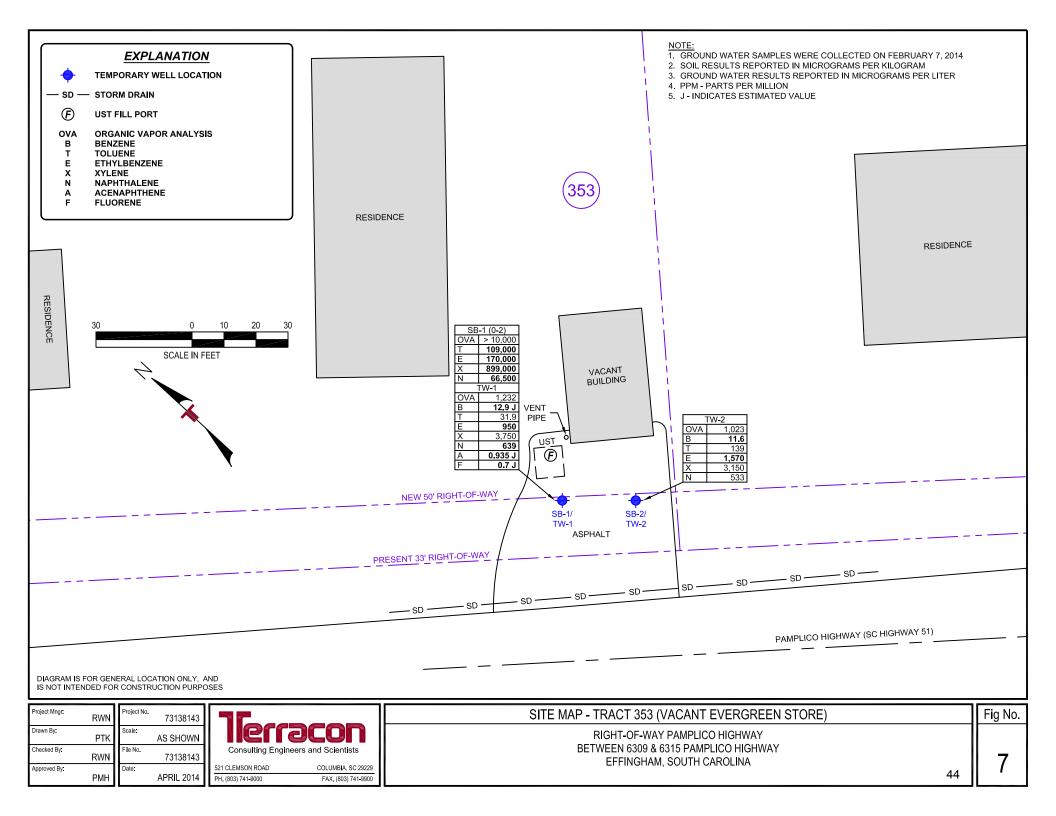
#### **NOTES:**

- 1) All samples collected on February 7,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

## **Attachments**

Figure 7 – Site Map Well Logs



PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT:	SCDOT			
	Way Expansion Hwy 51					
SIT	E: Site 7 - Tract 353 Effingham, South Carolina					
90	LOCATION See Figure 7		INSTALLATION DETAI		EL NS	PE
H H				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
GRAPHIC LOG			Well Completion:	DEP	/ATER	AMPL
0	DEPTH MATERIAL DESCR	RIPTION			> 8	S)
	0.5 ASPHALT  SAND (SP), medium grained, orange, high petroleum odd	or, dry, loose	Not Grouted to			
			Surface			
	2.5		1.5' to 2.5' - #2 Filter Sand	-		
	SAND (SP), medium grained, gray, very high petroleum o	dor, wet, medium dense				
	4.0					
	Soil Boring Terminated at 4 Feet		8.5' to 6' - 2" (0.010) Slotted PVC			
			(0.010) Slotted PVC	5 -		
	Temporary Well Terminated at 6 Feet					
	The stratification lines represent the approximate transition between o	liffering soil types and/or rock	Hammer Type: Direct Push			
	types; in-situ these transitions may be gradual or may occur at differe	nt depths than shown.	T.a.			
	cement Method: ct Push		Notes:			
	onment Method: ngs backfilled with cement-bentonite grout upon					
	pletion.					
Z	WATER LEVEL OBSERVATIONS 2.3' on 2/7/2014	<u>lerraco</u>	Well Started: 2/7/2014 We	II Complete	ed: 2/7/	2014
		521 Clemson Road	Drill Rig: Geoprobe Dril	ler: J. Chio	orazzi	
		Columbia, South Carolina	Project No.: 73138143 Exh	iibit: B-	-1 45	



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

TROSIOTE TROTECT TROSIER		
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#18478, MW-09485
Name: SCDOT		51tc 15#10 176, 1411 05 105
(last)	(first)	8. USE:
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: S(	Zip: 29202-00	On Irrigation
ony. Columbia otate. Sc	J 27202-00	☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
· · · · · · · · · · · · · · · · · · ·	OUNTY: Florence	
Name: Site 7 -Tract 353	1 toronco	10. CASING: Threaded Welded
	15 D!! - II	Diam.: 1.5" Height: Above Below
Street Address: Bwtn. 6309 &63	Zip:	Type:  PVC  Galvanized  Surface  ft.
City: Effingham	<b>Ζ</b> ι <b>ρ</b> .	☑ Steel ☐ Other Weight
Latituda	lo.	$0 \qquad \text{in. to } 2 \qquad \text{ft. depth} \qquad \text{Drive Shoe?} \qquad \square \text{ Yes} \qquad \square \text{ No}$
Latitude: Longitud	e:	in. toft. depth
a Bublic Overtil Male	UDI IO OVOTEN NUMBE	
3. PUBLIC SYSTEM NAME: P		Type: SS Diam.: 1"
18478 SB-	1/TW-1	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT:  Yes	] No	Set Between: 2 ft. and 6 ft. NOTE: MULTIPLE SCREENS
		ft. and ft. USE SECOND SHEET
Grouted Depth: from 6	ft. to <u>0</u>	ft. Sieve Analysis □ Yes (please enclose) ☑ No
	*Thickness Depth	
Formation Description	of Botton	ı of
	Stratum Stratu	
See Geologist's Log		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)
		Installed from ft. to ft.
		Effective size Uniformity Coefficient
		16. WELL GROUTED? ☐ Yes ☐ No
		□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
		Depth: From ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Type
		18. PUMP: Date installed: Not installed 🖸
		Mfr. Name: Model No.:
		H.P Volts Length of drop pipe ft. Capacity gpm
		TYPE: Submersible Jet (shallow) Turbine
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. No.: 1790
		Address: (Print)  Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
(Han a Ond about the said d)		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		Signed: Date: 3/2/14
		Signed: Date: Signed: Date: Da
e Type, Malo	П 5	
6. TYPE:  Mud Rotary  Jetted	-	If D Level Driller, provide supervising driller's name:
Dug Air Ro	•	
☐ Cable tool     ☑ Other		·

PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT:	SCDOT				
CIT	Way Expansion Hwy 51						
SIT	E: Site 7 - Tract 353 Effingham, South Carolina						
90	LOCATION See Figure 7	•	INSTALLATION DETAIL		NS E	PE	_
GRAPHIC LOG				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
RAPI			Well Completion:	DEP.	'ATER	MPL	
- 1	DEPTH MATERIAL D	ESCRIPTION			> 8	S	_
	0.5 ASPHALT  SAND (SP), medium grained, orange, high petroleum	odor, dry, loose	Not Grouted to			$  \setminus  $	
			Surface			$ \Lambda $	1
	2.5		1.5' to 2.5' - #2 Filter Sand	<u> </u>		H	_
	SAND (SP), medium grained, gray, very high petrolet	um odor, wet, medium dense		<u> </u>			1
	4.0						ı
	Soil Boring Terminated at 4 Feet		8.5' to 6' - 2" (0.010) Slotted PVC				ı
			(0.010) Slotted PVC	5 -			ı
				<u> </u>			_
	Temporary Well Terminated at 6 Feet						
							ĺ
	The stratification lines represent the approximate transition betw types; in-situ these transitions may be gradual or may occur at d	een differing soil types and/or rock fferent depths than shown.	Hammer Type: Direct Push				
	cement Method:		Notes:				
Dire	ct Push						
اممما	anneaut Mathadi						
Bori	onment Method: ngs backfilled with cement-bentonite grout upon						
com	WATER LEVEL OBSERVATIONS						
Z	2.3' on 2/7/2014	Nerraco	Well Started: 2/7/2014 Well	Complete		2014	_
		521 Clemson Road	Drill Rig: Geoprobe Drille	er: J. Chio	orazzi		_
		Columbia, South Carolina	Project No.: 73138143 Exhil	bit. B-	-2 <sub>4</sub> <del>7</del>		



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18478, MW-09485
Name: SCDOT	SIC 1D#10470, WW-07403
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
onst Columbia	2 lest vveil   Monitor vveil   Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	6 ft. Date Completed: 2/7/14
Name: Site 7 -Tract 353	10. CASING: Threaded  Welded
Street Address: Bwtn. 6309 &6315 Pamplico Hwy	Diam.: 1.5" Height: Above Below 7
City: Effingham Zip:	Type:  PVC  Galvanized  Surface ft.
2311116111111	Steel Other Weight — Ib./ft.
Latitude: Longitude:	0 in. to 2ft. depth Drive Shoe? □ Yes ☑ No
	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER	11. SCREEN:
18478 SB-2/TW-2	Type: <u>SS</u> Diam.: <u>1"</u> Slot/Gauge: <u>0.010</u> Length: <u>4'</u>
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: Length: Set Between: 2 ft. and 6 ft. NOTE: MULTIPLE SCREENS
	ft. andft. USE SECOND SHEET
Grouted Depth: from $6$ ft. to $0$ ft.	Sieve Analysis  Yes (please enclose)  No
*Thickness Depth to	12. STATIC WATER LEVEL 2 ft. below land surface after 24 hours
Formation Description of Bottom of	
Stratum Stratum	13. PUMPING LEVEL Below Land Surface ft. after hrs. Pumping G.P.M.
See Geologist's Log	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)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? ☐ Yes ☐ No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	- 18. PUMP: Date installed: Not installed ☑
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE:   Submersible   Jet (shallow)   Turbine
	Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Well Priller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	in D. Level Dillion, provide supervising arms a flattic.
☐ Cable tool ☑ Other	

#### **Limited Environmental Site Assessment**

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



## SITE 8 TRACT 356 EVERGREEN EXPRESS (UST # 03428) 6331 PAMPLICO HWY

## 1.0 Site Description

This site is an active gas station operating as the Evergreen express (UST Site 03428). The site maintains one gasoline and one diesel UST system. The site had a reported UST release in 1998. A Tier I Assessment was conducted in 2003 which indicated elevated levels of hydrocarbon compounds in ground water.

#### 2.0 Assessment Activities

Due to the proximity of the UST tank basins to the new proposed right of way, an EM survey was performed as depicted on Figure 2. The results of the EM survey indicated that the tank basins are not located within the new ROW boundary; however, the gasoline USTs and dispensers are within five feet of the proposed ROW.

Four soil borings were advanced in the vicinity of the USTs and dispenser islands. Temporary wells (TW-1 through TW-4) were advanced using direct-push sampling equipment at the edge of the proposed ROW. Soil Samples were collected from each boring and analyzed for Organic Vapor Analysis (OVA) using a Foxboro Century 128 Flame Ionization Detector (FID). The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-1 was submitted for laboratory analysis for petroleum compounds per EPA Method 8260 and Polynuclear Aromatic Hydrocarbons (PAHs) per EPA Method 8270. Ground water samples were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

The analytical results are shown on Table 8, below. A site layout with boring/temporary well locations is attached as Figure 8.

## 3.0 Results and Findings

An elevated OVA reading (> 10,000 ppm) was recorded in a soil sample collected from TW-1. The depth to ground water was recorded at depths ranging from 3 - 4 feet.

Elevated petroleum compounds (> 50,000 ppb) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

Based on the EM survey, the UST (if present) and dispenser system are likely located outside of new ROW; however may be affected by ROW activities. Low to moderate impact to ground water was detected above allowable levels at the edge of the right of way. Special handling and disposal of soils impacted by petroleum-contaminated ground water is may be necessary.



## Site 8 Tract 356 Evergreen Express (UST # 03428) 6331 Pamplico Hwy

Table 8 - Analytical Data Summary of Detected Compounds

	SO (ug/		GROUND WATER (ug/l)					
Sample	SB-1	DDO	TW-1	TW-2	TW-3	TW-4	DDOL /AL	
(Sample Depth, ft.)	(0 - 2)	RBSL	6.5-10	6.5-10	6.5-10	6.5-10	RBSL / AL	
OVA (ppm)	5,916	ne	234	349	118	2,090	ne	
Benzene	941J	7	41.7	43.5	26	49.4	5	
Toluene	<67.7	1,450	2.23	19.3	5.75	3.62J	1,000	
Ethylbenzene	40,400	1,150	13.4	71.9	81.1	18.7	700	
Xylene	58,300	14,500	17.8	87	88.9	19	10,000	
Naphthalene (8260)	17,600	36	5.1	44.8	25	18.7J	25	
MTBE	NA	ne	< 0.078	2.75	2.35	4.77	40	
tert-butyl formate (TBA)	NA	ne	< 0.29	198	< 0.29	38.2J	1,400	
tert-amyl alcohol (TAA)	NA	ne	81.8	521	46.8	68.1J	240	
Naphthalene (8270)	NA	ne	24.3	NA	NA	24.3	25	
Fluorene	NA	ne	1.3J	NA	NA	1.3J	ne	

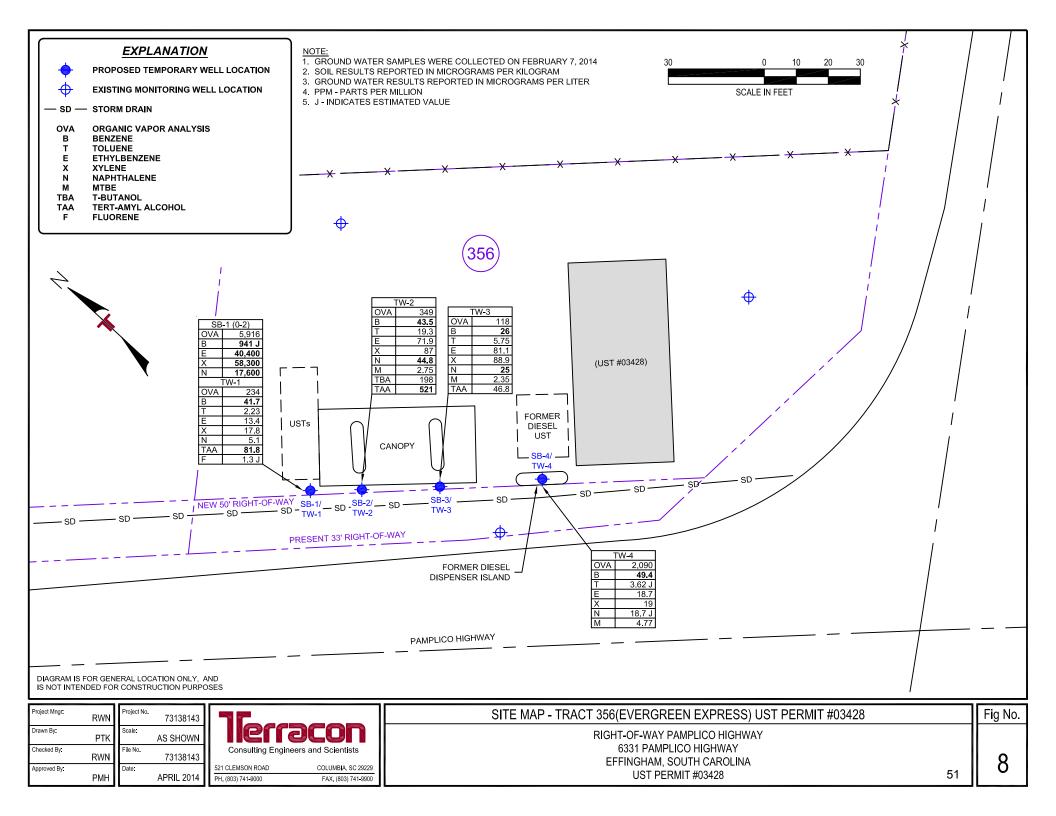
#### **NOTES:**

- 1) All samples collected on February 7,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

## **Attachments**

Figure 8- Site Map Well Logs



PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT: S	CDOT					
SIT	Way Expansion Hwy 51  TE: Site 8 - Tract 356							
	Effingham, South Carolina							_
90-	LOCATION See Exhbit A-2		INSTALLATION D	ETAILS	£	NS ONS	/PE	
GRAPHIC LOG					DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
3RAF			Well Completion:		ä	VATE 3SER	AMP	
		DESCRIPTION				> 0	Š	
	0.5 ASPHALT  SAND (SP), fine to medium grained, dark gray, mo	ist, medium dense					$\mathbb{N}$	
	1.5				_			ŀ
	SAND (SP), fine to medium grained, gray to tan, pe	etroleum odor, moist, medium dense			-	-	$\left\langle \cdot \right\rangle$	l
							V	
	3.5 4.0 SAND (SP), fine to medium grained, gray to tan, pe		Not Grouted to Surface			$\Box$		I
	Soil Boring Terminated at 4 feet	erroleum odor, wer, medium dense			-			
					5 –	_		
					J			
			1.5' to 2.5' - #2 Filter Sand		_			
					_			
			8.5' to 6' - 2"					
			(0.010) Slotted PVC		-			
					10-			
	Temporay Well Terminated at 10 Feet				10			
								ı
	The stratification lines represent the approximate transition be types; in-situ these transitions may be gradual or may occur at	tween differing soil types and/or rock	Hammer Type: Direct Push	ı		<u> </u>		
4		t different depths than shown.	T.v.					
	cement Method: ect Push		Notes:					
	lonment Method:							
	ings backfilled with cement-bentonite grout upon pletion.							
	WATER LEVEL OBSERVATIONS	75	Well Started: 2/7/2014	Well Co	omplete	d: 2/7/	2014	
<u> </u>	3.6' on 2/7/2014	Jerraco	Drill Rig: Geoprobe	1	J. Chior			
		521 Clemson Road						
		Columbia, South Carolina	Project No.: 73138143	Exhibit:	: B-′	1		



PROMOTE PROTECT PROSPER	7 DEDMITAUMDED.
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25375
Name: SCDOT	
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City. Columbia Glate. SC 219. 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	10 ft. Date Completed: 2/7/14
	10. CASING: ☑ Threaded ☑ Welded
Name: Site 8-Tract 356	Diam.: 1.5" Height: Above Below
Street Address: 6331 Pamplico Hwy	Type:  PVC  Galvanized  Surface ft.
City: Effingham Zip:	Steel
	0in. to 6ft. depth   Drive Shoe? □ Yes ☑ No
Latitude: Longitude:	in, toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:  Type: SS Diam.: 1"
SB-1/TW-1	Type: $0.010$ Diam.: $\frac{1}{4'}$
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'
A ADARDONINER E 100 E 100	Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from $\underline{10}$ ft. to $\underline{0}$ ft.	ft. andft. USE SECOND SHEET
	Sieve Analysis
*Thickness Depth to Formation Description of Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
Formation Description of Bottom of Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
	ft. after hrs. Pumping G.P.M.
See Geologist's Log	Pumping Test:  Yes (please enclose)
	Yield:
	14. WATER QUALITY
	14. WATER QUALITY  Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No
	Please enclose lab results.
	15. ARTIFICIAL FILTER (filter pack)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? ☐ Yes ☐ No
	☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
	Type
	Well Disinfected ☐ Yes ☐ No Type: Amount:
	18. PUMP: Date installed: Not installed
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Data 3/2/14
	Signed: Date: 572/14
_	Well Diller
6. TYPE: Mud Rotary Jetted Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool	
	CONTROL CONTRO

		VELL LOG	NO. SB-2/TW-2			Pa	ge 1	of 1	
PR SIT			CLIENT: SCDOT						
	Effingham, South Carolina  LOCATION See Exhbit A-2			INSTALLATION DE	ETAILS		<u>s</u>	ш	
GRAPHIC LOG				Well Completion:		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)
	0.5 ASPHALT	AL DESCRIPTION						/	
	SAND (SP), fine to medium grained, dark gray, m	oist, medium dense				-	-		73.0
	SAND (SP), fine to medium grained, light gray, pe			Not Grouted to Surface		-			242
	4.0 SAND (SP), fine to medium grained, light gray, per Soil Boring Terminated at 4 feet	etroleum odor, wet, m	eaium dense			5 <del>-</del>			
				1.5' to 2.5' - #2 Filter Sand		-			
				8.5' to 6' - 2" (0.010) Slotted PVC		-	-		
						10-			
	The stratification lines represent the approximate transition by	petygen differing soil typ	es and/or rock Hammer	Type: Direct Push					
	types; in-situ these transitions may be gradual or may occur	at different depths than s	es and/or rock Hammer shown.	Type: Direct Push					
Aband Bori	cement Method: ict Push ionment Method: ings backfilled with cement-bentonite grout upon ipletion.		Notes:						
con	WATER LEVEL OBSERVATIONS	75	Well Started	1· 2/7/2014	Well C	omplete	d· 2/7/	2014	
$\nabla$	3.6' on 2/7/2014	llerr	Well Started Drill Rig: Ge			J. Chior		_017	
		521 Clen	nson Road Outh Carolina Project No.:		Exhibit				



4 MELL OMNED INCORMATION.	7. PERMIT NUMBER: NIV. 05275
1. WELL OWNER INFORMATION:	7. PERIMIT NOMBER: MW-25375
Name: SCDOT (last) (first)	
, ,	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
ony. Columbia data. Sc 24. 2)202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	10 ft. Date Completed: 2/7/14
11010110	10. CASING:  Threaded  Welded
Name: Site 8-Tract 356	Diam.: 1.5" Height: Above Below
Street Address: 6331 Pamplico Hwy	Type: PVC Galvanized Surfaceft.
City: Effingham Zip:	Steel U Other Weight
	0 in. to 6 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:  Type: SS Diam.: 1"
SB-2/TW-2	Type: Diam.:
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'  Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
THE PROPERTY AND THE PROPERTY OF THE PROPERTY	
Grouted Depth: from 10 ft. to 0 ft.	ft, andft. USE SECOND SHEET
	Sieve Analysis
*Thickness Depth to Formation Description of Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
	ft. after hrs. PumpingG.P.M.
See Geologist's Log	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)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? Tyes No
	☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☐ No Type: Amount:
	18. PUMP: Date installed: Not installed ☑  Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm  TYPE:  Submersible  Jet (shallow)  Turbine
	TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Mater Decrine Zenes	Tabahara Na - X03-479-5001
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Use a 2nd sheet if needed)	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.
5. REMARKS:	$\cap$
	Signed: Date: 3/2/14
	Well Driller
C TYPE: Claude Date: District	
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool ☐ Other	

		OG NO. SB-3/TV	V-3	Pa	ge 1	of
	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT				
SIT	E: Site 8 - Tract 356 Effingham, South Carolina					
90.	LOCATION See Exhbit A-2	•	INSTALLATION DETAIL	- 1	/EL ONS	/PE
GRAPHIC LOG				DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
3RAF			Well Completion:	PEP	VATE 3SER	AMP
	DEPTH MATERIAL DESCRIPTION 0.5 ASPHALT	N		+-	>ō	S
	SAND (SP), fine to medium grained, dark gray, moist, medium	dense				$  \rangle $
						$  \wedge $
				-	-	$\vdash$
	3.0					V
	SAND (SP), fine to medium grained, light grayish tan, petroleur	n odor, moist, medium dense	Not Grouted to Surface		$\Box$	[/\
	4.5 Soil Boring Terminated at 4 feet			-	1	
	SAND (SP), fine to medium grained, light grayish tan, petroleur	n odor, wet, medium dense		5 –	-	
			4 514- 0 51 40			
			1.5' to 2.5' - #2 Filter Sand	]		
				-	+	
				<u> </u>		
			8.5' to 6' - 2" (0.010) Slotted			
			PVC	-		
	10.0			10-		
	Temporay Well Terminated at 10 Feet					
	The stratification lines represent the approximate transition between differing types; in-situ these transitions may be gradual or may occur at different depi	g soil types and/or rock H ths than shown.	ammer Type: Direct Push			
lvan	cement Method:		otes:			
	ct Push	, No.	oles.			
	onment Method: ngs backfilled with cement-bentonite grout upon					
	pletion.		<u>.</u>			
	WATER LEVEL OBSERVATIONS	We	Il Started: 2/7/2014 Wel	I Complete	d: 2/7/2	2014
<u> </u>	3.6' on 2/7/2014	SCON Drill	Rig: Geoprobe Drill	ler: J. Chior	razzi	
		521 Clemson Road				
	Col	umbia, South Carolina Pro	ject No.: 73138143 Exh	idit: B-(	3 EG	



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25375
Name: SCDOT	11111 20010
(last) (first)	8. USE:
Address: PO Box 191	Residential Public Supply Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	10 ft. Date Completed: 2/7/14
Name: Site 8-Tract 356	10. CASING: ☑ Threaded ☑ Welded
Street Address: 6331 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Effingham Zip:	Type:  PVC  Galvanized Surface ft.
Limgian	☑ Steel □ Other Weight — Ib./ft.
Latitude: Longitude:	0 in. to 6 ft. depth Drive Shoe? □ Yes □ No
	in. to ft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-3/TW-3	Type: <u>SS</u> Slot/Gauge: <u>0.010</u> Diam.: <u>1"</u> Length: <u>4'</u>
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 10 ft. to 0 ft.	Sieve Analysis
*Thickness Depth to of Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
Formation Description of Bottom of Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologistla Lea	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? Tyes No
	☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.: ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool	

PR	OJECT:	SC-51 PIN 38191 - Right of		CLIENT: SCDOT			Page 1		
		Way Expansion Hwy 51							
SIT	ΓE:	Site 8 - Tract 356 Effingham, South Carolina							
<u>9</u>	LOCATIO	N See Exhbit A-2			INSTALLATION DE		⊣ S	Щ	
GRAPHIC LOG						DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	0
RAPH					Well Completion:	DEPT	ATER SERV	MPLI	1
<u>o</u>	DEPTH		MATERIAL DESCRIF	TION			% 8 8	SA	
·	0.5 ASPI	<b>HALT</b> <b>D (SP)</b> , fine to medium grained, dark gray, m	noist modium dones					$\setminus$	
	<u>SAN</u>	<u>D (GF.),</u> fille to medium grained, dark gray, m	ioist, medium dense				-	IX	2
							_		L
	2.5 <b>SAN</b>	<b>D (SP)</b> , fine to medium grained, dark gray, pe	etroleum odor, moist,	medium dense					
									ľ
	4.5 Soil	Boring Terminated at 4 feet					-		H
		<b>D (SP)</b> , fine to medium grained, dark gray, pe	etroleum odor, wet, me	edium dense		5			
						3			
							-		
							-		
	100								
<u> </u>	10.0 <b>Tem</b>	poray Well Terminated at 10 Feet				10	)		r
	The stratif	fication lines represent the approximate transition be situ these transitions may be gradual or may occur	petween differing soil type at different depths than s	es and/or rock Hamm hown.	er Type: Direct Push				
dvan	cement Met	hod:		Notes:					_
	ect Push								
Bori		hod: ed with cement-bentonite grout upon							
com	npletion.	ED LEVEL ODGEDVATIONS							_
<del></del>	3.6' on 2	ER LEVEL OBSERVATIONS 0/7/2014	75-6	Well Sta	rted: 2/7/2014	Well Comple	eted: 2/7	/2014	
_	0.0 011 2	· · · <del>- ·</del> · ·		Drill Rig:	Geoprobe	Driller: J. Ch	iorazzi		
		· · · · · · · · · · · · · · · · · · ·		son Road					_



4 WELL OWNED DISCORDATION.	7. DEDINITANINGED
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25375
Name: SCDOT	
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
51137 Columbia 51416. SC 21p. 27202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	10 ft. Date Completed: 2/7/14
Name: Site 8-Tract 356	10. CASING: ☑ Threaded ☑ Welded
Street Address: 6331 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Effingham Zip:	Type:  PVC  Galvanized Surface ft.
- Pringnam	☑ Steel ☐ Other Weight
Latitude: Longitude:	0in. to 6ft. depth   Drive Shoe? □ Yes ☑ No
Longitudo.	in, toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-4/TW-4	Type: SS Diam.: 1"
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'
4. ADANDONIMENT: LI YES LI NO	Set Between: $\underline{6}$ ft. and $\underline{10}$ ft. NOTE: MULTIPLE SCREENS
Created Breath, from 10	ft. and ft. USE SECOND SHEET
Grouted Depth: from 10 ft. to 0 ft.	Sieve Analysis 🗖 Yes (please enclose) 🛮 No
*Thickness Depth to Formation Description of Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
maiodo rvator bouring zonos	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	,
	2/2/14
	Signed: Date: 3/2/14
	Well Dfiller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool	

# Limited Environmental Site Assessment SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143

Jerracon

SITE 9 TRACT 397 MIDWAY SUPPLY, UST NOS. 16808 & 03429) 6402 PAMPLICO HWY.

## 1.0 Site Description

This site is an active gas station convenience store operating as Midway Supply Convenience store under UST Permit # 03429. The site maintains a UST system consisting of four gasoline USTs, distribution lines, kerosene and diesel USTs, pump islands and canopy. The UST system and canopy is within the proposed ROW, and will require complete demolition and removal. The approximate UST and ROW locations are shown on Figure 9.

No release has been reported from this system.

#### 2.0 Assessment Activities

Two soil borings were advanced in the vicinity of the USTs and dispenser islands. Temporary wells (TW-1 and TW-2) were advanced using direct-push sampling equipment at the edge of the proposed ROW. Soil Samples were collected from each boring and analyzed for OVA using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-1 and ground water samples collected from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 9, below. A site layout with boring/temporary well locations is attached as Figure 9.

## 3.0 Results and Findings

The depth to ground water was recorded at depths ranging from 4 - 4.5 feet. Low petroleum compound concentrations (<500 ppb) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

The UST system is within the proposed ROW, and will require complete demolition and removal. Accordingly, the following activities should be conducted prior to site widening activities:

- Regulatory notice and assessment activities should be conducted in accordance with the SCDHEC UST Closure Assessment guidelines,
- Special handling and disposal of soils impacted by petroleum contaminated ground water may likely be necessary.



Site 9 Tract 397 Midway Supply, UST Nos. 16808 & 03429) 6402 Pamplico Hwy.

Table 9 - Analytical Data Summary of Detected Compounds

		OIL g/kg)	GROUND WATER (ug/l)				
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL		
(Sample Depth, ft.)	(0 - 2)	RBSL	6.5-10	6.5-10	RBSL/AL		
OVA (ppm)	1,687	ne	2,614	85.6	ne		
Benzene	11.5J	7	420	6.83	5		
Toluene	< 3.41	1,450	5.78	3.38	1,000		
Ethylbenzene	189	1,150	67.8	4.9	700		
Xylene	< 7.86	14,500	35.4	4.9J	10,000		
Naphthalene	464	36	299	73.5	25		
MTBE	NA	ne	257	385	40		
tert-butyl formate TBA	NA	ne	< 1.45	41.1	1,400		

## **NOTES:**

- 1) All samples collected on February 7,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

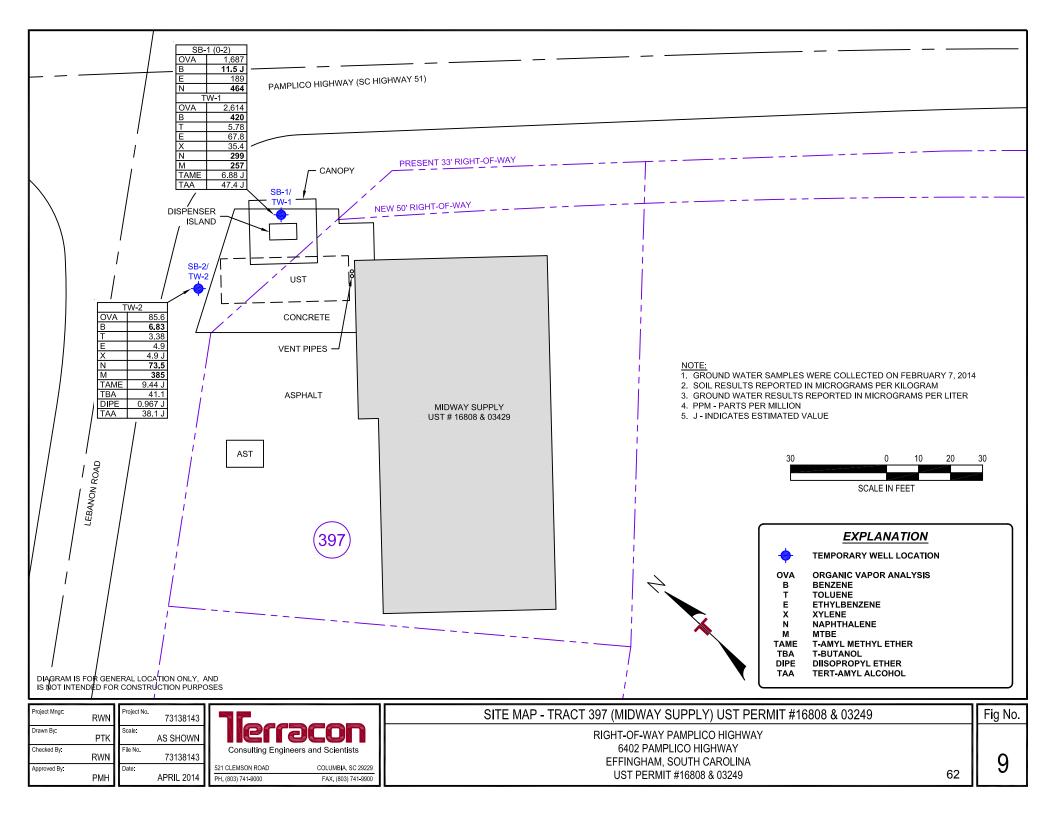
8) RBSL/AL - SCDHEC Risk Based Screening

Level or Action Level

- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 9 – Site Map Well Logs



	V	VELL LOG	NO. SB-1/TW-1			Pa	ge 1	of 1	1
PR			CLIENT: SCDOT						
<u></u>	Effingham, South Carolina  LOCATION See Exhbit A-2			INSTALLATION DE	TAILS		, σ		$\overline{}$
GRAPHIC LOG				Well Completion:		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID (ppm)
e a	0.5 CONCRETE	IAL DESCRIPTION						/	$\vdash$
	SAND (SP), fine grained, brown, slight petroleun	n odor, moist, dense				_		X	1,68
	3.8			Not Grouted to Surface		_	-		470
	4.0 SAND (SP), fine grained, brown, slight petroleun Soil Boring Terminated at 4 Feet	n odor, wet, dense				-	$\Box$	-	<del> </del>
	Son Boring Terminated at 4 Feet					5 –	-		
				1.5' to 2.5' - #2 Filter Sand		-	-		
				8.5' to 6' - 2" (0.010) Slotted PVC		-	_		
						10-			
	The stratification lines represent the approximate transition types; in-situ these transitions may be gradual or may occu	between differing soil typ r at different depths than	nes and/or rock Hammer shown.	Type: Direct Push					
	cement Method:	· ·	Notes:						
Aband Bor	lonment Method: ings backfilled with cement-bentonite grout upon	-							
con	WATER LEVEL OBSERVATIONS	<del>   </del>		4. 0/7/004 4	\A/-" C		4.0/2"	2044	
$\overline{\mathbf{x}}$	4.3' on 2/7/2014		Well Starte Drill Rig: Go			J. Chior		∠∪14	
		521 Clen	nson Road South Carolina Project No.		Exhibit				



4 MELL CHAIRD MECHATION			T DEDIGENUADED.
1. WELL OWNER INFORMATION:			7. PERMIT NUMBER:
Name: SCDOT	/first	,	
(last)	(first	,	8. USE:
Address: PO Box 191			☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC	Zip: 292	202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
ony. Columbia olate. SC	Zip. 292	202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:		9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: CO		100	10 ft. Date Completed: 2/7/14
	O Triorei	ice	10. CASING: Threaded Welded
Name: Site 9-Tract 397			Diam.: 1.5" Height: Above Below ✓
Street Address: 6402 Pamplico Hy			Type:  PVC  Salvanized  Surface  ft.
City: Effingham	∠ip:		lt.
			0in. to 6ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:			in. toft. depth
			·
3. PUBLIC SYSTEM NAME: PUB	BLIC SYSTEM	I NUMBER:	11. SCREEN:  Type: <u>SS</u> Diam.: 1"
SB-1/	TW-1		Type: 33 Diam.: 4 Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT:	No	***************************************	
	.,,		Set Between: 6 ft. and 10 ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from 10 ft.	. to <u>0</u>	#	ft. and ft. USE SECOND SHEET
Glouted Deptil. Iron 10 10 11			Sieve Analysis
Formation Description	*Thickness of	Depth to Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
Formation Description	Stratum	Stratum	13. PUMPING LEVEL Below Land Surface.
	Otratam	Circum	ft. after hrs. Pumping G.P.M.
See Geologist's Log			Pumping Test: ☐ Yes (please enclose) ☑ No
			Yield:
			14. WATER QUALITY
			Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No
			Please enclose lab results.
	1		15. ARTIFICIAL FILTER (filter pack)
			Installed from ft. to ft.
			Effective size Uniformity Coefficient
			16. WELL GROUTED?    Yes    No
			☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Type
			Well Disinfected ☐ Yes ☑ No Type: Amount:
			18. PUMP: Date installed: Not installed
			Mfr. Name: Model No.:
			H.P Volts Length of drop pipe ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
			19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
			Address: (Print)  Level: A B C D (circle one)
			2047 Industrial Blvd, Lexington, SC
			OIL THE SHAD
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:
(I lea a Ond -tt it ! !)		t	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
			Poto: 3/2/14
			Signed: Date: Date:
6. TYPE: Mud Rotary	<b>□</b> B	1	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rota	ry <b>LI</b> D	riven	
☐ Cable tool       ☐ Other			
			AND

₽₽	OJECT	SC-51 PIN 38191 - Right of		NO. SB-2/TW-2			ra	ge 1	OI 1	
	OJLU1.	Way Expansion Hwy 51		CLILIVI. SCDOI						
SIT	ΓE:	Site 9 - Tract 397 Effingham, South Carolina								
90	LOCATIO	N See Exhbit A-2			INSTALLATION D	ETAILS		EL	PE	Ī
<u>`</u>							DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
GRAPHIC LOG					Well Completion:		DEP.	ATEF SER\	MPL	
ڻ ص	DEPTH	MATERI	AL DESCRIPTION					8 ⊗	SA	
	0.5 ASPH	<u>HALT</u> <u>D (SP)</u> , fine grained, brown, slight petroleum	adan maiat danaa						$\mathbb{N}$	1
	SAINL	<u>7 (37)</u> , illie grained, brown, slight petroleum	odor, moist, dense				_		X	
							_		$\triangle$	١
									$\mathbb{N}/$	
	3.5				Not Grouted to		_	1	IX	
	4.0 <b>SANI</b>	O (SP), fine grained, brown, slight petroleum	odor, wet, dense		Surface		_		$\langle \ \ \rangle$	١
							5 –			
					1.5' to 2.5' - #2		_			
					Filter Sand					
							_	1		
					0.514-01-0"		_	-		
					8.5' to 6' - 2" (0.010) Slotted PVC	計				
					PVC		_			
	Tome	novey Mall Torminated at 40 East					10-	_		-
	rem	poray Well Terminated at 10 Feet								
	The stratif	ication lines represent the approximate transition litu these transitions may be gradual or may occur	between differing soil typ	es and/or rock Hamme	r Type: Direct Push			-		
			T							
	cement Meth ect Push	nod:		Notes:						
band	Ionment Meth	nod:								
	ings backfille npletion.	ed with cement-bentonite grout upon								
	WATE	ER LEVEL OBSERVATIONS	75	Well Start	ed: 2/7/2014	Well C	omplete	d: 2/7/:	2014	
Z	4.2' on 2	/7/2014	llerr	Well Start Drill Rig: 0			J. Chior			
			521 Clen	nson Road						-
			Columbia, S	outh Carolina Project No	o.: 73138143	Exhibit	: B-2	2		



PROMOTE PROTECT PROSPER		
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER:
Name: SCDOT		· ·
(last)	(first)	8. USE:
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process
City: C. 1. 1: State: SC	Zin: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC	Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
	OUNTY: Florence	10 ft. Date Completed: 2/7/14
Name: Site 9-Tract 397	own in torchec	10. CASING:  Threaded  Welded
Street Address: 6402 Pamplico H		Diam.: 1.5" Height: Above Below
	Zip:	Type:  PVC  Galvanized Surfaceft.
o.g. Ellingnam	p.	☑ Steel ☐ Other Weight — lb./ft.
Latitude: Longitude	9'	0 in. to 6 ft. depth
Latitado.	•	in. toft. depth
3. PUBLIC SYSTEM NAME: PU	IBLIC SYSTEM NUMBER:	11. SCREEN:
	/TW-2	Type: $\underline{SS}$ Diam.: $\underline{1''}$ Slot/Gauge: $\underline{0.010}$ Length: $\underline{4'}$
4. ABANDONMENT:   Yes		Slot/Gauge: 0.010 Length: 4'
4. ADANDONMENT. M Tes (	INO	Set Between: $\underline{6}$ ft. and $\underline{10}$ ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from 10	ft. to <u>0</u> ft.	ft. and ft. USE SECOND SHEET
Glodied Deptil. Holli 10	*Thickness Depth to	Sieve Analysis
Formation Description	of Bottom of	12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours
· ····································	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log		ft. after hrs. Pumping G.P.M.
See Geologist's Eog		Pumping Test: Tyes (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? Tyes No
		☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
		Depth: From ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Туре
		Well Disinfected ☐ Yes ☑ No Type: Amount:
		18. PUMP: Date installed: Not installed 🛮
		Mfr. Name: Model No.:
		H.P Volts Length of drop pipe ft. Capacity gpm
		TYPE: Submersible Jet (shallow) Turbine
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
		Address: (Print)  Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
(Use a 2nd sheet if needed)		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
5. REMARKS:		my direction and this report is true to the best of my knowledge and belief.
o. Remaino.		
		Signed: Date: 3/2/14
		Well Driller
6. TYPE:  Mud Rotary  Jetted	☐ Bored ary ☐ Driven	If D Level Driller, provide supervising driller's name:

# Limited Environmental Site Assessment SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



# SITE 10 TRACT 402 FORMER WEBB'S GROCERY (UST # 03563) 6412 PAMPLICO HWY;

## 1.0 Site Description

This site is an abandoned former gas station property, as evidenced by an existing former dispenser island. According to SCDHEC records. a release was reported in 1991. Two USTs were reportedly removed, and one UST was reported filled with sand. Three monitoring wells associated with the release are located within the proposed ROW. The closest receptor to the monitoring wells is an underground storm drain culvert is located approximately 5 feet from the front of the store.

#### 2.0 Assessment Activities

Due to the proximity of the UST tank basin to the new proposed right of way an EM survey was performed as depicted on Figure 10. The results of the EM survey indicated that one UST is located within the new proposed ROW. This presence of this tank location was confirmed with a hand auger prior to boring installation.

Temporary wells (TW-1, TW-2, and TW-3) were advanced using direct-push sampling equipment at the edge of the proposed ROW. Soil Samples were collected from each boring and analyzed for OVA using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached.

Soil sample SB-1 and ground water samples TW-1, TW-2, and TW-3 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 10, below. A site layout with boring/temporary well locations is attached as Figure 10.

## 3.0 Results and Findings

An elevated OVA reading (> 10,000 ppm) was recorded in a soil sample collected from TW-1. The depth to ground water was recorded at depths ranging from 3 - 4 feet.

Low to moderate petroleum compound concentrations (1,620 ppb, naphthalene) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

Based on the EM survey and subsequent confirmation, a filled in-place UST is located with the new ROW. Low to moderate impact to ground water was detected above allowable levels at the edge of the right of way. Special handling and disposal of soils impacted by petroleum-contaminated ground water is may be necessary.



Site 10 Tract 402 Former Webb's Grocery (UST # 03563) 6412 Pamplico Hwy;

Table 10 - Analytical Data Summary of Detected Compounds

		SOIL g/kg)	GROUND WATER (ug/l)				
Sample	SB-1	RBSL	TW-1	TW-2	TW-3	RBSL / AL	
(Sample Depth, ft.)	(0 - 2)	KBSL	4.5-8	4.5-8	4.5-8	RDSL / AL	
OVA (ppm)	1,412	ne	2,213	749	850	ne	
Benzene	38.0J	7	213	37.7	20	5	
Toluene	25.8J	1,450	44	20.8	3.17	1,000	
Ethylbenzene	981	1,150	659	1,140	234	700	
Xylene	414	14,500	777	1,880	26.4	10,000	
Naphthalene	1,620	36	109	560	136	25 40	
MTBE	NA	ne	118	< 0.777	10.1		

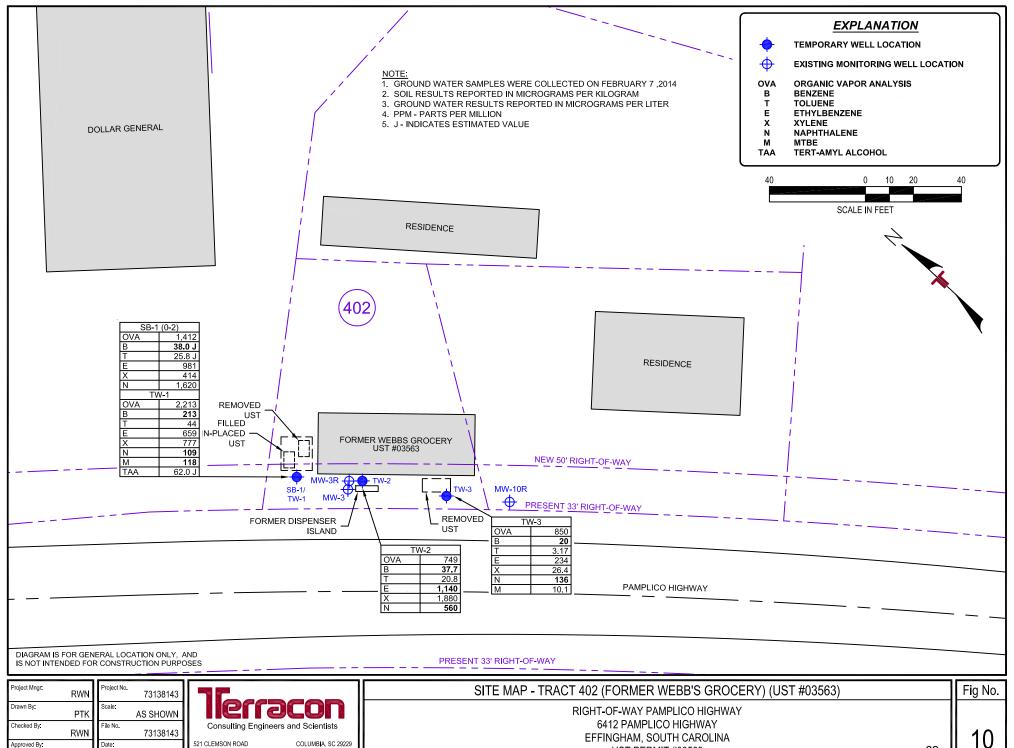
#### **NOTES:**

- 1) All samples collected on February 7,2014
- 2) μg/kg micrograms per kilogram
- 3) µg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

## **Attachments**

Figure 10 – Site Map Well Logs



PMH

APRIL 2014

PH. (803) 741-9000

FAX. (803) 741-9900

UST PERMIT #03563

69

	WELL LOC	G NO. SB-1/TW-1			Pa	ge 1	of ´	<u> </u>
PR SIT	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51 E: Site 10 - Tract 402	CLIENT: SCDOT						
	Effingham, South Carolina		INSTALLATION D	ΕΤΔΙΙ S		ω.		Г
GRAPHIC LOG	LOCATION See Figure 11  DEPTH MATERIAL DESCRIPTION		Well Completion:	-174120	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	0.00
	SAND (SP), with brick fragments, medium grained, tannish brown, h	igh petroleum odor, moist, loose	Not Grouted to		_	-		1
	3.5  SAND (SP), fine to medium grained, gray, high petroleum odor, wet	to saturated, medium dense	Surface		_		$\setminus$	8
	<u>ozato (oi 1</u> , ilile to inediani grained, gray, mgri perioleani odor, wet	to saturated, medium dense	3.5' to 8' - #2 Filter Sand		5 -		$\bigvee$	1,
	8.0		4.5' to 8' - 2" (0.010) Slotted PVC		_	-		3.
Advan	The stratification lines represent the approximate transition between differing soil types; in-situ these transitions may be gradual or may occur at different depths the temperature of the strategies of the str	an shown.	ype: Direct Push					_
Dire Aband Bor	chement Method:  conment Method:  ags backfilled with cement-bentonite grout upon pletion.	Notes:						
$\overline{}$	WATER LEVEL OBSERVATIONS 2.7' on 2/7/2014	Well Started Drill Rig: Ge	: 2/7/2014	Well Co	mplete	d: 2/7/2	2014	_
	521 C	lemson Road		Driller: J				_
	Columbia	, South Carolina Project No.:	13138143	Exhibit:	B-1	70		



4 MELL OWNER INFORMATION:	7. PERMIT NUMBER:
1. WELL OWNER INFORMATION:	/. PERIVIT NUMBER:
Name: SCDOT	
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
ons. Columbia	☑ Test Well
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	8 ft. Date Completed: 2/7/14
Name: Site 10-Tract 402	10. CASING: Threaded Welded
Street Address: 6412 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Effingham Zip:	Type: D PVC D Galvanized Surface ft.
Eliligham	☑ Steel □ Other Weight — lb./ft.
Latitude: Longitude:	0 in. to 4 ft. depth Drive Shoe? ☐ Yes ☑ No
•	in. to ft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-1/TW-1	Type: $\underline{SS}$ Diam.: $\underline{1''}$ Slot/Gauge: $\underline{0.010}$ Length: $\underline{4'}$
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: U.010 Length: The state of the s
<u> </u>	Set Between:ft. andft. USE SECOND SHEET
Grouted Depth: from $8$ ft. to $0$ ft.	Sieve Analysis  Yes (please enclose)  No
*Thickness Depth to	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
Formation Description of Bottom of	
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log	ft. afterhrs. PumpingG.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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☐ No Type: Amount:
	18. PUMP: Date installed: Not installed ☑
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
indicate train Dodning Dollars	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Signed: Date: Date: Well Driller
C TVDE, ELLIPSIA	
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven ☐ Cable tool ☑ Other	
LI CADIC TOOL LI CHIEF	

PR	OJECT:	SC-51 PIN 38191 - Right of		CLIENT: SCDOT					
SIT	ΓE:	Way Expansion Hwy 51 Site 10 - Tract 402 Effingham, South Carolina		_					
90	LOCATIO	N See Figure 11		1	INSTALLATION DE	TAILS		NS NS	ЪЕ
GRAPHIC LOG					Well Completion:		DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH TW-2	MATERIA 2 was pushed to 8 Feet	L DESCRIPTION			$\Box$		-0	0)
					Not Grouted to Surface		-		
					Surface		_	$oxed{\nabla}$	
					3.5' to 8' - #2 Filter Sand		5 –		
					4.5' to 8' - 2" (0.010) Slotted PVC		-	-	
Dire	types; in-s	nod:	etween differing soil ty at different depths than	pes and/or rock Hammer shown. Notes:	r Type: Direct Push				
Bor	ings backfille npletion.	d with cement-bentonite grout upon			1				
Z	2.7' on 2	ER LEVEL OBSERVATIONS /7/2014				Well Co	-		2014
			521 Clei	mson Road		Driller: C		azzi	



4 MELL CAMPEDING COMPACTION	7 DEDMITAUMED				
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER:				
Name: SCDOT (last) (first)					
	8. USE:				
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process				
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency				
ony. Columbia State. SC 219. 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement				
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14				
2. LOCATION OF WELL: COUNTY: Florence	8				
	8 Date Completed: 2/7/14				
Name: Site 10-Tract 402	10. CASING: ☑ Threaded ☐ Welded				
Street Address: 6412 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓				
City: Effingham Zip:	Type: PVC Galvanized Surfaceft.				
	Steel Other Weight lb./ft.				
Latitude: Longitude:	0 in. to 4 ft. depth Drive Shoe? ☐ Yes ☑ No				
	in. to ft. depth				
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:				
TW-2	Type: SS Diam.: 1"				
4 ADANDONMENT: III Vaa III Na	Slot/Gauge: 0.010 Length: 4'				
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS				
0	ft. and ft. USE SECOND SHEET				
Grouted Depth: from 8 ft. to 0 ft.	Sieve Analysis 🔲 Yes (please enclose) 🗹 No				
*Thickness Depth to	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours				
Formation Description of Bottom of	1 100 100 100 100 100 100 100 100 100 1				
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.				
See Geologist's Log	ft. after hrs. Pumping G.P.M.				
	Pumping Test: Yes (please enclose) INO				
	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 ft. to ft.				
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction				
	Туре				
	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				
	Address: (Print)  Level: A B C D (circle one)				
	2047 Industrial Blvd, Lexington, SC				
*Indicate Water Bearing Zones	The Lead No. XII3-479-5001				
mulcate water bearing 20168	Telephone No.: 803-429-5001 Fax No.:				
(Use a 2nd sheet if needed)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under				
5. REMARKS:	my direction and this report is true to the best of my knowledge and belief.				
5. REWARKS:					
	Signed: Date: 3/2/14				
	Signed: Date: 572114				
0. TVDE: 6	- vveil Driller				
6. TYPE: Mud Rotary Jetted Bored	If D Level Driller, provide supervising driller's name:				
□ Dug □ Air Rotary □ Driven					
☐ Cable tool          ☑ Other					

	WE	LL LOG NO. SB-2/T	W-3	Pa	ge 1	of ´
PR	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDO	Т			
SIT	E: Site 10 - Tract 402 Effingham, South Carolina					
L0G	LOCATION See Figure 11	•	INSTALLATION DETAILS		VEL	YPE
GRAPHIC LOG			Well Completion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH MATERIAL DE- FILL - SAND (SP), with rock, coarse grained, orange, '					\ /
			Not Grouted to	_		X
	3.0  FILL - SAND (SP), with rock, coarse grained, orange,	saturated, loose	Surface	_		V
	4.0		3.5' to 8' - #2	-		$\backslash \backslash$
	Soil Boring Terminated at 4 Feet		Filter Sand	5 -		
			4.5' to 8' - 2" (0.010) Slotted PVC	-	-	
	Temporay Well Terminated at 8 Feet			_		
	The stratification lines represent the approximate transition betwee types; in-situ these transitions may be gradual or may occur at diff	en differing soil types and/or rock erent depths than shown.	Hammer Type: Direct Push		1	
	cement Method: ct Push		Notes:			
Borir	onment Method: ngs backfilled with cement-bentonite grout upon pletion.					
7	WATER LEVEL OBSERVATIONS		Well Started: 2/7/2014 Well C	omplete	ed: 2/7/2	2014
<u> </u>	2.7' on 2/7/2014		Orill Rig: Geoprobe Driller:	J. Chior	razzi	
		521 Clemson Road Columbia, South Carolina	Project No.: 73138143 Exhibit	: B-:	3 74	



1. WELL OWNER INFORMATION:	7. PERMIT NUMBER:
Name: SCDOT	
(last) (first) Address: PO Box 191	8. USE:
7.66.666. PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
	9. WELL DEPTH (completed)  Date Started: 2/7/14
Telephone: Work: Home:  2. LOCATION OF WELL: COUNTY: Florence	· · · ·
Name: Site 10-Tract 402	8 ft. Date Completed: 2/7/14  10. CASING: ☑ Threaded ☑ Welded
Street Address: 6412 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Effingham Zip:	Type: D PVC D Galvanized Surfaceft.
- Erringham	☐ Steel ☐ Other Weight — Ib./ft.  ☐ in. to 4 — ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	
	in, toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:  Type: SS Diam.: 1"
SB-2/TW-3	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS
0 1 1 0 11 1 0 0 0 0 0	ft. and ft. USE SECOND SHEET
Grouted Depth: from 8   ft. to 0   ft.     *Thickness   Depth to	Sieve Analysis  Yes (please enclose)  No
Formation Description of Bottom of	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log	ft. afterhrs. PumpingG.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)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? Yes No
	□ Neat Cement         □ Bentonite         □ Bentonite/Cement         □ Other
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected 🛘 Yes 🗗 No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. No.: 1790
	Address: (Print)  2047 Industrial Blvd, Lexington, SC  Level: A B C D (circle one)
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Hear of Ord shoot if year to 1)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	2/2//
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: Mud Rotary Jetted Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven☐ Cable tool ☐ Other	
E Gasio Goi E Guidi	

## Limited Environmental Site Assessment SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4

April 28, 2014 

Terracon Project No. 73138143



### SITE 11 TRACT 411 VACANT CYPRESS CREEK STORE, 6806 PAMPLICO HWY

#### 1.0 Site Description

This site is an abandoned former gas station property with evidence of a former dispenser island within the new proposed ROW and UST vent pipes located at the building edge. The closest receptor to the dispenser island is a wetland that is located approximately 180 feet southwest from the dispenser islands.

#### 2.0 Assessment Activities

An EM survey of areas adjacent to the ROW was conducted, as depicted on Figure 2. Two USTs were indicated by the survey and are located approximately 20 feet outside of the proposed new ROW.

Due to the shallow depth to ground water (< 2 feet), no soil samples were submitted for analysis. Two temporary wells were advanced in the vicinity of the USTs (TW-1) and dispenser island (TW-2). A site layout with boring/temporary well locations is attached as Figure 11. Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 5, below.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil boring SB-1 and SB-2. The depth to ground water was recorded at depths ranging from 2-3 feet, and is suspected to discharge to the adjacent wetlands.

No petroleum compounds were detected in the soil or ground water above RBSLs or Als except for benzene (11 micrograms per liter) detected in a ground water sample collected from TW-1.

No USTs or environmental conditions are expected to impact the ROW widening at this site.



### Site 11 Tract 411 Vacant Cypress Creek Store, 6806 Pamplico Hwy

Table 11 - Analytical Data Summary of Detected Compounds

Sample	TW-1	TW-2	
(Sample Depth, ft.)	(4.5 - 8)	(4.5 - 8)	RBSL / AL
OVA (ppm)	6.8	3.6	ne
Benzene	11.3	3.6	5
Toluene	17.1	2.99	1,000
Ethylbenzene	5.28	< 0.109	700
Xylene	18.3	7.24	10,000
Naphthalene	4.71	< 0.176	25
MTBE	< 0.078	< 0.078	40
1,2 DCA	< 0.116	< 0.116	5

#### **NOTES:**

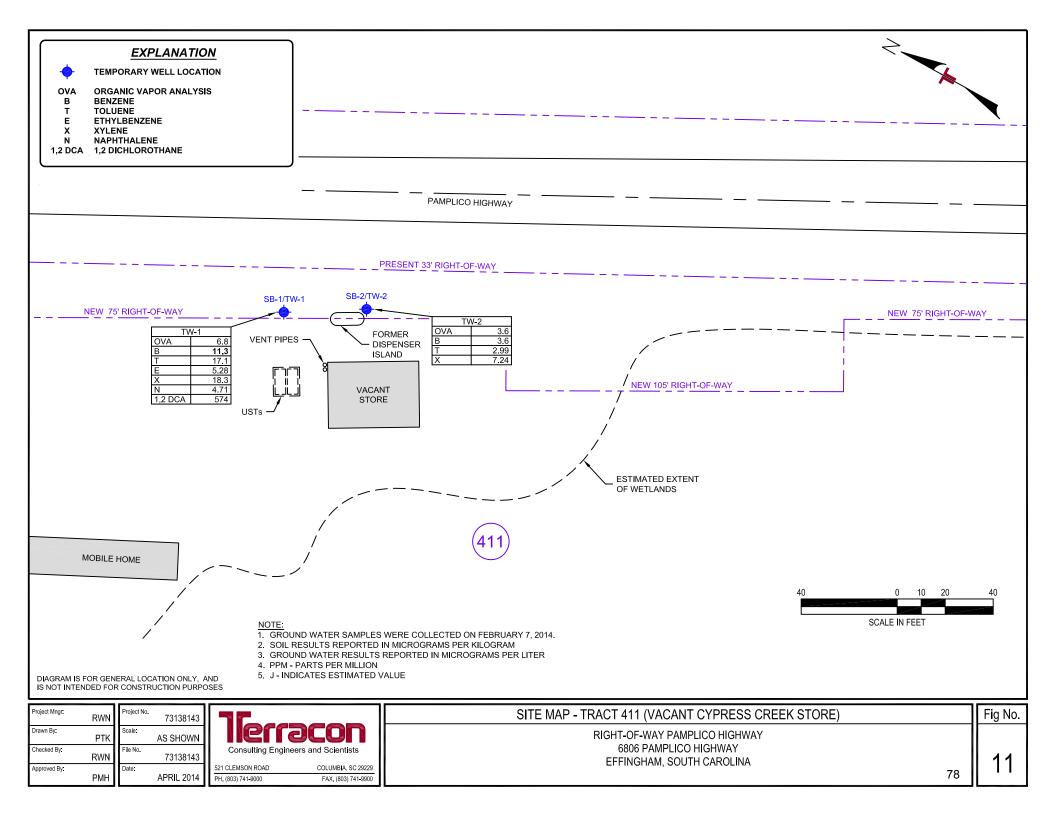
9) Concentrations in bold represent RBSL or

10) ne - no regulatory action level established

12) na - Not Analyzed

### **Attachments**

Figure 11 – Site Map Well Logs



		G NO. SB-1/TW-1			Pa	ge 1	of
PR SIT		CLIENT: SCDOT					
	Effingham, South Carolina		INICTALLATION	-TAIL O			
GRAPHIC LOG	LOCATION See Figure 11		Well Completion:	ETAILS	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH MATERIAL DESCRIPTION  SAND (SP), fine to medium grained, tan, moist, loose						\
			Not Grouted to Surface		-		X
	2.5  SAND (SP), fine to medium grained, tan, saturated, loose		Gunace			$\Box$	$\bigvee$
	3.5  SAND (SP), fine to medium grained, gray, saturated, medium dense	, hydric soils	3.5' to 8' - #2 Filter Sand		_		<u> </u>
	5.0				5 -	-	
			4.5' to 8' - 2" (0.010) Slotted PVC		_	-	
	Temporay Well Terminated at 8 Feet				-		
	The stratification lines represent the approximate transition between differing soil types; in-situ these transitions may be gradual or may occur at different depths the	types and/or rock Hammer	Type: Direct Push				
	icement Method:	Notes:					
band	Ionment Method:						
	ings backfilled with cement-bentonite grout upon apletion.						
$\overline{\nabla}$	WATER LEVEL OBSERVATIONS 2.6' on 2/7/2014	Well Started Drill Rig: Ge		Well Co	-		2014
	521 C	lemson Road	-	Driller: .			
		, South Carolina Project No.:	731381/3	Exhibit:	R_1	70	



1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Size ID#19470, MAY 00496				
Name: SCDOT	Site ID#18479, MW-09486				
(last) (first)	8. USE:				
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process				
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency				
City: Columbia State: SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement				
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14				
2. LOCATION OF WELL: COUNTY: Florence	8 ft. Date Completed: 2/7/14				
Name: Site 11-Tract 411	10. CASING: ☑ Threaded ☑ Welded				
Street Address: 6806 Pamplico Hwy	Diam.: 1.5" Height: Above_Below 🗸				
City: Effingham Zip:	Type: D PVC D Galvanized Surface ft.				
	☐ Steel ☐ Other Weight lb./ft.  O in. to 4 ft. depth Drive Shoe? ☐ Yes ☑ No				
Latitude: Longitude:	in. toft. depth   Drive Shoe?				
A RUDU IO OVOTEM NUMBER	11. SCREEN:				
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER: 18479 SB-1/TW-1	Type: <u>SS</u> Diam.: 1"				
	Slot/Gauge: 0.010 Length: 4'				
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS				
Grouted Depth: from 8 ft. to 0 ft.	ft. and ft. USE SECOND SHEET				
*Thickness Depth to	Sieve Analysis Yes (please enclose) 🖸 No				
Formation Description of Bottom of	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours				
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.				
See Geologist's Log	ft. after hrs. PumpingG.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 ft. to ft.				
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction				
	Type Well Disinfected ☐ Yes ☑ No Type: Amount:				
	18. PUMP: Date installed: Not installed ☑  Mfr. Name: Model No.:				
	H.P Volts Length of drop pipe ft. Capacity gpm				
	TYPE: Submersible Jet (shallow) Turbine				
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal				
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790				
	Address: (Print) Level: A B C D (circle one)				
	2047 Industrial Blvd, Lexington, SC				
*Ladicate Water Depring 7	Telephone No.: 803-429-5001 Fax No.:				
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under				
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.				
5. REMARKS:					
	Signed: Date: 3/2/14				
	Signed: Date: Date:				
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored					
Dug Air Rotary Driven	If D Level Driller, provide supervising driller's name:				
☐ Cable tool					

			P	age 1	WELL LOG NO. SB-2/TW-2 Page 1 of 1					
PROJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDO	Т								
SITE: Site 11 - Tract 411 Effingham, South Carolina										
		INSTALLATION DET		VEL	YPE					
OOO DE LOCATION See Figure 11		Well Completion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE					
	ESCRIPTION			>8	\/S					
<u></u>				+						
2.0  SAND (SP), fine to medium grained, tan, wet, loose		Not Grouted to Surface								
4.0		3.5' to 8' - #2			X					
SAND (SP), fine to medium grained, gray, saturated,	medium dense, hydric soil	Filter Sand	5							
6.0  SAND (SP), medium grained, light tan, saturated, me	edium dense	4.5' to 8' - 2"	5	+						
7.0  SAND (SP), medium to coarse grained, gray, saturat	ed medium dense hydric soil	(0.010) Slotted PVC		4						
8.0 Temporay Well Terminated at 8 Feet					╄					
The stratification lines represent the approximate transition between types; in-situ these transitions may be gradual or may occur at d		Hammer Type: Direct Push								
types; in-situ these transitions may be gradual or may occur at d		Hammer Type: Direct Push  Notes:								
types; in-situ these transitions may be gradual or may occur at d Advancement Method: Direct Push Abandonment Method:										
types; in-situ these transitions may be gradual or may occur at discovered the description of the descriptio	ifferent depths than shown.	Notes:								
types; in-situ these transitions may be gradual or may occur at dadvancement Method: Direct Push  Abandonment Method: Borings backfilled with cement-bentonite grout upon	ifferent depths than shown.	Notes:  Well Started: 2/7/2014	Vell Comple		2014					
types; in-situ these transitions may be gradual or may occur at dadvancement Method: Direct Push  Abandonment Method: Borings backfilled with cement-bentonite grout upon completion.  WATER LEVEL OBSERVATIONS	Terracon  521 Clemson Road	Notes:  Well Started: 2/7/2014  Will Rig: Geoprobe	Driller: J. Ch		2014					



PROMOTE PROTECT PROSPER	, , , , , , , , , , , , , , , , , , , ,					
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18479, MW-09486					
Name: SCDOT (last) (first)						
Address: PO Box 191	8. USE:  ☐ Residential ☐ Public Supply ☐ Process					
	☐ Residential       ☐ Public Supply       ☐ Process         ☐ Irrigation       ☐ Air Conditioning       ☐ Emergency					
City: Columbia State: SC Zip: 29202-0000	☐ Test Well ☐ Monitor Well ☐ Replacement					
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14					
2. LOCATION OF WELL: COUNTY: Florence	8 ft. Date Completed: 2/7/14					
Name: Site 11-Tract 411	10. CASING: ☑ Threaded ☑ Welded					
Street Address: 6806 Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓					
City: Effingham Zip:	Type:         □         PVC         □         Galvanized         Surface					
Latituda	0 in, to 4 ft, depth Drive Shoe? ☐ Yes ☑ No					
Latitude: Longitude:	in. toft. depth					
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:					
18479 SB-2/TW-2	Type: $\underline{SS}$ Diam.: $\underline{1''}$ Length: $\underline{4'}$					
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS					
0	ft. and ft. USE SECOND SHEET					
Grouted Depth: from 8 ft. to 0 ft.	Sieve Analysis ☐ Yes (please enclose) ☑ No					
*Thickness Depth to Formation Description of Bottom of	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours					
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.					
See Geologist's Log	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 ft. to ft.					
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction					
	Туре					
	Well Disinfected ☐ Yes ☑ No Type: Amount:					
	<b>18. PUMP:</b> Date installed: Not installed ☑					
	Mfr. Name: Model No.:					
	H.P Volts Length of drop pipe ft. Capacity gpm  TYPE:					
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal					
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790					
	Address: (Print)  Level: A B C D (circle one)					
	2047 Industrial Blvd, Lexington, SC					
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:					
(Use a 2nd sheet if needed)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under					
5. REMARKS:	my direction and this report is true to the best of my knowledge and belief.					
V. Tiemanno.						
	Stand 3/2/14					
	Signed: Date: 3/2/14					
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored						
Dug ☐ Air Rotary ☐ Driven	If D Level Driller, provide supervising driller's name:					
☐ Cable tool      ☑ Other						

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 12 TRACT 536 HYMAN OIL CAR WASH (UST # 03462), 963 N. PAMPLICO HWY

#### 1.0 Site Description

The site is an abandoned former gas station property, registered under UST Permit # 03462. The site is currently operating as a self-service car wash. Based on a FOI review, two USTs were removed from the ground in 1993 from an area located outside of the proposed ROW. A site layout with boring/temporary well locations is attached as Figure 12

The site is under active corrective action through the SCHEC UST Program via monitored natural attenuation (MNA). The site contains 15 monitoring or extraction wells surrounding the former dispenser island, located inside of the proposed R/W.

#### 2.0 Assessment Activities

Due to the location of the abandoned USTs outside of the proposed R/W, an EM survey was not conducted at this site.

Two temporary wells (TW-1, TW-2) were advanced using direct-push sampling equipment in the dispenser island area. Soil Samples were collected from each boring and analyzed for OVA using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached.

Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 12, below.

### 3.0 Results and Findings

Elevated OVA readings were recorded at soil boring SB-1 and SB-2. The depth to ground water was recorded at depths ranging from 5-6 feet.

Elevated petroleum compounds ( > 100,000 ppb) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

The UST dispenser system is within the proposed ROW, and will require complete demolition and removal. Accordingly, the following activities should be conducted prior to site widening activities:

- Monitoring wells affected by the widening should be abandoned in accordance with the SC Well Standards and Regulations,
- Based on the analytical results, special handling and disposal of soils impacted by petroleum contaminated ground water will be necessary.

### SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 12 Tract 536 Hyman Oil Car Wash (UST # 03462), 963 N. Pamplico Hwy

Table 12 - Analytical Data Summary of Detected Compounds

	SOII (ug/k		GROUND WATER (ug/l)				
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL		
(Sample Depth, ft.)	(2-4)	KBSL	8.5-12	8.5-12	RBSL/AL		
OVA (ppm)	+10,000	ne	+10,000	+10,000	ne		
Benzene	1,390	7	24,400	24,100	5		
Toluene	464	1,450	24,900	26,400	1,000		
Ethylbenzene	2,260	1,150	2,520	2,450	700		
Xylene	5,550	14,500	11,400	10,700	10,000		
Naphthalene	1,410	36	1,450	560	25		
MTBE	NA	ne	< 19.4	< 19.4	40		
1,2 DCA	NA	ne	574	< 1.16	5		
Di-isopropyl ether (DIPE)	NA	ne	1,110J	1,830	150		
Tert-amyl alcohol (TAA)	NA	ne	12,700	15,700	240		

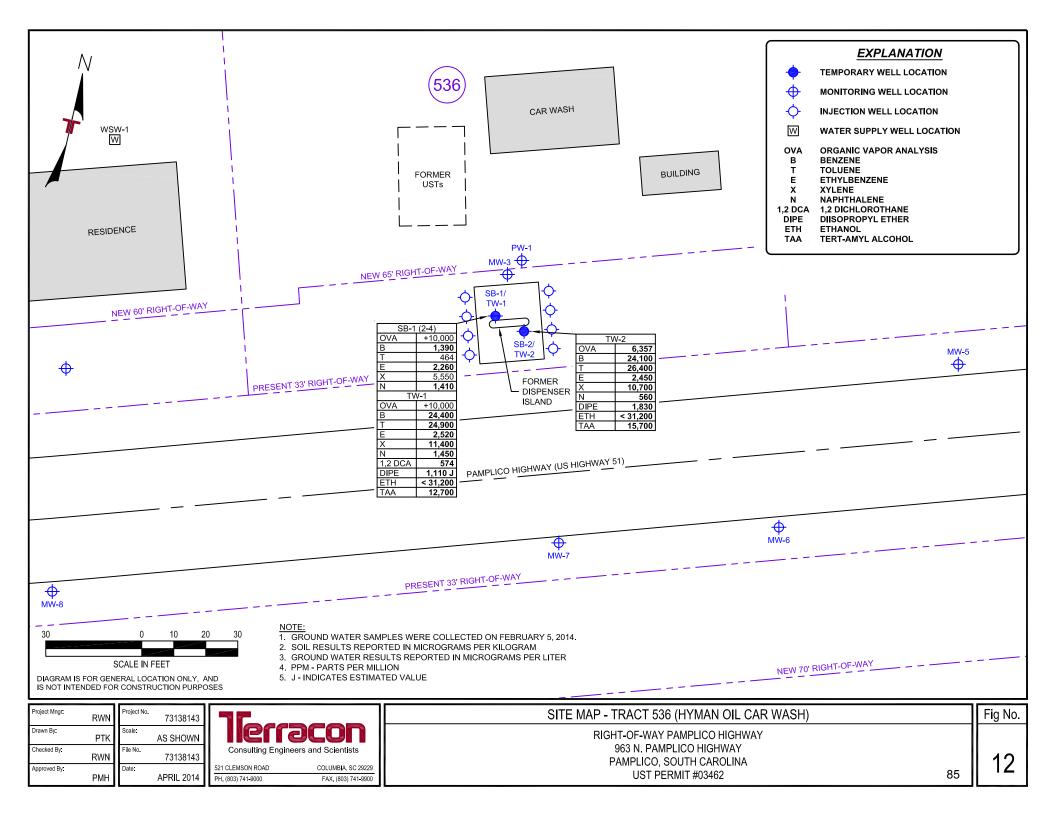
#### **NOTES:**

- 1) All samples collected on February 5,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

### **Attachments**

Figure 12 - Site Map Well Logs



		NO. SB-1/TW-1			Pa	ge 1	of	1
PK	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT						
SIT	E: Site 12 - Tract 536 Pamplico, South Carolina							
90:	LOCATION See Figure 12		INSTALLATION DE	TAILS		/EL	/PE	
GRAPHIC LOG					DEРТН (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	0,4,4
GRA			Well Completion:		DEF	WATE	SAMP	6
۵ ۵	DEPTH MATERIAL DESCRIPTION  0.5 CONCRETE						\ ,	+
	<u>SAND (SP)</u> , some organics, fine to medium grained, dark brown, hig dense	h petroleum odor, dry, medium			_		IX	2,
					_			$\downarrow$
	3.0						$\mathbb{N}$	1
	SAND (SP), fine to medium grained, brown, high petroleum odor, dry	, medium dense			_		$ \Lambda$	9.
	4.5		Not Grouted to Surface		-			+
	<u>CLAYEY SAND (SC)</u> , fine to medium grained, mottled (orange, red, dense	gray), high petroleum odor, wet,			5 –		$  \rangle$	3.
					_			
							$\mathbb{N}$	1
					_		X	1
	8.5		7.5' to 12' - #2 Filter Sand		-		$\vdash$	+
	CLAYEY SAND (SC), fine to medium grained, mottled (orange, red, saturated, dense	gray), high petroleum odor,	o. ca.i.a		_			
	Saturated, define				40			
			8.5' to 12' - 2" (0.010) Slotted		10-			
			(0.010) Slotted PVC		-			
	12.0 Temporay Well Terminated at 12 Feet				_			1
	Temporay Well Teminated at 12 Feet							
	The stratification lines represent the approximate transition between differing soil types; in-situ these transitions may be gradual or may occur at different depths that	ypes and/or rock Hammer in shown.	Type: Direct Push					
	cement Method: ct Push	Notes:						_
2110								
	onment Method:							
	ngs backfilled with cement-bentonite grout upon pletion.							
	WATER LEVEL OBSERVATIONS	Well Started Drill Rig: Ge	d: 2/7/2014	Well Co	omplete	d: 2/7/2	2014	+
		Drill Rig: Ge	oprobo	Driller:	I Chior			_
		emson Road	oprobe	D	J. CI 1101	azzı		



1. WELL OWNER INFORMATION:	7. PERMIT NUMBER:				
Name: SCDOT	MW-25380				
(last) (first)					
Address: PO Box 191	8. USE:				
PO Box 191	☐ Residential ☐ Public Supply ☐ Process				
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency				
Columbia	☑ Test Well ☐ Monitor Well ☐ Replacement				
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14				
2. LOCATION OF WELL: COUNTY: Florence	12 ft. Date Completed: 2/7/14				
Name: Site 12-Tract 536	10. CASING:  Threaded  Welded				
Street Address: 963 N Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓				
City: Pamplico Zip:	Type: 🗖 PVC 🗖 Galvanized Surface ft.				
- Tampheo	☑ Steel ☑ Other Weight — Ib./ft.				
Latitude: Longitude:	0 in. to 8 ft. depth Drive Shoe? ☐ Yes ☑ No				
g	in. to ft. depth				
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:				
SB-1/TW-1	Type: SS Diam.: 1"				
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'				
7. ADARDONINERT. E 163 E 100	Set Between: 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS				
Grouted Depth: from 12 ft. to 0 ft.	ft. andft. USE SECOND SHEET				
*Thickness Depth to	Sieve Analysis				
Formation Description of Bottom of	12. STATIC WATER LEVEL 8 ft. below land surface after 24 hours				
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.				
See Geologista Lea	ft. after hrs. Pumping G.P.M.				
See Geologist's Log	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 ft. to ft.				
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction				
	Type				
	Well Disinfected ☐ Yes ☐ No Type: Amount:				
	18. PUMP: Date installed: Not installed 🖸				
	Mfr. Name: Model No.:				
	H.P Volts Length of drop pipe ft. Capacity gpm				
	TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine				
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal				
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790				
	Address: (Print) Level: A B C D (circle one)				
	2047 Industrial Blvd, Lexington, SC				
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:				
(Use a 2nd sheet if needed)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under				
5. REMARKS:	my direction and this report is true to the best of my knowledge and belief.				
o. ILEMANIO.					
	Signed: Date: 3/2/14				
	Well Driller				
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:				
☐ Dug ☐ Air Rotary ☐ Driven	= Franks saparnang annar a namar				
☐ Cable tool					

	WELL LOG NO. SB-2/TW-2 Page 1 of 1								
	PR	PROJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51  CLIENT: SCDOT							
	SIT								
	90-	LOCATION See Figure 12		INSTALLATION DETAIL	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE		
	GRAPHICLOG	DEPTH MATERIAL DESCRIPTION	Well Completion:					OVA/PID (ppm)	
	& ∆D						/		
		SAND (3F), Medium gramed, brown, mgn petroleum odor, mois	st, loose		-		X	2,213	
					-				
				Not Grouted to	-		X	7,477	
+14	///	4.5  CLAYEY SAND (SC), fine to medium grained, mottled (orange,	tan, gray), high petroleum odor, moist,	Surface			$\mathbb{N}$		
JPJ 4/25		dense			5 -		$\bigwedge$	5,584	
-31-14.0							$\bigvee$	5.83%	
DAIES		8.0					$/\!\!/$	5.03%	
I E UP		CLAYEY SAND (SC), fine to medium grained, mottled (orange, tan, gray), high petroleum odor, saturated, dense  7.5' to 12' - #2 Filter Sand							
EMPLA					-				
25.			8.5' to 10' - 2"	10-					
5143-12				8.5' to 10' - 2" (0.010) Slotted PVC	-	_			
7.3138		12.0 Temporay Well Terminated at 12 Feet			_				
KI LO									
YL SIVIA									
ENVIRONMENTA									
NAIRON									
L									
REPO-									
GINAL									
NO INC									
בט דק									
FARA		The stratification lines represent the approximate transition between differing types; in-situ these transitions may be gradual or may occur at different dept	g soil types and/or rock Hammins than shown.	er Type: Direct Push					
U IT SE		cement Method: ct Push	Notes:						
I VALI	A1 .								
S IN C	Bori	onment Method: ngs backfilled with cement-bentonite grout upon pletion.							
NG LOC		WATER LEVEL OBSERVATIONS	Well Star	rted: 2/7/2014 Wel	l Complete	ed: 2/7/2	2014		
שלאם מלאם				Geoprobe Drill	er: J. Chio	razzi			
2			521 Clemson Road	lo : 73138143 Evh	ihit· R-	2			



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25380
Name: SCDOT	11111 23300
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/7/14
2. LOCATION OF WELL: COUNTY: Florence	12 ft. Date Completed: 2/7/14
Name: Site 12-Tract 536	10. CASING: ☑ Threaded ☑ Welded
Street Address: 963 N Pamplico Hwy	Diam.: 1.5" Height: Above Below
	Type:  PVC  Salvanized Surface ft.
City: Pamplico Zip:	☑ Steel □ Other Weightlb./ft.
Latitude: Longitude:	0 in. to 8 ft. depth   Drive Shoe? ☐ Yes ☑ No
Landude. Longitude.	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-2/TW-2	Type: SS Diam: 1"
	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 12 ft. to 0 ft.	Sieve Analysis
*Thickness Depth to	12. STATIC WATER LEVEL 8 ft. below land surface after 24 hours
Formation Description of Bottom of	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	13. POMPING LEVEL Below Land Surface.  ft. after hrs. Pumping G.P.M.
See Geologist's Log	Pumping Test: Yes (please enclose) I 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? Tyes No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected 🛘 Yes 🚨 No Type: Amount:
	18. PUMP: Date installed: Not installed 🛛
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE:   Submersible   Jet (shallow)   Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Head a Conditional of manufact)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	KD Lavel Diller and idea on a deign deille de serve
Dug Air Rotary Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool         ☐ Other	
- Cabio tool	

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 13 TRACTS 565 GIBB'S GROCERY (UST # 03463), 863 N. PAMPLICO HWY

#### 1.0 Site Description

The site is an abandoned former gas station property, registered under UST permit #03463. Based on a FOI data review, three USTs were removed from the ground in 1993, and one 2,000 gallon UST still remains at the site. A former dispenser island is constructed above the current UST. A site layout with site features is attached as Figure 13.

The closest receptor to the monitoring wells is an irrigation supply well (WSW-3) located approximately 80 feet from the former dispenser island. The site is under Active Corrective Action and is currently reported to be Monitored Natural Attenuation. Six monitoring wells are located inside of the proposed R/W.

#### 2.0 Assessment Activities

Due to the reported location of the USTs inside and outside of the proposed ROW, an EM survey was conducted at this site. The results of the survey indicate the current tank basin is located within 10 feet outside of the proposed R/W.

Two temporary wells (TW-1, TW-2) were advanced using direct-push sampling equipment in the dispenser island area. Soil Samples were collected from each boring and analyzed for Organic Vapor Analysis (OVA) using a Foxboro Century 128 Flame Ionization Detector (FID). The OVA results are included on the boring logs generated for each temporary well, attached.

Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. The analytical results are shown on Table 13, below.

#### 3.0 Results and Findings

Elevated OVA readings were recorded at soil borings SB-1 and SB-2. The depth to ground water was recorded at depths ranging from 5- 6 feet.

Elevated petroleum compounds ( > 100,000 ppb) were detected in the soil sample collected from SB-1, above RBLSs for soil. Ground water was impacted above RBSLs for ground water in both temporary wells TW-1 and TW-2.

The following activities should be conducted prior to site widening activities:

- Monitoring wells affected by the widening should be abandoned in accordance with the SC Well Standards and Regulations,
- Based on the analytical results, special handling and disposal of soils impacted by petroleum contaminated ground water will be necessary.

April 28, 2014 Terracon Project No. 73138143

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4



Site 13 Tract 565 Gibb's Grocery (UST # 03463), 863 N. Pamplico Hwy

Table 13 - Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)		GROUND WATER (ug/l)		
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL
(Sample Depth, ft.)	(0-2)	KBSL	3.5-7	4.5-8	RBSL / AL
OVA (ppm)	> 10,000	ne	6,357	> 10,000	ne
Benzene	25,400	7	1,870	2,050	5
Toluene	6950J	1,450	51.8	1,010	1,000
Ethylbenzene	199,000	1,150	661	3,340	700
Xylene	414,000	14,500	426	7,900	10,000
Naphthalene	95,700	36	651	847	25
MTBE	NA	ne	79.7	29.7J	40
1,2 DCA	NA	ne	< 2.9	< 5.81	5
Diisopropyl ether (DIPE)	NA	ne	85.5J	180J	150
Tert-Amyl Alcohol (TAA)	NA	ne	312J	919J	240

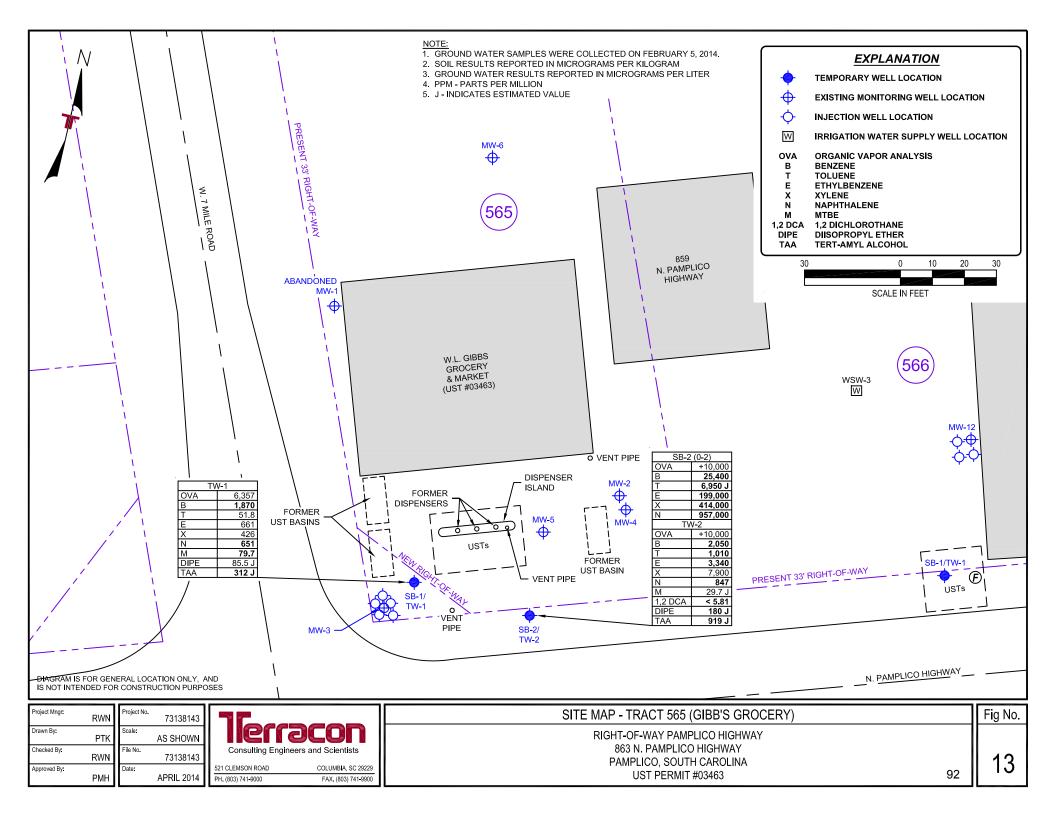
#### **NOTES:**

- 1) All samples collected on February 5,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

### **Attachments**

Figure 13 - Site Map Well Logs



	WELL LOG	NO. SB-1/TW-1		Pa	ige 1	of 1	
PR	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51  E: Site 13 - Tract 565	CLIENT: SCDOT					
	Pamplico, South Carolina						_
F06	LOCATION See Figure 13		INSTALLATION DETAI		VEL	YPE	
GRAPHIC LOG			Well Completion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	מַנַיּלְאָל
, & DP	DEPTH MATERIAL DESCRIPTION  0.5 CONCRETE				-0	\	
2	SAND (SP), medium grained, gray, high petroleum odor, moist, loose	e, poorly sorted	Not Grouted to Surface	-		X	ξ
	3.0  SAND (SP), medium grained, gray, high petroleum odor, saturated, lo	pose, poorly sorted	2.5' to 3.5' - #2 Filter Sand	-			
	grave (gr.), mediam granica, gray, mgn periocam odor, sataraca, k	oose, poorly sorted	Filler Sand	-			
			3.5' to 7' - 2" (0.010) Slotted PVC	5 -	_		
	7.0			-			
	Refusal on Concrete of Old Tank Basin at 7 Feet						
	The stratification lines represent the approximate transition between differing soil ty	ypes and/or rock Hammer T	ype: Direct Push				
Advan	types; in-situ these transitions may be gradual or may occur at different depths that cement Method:	n shown.  Notes:					_
Dire	ct Push	Notes.					
Bori	onment Method: ngs backfilled with cement-bentonite grout upon pletion.						
$\overline{}$	WATER LEVEL OBSERVATIONS	Well Started:	2/6/2014 We	Il Complete	ed: 2/6/2	2014	
<u> </u>	2.5' on 2/6/2014	Well Started: Drill Rig: Geo	oprobe Dri	ller: J. Chio	razzi		
-		emson Road South Carolina Project No.: 7	73138143 Ext	nibit: B-	1 02		



Name: SCDOT (last) (first) Address: PO Box 191	8. USE:
· ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	8. USE:
I Address: PO Box 191	
	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
Columbia	☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/6/14
2. LOCATION OF WELL: COUNTY: Florence	7 ft. Date Completed: 2/6/14
Name: Site 13-Tract 565	10. CASING:  Threaded  Welded
Street Address: 863 N Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico Zip:	Type:  PVC Galvanized Surface ft.
•	Steel Other Weight lb./ft.
Latitude: Longitude:	0 in. to 3 ft. depth Drive Shoe? ☐ Yes ☑ No
_	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
SB-1/TW-1	Type: SS Diam.: 1" Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 3 ft. and 7 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from $7$ ft. to $0$ ft.	Sieve Analysis ☐ Yes (please enclose) ☑ No
*Thickness Depth to	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
Formation Description of Bottom of	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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. WELL GROUTED? Yes No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indiante Water Descine 7	
*Indicate Water Bearing Zones	Telephone No.: 803-429-3001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	y odion and this report to the book of my thierhouge and bollon
	2/2/14
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: Mud Rotary	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool         Other	

PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT: SCDOT					
QI7	Way Expansion Hwy 51  TE: Site 13 - Tract 565	_					
JI 1	Pamplico, South Carolina						
90.	LOCATION See Figure 13	•	INSTALLATION DETAILS		ÆL SNS	'PE	
GRAPHIC LOG				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
GRAF			Well Completion:		VATE BSER	AMP	
	DEPTH MATERIAL DESCRIPTION 0.5 ASPHALT				-0	S	
	SAND (SP), medium grained, tan to brown, high petroleum odor, mois	t, loose		_		V	
	2.0		Not Grouted to			$ / \rangle$	١
	SAND (SP), medium grained, gray, high petroleum odor, moist to wet,	loose	Surface	-			
				-		IX	
			3.5' to 4.5' - #2			$\mathbb{Z}^{\setminus}$	,
			Filter Sand				
			4.5' to 8' - 2" (0.010) Slotted PVC	5 -	1		
			4.5' to 8' - 2" (0.010) Slotted PVC	-			
			PVC	-			
	8.0						
	The stratification lines represent the approximate transition between differing soil types; in-situ these transitions may be gradual or may occur at different depths than	pes and/or rock Hammer shown.	r Type: Direct Push				•
	ncement Method:	Notes:					
אווכ	Ionment Method:						
Bor	ings backfilled with cement-bentonite grout upon pletion.						
Bor	npletion.	Well Starte	ed: 2/6/2014 Well (	Complete	ed: 2/6/2	2014	
Bor	npletion.	Well Starte  Drill Rig: C		Completer: J. Chio		2014	



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: MW-25381
Name: SCDOT	
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/6/14
2. LOCATION OF WELL: COUNTY: Florence	8 ft. Date Completed: 2/6/14
	8 ft. Date Completed: 2/6/14  10. CASING: ☑ Threaded ☑ Welded
Name: Site 13-Tract 565	Diam.: 1.5" Height: Above Below 🗸
Street Address: 863 N Pamplico Hwy	Type:  PVC  Galvanized  Surface  ft.
City: Pamplico Zip:	Type: ☐ PVC ☐ Galvanized Surface it.  ☐ Steel ☐ Other Weight ib./ft.
	0 in. to 4 ft. depth Drive Shoe? ☐ Yes ☐ No
Latitude: Longitude:	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:  Type: SS Diam.: 1"
SB-2/TW-2	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between; 4 ft. and 8 ft. NOTE: MULTIPLE SCREENS
	ft. andft. USE SECOND SHEET
Grouted Depth: from 8 ft. to 0 ft.	Sieve Analysis  Yes (please enclose)  No
*Thickness Depth to	12. STATIC WATER LEVEL 3 ft. below land surface after 24 hours
Formation Description of Bottom of	
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log	ft. after hrs. Pumping G.P.M.
See Geologist Dog	Pumping Test: Tyes (please enclose)  No
	Yield:
	14. WATER QUALITY
	Chemical Analysis □ Yes ☑No Bacterial Analysis □ Yes ☑ No
	Please enclose lab results.
	15. ARTIFICIAL FILTER (filter pack)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? Yes No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type Well Disinfected □ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🗹
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Use a 2nd sheet if needed)	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.
5. REMARKS:	
	\\( \( \)
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D. Lavel Dallan mandals arranging deliled a serve
□ Dug □ Air Rotary □ Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool ☐ Other	
Li Cable tool Li Culei	

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 14 TRACT 584 RAIDER STATION (UST # 19301), 848 N. PAMPLICO HWY

#### 1.0 Site Description

This site is an operating as the Raider Station convenience store (UST # 19301). A UST system is operated at the site, all outside of the proposed ROW. There have been no reported releases from this system.

#### 2.0 Assessment Activities

Since the location of the existing USTs are known, an EM survey was not conducted at this site. No USTs are suspected to be within the proposed ROW area.

Three temporary wells were advanced using direct-push sampling equipment within the ROW in front the dispenser islands. Soil Samples were collected from each boring and analyzed for OVA using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached.

Soil Sample SB-2 was submitted for laboratory analysis for petroleum compounds per EPA Method 8260. Ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260. A site layout with boring/temporary well locations is attached as Figure 1.

#### 3.0 Results and Findings

The depth to ground water was recorded between 2 to 3.2 feet. No petroleum compounds were detected in the soil or ground water samples collected.

No USTs, piping, or environmental conditions are expected to impact the construction activities for the ROW widening at this site.

(No compounds were detected; therefore, no analytical data summary table was generated for this site.)

#### **Atttachments**

Figure 14 – Site Map Well Logs

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 15 TRACT 566 OLD JUNQUE SHOP, 853 N. PAMPLICO HWY

#### 1.0 Site Description

The site is former tractor sales and repair facility, currently operated as a Thrift Store. A former dispenser island was suspected to be located near the west side of the Thrift Store building in the proposed ROW. No records of a UST system were available from the SCDHEC UST registry.

The site is located one parcel over from The Former Gibbs Grocery (UST#03463). Monitoring wells and remediation injection wells are located on this property associated with the UST #03463 release. A site layout with boring/temporary well locations is attached as Figure 2.

#### 2.0 Assessment Activities

An EM survey was conducted at this site to locate the position of the UST with respect to the a fill port located within the existing ROW. The survey indicated USTs are present within the present ROW. The approximate UST and ROW locations are shown on Figure 15.

A temporary well was advanced using direct-push sampling equipment in the vicinity of the suspected UST area. Soil Samples were collected and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil and ground water samples from TW-1 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil boring SB-1. The depth to ground water was recorded at a depth of 3.5 feet. Petroleum compounds were detected above RBSLs for benzene in a ground water sample. The analytical results are shown on Table 15.

A non-regulated UST identified to be within the proposed ROW should be removed prior to or as a part of the ROW expansion. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

## SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4

April 28, 2014 Terracon Project No. 73138143



#### Site 15 Tract 566 Old Junque Shop, 853 N. Pamplico Hwy

Table 15 - Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)	GROUND WA	ATER
Sample	SB-1	TW-1	DD01 / 44
(Sample Depth, ft.)	(6 - 8)	8.5-12	RBSL / AL
OVA (ppm)	9.83	6,357	ne
Benzene		39	
Toluene		17.9	1,000
Ethylbenzene	NO COMPOUNDS	35.8	700
Xylene	DETECTED	43.4	10,000
Naphthalene		21.4	25
MTBE		0.845J	40
TAA		42.7	240

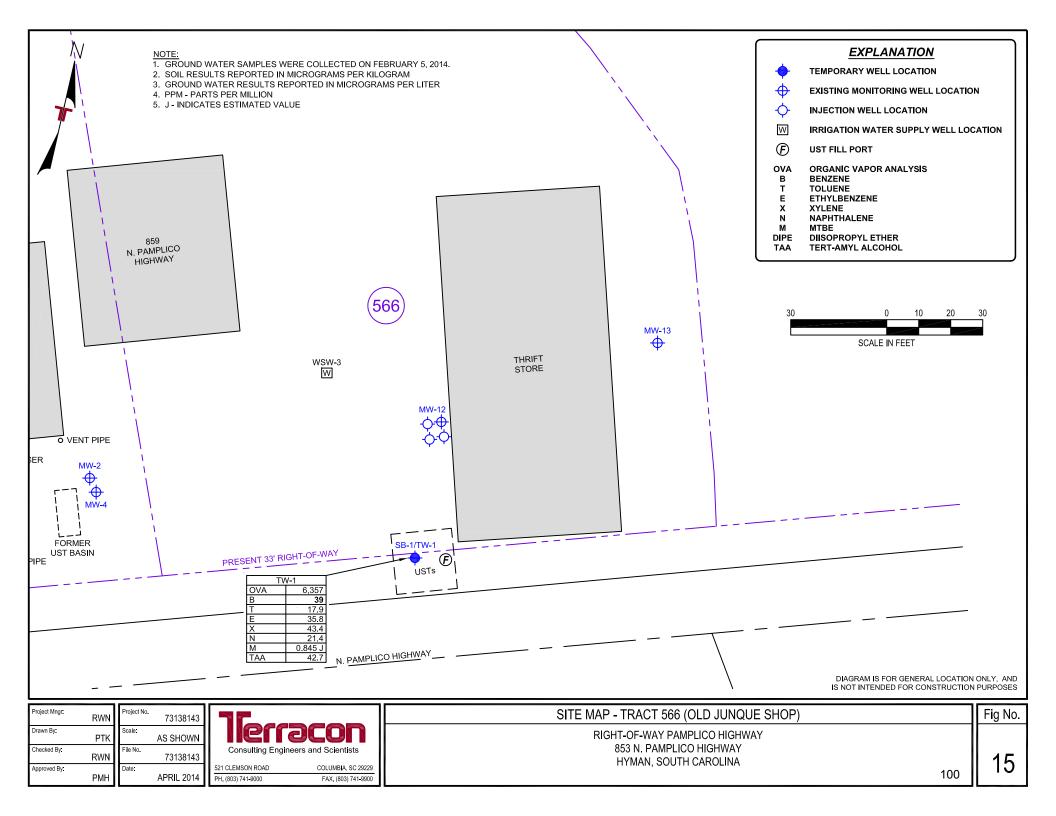
#### **NOTES:**

- 1) All samples collected on February 5,2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 15 - Site Map Well Log



PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT: SCDOT			<u>J -                                   </u>	of 1	_
	Way Expansion Hwy 51						
SIT	ΓΕ: Site 15 - Tract 566 Hyman, South Carolina						
<u>ე</u>	LOCATION See Figure 15		INSTALLATION DETAIL	.s	ZS ZS	й	Γ
GRAPHIC LOG				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
₹APH			Well Completion:	EPT	TER	MPLE	
9	DEPTH MATERIA	AL DESCRIPTION			WA	SAI	
	SAND (SP), medium grained, tan, moist, loose	NE BESSYIF HOW				\ /	T
				-		X	į
						$/ \setminus$	
						$\setminus$	ſ
//	3.0  CLAYEY SAND (SC), medium grained, tan, moist, medium de	ense		-		X	;
						$\backslash \backslash$	$\downarrow$
<del>//</del>	4.5  CLAYEY SAND (SC), fine to medium grained, mottled (orang	ue red grav) moist very dense		_		$\mathbb{N}$	1
	<u></u>	o, roa, gray), moiot, vory donoc		5 -		X	4
				.			$\downarrow$
						$  \setminus  $	
				-			!
	0.5			-		-	ł
	8.5  SAND (SP), medium grained, orange, saturated, loose			┪.			
	10.5			10-			
	SAND (SP), medium grained, gray, moist, medium dense			٦.			
	11.5 12.0 SAND (SP), medium grained, tan, saturated, loose			_			
	Temporay Well Terminated at 12 Feet			-			t
	The stratification lines represent the approximate transition between differ types; in-situ these transitions may be gradual or may occur at different de	ring soil types and/or rock Ha	ammer Type: Direct Push				_
dvan	incernent Method:		too:				_
	ect Push	NO	tes:				
	donment Method: ings backfilled with cement-bentonite grout upon						
	npletion.		1				_
	WATER LEVEL OBSERVATIONS	Well	Started: 2/6/2014 Well	Complete	ed: 2/6/2	2014	
$\overline{\nearrow}$	3 4' on 2/6/2014	~~~~~~					
Z	3.4' on 2/6/2014	Prill Drill 521 Clemson Road	Rig: Geoprobe Drille	er: J. Chio	razzi		_



## Water Well Record

PROMOTE PROTECT PROSPER	2600 Bı	<b>Bureau of Water</b> ull Street, Columbia, SC 29201-1708; (803) 898-4300					
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#18480, MW-09487					
Name: SCDOT	(first)	Site 1D#10400, 191 W -07401					
(last) Address: PO Box 191		8. USE:  Residential Public Supply Process Irrigation Air Conditioning Emergency					
Columbia	C Zip: 29202-0000	☐ Test Well ☐ Monitor Well ☐ Replacement  9. WELL DEPTH (completed) Date Started: 2/6/14					
Telephone: Work:	Home:						
2. LOCATION OF WELL: On Name: Site 15-Tract 566	COUNTY: Florence	12 ft. Date Completed: 2/6/14  10. CASING: ☑ Threaded ☑ Welded					
Street Address: 853 N. Pamplico	о Цили	Diam.: 1.5" Height: Above Below					
City: Hyman	Zip:	Type: D PVC D Galvanized Surfaceft.					
11)111411		Steel Other Weight lb./ft.					
Latitude: Longitud	le:	<u>0</u> in. to <u>8</u> ft. depth Drive Shoe? ☐ Yes ☑ Noin. toft. depth					
3. PUBLIC SYSTEM NAME: P	UBLIC SYSTEM NUMBER:	11. SCREEN: Type: SS Diam.: 1"					
18480 SB-	-1/TW-1	Type: 33 Diam.: 1 Slot/Gauge: 0.010 Length: 4'					
4. ABANDONMENT:	] No	Set Between: 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS					
		ft. and ft. USE SECOND SHEET					
Grouted Depth: from 12	·····	Sieve Analysis 🔲 Yes (please enclose) 🛮 No					
Formation Description	*Thickness Depth to of Bottom of	12. STATIC WATER LEVEL 4 ft. below land surface after 24 hours					
1 officiation Description	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.					
See Geologist's Log		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 ft.  Depth: From ft.					
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction					
		Type					
		Well Disinfected ☐ Yes ☐ No Type: Amount:					
		18. PUMP: Date installed: Not installed 🖸					
		Mfr. Name: Model No.: ft. Capacity gpm					
		TYPE: Submersible Jet (shallow) Turbine					
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal					
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790					
		Address: (Print)  Level: A B C D (circle one)					
		2047 Industrial Blvd, Lexington, SC					
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:					
(loo o 2nd obo-t if		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under					
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.					
5. REMARKS:							
		Signed: Date: 3/2/14					
		Signed: Date: 572/14					
6. TYPE: ☐ Mud Rotary ☐ Jetter	d ☐ Bored						
Dug Air R	_	If D Level Driller, provide supervising driller's name:					
☐ Cable tool         ☑ Other	•						

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 16 TRACT 673 - PANTRY 3326 (UST # 03556), 103 N. PAMPLICO HWY.

This site is an active gas station convenience store operating as Pantry 3326 convenience store under UST Permit # 13244. The site maintains a UST system consisting of four gasoline USTs, distribution lines, pump islands and canopy. The UST system is located adjacent to the current ROW. According to the SCDOT, there are currently no plans for ROW expansion at this parcel. The approximate UST and ROW locations are shown on Figure 16.

In 1989, a release was reported from this system from UST # 03556 (Formerly SC-654). Assessment has been conducted since 1992 that has defined the extent of the hydrocarbon plume. Six monitoring wells are located adjacent to the current ROW. A comprehensive ground water sampling event was conducted in December 2013. Based on the 2013 results, four of these wells have petroleum hydrocarbon concentrations above RBLSs. The depth to ground water was reported to be approximately five feet in the vicinity of these wells.

#### 2.0 Assessment Activities

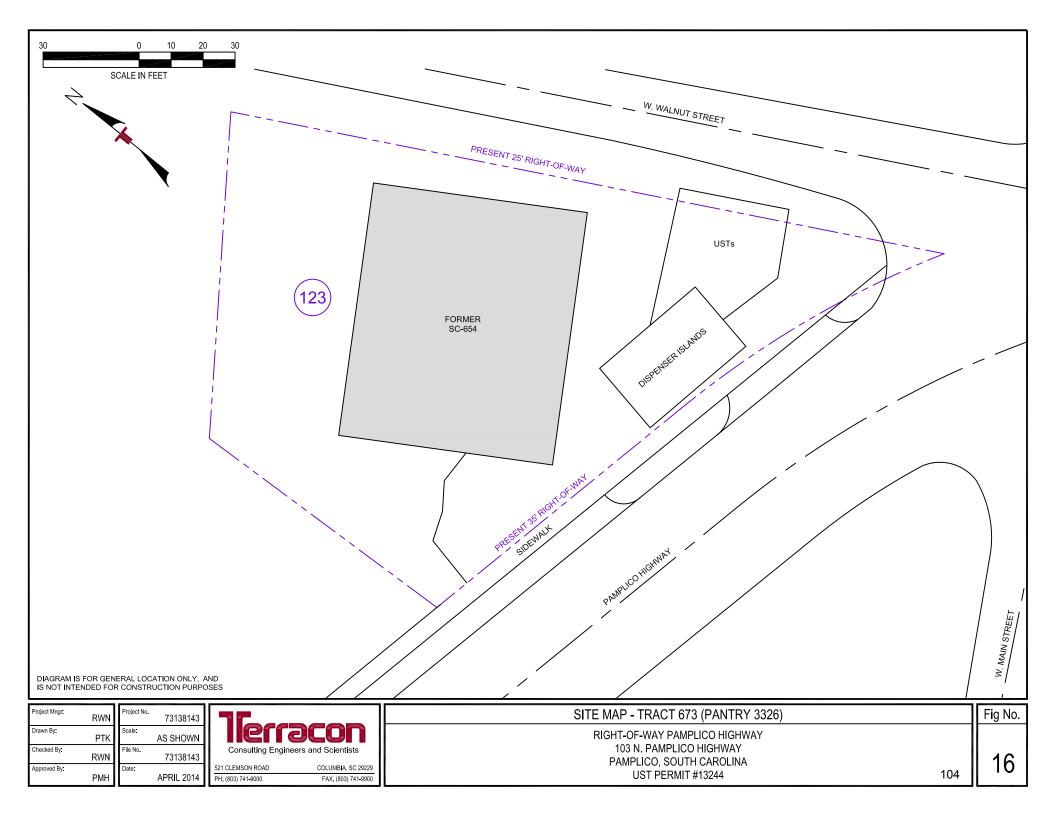
Based on the 2013 groundwater data review, and since the entire UST system is outside of the proposed ROW, no assessment was conducted at this site. A site map showing the December 2003 ground water quality conditions (Terrracon assessment report) is included below.

#### 3.0 Results and Findings

Since there is no proposed ROW expansion, the UST system should not be affected by the proposed activity. However, should road improvements require excavation to the ground water, impacted soils special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

#### **Attachments**

Figure 16 – Site map and ground water quality from previous SCDHEC UST assessment (Terracon, December 2013).



SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 17 TRACT 792 BAGGETT'S GULF (UST# 03542) 105 S. WALNUT ST.

This site is a former service gas station previously operated as Baggett's Gulf under UST Permit # 03542. Six UST were reportedly abandoned by removal prior to 1992.

According to the SCDOT, there are currently no plans for ROW expansion at this parcel. The approximate former UST and ROW locations are shown on Figure 17.

In 1991, a release was reported from this system. Assessment has been conducted since 1992 to define the extent of the hydrocarbon plume. Three shallow monitoring wells (MW-1, MW-2, MW-5) are located adjacent to the current ROW, shown on Figure 17. A comprehensive ground water sampling event was conducted in 2004 by Delta Environmental Consultants. Based on the 2004 results, these wells have petroleum hydrocarbon concentrations above RBSLs. The depth to ground water was reported to be approximately five feet in the vicinity of these wells.

#### 2.0 Assessment Activities

Based on the 2004 groundwater data review, and since the entire UST system is outside of the proposed ROW, no assessment was conducted at this site.

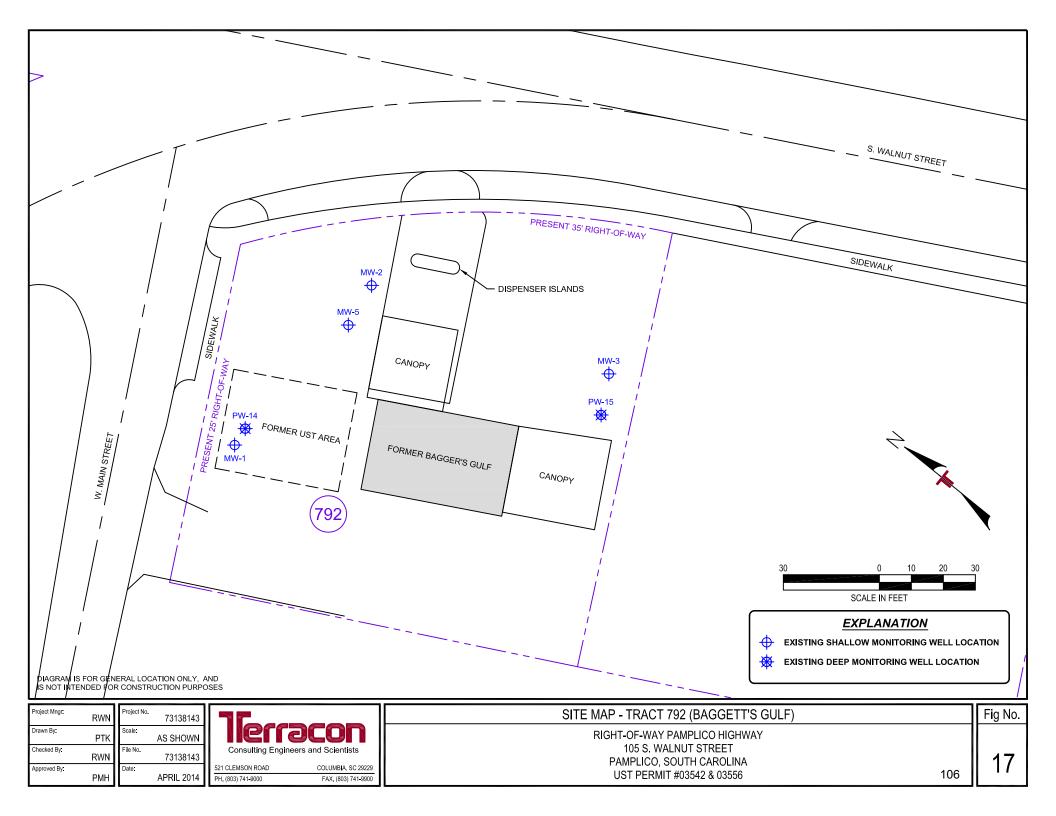
#### 3.0 Results and Findings

Since there is no proposed ROW expansion, the UST system should not be affected by the proposed activity. However, should road improvements require excavation to the ground water, impacted soils special handling and disposal of soils impacted by petroleum contaminated ground water field may be necessary.

#### **Attachments**

Figure 17 - Site Map

Site maps and ground water quality from previous SCDHEC UST assessment (Delta Environmental report, October 2004).



SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 18 TRACT 831 EDWARDS ROAD STORE, 1570 S. PAMPLICO HWY.

#### 1.0 Site Description

The site is a vacant, former country store with a visible heating oil fill port located at the corner of the store building, inside of the proposed ROW. The UST system and majority of the store and is within the proposed ROW, and will require complete demolition and removal. The approximate UST and ROW locations are shown on Figure 18.

#### 2.0 Assessment Activities

An EM survey was not conducted at this site due to the known location of the heating oil tank with respect to fill ports and vent pipe.

Two temporary wells were advanced using direct-push sampling equipment at each end of the UST. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

Low OVA readings were recorded at soil boring SB-1. The depth to ground water was recorded at depths ranging from 6-7.6 feet. Petroleum compounds were detected above RBSLs in the soil sample collected from TW-1. The analytical results are shown, below.

The abandoned store and UST were identified to be within the proposed ROW should be removed prior to or as a part of the ROW expansion. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 18 Tract 831 Edwards Road Store, 1570 S. Pamplico Hwy.

Table 18 - Analytical Data Summary of Detected Compounds

		OIL /kg)	GROUND WATER (ug/l)			
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL	
(Sample Depth, ft.)	(6-8)	RBSL	10.5-14	10.5-14	RBSL/AL	
OVA (ppm)	11.8	ne	7.6	18.3	ne	
Benzene	20.2J	7	< 0.111	0.414J	5	
Naphthalene	299	36	< 0.176	< 0.176	25	

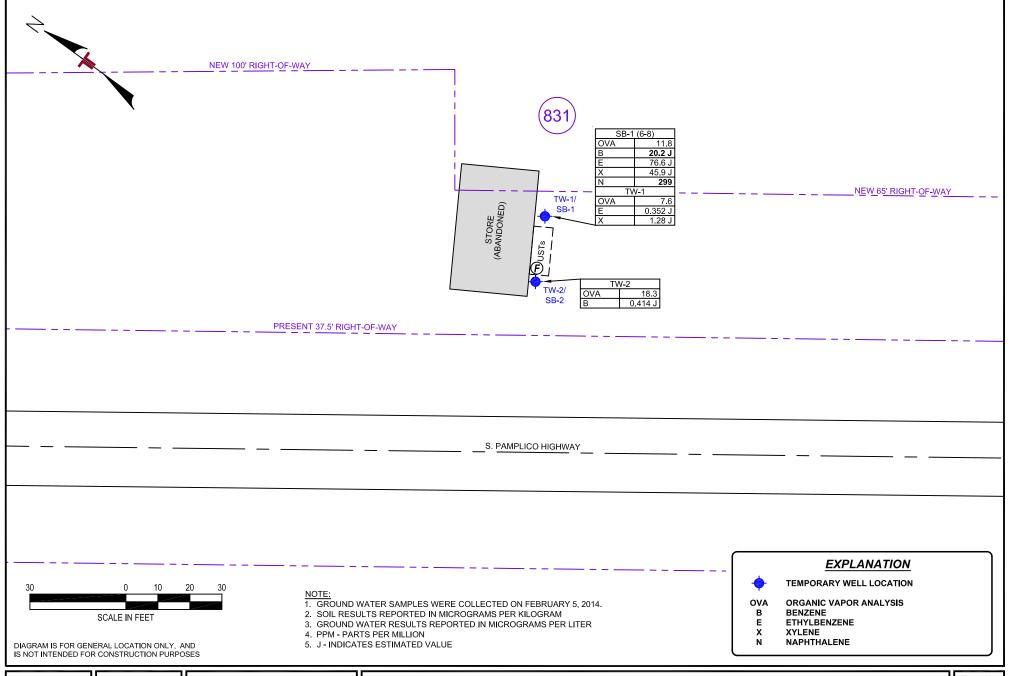
#### **NOTES:**

- 1) All samples collected on February 6, 2014
- 2) μg/kg micrograms per kilogram
- 3)  $\mu$ g/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)

- 6) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 7) Concentrations in bold represent RBSL or Al exceedance
- 8) ne no regulatory action level established

### **Attachments**

Figure 18 – Site Map Well Logs



Project Mngr:	RWN	Project No.
Drawn By:	PTK	Scale:
Checked By:	RWN	File No.
Approved By:	PMH	Date:

73138143 AS SHOWN 73138143 APRIL 2014



FAX. (803) 741-9900

PH. (803) 741-9000

## SITE MAP - TRACT 831 (EDWARDS ROAD STORE - VACANT)

RIGHT-OF-WAY PAMPLICO HIGHWAY 1570 S. PAMPLICO HIGWAY

Fig No.

PAMPLICO, SOUTH CAROLINA

18

109

		LL LOG NO. SB-1/		Pa	ge 1	of 1	_
PRO	DJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCD	ОТ				
SITE							
9 L	OCATION See Figure 19	•	INSTALLATION DETA	1	SNS	/PE	
GRAPHICLOG				DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	OVA/PID
GRAF			Well Completion:		WATE	SAMP	6
DE	EPTH MATERIAL DE SAND (SP), with organics, medium grained, dark gray	SCRIPTION v, dry, loose			- 0	<del>,</del>	_
						V	4
	2.0					$/ \setminus$	
	SAND (SP), medium grained, light tan, wet, loose						
	3.5					X  ·	4.
	CLAYEY SAND (SC), medium grained, mottled (orang	ge, red, gray), moist, medium dense				$\langle \cdot \rangle$	_
			Not Grouted to			$\bigvee$	
			Surface	5 -		$ \mathcal{N} $	4.
	6.0  CLAYEY SAND (SC), medium grained, gray, heating	oil odor, moist, very dense		-		$\langle \cdot \rangle$	_
							11
	8.0				$\overline{\nabla}$	/ V	
	Soil Boring Terminated at 4 Feet						
			9.5' to 14' - #2	10-			
			Filter Sand				
			10.5' to 14' - 2"	<b>∄</b> 1 -			
			(0.010) Slotted PVC	<u> </u>			
	Temporay Well Terminated at 14 Feet		1				
	The stratification lines represent the approximate transition between	on differing sail types and/or rock	Hammer Type: Direct Push				_
,	types; in-situ these transitions may be gradual or may occur at dif	ferent depths than shown.	Hammer Type. Direct Fush				
dvance Direct	ment Method: Push		Notes:				_
	ment Method:						
comple							
7 .	WATER LEVEL OBSERVATIONS 7.6' on 2/5/2014	15	Well Started: 2/5/2014 We	ell Complete	d: 2/5/2	2014	
	7.6' on 2/5/2014	llerracon	Drill Rig: Geoprobe Dr	iller: J. Chior	azzi		
		521 Clemson Road Columbia, South Carolina	Project No.: 73138143 Ex	khibit: B-1	1 10		



PROMOTE PROTECT PROSPER					
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18481, MW-09488				
Name: SCDOT	2217 2211 23 134) 414 17 22 133				
(last) (first)	8. USE:				
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process				
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency				
City: Columbia State: SC Zip: 29202-0000	☑ Test Well				
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14				
2. LOCATION OF WELL: COUNTY: Florence	14 ft. Date Completed: 2/5/14				
Name: Site 18-Tract 831	10. CASING: Threaded Welded				
Street Address: 1570 S. Pamplico Hwy	Diam.: 1.5" Height: Above Below				
City: Pamplico Zip:	Type: D PVC D Galvanized Surfaceft.				
rampneo	☑ Steel □ Other Weight lb./ft.				
Latitude: Longitude:	0 in. to 10 ft. depth Drive Shoe? ☐ Yes ☑ No				
	in. to ft. depth				
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:				
18481 SB-1/TW-1	Type: SS Diam.: 1"				
	Slot/Gauge: 0.010 Length: 4'				
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: $10$ ft. and $14$ ft. NOTE: MULTIPLE SCREENS				
Crowled Dordhy from 14 54-0	ft. and ft. USE SECOND SHEET				
Grouted Depth: from 14 ft. to 0 ft.	Sieve Analysis				
*Thickness Depth to Formation Description of Bottom of	12. STATIC WATER LEVEL 7 ft. below land surface after 24 hours				
Stratum Stratum	13. PUMPING LEVEL Below Land Surface.				
	ft. after hrs. Pumping G.P.M.				
See Geologist's Log	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: Fromft. toft.				
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft, direction				
	Type				
	Well Disinfected ☐ Yes ☑ No Type: Amount:				
	18. PUMP: Date installed: Not installed \[ \overline{\sigma}				
	Mfr. Name: Model No.: Model No.:				
	H.P Volts Length of drop pipe ft. Capacity gpm				
	TYPE: Submersible Jet (shallow) Turbine				
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal				
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790				
	Address: (Print) Level: A B C D (circle one)				
	2047 Industrial Blvd, Lexington, SC				
	2047 maustrai diva, lexingion, se				
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:				
	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under				
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.				
5. REMARKS:					
	Signed: Date: 3/2/14				
	Signed: Date: 27271				
6 TVDE: Fl Mild Daton: Fl James 1 Danes					
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven	If D Level Driller, provide supervising driller's name:				
☐ Cable tool ☐ Other					
L Capie too: Li Otriei					

PRO	DJECT: SC-51 PIN 38191 - Right of	CLIENT: SCDOT					
SITI	Way Expansion Hwy 51 E: Site 18 - Tract 831 Pamplico, South Carolina						
ဗ္ဂ ၊	LOCATION See Figure 19		INSTALLATION DETAIL		ПS NS	PE	Γ
GRAPHIC LOG			Well Completion:	DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	9
	DEPTH MATERIAL DESCRIPTION  SAND (SP), medium grained, dark gray, dry, loose					\ /	
	2.0			-		X	
	SAND (SP), medium grained, gray, moist, loose			-			
//	3.5  CLAYEY SAND (SC), medium grained, mottled (tan, orange, gray), medium dense	slight heating oil odor, wet,		_		$\triangle$	
	medium dense		Not Grouted to Surface	5 -		$\bigvee$	3
	6.0 CLAYEY SAND (SC), medium grained, gray, high heating oil odor,	wet, very dense		-		$\left\langle \cdot \right\rangle$	L
				-		X	3
				_			
			9.5' to 14' - #2	10-			
			Filter Sand	-			
			10.5' to 14' - 2"	- -			
			10.5' to 14' - 2" (0.010) Slotted PVC	<u>-</u>			
<u>//</u> 1	14.0  Boring Terminated at 14 Feet			-			
	The stratification lines represent the approximate transition between differing soil types; in-situ these transitions may be gradual or may occur at different depths the	an shown.	r Type: Direct Push				
	ement Method: ct Push	Notes:					
	nment Method:						
	gs backfilled with cement-bentonite grout upon letion.						
7	WATER LEVEL OBSERVATIONS	Well Start	red: 2/5/2014 Wel	l Complete	ed: 2/5/2	2014	
		Well Start Drill Rig: 0	Geoprobe Drill	er: J. Chio	razzi		
	521 0	Clemson Road	o.: 73138143 Exh	ibit. D	212		



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

PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18481, MW-09488
Name: SCDOT	Site 1D#18481, MW-09488
(last) (first)	8. USE:
Address: PO Box 191	Residential □ Public Supply □ Process
	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: COUNTY: Florence	14 Date Completed: 2/5/14
Name: Site 18-Tract 831	10. CASING:  Threaded Welded
Street Address: 1570 S. Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico Zip:	Type: D PVC D Galvanized Surface ft.
- Tampheo	☑ Steel □ Other Weight — Ib./ft.
Latitude: Longitude:	0 in, to 10 ft. depth Drive Shoe? ☐ Yes ☑ No
	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
18481 SB-2/TW-2	Type: SS Diam.: 1"
	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 10 ft. and 14 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from $\underline{14}$ ft. to $\underline{0}$ ft.	Sieve Analysis   Yes (please enclose)   No
*Thickness Depth to	12. STATIC WATER LEVEL 7 ft. below land surface after 24 hours
Formation Description of Bottom of	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	147 7 4 117 117 4
See Geologist's Log	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 ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE:   Submersible   Jet (shallow)   Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print) Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
	2017 11144011141 22144, 220114, 20
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	A successful and this report is the sect of my knowledge and bollon.
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	ii D Ector Brillor, provide supervising armer a frame.
☐ Cable tool      ☑ Other	

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143

lerracon

SITE 19 TRACT 851 DUNK ROAD STORE, 1570 S. PAMPLICO HWY.

1.0 Site Description

The site is a vacant, former retail store. The site has a visible pump island in the front of the vacant store that located inside of the proposed new R/W. There are two visible fill ports located just outside of the proposed ROW, it is assumed that the tanks are still presently in the ground. The status of abandonment (removed/filled) is not known.

No records of a UST system were available from the SCDHEC UST registry. Due to the site layout, a UST (if present), was not suspected to be located in the proposed ROW, therefore an EM survey was not conducted at this site. The approximate UST fill port and ROW locations are shown on Figure 19.

2.0 Assessment Activities

Two borings (SB-1, SB-2) were installed in the vicinity of the former dispenser island and UST (respectively) to determine current soil and ground water conditions.

Two temporary wells (TW-1, TW-2) were advanced using direct-push sampling equipment at each end of the UST. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

3.0 Results and Findings

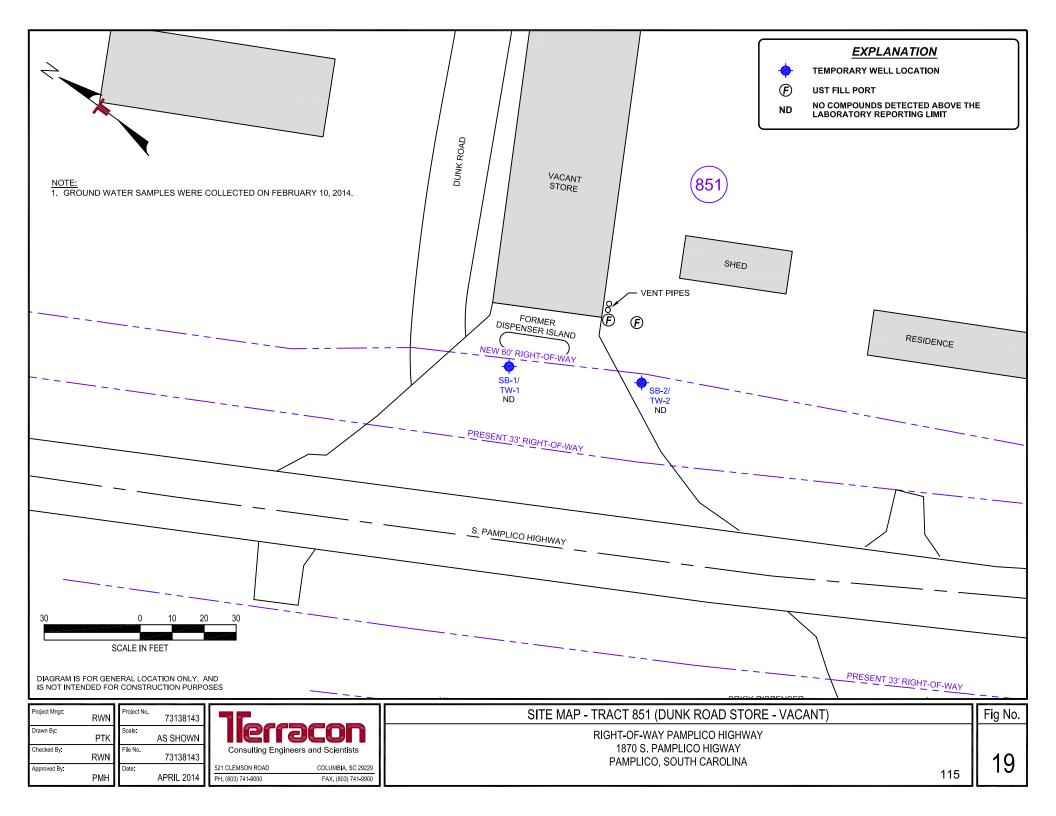
The depth to ground water was recorded at depths ranging from approximately 6-9 feet. No petroleum compounds were detected the soil or ground water samples collected. The UST and dispenser were identified to be outside the proposed ROW. No petroleum compounds were identified in the soils or ground water.

No USTs, piping, or environmental conditions are expected to impact the construction activities for the ROW widening at this site.

(No compounds were detected; therefore, no analytical data summary table was generated for this site.)

**Attachments** 

Figure 19 – Site Map Well Logs



PRO	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCD	ОТ			
SIT						
90	LOCATION See Figure 19		INSTALLATION DETA		L S	닖
GRAPHIC LOG			Well Completion:	ОЕРТН (#)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE
	DEPTH MATERIAL DE: _0.3_CONCRETE	SCRIPTION			- 0	\
	FILL - SAND (SP), coarse grained, yellow, dry, loose 1.3			-		$\bigvee$
	SAND (SP), fine grained, tan to light gray, moist, dense	e			]	/
				-	_	M
	4.0 SAND (SP), trace clay, fine grained, tan to light gray, v	vet, dense		-		<del>/ \</del>
			Not Grouted to Surface	5 -	_	
				-		
				-		
				10-		
			10.5' to 15' - #2 Filter Sand	- =::		
				-		
			11.5' to 15' - 2" (0.010) Slotted PVC	- -		
	15.0			15-		
	Boring Terminated at 15 Feet			13		
	The stratification lines represent the approximate transition betwee types; in-situ these transitions may be gradual or may occur at diff	en differing soil types and/or rock ferent depths than shown.	Hammer Type: Direct Push			
	cement Method: ct Push		Notes:			
Borir	onment Method: ngs backfilled with cement-bentonite grout upon pletion.					
COM	WATER LEVEL OBSERVATIONS	15	Well Started: 2/5/2014 We	ell Complete	d: 2/5/2	014
Z_	6.2' on 2/5/2014	llerracon		ller: J. Chio		
		521 Clemson Road Columbia, South Carolina	Project No.: 73138143 Ex			



# **Water Well Record**

PROMOTE PROTECT PROSPER	2600 Bı	<b>Bureau of Water</b> 2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300					
1. WELL OWNER INFORMATION: Name: SCDOT	•	7. PERMIT NUMBER: Site ID#18482, MW-09489					
(last)	(first)	8. USE:					
Address: PO Box 191		Residential Public Supply Process					
Other C to the Court of	7: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency					
City: Columbia State: S	SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement					
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/5/14					
	COUNTY: Florence	15 ft. Date Completed: 2/5/14					
Name: Site 19-Tract 851		10. CASING: ☑ Threaded ☑ Welded					
Street Address: 1870 S. Pampli	co Hwy	Diam.: 1.5" Height: Above Below ✓					
City: Pamplico	Zip:	Type: D PVC D Galvanized Surface ft.					
•		☐ Steel ☐ Other					
Latitude: Longitu	ıde:	<u>U</u> in. to <u>II</u> ft. depth   Drive Shoe? □ Yes ☑ No					
o BUBLIO OVOTENA VANE		11. SCREEN:					
	PUBLIC SYSTEM NUMBER: -1/TW-1	Type: SS Diam.: 1"					
		Slot/Gauge: 0.010 Length: 4'					
4. ABANDONMENT:   Yes	∐ No	Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS					
Created Death, from 15	40	ft. and ft. USE SECOND SHEET					
Grouted Depth: from 15	ft. to <u>0</u> ft. *Thickness Depth to	Sieve Analysis					
Formation Description	of Bottom of	12. STATIC WATER LEVEL 7 ft. below land surface after 24 hours					
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.					
See Geologist's Log		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					
D		16. WELL GROUTED? ☐ Yes ☐ No					
		☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other					
		Depth: From ft. to ft.					
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction					
		Type					
		Well Disinfected ☐ Yes ☑ No Type: Amount:					
WHAT		18. PUMP: Date installed: Not installed 🗹					
		Mfr. Name: Model No.: H.P Volts Length of drop pipe ft. Capacity gpm					
		TYPE: Submersible Jet (shallow) Turbine					
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal					
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790					
		Address: (Print)  Level: A B C D (circle one)					
		2047 Industrial Blvd, Lexington, SC					
*Indicate Water Decrine Zones		- 1 × 1 × 103-/179-8001					
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under					
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.					
5. REMARKS:							
		Signed: Date: 3/2/14					
		Signed: Date: Date:					
6. TYPE: ☐ Mud Rotary ☐ Jette	ed 🔲 Bored	If D Level Driller, provide supervising driller's name:					
☐ Dug ☐ Air F							
☐ Cable tool       ☐ Othe	er.						

PR	OJECT: SC-51 PIN 38191 - Right of	CLIENT: SC	DOT					
CIT	Way Expansion Hwy 51							
SIT	E: Site 19 - Tract 851 Pamplico, South Carolina							
90	LOCATION See Figure 19	+	INSTALLATION D	ETAILS		NS E	PE	_
GRAPHIC LOG					DEPTH (ft)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
RAP			Well Completion:		DEP	ATER SER\	MPL	3
- 1		L DESCRIPTION				>8	/S	_
	SAND (SP), fine to medium grained, gray, moist, r	neaium dense					$\backslash / \mid$	
					-		X	2
					_		$\langle \cdot \rangle$	_
							$\backslash / \mid$	
	3.5				_		M	3
	SAND (SP), trace clay, fine to medium grained, ta	n, very moist to wet, medium dense			-		$\langle \cdot \rangle$	_
					_		$\backslash / \mid$	
					5 –		$ \Lambda $	2
//	6.0 CLAYEY SAND (SC), fine grained, mottled (yellow	v orange grav) dry very dense	Not Grouted to Surface		-		$\langle \cdot \rangle$	_
	<u></u>	,, o.ago, g.a.y,, a.y, ro.y aooo					$  \setminus  $	,
	7.5				_			;
	<b>LEAN CLAY (CL)</b> , medium plasticity, mottled (oran	nge, red, gray), moist, very dense			_		$\langle \cdot \rangle$	_
	9.0						V	2
	SAND (SP), medium grained, tan, wet, medium de	ense					$ \Lambda $	3
					10-		$\langle \cdot \rangle$	_
					_		V	3
	11.5  SAND (SP), medium grained, light gray, moist to v	unt dance					$ \Lambda $	J
	SAND (SP), medium gramed, light gray, moist to v	vet, derise	11.5' to 16' - #2 Filter Sand		-		$\left\langle \cdot \cdot \right\rangle$	_
	13.0				_		V	3
	SAND (SP), medium grained, tan, wet, medium de	ense						,
			12.5' to 16' - 2"		-		$\langle \cdot \rangle$	_
	15.0		(0.010) Slotted PVC		15-		V	2
	<b>LEAN CLAY (CL)</b> , medium plasticity, gray, moist,	dense			.0			
<u>////</u>	Boring Terminated at 16 Feet			<u> </u>	-		$\rightarrow$	-
		difference all forms and forms all	Hanna Tana Birat Bud					
	The stratification lines represent the approximate transition by types; in-situ these transitions may be gradual or may occur a	etween differing soil types and/or rock at different depths than shown.	Hammer Type: Direct Push					
	cement Method: ct Push		Notes:					-
	onment Method:							
	ngs backfilled with cement-bentonite grout upon pletion.							
<del></del>	WATER LEVEL OBSERVATIONS 9.2' on 2/5/2014	75	Well Started: 2/5/2014	Well Co	mplete	d: 2/5/2	2014	
	3.2 UII 2/3/2014	lerracor	Drill Rig: Geoprobe	Driller: J	J. Chior	azzi		_
		521 Clemson Road Columbia, South Carolina	Project No.: 73138143	Exhibit:	B-2	110		



PROMOTE PROTECT PROSPER	2000 B	uli Street, Columbia, 3C 2920 1-1700, (603) 696-4300
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: City ID#19492 MW 00490
Name: SCDOT		Site ID#18482, MW-09489
(last)	(first)	8. USE:
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process
		☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC	Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
		9. WELL DEPTH (completed)  Date Started: 2/5/14
Telephone: Work:	Home:	4
	DUNTY: Florence	ft. Date Completed: 2/5/14
Name: Site 19-Tract 851		10. CASING: Threaded Welded
Street Address: 1870 S. Pamplico	Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico	Zip:	Type: PVC Galvanized Surface ft.
		U Steel □ Other Weight — Ib./ft.  O in. to 12 ft. depth Drive Shoe? □ Yes □ No
Latitude: Longitude	<b>:</b> :	
		in. toft. depth
3. PUBLIC SYSTEM NAME: PL	IBLIC SYSTEM NUMBER:	11. SCREEN:  Type: SS Diam.: 1"
18482 SB-2	/TW-2	Type: <u>55</u> Diam.: <u>1</u> Slot/Gauge: <u>0.010</u> Length: <u>4'</u>
4. ABANDONMENT:  ☑ Yes □	No	10 16
		Set Between: 12 ft. and 16 ft. NOTE: MULTIPLE SCREENS  ft. and ft. USE SECOND SHEET
Grouted Depth: from 16	ft. to <u>0</u> ft.	Sieve Analysis  Yes (please enclose)  No
· -	*Thickness Depth to	12. STATIC WATER LEVEL 7 ft. below land surface after 24 hours
Formation Description	of Bottom of	
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log		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 ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Well Disinfected ☐ Yes ☐ No Type: Amount:
		18. PUMP: Date installed: Not installed ☑
		Mfr. Name: Model No.:
		H.P Volts Length of drop pipe ft. Capacity gpm
		TYPE: Submersible Jet (shallow) Turbine
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
		Address: (Print) Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
		2077 Industrial Divd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		$\mathbb{N}$
		Signed: Date: 3/2/14
		Signed: Date: 5/2/14  Well Driller
6 TVDE: El Mist Barrer		
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Dug ☐ Air Rot	☐ Bored ary ☐ Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool ☐ Other	ary <b>L</b> Driven	
_ Sable tool _ E_ Other		

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



## SITE 20 TRACT 863 MT. ZION STORE 1863 S. PAMPLICO HWY.

#### 1.0 Site Description

The site is a vacant, former country store with a visible heating oil vent pipe located at the corner of the store building, inside of the proposed ROW. The UST system and majority of the store and is within the proposed ROW, and will require complete demolition and removal. The approximate UST and ROW locations are shown on Figure 20.

#### 2.0 Assessment Activities

An EM survey was conducted at this site with respect to the dispenser structure and fill ports. Based on the EM survey, two USTs are located adjacent to a brick dispenser structure

Two temporary wells were advanced using direct-push sampling equipment based on EM survey results and UST vent pipe locations. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples from TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

The depth to ground water was recorded at depths ranging from 2-3 feet. Petroleum compounds were detected above RBSLs in the soil sample collected from TW-2. The analytical results are shown on Table 20, below.

The USTs and dispenser structure were identified to be within the proposed ROW should be removed prior to or as a part of the ROW expansion. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

## SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 20 Tract 863 Mt. Zion Store 1863 S. Pamplico Hwy.

Table 20 - Analytical Data Summary of Detected Compounds

	SO (ug/l		GROUND WATER (ug/l)			
Sample	SB-1	RBSL	TW-1	TW-2	RBSL / AL	
(Sample Depth, ft.)	(2-4)	KBSL	11.5-15	11.5-15	RBSL/AL	
OVA (ppm)	35.5	ne	17.5	12.8	ne	
Benzene	< 0.038	7	0.455J	6.23	5	
Toluene	< 0.08	1,450	< 0.122	51.7	1,000	
Ethylbenzene	< 0.137	1,150	< 0.109	168	700	
Xylene	< 0.185	14,500	< 0.179	557	10,000	
Naphthalene	< 0.26	36	7.82	110	25	
TAA	NA	ne	< 1.01	77.8	240	

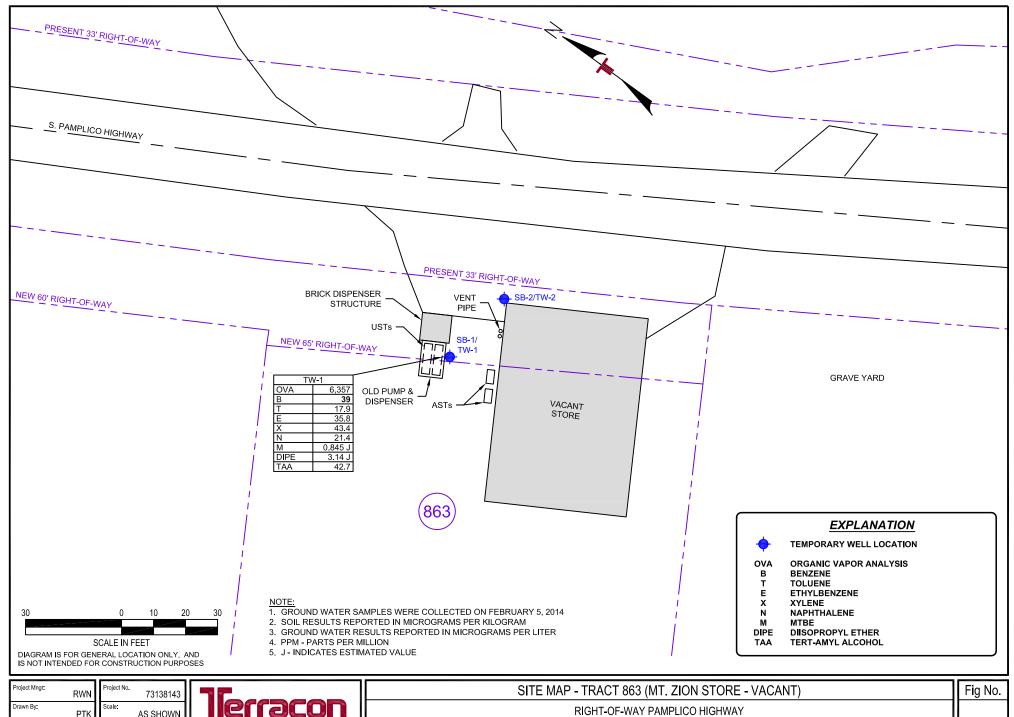
#### **NOTES:**

- 1) All samples collected on February 5,2014
- 2) μg/kg micrograms per kilogram
- 3) µg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 20 – Site Map Well Logs



Project Mngr.	RWN	Project No.	73138143
Drawn By:	PTK	Scale:	AS SHOWN
Checked By:	RWN	File No.	73138143
Approved By:	РМН	Date:	APRIL 2014



RIGHT-OF-WAY PAMPLICO HIGHWAY 1873 S. PAMPLICO HIGWAY PAMPLICO, SOUTH CAROLINA

20

122

PR	OJECT: SC-51	PIN 38191 - Right of	BORING LO	CLIENT: SCDOT	<u> </u>	Page 1	OF T	_
	Way E	xpansion Hwy 51						
SIT	0.10 _	) - Tract 863 ico, South Carolina						
<u> </u>	LOCATION See Fig					⊒ S S S	PE	_
GRAPHIC LOG					DEPTH (#)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	
RAPI						ATER SERV	MPL	3
	DEPTH		MATERIAL DESCRIPT	ION		> 8	δS	
	_0.3_ <u>TOPSOIL</u> <u>SANDY LEAN</u> (	CLAY (CL), brown to orange, dry	y, stiff, medium dense				$\Lambda$	
						1	X	5
	2.0							
	SANDY LEAN (	CLAY (CL), medium to coarse g	grained, mottled (tan, gray	, orange), moist, dense			$\Lambda$	
						-	X	3
	4.0					$\perp$	$V \setminus$	_
	Water Point dri							
		ample collected from screen - p erminated at 4 Feet	ooint water sampler from	1-15 Feet.				
	The stratification lines types; in-situ these tra	represent the approximate transition	on between differing soil types our at different depths than sh	and/or rock Hammer Type: D	irect Push	•	•	
dvan	cement Method:		<del></del>	Notes:				
	ct Push			Notes.				
	onment Method: ngs backfilled with ceme	ent-bentonite grout upon						
	pletion.		1		ı			_
	No free water obs	OBSERVATIONS erved	<b>1</b> 7 Constant	Boring Started: 2/5/2 Drill Rig: Geoprobe	2014 Boring Com	pleted: 2/	/5/201	1
		<del>-</del>			Driller: J. Cl	hiorazzi		_
			521 Clems Columbia, Sou		43 Exhibit:	B-1		



1. WELL OWNER INFORMATION:			7. PERMIT NUMBER: Site ID#18483, MW-09490
Name: SCDOT	/£i		
(last)	(firs	51)	8. USE:
Address: PO Box 191			☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC	Zip: 29	202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
Columbia	, =	202 0000	☑ Test Well ☐ Monitor Well ☐ Replacement
	Home:		9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: CO	DUNTY: Flore	nce	15 Date Completed: 2/5/14
Name: Site 20-Tract 863			10. CASING: Threaded Welded
Street Address: 1873 S. Pamplico	Hwy		Diam.: 1.5" Height: Above Below ✓
<sup>City:</sup> Pamplico	Zip:		Type:  PVC Galvanized Surfaceft.
			Steel Other Weight lb./ft.
Latitude: Longitude	:		0 in. to 11 ft. depth Drive Shoe? ☐ Yes ☑ Noin. toft. depth
***************************************			
3. PUBLIC SYSTEM NAME: PU		M NUMBER:	11. SCREEN:  Type: <u>SS</u> Diam.: <u>1"</u>
18483 SB-1			Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐	No		Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS
			ft. and ft. USE SECOND SHEET
Grouted Depth: from 15 f	t. to <u>0</u>	ft.	Sieve Analysis
	*Thickness	Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description	of Stratum	Bottom of Stratum	13. PUMPING LEVEL Below Land Surface.
	Stratum	Stratum	ft. after hrs. Pumping G.P.M.
See Geologist's Log			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)
			Installed from ft. to ft.
			Effective size Uniformity Coefficient
			16. WELL GROUTED?  Yes  No
			☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
Normania .			Depth: From ft. to ft.
			17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
			Туре
			Well Disinfected ☐ Yes ☐ No Type: Amount:
			18. PUMP: Date installed: Not installed ☑
			Mfr. Name: Model No.:
			H.P Volts Length of drop pipe ft. Capacity gpm
			TYPE: Submersible Jet (shallow) Turbine
			☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
			19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
· · · · · · · · · · · · · · · · · · ·			Address: (Print)  Level: A B C D (circle one)
			2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones			Telephone No.: 803-429-5001 Fax No.:
		i	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)			my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:			
			Signed: Date: 3/2/14
			Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted	<b>O</b> 8	lored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rota	-	)riven	5 2015. Stiller, provide supervising diffici o fiditio.
☐ Cable tool      ☐ Other			

PR	OJECT: SC-51 PIN 38191 - Right of	C	LIENT: SCDOT		age 1	J. 1	_
	Way Expansion Hwy 51						
SIT	TE: Site 20 - Tract 863 Pamplico, South Carolina						
<u></u> ტ	LOCATION See Figure 20				_ s	Ш	-
GRAPHIC LOG				(£)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	ב ב
APHI				DEPTH (ft)	TER I	IPLE	מיני
-	DEPTH	MATERIAL DESCRIPTIO			WA	SAN	
1/2 /1	0.5 TOPSOIL					17	_
	SANDY LEAN CLAY (CL), medium to coarse grain	ned, gray to orange, dry,	stiff, medium dense	-		X	1
	2.0					$ / \rangle$	1
	SANDY FAT CLAY (CH), medium grained, orange	e, moist, dense		-			_
						V	1
						$ / \rangle$	ı
	4.0 MacroCore Terminated at 4 Feet			-			-
	Water Point driven to 15 Feet. Ground water sample collected from screen - poin	nt water sampler from 11-	15 Feet.				
	Direct Push Terminated at 4 Feet						
							1
	The stratification lines represent the approximate transition be	etween differing soil types ar	nd/or rock Hammer Type: Direct Push				
	types; in-situ these transitions may be gradual or may occur a	at different depths than show					
	cement Method: ect Push		Notes:				
	Ionment Method:						
	ings backfilled with cement-bentonite grout upon pletion.						
	WATER LEVEL OBSERVATIONS	75	Boring Started: 2/5/2014	Boring Comple	eted: 2/	5/201	4
	No free water observed	Terra	Drill Rig: Geoprobe	Driller: J. Chic			_
		521 Clemson	Road				_
		Columbia, South		Exhibit: B-	325		



1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: C. ATRICAGO NAVA COACO
Name: SCDOT		Site ID#18483, MW-09490
(last)	(first)	8. USE:
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC	Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: He	ome:	9. WELL DEPTH (completed) Date Started: 2/5/14
	JNTY: Florence	15 ft. Date Completed: 2/5/14
Name: Site 20-Tract 863	Torence	10. CASING:   Threaded  Welded
Street Address: 1873 S. Pamplico H	-Iww	Diam.: 1.5" Height: Above Below ✓
	ip:	Type: D PVC D Galvanized Surfaceft.
1 ampheo		Steel D Other Weight lb./ft.
Latitude: Longitude:		0in. to 11ft. depth   Drive Shoe? ☐ Yes ☑ No in. toft. depth
3. PUBLIC SYSTEM NAME: PUB	LIC SYSTEM NUMBER:	11. SCREEN:
18483 SB-2		Type: SS Diam.: 1"
4. ABANDONMENT: ☑ Yes ☐ N		Slot/Gauge: 0.010 Length: 4'
4. ADANDONNIENT. E 163 E N	10	Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from 15 ft.	to <u>0</u> ft.	ft. and ft. USE SECOND SHEET
	*Thickness Depth to	Sieve Analysis
Formation Description	of Bottom of	12. STATIC WATER LEVEL ft. below land surface after 24 hours
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log		ft. afterhrs. PumpingG.P.M.  Pumping Test: ☐ Yes (please enclose) ☑ No
		Yield:
		14. WATER QUALITY
		THE WALER QUALITY  Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No
		Please enclose lab results.
		15. ARTIFICIAL FILTER (filter pack) ☐ Yes ☐ No
		Installed fromft. toft.
		Effective size Uniformity Coefficient
		16. WELL GROUTED? ☐ Yes ☐ No
		□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
		Depth: From ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Type
		Well Disinfected ☐ Yes ☑ No Type: Amount:
		18. PUMP: Date installed: Not installed 🖸
		Mfr. Name: Model No.:
		H.P Volts Length of drop pipe ft. Capacity gpm
	7.4.4	TYPE: Submersible Jet (shallow) Turbine
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
		Address: (Print)  Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
(Upp a 2nd about 15 years)		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		Signed: Date: 3/2/14
		Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted	■ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary	y 🗖 Driven	
☐ Cable tool		

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



### SITE 21 TRACT 916 FORMER CROSS ROADS GROCERY, 3032 S. PAMPLICO HWY.

#### 1.0 Site Description

The site is a vacant, former gas station and convenience store. The site has an abandoned dispenser island, a underground dispenser lines to an AST tank farm consisting of four ASTs. Additionally, a UST fill port for a suspected heating oil UST is located in the inside of the proposed ROW. The approximate dispenser, line, ASTs, and UST locations are shown on Figure 21.

#### 2.0 Assessment Activities

An EM survey was conducted at this site with respect to the dispenser lines and UST fill ports. Based on the EM survey, one UST and the former dispenser island is located in the proposed ROW.

Four temporary wells were advanced using direct-push sampling equipment based on EM survey results and dispenser and UST locations. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples from TW-1 through TW-4 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

Petroleum compounds were detected above RBSLs in the soil sample collected from TW-2. The analytical results are shown on Table 21, below.

The UST and dispenser lines were identified to be within the proposed ROW should be removed prior to or as a part of the ROW expansion. Special handling and disposal of soils impacted by petroleum contaminated ground water may be necessary.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 21 Tract 916 Former Cross Roads Grocery, 3032 S. Pamplico Hwy.

Table 21 - Analytical Data Summary of Detected Compounds

		SOIL (ug/kg)		GROUND WATER (ug/l)					
Sample	SB-2	RBSL	TW-1	TW-2	TW-3	TW-4	RBSL / AL		
(Sample Depth, ft.)	(2-4)	KBSL	11.5-15	11.5-15	11.5-15	11.5-15	KBSL/AL		
OVA (ppm)	395.0	ne	15.9	171.0	11.9	19.3	ne		
Benzene	68.8J	7	2.81	167	1.14	0.958J	5		
Toluene	< 3.79	1,450	4.44	4.82	< 0.122	1.81	1,000		
Ethylbenzene	3,210	1,150	0.646J	181	< 0.109	< 0.109	700		
Xylene	350J	14,500	1.6J	102	< 0.179	< 0.179	10,000		
Naphthalene	1,080	36	3.03J	116	< 0.176	< 0.176	25		
MTBE	NA	ne	< 0.078	57.3	< 0.078	< 0.078	40		
Tert-Amyl Methyl Ether (TAME)	NA	ne	< 0.240	31.8	< 0.240	< 0.240	128		
t-butynol (TBA)	NA	ne	< 0.290	7.36J	< 0.290	< 0.290	1,400		
tert-amyl alcohol (TAA)	NA	ne	< 1.01	94.2	< 1.01	< 1.01	240		

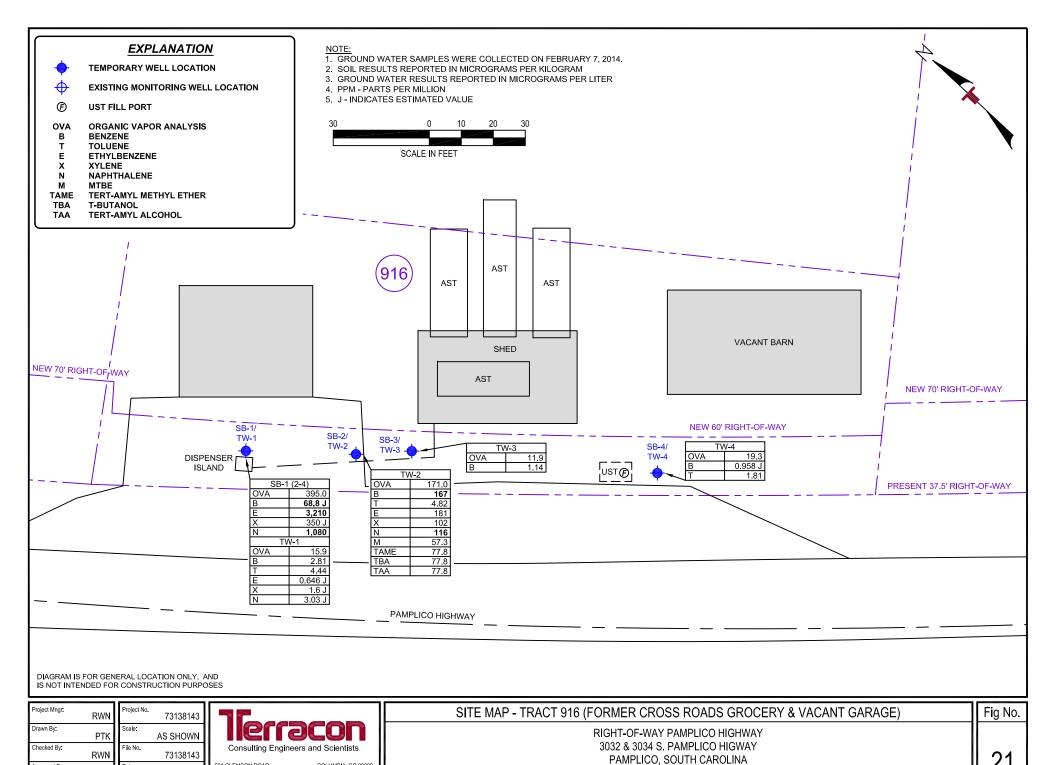
#### **NOTES:**

- 1) All samples collected on February 5 ,2014
- 2)  $\mu$ g/kg micrograms per kilogram
- 3)  $\mu$ g/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 21 – Site Map Well Logs



521 CLEMSON ROAD

PH. (803) 741-9000

Approved By:

Date:

APRIL 2014

PMH

COLUMBIA, SC 29229

FAX. (803) 741-9900

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			ING LOG	NO. SB-1/TW-1		Page 1	of 1	_
PR	OJ	ECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51		CLIENT: SCDOT				
SIT	Œ:							
GRAPHIC LOG	LO	CATION See Figure 21				DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	
_	DEF	PTH APPLIANT					Šä	L
	0.5	ASPHALT  SAND (SP), fine grained, mottled (gray, brown	, orange), medium	dense, poorly sorted		_		
	2.0	FAT CLAY (CH), tannish orange, moderate pe	troleum odor			_		(
	4.0	MacroCore Terminated at 4 Feet Water Point driven to 15 Feet. Ground water sample collected from screen -	point water sample	r from 11-15 Feet.		5 -		/
			, , , , , , , , , , , , , , , , , , , ,			-	_	
						_		
						_	_	
						10-		
						_		
						_		
		Direct Push Terminated at 15 Feet				15-		
	St	tratification lines are approximate. In-situ, the transition may	/ be gradual.	Hammer Type: Dire	ect Push			
٠		ent Method:						
Dire	ect Pi	ush		Notes:				
Bori	onm ings ipleti							
		WATER LEVEL OBSERVATIONS	75	Boring Started: 2/5/20 Drill Rig: Geoprobe	Boring Con	npleted: 2/5	5/2014	
			521 Clem	Drill Rig: Geoprobe uson Road outh Carolina  Drill Rig: Geoprobe Project No.: 73138143	Driller: J. C	B-1		_
			Columbia, S	555. Saroma ji 10j00t 140 70 100 140	- Allion.	~ 120		



PROMOTE PROTECT PROSPER 2000 L	oui oti cot, Columbia, 60 2520 1-17 00, (000) 050-4000
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: City ID #10 40 4 MIN 00 40 1
Name: SCDOT	7. PERWIT NOWBER: Site ID#18484, MW-09491
(last) (first)	8. USE:
Address: PO Box 191	Residential Public Supply Process
	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☐ Inigation ☐ Air Conditioning ☐ Entergency
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: COUNTY: Florence	15 ft. Date Completed: 2/5/14
Name: Site 21-Tract 916	10. CASING: ☑ Threaded   ☐ Welded
Street Address: 3032 & 3034 S. Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico Zip:	Type: D PVC D Galvanized Surfaceft.
1 umpheo	☑ Steel ☑ Other Weight — lb./ft.
Latitude: Longitude:	0 in. to 11 ft. depth Drive Shoe? ☐ Yes ☑ No
	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER	· 11. SCREEN:
18484 SB-1	Type: SS Diam.: 1"
	Slot/Gauge: <u>0.010</u> Length: <u>4'</u>
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from $\underline{15}$ ft. to $\underline{0}$ ft.	Sieve Analysis ☐ Yes (please enclose) ☑ No
*Thickness Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description of Bottom of	
Stratum Stratum	13. PUMPING LEVEL Below Land Surface ft. after hrs. Pumping G.P.M.
See Geologist's Log	Pumping Test:   Yes (please enclose)   No
	<b>-</b>
	Yield:
	14. WATER QUALITY
	Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No
	Please enclose lab results.
	15. ARTIFICIAL FILTER (filter pack)
	Installed from ft. to ft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? ☐ Yes ☐ No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: Fromft. toft.
	· · · · · · · · · · · · · · · · · · ·
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type Well Disinfected □ Yes ☑ No Type: Amount:
	- 18. PUMP: Date installed: Not installed ☑
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
	<u></u>
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Ular a Constant St. 199	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	
	Signed: Date: 3/2/14
	Signed: Date: Date:
6. TYPE: Mud Rotary Jetted Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	
☐ Cable tool          Other	

		ВС	ORING LOG	NO. SB-2/TW-2	Pa <sub>e</sub>	ge 1	of 1	
PR	OJECT	: SC-51 PIN 38191 - Right of Way Expansion Hwy 51		CLIENT: SCDOT				
SIT	E:	Site 21 - Tract 916 Pamplico, South Carolina						
GRAPHIC LOG	LOCATIO	ON See Figure 21				DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	
Б	DEPTH					۵	WA	_
	FAI	「CLAY (CH), tannish gray to orange, s	strong petroleum odor, v	very dense		_		/
	2.0 <b>SAN</b>	ND (SP), with quartz, coarse grained, s	subrounded, strong petr	oleum odor, loose		_		\
	Wat	croCore Terminated at 4 Feet ter Point Driven to 12 Feet. undwater Sample collected from Scre	en - point water sample	from 8-12 Feet		- 5		/
	GIO.	unawater cumple concated from core	on point water sample	10110 12100		5 — –		
						_		
						_		
						10-		
	Dire	ect Push Terminated at 12 Feet				_		_
	Stratifica	tion lines are approximate. In-situ, the transition	n may be gradual.	Hammer Type: Direct	t Push			
	cement Me ct Push	thod:		Notes:				-
Bori	pletion.	led with cement-bentonite grout upon						
	WAT	ER LEVEL OBSERVATIONS	75000	Boring Started: 2/5/2014  Drill Rig: Geoprobe	4 Boring Complet	ted: 2/5	5/2014	_
			521 Clen	Drill Rig: Geoprobe son Road outh Carolina  Drill Rig: Geoprobe Project No.: 73138143	Driller: J. Chion Exhibit: B-2	azzi		_



PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18484, MW-09491
Name: SCDOT	SIC ID#10404, W-03431
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City C 1 11 State: CC Zin: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: COUNTY: Florence	12 ft. Date Completed: 2/5/14
Name: Site 21-Tract 916	12 ft. Date Completed: 2/5/14  10. CASING: ☑ Threaded ☑ Welded
	Diam.: 1.5" Height: Above Below
Street Address: 3032 & 3034 S. Pamplico Hwy	Type:  PVC Galvanized Surfaceft.
City: Pamplico Zip:	☐ Steel ☐ Other Weight
Latitude: Longitude:	0 in. to 8 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
18484 SB-2	Type: SS Diam: 1"
	Type: SS Diam.: 1" Length: 4'
4. ABANDONMENT:	Set Between; 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 12 ft. to 0 ft.	Sieve Analysis 🔲 Yes (please enclose) 🗹 No
*Thickness Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description   of Bottom of Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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 fromft.   ft. toft.
	Ellective size Officiality Coefficient
	16. WELL GROUTED? Yes No
	□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected ☐ Yes ☐ No Type: Amount:
	18. PUMP: Date installed: Not installed 🖸
	Mfr. Name: Model No.:
· · · · · · · · · · · · · · · · · · ·	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: Submersible Jet (shallow) Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Pagring Zange	Telephone No.: 803-429-5001 Fax No.:
*Indicate Water Bearing Zones	Telephone No.: 803-429-3001 Fax No.:  20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)	my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:	my amounted and this report is true to the pest of my knowledge and penci.
	Signed:
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	p
☐ Cable tool	

		ВС	DRING LOG	NO. SB-3/TW-3	Pag	e 1 c	of 1	
PR	OJECT	: SC-51 PIN 38191 - Right of Way Expansion Hwy 51		CLIENT: SCDOT				
SIT	E:	Site 21 - Tract 916 Pamplico, South Carolina						
GRAPHIC LOG	LOCATION	ON See Figure 21				4 (Ft.)	LEVEL	L
GRAPH	DEPTH					DEРТН (Ft.)	WATER LEVEL OBSERVATIONS	
		CLAY (CH), medium to coarse grained	d, dark brown to tannis	h orange, medium dense				١
	2.0							/
	<u>FA1</u>	「CLAY (CH), tan to orange, medium sti	iff, dense			_	\	
		croCore Terminated at 4 Feet				_	/	
		ter Point Driven to 12 Feet. undwater Sample collected from Scree	en - point water sample	from 8-12 Feet.		5 —		
						_		
						10-		
						_		
	Dire	ect Push Terminated at 12 Feet				-		
	Stratifica	ation lines are approximate. In-situ, the transition	may be gradual.	Hammer Type: Dire	ct Push			•
	cement Me ct Push	ethod:		Notes:				
	onment Me	ethod: led with cement-bentonite grout upon	_					
	pletion.	ER LEVEL OBSERVATIONS	75	Boring Started: 2/5/20 <sup>-1</sup>	Boring Complete	d: 2/5/	2014	
			- lierr	Drill Rig: Geoprobe	Driller: J. Chioraz			
			521 Cler Columbia, S	nson Road outh Carolina Project No.: 73138143	Exhibit: B-3,	<u> </u>		



PROMOTE PROTECT PROSPER	2. 2. 20. 30. 30. 30. 30. 30. 30. 30. 30. 30. 3
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18484, MW-09491
Name: SCDOT	Site 1D#18484, MW-09491
(last) (first)	8. USE:
Address: PO Box 191	☐ Residential ☐ Public Supply ☐ Process
City C 1 1: Ct-t-: CC 7: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: COUNTY: Florence	12
Name: Site 21-Tract 916	12 ft. Date Completed: 2/5/14  10. CASING:  Threaded  Welded
	1 611
Street Address: 3032 & 3034 S. Pamplico Hwy	
City: Pamplico Zip:	Type:
Latterday Lauretterday	0 in to 8 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitude:	in. toft. depth
2. DUDI IC CVCTES NAME. DUDI IC OVCTES NUMBER	11. SCREEN:
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER: 18484 SB-3	Type: SS Diam.: 1"
- International Control of the Contr	Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT: ☑ Yes ☐ No	Set Between: 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS
	ft. and ft. USE SECOND SHEET
Grouted Depth: from 12 ft. to 0 ft.	Sieve Analysis  □ Yes (please enclose) ☑ No
*Thickness Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description of Bottom of	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	ft. after hrs. Pumping G.P.M.
See Geologist's Log	Pumping Test: Pes (please enclose)  No
	Yield:
	14. WATER QUALITY
	Chemical Analysis ☐ Yes ☑No Bacterial Analysis ☐ Yes ☑ No Please enclose lab results.
	15. ARTIFICIAL FILTER (filter pack)
	Installed fromft.
	Effective size Uniformity Coefficient
	16. WELL GROUTED? Tyes I No
	☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
	Depth: From ft. to ft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
	Type
	Well Disinfected  Yes  No Type: Amount:
	18. PUMP: Date installed: Not installed 🛮
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: 🔲 Submersible 🔲 Jet (shallow) 🔲 Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
#U	MALE ACID ACID.
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Use a 2nd sheet if needed)	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.
5. REMARKS:	
	Signed: Date: 3/2/14
	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored	If D Level Driller, provide supervising driller's name:
☐ Dug ☐ Air Rotary ☐ Driven	וו ט בפיפו טיווופו, provide supervising utilier's name:
☐ Cable tool	

		NG LOG NO. SB-4/TW-4	Page 1 of 1	
PR	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT		
SIT				
GRAPHIC LOG	LOCATION See Figure 21		DEPTH (Ft.) WATER LEVEL	CESCIANTIONS
	DEPTH		Q WA	3
<u> </u>	0.5 TOPSOIL  SAND (SP), with clay, medium to coarse grained.	brownish orange, medium dense		
	2.0  FAT CLAY (CH), mottled (dark brown, tan, orango	e), weak petroleum odor, dense		
	4.0 MacroCore Terminated at 4 Feet			
	Water Point driven to 15 Feet. Ground water sample collected from screen - poi	nt water sampler from 11-15 Feet.	5 —	
			10-	
	Direct Push Terminated at 15 Feet		15	+
	Stratification lines are approximate. In-situ, the transition may be	gradual. Hammer Type: Direct Push		
	cement Method: ect Push	Notes:		
Bori	lonment Method: ings backfilled with cement-bentonite grout upon spletion.			
	WATER LEVEL OBSERVATIONS	Boring Started: 2/5/2014  Drill Rig: Geoprobe	Boring Completed: 2/5/201	4
		Drill Rig: Geoprobe  521 Clemson Road Columbia, South Carolina  Project No.: 73138143	Driller: J. Chiorazzi  Exhibit: B-4,	
		Columbia, Couli Carolina Info Columbia, 13 130 143	Exhibit: B-4	



PROMOTE PROTECT PROSPER					
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#18484, MW-09491			
Name: SCDOT		Site 1D#18484, MW-09491			
(last)	(first)	8. USE:			
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process			
City C 1 1: State CC	7 7in: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency			
City: Columbia State: SC	Zip: 29202-0000	☐ Test Well ☐ Monitor Well ☐ Replacement			
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/5/14			
2. LOCATION OF WELL: C		15 ft. Date Completed: 2/5/14			
Name: Site 21-Tract 916	1 10101100	10. CASING: Threaded Welded			
Street Address: 3032 & 3034 S. I	Pamalico Huzy	Diam.: 1.5" Height: Above Below ✓			
City: Pamplico	Zip:	Type: D PVC D Galvanized Surfaceft.			
7 I amplico		Steel Dother Weight			
Latitude: Longitude	e:	0 in. to 11 ft. depth Drive Shoe? ☐ Yes ☑ No			
		in. to ft. depth			
3. PUBLIC SYSTEM NAME: PL	JBLIC SYSTEM NUMBER:	11. SCREEN:			
18484 SB-4	1	Type: <u>SS</u> Diam.: <u>1"</u>			
4. ABANDONMENT: ☑ Yes ☐	No	Slot/Gauge: 0.010 Length: 4'			
		Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS			
Grouted Depth: from 15	ft. to <u>0</u> ft.	ft. andft. USE SECOND SHEET			
	*Thickness Depth to	Sieve Analysis			
Formation Description	of Bottom of	12. STATIC WATER LEVEL ft. below land surface after 24 hours			
•	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.			
See Geologist's Log		ft. afterhrs. PumpingG.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)			
		Installed fromft. toft.			
		Effective size Uniformity Coefficient			
		16. WELL GROUTED? TYes No			
		□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other			
		Depth: From ft. to ft.			
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction			
		Type Well Disinfected □ Yes ☑ No Type: Amount:			
		18. PUMP: Date installed: Not installed 🗹			
		Mfr. Name: Model No.: ft. Capacity gpm H.P Volts Length of drop pipe ft. Capacity gpm			
		TYPE: Submersible Jet (shallow) Turbine			
		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal			
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790			
		Address: (Print) Level: A B C D (circle one)			
		2047 Industrial Blvd, Lexington, SC			
		2017 Industrial Diva, Devington, DC			
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:			
Alexan Ond should be 10		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under			
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.			
5. REMARKS:					
		Signed: Date: 3/2/14			
		Well Driller			
6. TYPE: ☐ Mud Rotary ☐ Jetted	■ Bored	If D Level Driller, provide supervising driller's name:			
☐ Dug ☐ Air Ro	tary Driven	The series series, provide experitioning armore relation			
☐ Cable tool					

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



## SITE 22 TRACT 967 DANIELS BROTHERS (UST#03418), 3732 S. PAMPLICO HWY.

#### 1.0 Site Description

This site is an abandoned former gas station property that operated under UST Permit # 03418. The site formally operated two gasoline USTs at the site which were reportedly removed in 1997. Two releases were reported at the site. No files are available from the SCDHEC. The site release was issued a No Further Action (NFA) status in 1998 and 2003.

Monitoring wells associated with the releases reported at the site are present on-site and across Pamplico Highway. The majority of the monitoring well network is located inside of the proposed new ROW. The approximate dispenser, line, ASTs, and UST locations are shown on Figure 22.

#### 2.0 Assessment Activities

An EM survey was conducted at this site with respect to the dispenser lines and UST fill ports. Based on the EM survey, two USTs are located in the proposed ROW.

Two temporary wells were advanced using direct-push sampling equipment based on EM survey results and dispenser and UST locations. Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

Petroleum compounds were detected above RBSLs in the soil sample collected from TW-2. The analytical results are shown on Table 22, below.

The UST system and majority of the store and is within the proposed ROW, and will require complete demolition and removal. Accordingly, the following activities should be conducted prior to site widening activities:

- Monitoring wells affected by the widening should be abandoned in accordance with the SC Well Standards and Regulations,
- Special handling and disposal of soils impacted by petroleum contaminated ground water likely may be necessary.

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 22 Tract 967 Daniels Brothers (UST#03418), 3732 S. Pamplico Hwy.

Table 22 – Analytical Data Summary of Detected Compounds

	SOIL (ug/kg)		GROUND WATER (ug/l)			
Sample	SB-2		TW-1	TW-2		
(Sample Depth, ft.)	(2-4)	RBSL	8.5-12	11.5-15	RBSL / AL	
OVA (ppm)	68.6	ne	751.0	171.0	ne	
Benzene	< 0.058	7	13.4J	167	5	
Toluene	< 0.123	1,450	1,280	4.82	1,000	
Ethylbenzene	< 0.211	1,150	828.0	181	700	
Xylene	< 0.285	14,500	4,260	102	10,000	
Naphthalene	< 0.447	36	152	116	25	
MTBE	NA	ne	< 1.55	57.3	40	
Diisopropyl ether (DIPE)	NA	ne	NA	77.0J	150	
tert-amyl alcohol (TAA)	NA	ne	NA	3,130	240	

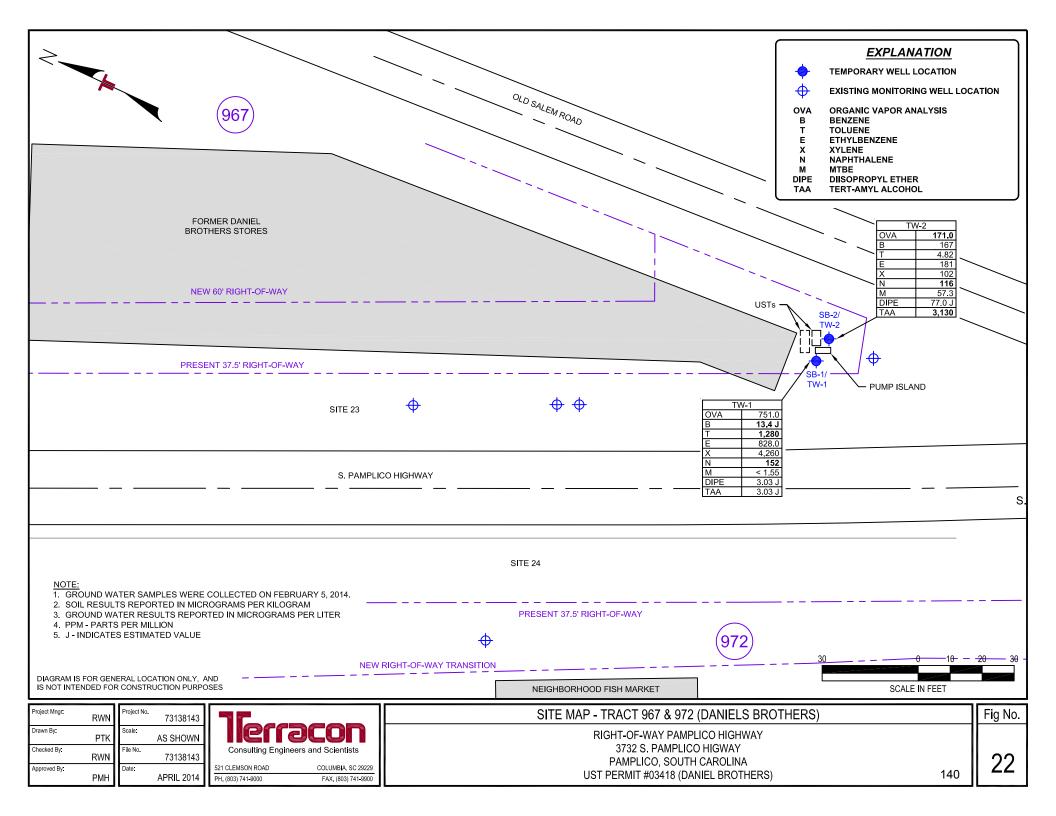
#### NOTES:

- 1) All samples collected on February 5, 2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane

- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 22 – Site Map Well Logs



			BORING LO	OG NO. SB-1	P	age 1	of 1	_
PR	OJECT	F: SC-51 PIN 38191 - Right of Way Expansion Hwy 51		CLIENT: SCDOT				
SIT	Έ: 	Site 22 - Tract 967 Pamplico, South Carolina						
GRAPHIC LOG	LOCATI	ON See Figure 22				DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	
	DEPTH					DEP.	WATE OBSER	
3. T.	<sub>0.5</sub> AS	PHALT L - SAND (SP), medium to coarse grain	ned, orange, poorly son	ted				\
	_		3-7,1-1-7			_		/
	2.0 <b>FIL</b>	L - SAND (SP), medium to coarse grain	ned, orange, poorly sor	ted		_		\
		croCore Terminated at 4 Feet				_		/
		ater Point Driven to 12 Feet.  Soundwater Sample collected from Scree	en - point water sample	e from 8-12 Feet.		5 –	-	
						-		
						_		
						_		
						10-		
						-	_	
	Dir	rect Push Terminated at 12 Feet				_		_
	Dir	ect Push Terminated at 12 Peet						
	Stratific	ation lines are approximate. In-situ, the transition	n may be gradual.	Hammer Type: Dire	ct Push			
	cement Mo	ethod:		Notes:				
Bori		ethod: illed with cement-bentonite grout upon	_					
com	pletion. WA	TER LEVEL OBSERVATIONS	75	Boring Started: 2/5/20	14 Boring Compl	leted: 2/5	5/2014	_
			- lierr	Drill Rig: Geoprobe	Driller: J. Chic			_
			521 Cler Columbia, S	nson Road South Carolina Project No.: 73138143	Exhibit: B	B-1 1 4 4		



PROMOTE PROTECT PROSPER	2000 De	uii oticet, oolumbia, oo 2020 1 1700, (000) 000 4000
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#18484, MW-09491
Name: SCDOT		51te 1D#18484, MW-09491
(last)	(first)	8. USE:
Address: PO Box 191		Residential Public Supply Process
_		☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: S	C Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
	COUNTY: Florence	12 ft. Date Completed: 2/5/14
	ood III Tolence	12 ft. Date Completed: 2/5/14  10. CASING: ☑ Threaded ☑ Welded
Name: Site 22-Tract 916		Diam.: 1.5" Height: Above Below
Street Address: 3032 & 3034 S.		Type:  PVC  Galvanized  Surface  ft.
City: Pamplico	Zip:	Steel Other Weight
		0 in to 8 ft. depth Drive Shoe? ☐ Yes ☑ No
Latitude: Longitue	de:	in. toft. depth
3. PUBLIC SYSTEM NAME: F	PUBLIC SYSTEM NUMBER:	11. SCREEN:
18484 SB-		Type: SS Diam.: 1"
		Slot/Gauge: 0.010 Length: 4'
4. ABANDONMENT:    Yes (	□ No	Set Between: 8 ft. and 12 ft. NOTE: MULTIPLE SCREENS
		ft. andft. USE SECOND SHEET
Grouted Depth: from 12	_ ft. to <u>0</u> ft.	Sieve Analysis 🗖 Yes (please enclose) 🛽 No
Formation Description	*Thickness Depth to of Bottom of	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Tormation Description	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
6 6 1 7 4 7		ft. after hrs. Pumping G.P.M.
See Geologist's Log		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)
		Installed fromft.  Effective size Uniformity Coefficient
	]	Effective size Officiality Coefficient
		16. WELL GROUTED? Yes No
		□ Neat Cement □ Bentonite □ Bentonite/Cement □ Other
		Depth: From ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Type
		Well Disinfected ☐ Yes ❷ No Type: Amount:
		18. PUMP: Date installed: Not installed ☑
		Mfr. Name: Model No.:
TRANSPORTED TO THE PROPERTY OF		H.P Volts Length of drop pipe ft. Capacity gpm
		TYPE: 🔲 Submersible 🔲 Jet (shallow) 🔲 Turbine
·		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
		Address: (Print) Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		Signed: Date: 3/2/14
		Signed: Date: 57211
C TVDE C VIJE C	J 80-1	
6. TYPE: ☐ Mud Rotary ☐ Jette ☐ Dug ☐ Air R		If D Level Driller, provide supervising driller's name:
☐ Cable tool ☐ Othe	•	
Li Cable tool	•	

		RING LOG NO. SB-2	Page 1 of 1
PRO	OJECT: SC-51 PIN 38191 - Right of Way Expansion Hwy 51	CLIENT: SCDOT	
SITE			
GRAPHIC LOG	OCATION See Figure 22		DEPTH (Ft.) WATER LEVEL OBSERVATIONS
D	Depth 5 <b>asphalt</b>		_ \
	FILL - SAND (SP), medium to coarse grained, ora	ange to gray, poorly sorted	
4.	MacroCore Terminated at 4 Feet Water Point Driven to 15 Feet. Groundwater Sample collected from Screen - poi	nt water sample from 11-15 Feet.	5 —
			10-
	Direct Push Terminated at 15 Feet		15
	Stratification lines are approximate. In-situ, the transition may be	gradual. Hammer Type: Direct Pusl	h
	ement Method:	Notes:	
Abandon	nment Method:		
comple	gs backfilled with cement-bentonite grout upon letion.  WATER LEVEL OBSERVATIONS		
	TALLY LLVLL ODSERVATIONS	Boring Started: 2/5/2014  Drill Rig: Geoprobe	Boring Completed: 2/5/2014  Driller: J. Chiorazzi
		521 Clemson Road Columbia, South Carolina Project No.: 73138143	Exhibit: B-2



## Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

PROMOTE PROTECT PROSPER	
1. WELL OWNER INFORMATION:	7. PERMIT NUMBER: Site ID#18484, MW-09491
Name: SCDOT	5110 15 11 11 10 10 11 11 10 10 11 11 11 10 10
(last) (first) Address: PO Box 191	8. USE:
10 Box 191	☐ Residential ☐ Public Supply ☐ Process
City: Columbia State: SC Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work: Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: COUNTY: Florence	15 ft. Date Completed: 2/5/14
Name: Site 22-Tract 916	10. CASING: ☑ Threaded ☑ Welded
Street Address: 3032 & 3034 S. Pamplico Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico Zip:	Type: D PVC D Galvanized Surface ft.
*	Steel Other Weight
Latitude: Longitude:	0 in. to 11ft. depth in. toft. depth in. toft. depth
3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:	11. SCREEN:
18484 SB-2	Type: SS Diam.: 1"
4. ABANDONMENT: ☑ Yes ☐ No	Slot/Gauge: 0.010 Length: 4'
11 100 E 100	Set Between:         11         ft. and 15         ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from 15 ft. to 0 ft.	ft. and ft. USE SECOND SHEET Sieve Analysis ☐ Yes (please enclose) ☑ No
*Thickness Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description of Bottom of	13. PUMPING LEVEL Below Land Surface.
Stratum Stratum	ft. after hrs. Pumping G.P.M.
See Geologist's Log	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: Fromft. toft.
	17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction  Type
	Well Disinfected ☐ Yes ☑ No Type: Amount:
	18. PUMP: Date installed: Not installed ☑
	Mfr. Name: Model No.:
	H.P Volts Length of drop pipe ft. Capacity gpm
	TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine
	☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
	19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
	Address: (Print)  Level: A B C D (circle one)
	2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones	Telephone No.: 803-429-5001 Fax No.:
(Use a 2nd sheet if needed)	20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
5. REMARKS:	my direction and this report is true to the best of my knowledge and belief.
	Signed: 3/2/14
	Signed. Date.
C TVDT. 5 11 10 1	Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored ☐ Dug ☐ Air Rotary ☐ Driven	If D Level Driller, provide supervising driller's name:
☐ Cable tool	

#### **Limited Environmental Site Assessment**

SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



## SITE 23 TRACT 975 EVANS GROCERY (UST #03475) 3801 SANDPIT RD

#### 1.0 Site Description

This site is an abandoned former grocery store which previously operated under UST Permit No. 03175. A former dispenser island located in front of the store, and there are two vent pipes located on the side of the building just outside of the proposed ROW. Three USTs were reportedly removed in 1993, and was issued a no further action (NFA) status in 1993. The former dispenser and vent pipe locations are shown on Figure 23.

#### 2.0 Assessment Activities

An EM survey was conducted in the vicinity of the dispenser island. No indications of a UST was indicated by the survey.

Two temporary wells were advanced using direct-push sampling equipment based on EM survey results and dispenser and UST locations. One boring was advanced at the dispenser island and one boring was placed in the proximity of the vent pipes.

Soil samples were collected from each boring and analyzed using a Foxboro Century 128 FID. The OVA results are included on the boring logs generated for each temporary well, attached. Soil sample SB-1 and ground water samples TW-1 and TW-2 were submitted for laboratory analysis for petroleum compounds per EPA Method 8260.

#### 3.0 Results and Findings

No petroleum compounds were detected above RBSLs in the soil or ground water samples collected from TW-1 or TW-2. The analytical results are shown on Table 23, below.

No USTs, piping, or environmental conditions are expected to impact the ROW widening at this site.

# SC-51 PIN 38191 RD01; Hwy 51 -Sections 1, 3, & 4 April 28, 2014 Terracon Project No. 73138143



Site 23 Tract 975 Evans Grocery (UST #03475) 3801 Sandpit Rd

Table 23 - Analytical Data Summary of Detected Compounds

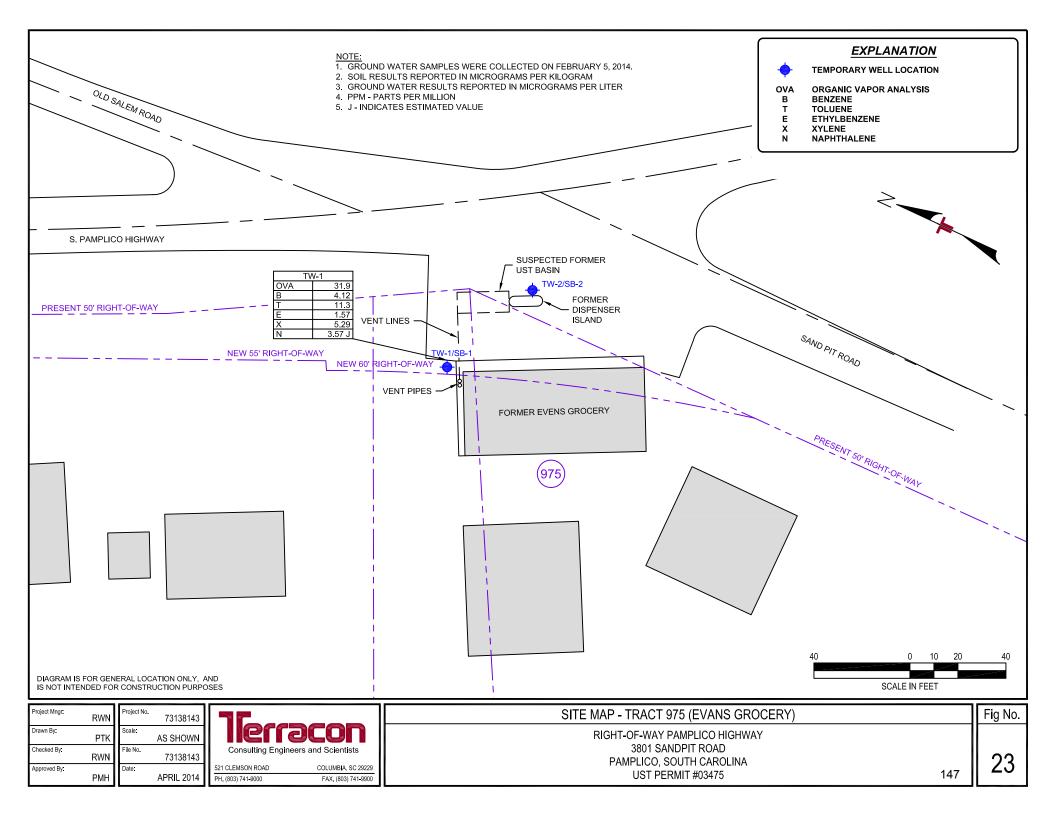
	SOIL (ug/kg)		GROUND WATER (ug/l)		
Sample	SB-1		TW-1	TW-2	
(Sample Depth, ft.)	(2-4)	RBSL	8.5-12	8.5-12	RBSL / AL
OVA (ppm)	12.9	ne	31.9	15.4	ne
Benzene	< 0.040	7	4.12	<0.11	5
Toluene	< 0.084	1,450	11.3	< 0.12	1,000
Ethylbenzene	< 0.144	1,150	1.57	<0.10	700
Xylene	< 0.194	14,500	5.29	< 0.18	10,000
Naphthalene	< 0.304	36	3.57J	<0.17	25
MTBE	NA	ne	< 0.078	< 0.078	40
1,2 DCA	NA	ne	< 0.116	< 0.116	5

#### **NOTES:**

- 1) All samples collected on February 5, 2014
- 2) μg/kg micrograms per kilogram
- 3) μg/l micrograms per liter
- 4) OVA- Organic Vapor Analysis
- 5) parts per million (PPM)
- 6) MTBE tert-Butyl methyl ether
- 7) 1,2-DCA 1,2-Dichloroethane
- 8) RBSL/AL SCDHEC Risk Based Screening Level or Action Level
- 9) Concentrations in bold represent RBSL or Al exceedance
- 10) ne no regulatory action level established
- 11) J indicates an estimated value
- 12) na Not Analyzed

#### **Attachments**

Figure 23 – Site Map Well Logs





## Water Well Record **Bureau of Water**

PROMOTE PROTECT PROSPER	2600 Bi	ull Street, Columbia, SC 29201-1708; (803) 898-4300
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#03418, MW-25378
Name: SCDOT		Site 1D#03418, MW-25378
(last)	(first)	8. USE:
Address: PO Box 191		☐ Residential ☐ Public Supply ☐ Process
City: C. I. 1.1. State: C	C 7: 20202 0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: S	C Zip: 29202-0000	☑ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
	COUNTY: Florence	15 ft. Date Completed: 2/5/14
Name: Site 23-Tract 967	Journal Hotelice	10. CASING: Threaded Welded
Street Address: 3732 S. Pamplio	TT	Diam.: 1.5" Height: Above Below
City: Pamplico	co nwy Zip:	Type: PVC Galvanized Surfaceft.
Pampneo	шр.	☑ Steel □ Other   Weight
Latitude: Longitud	de:	0 in. to 11 ft. depth Drive Shoe? ☐ Yes ☑ No
		in. to ft. depth
3. PUBLIC SYSTEM NAME: F	PUBLIC SYSTEM NUMBER:	11. SCREEN:
03418 SB-		Type: SS Diam.: 1"
4. ABANDONMENT:  Yes	7 No	Slot/Gauge: 0.010 Length: 4'
4. ADANDONWENT. E 165	1 NO	Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS
Grouted Depth: from 15	_ft. to <u>0</u> ft.	ft. and ft. USE SECOND SHEET
Glodied Deptil. Holli 120	*Thickness Depth to	Sieve Analysis
Formation Description	of Bottom of	12. STATIC WATER LEVEL ft. below land surface after 24 hours
	Stratum Stratum	13. PUMPING LEVEL Below Land Surface.
See Geologist's Log		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 ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft direction
		Туре
		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
ST		☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT. NO.: 1790
		Address: (Print)  Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
Ç		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		\\ ( //
		Simple 3/2/14
		Signed: Date: 572/14
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored		
Dug Air Rotary Driven		If D Level Driller, provide supervising driller's name:
☐ Cable tool       ☐ Other	· ·	



## Water Well Record Bureau of Water

2600 Bull Street, Columbia, SC 29201-1708; (803) 898-4300

PROMOTE PROTECT PROSPER		
1. WELL OWNER INFORMATION:		7. PERMIT NUMBER: Site ID#03418, MW-25378
Name: SCDOT (last)	(first)	
Address: PO Box 191	(mst)	8. USE:
10 00 191		☐ Residential ☐ Public Supply ☐ Process ☐ Irrigation ☐ Air Conditioning ☐ Emergency
City: Columbia State: SC	Zip: 29202-0000	☐ Irrigation ☐ Air Conditioning ☐ Emergency ☐ Test Well ☐ Monitor Well ☐ Replacement
Telephone: Work:	Home:	9. WELL DEPTH (completed) Date Started: 2/5/14
2. LOCATION OF WELL: C	OUNTY: Florence	15 ft. Date Completed: 2/5/14
Name: Site 23-Tract 967		10. CASING: Threaded Welded
Street Address: 3732 S. Pamplico	o Hwy	Diam.: 1.5" Height: Above Below ✓
City: Pamplico	Zip:	Type: PVC Galvanized Surface ft.
		U Steel □ Other   Weight □ Ib./ft.  O in. to 11 ft. depth   Drive Shoe? □ Yes ☑ No
Latitude: Longitude	ə:	<u>U</u> in. to <u>II</u> ft. depth   Drive Shoe? □ Yes ☑ No in. toft. depth
3. PUBLIC SYSTEM NAME: PI	JBLIC SYSTEM NUMBER:	11. SCREEN:
03418 SB-2	)	Type: <u>SS</u> Diam.: 1" Length: 4'
4. ABANDONMENT:	No	1 1 1 <i>E</i>
		Set Between: 11 ft. and 15 ft. NOTE: MULTIPLE SCREENS  ft. and ft. USE SECOND SHEET
Grouted Depth: from 15	ft. to <u>0</u> ft.	Sieve Analysis  Yes (please enclose)  No
_ , _ , . ,	*Thickness Depth to	12. STATIC WATER LEVEL ft. below land surface after 24 hours
Formation Description	of Bottom of Stratum	13. PUMPING LEVEL Below Land Surface.
Car Carlarieda I ar	Ollatari Ollatari	ft. after hrs. Pumping G.P.M.
See Geologist's Log		Pumping Test: 🗖 Yes (please enclose) 🗷 No
		Yield:
		14. WATER QUALITY
		Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
	<u> </u>	Please enclose lab results.
		15. ARTIFICIAL FILTER (filter pack) Yes No
	<del> </del>	Installed from ft. to ft.  Effective size Uniformity Coefficient
		16. WELL GROUTED? ☐ Yes ☐ No ☐ Neat Cement ☐ Bentonite ☐ Bentonite/Cement ☐ Other
		Depth: From ft. to ft.
		17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
		Туре
		Well Disinfected ☐ Yes ☑ No Type: Amount:
The state of the s		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
		TYPE: ☐ Submersible ☐ Jet (shallow) ☐ Turbine ☐ Jet (deep) ☐ Reciprocating ☐ Centrifugal
		19. WELL DRILLER: Jason Chiorazzi CERT, NO.: 1790
		Address: (Print)  Level: A B C D (circle one)
		2047 Industrial Blvd, Lexington, SC
*Indicate Water Bearing Zones		Telephone No.: 803-429-5001 Fax No.:
		20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under
(Use a 2nd sheet if needed)		my direction and this report is true to the best of my knowledge and belief.
5. REMARKS:		
		Signed: Date: 3/2/14
		Well Driller
6. TYPE: ☐ Mud Rotary ☐ Jetted ☐ Bored		If D Level Driller, provide supervising driller's name:
Dug Air Ro	tary Driven	
☐ Cable tool		

## **APPENDIX A**

Monitoring Well Approvals



South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re: Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18474

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- ➤ Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon Tim Hunter/SCDOT

2650 Pamplico Hwy

18474

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 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.
- 4. 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.
- If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09481

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT 2630 Pamplico Hwy

18475

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

## 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09482

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18475

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- > Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- > If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

G. McInnis, Program Manager Federal & State Site Assessment Section

Monitor well approval enc:

SCDHEC EQC Region cc:

Michael Hudgins - Terracon



South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re: Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18476

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- ➤ Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

4109 Pamplico Hwy

18476

Florence

This approval is for the installation of 3 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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. 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 the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
- 3. 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09483

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re: Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18477

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- > Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- > If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

ar G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

SCDHEC EQC Region cc:

Michael Hudgins - Terracon



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT 6114 Pamplico Hwy

18477

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

## 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. 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 the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
- 3. 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09484

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



## Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

January 22, 2014

Tim Hunter SC DOT P.O. Box 191 Columbia, SC 29202

Re: Poston Packing

5810 Pamlico Hwy, Florence, SC 29505

MWA # UMW-25376

Request to Install Groundwater Monitoring Wells received January 21, 2014

Florence County

Dear Mr. Hunter:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0647.

Sincerely,

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management

## Monitoring Well Approval

Approval is hereby granted to:

Terracon Consultants, Inc.

On Behalf of:

SC DOT

Location:

5810 Pamplico Hwy, Florence, SC

County:

Florence County

Permit:

03278

This approval is for the installation of monitoring wells. The monitoring wells are to be installed in the approved location. 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 Denise M. Place (tel: 803-898-0647 or e-mail: <a href="mailto:placedm@dhec.sc.gov">placedm@dhec.sc.gov</a>) 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: 1/22/14 Approval #: UMW-25376

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management



South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18478

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- ➤ Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathar G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

Between 6309 & 6315 Pamplico Hwy

18478

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 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.
- 4. 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.
- If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09485

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



site 8

Catherine B. Templeton, Director

Promoting and protesting the health of the public and the environment

MR MICHAEL HUDGINS TERRACON CONSULTANTS INC 521 CLEMSON ROAD COLUMBIA SC 29229

JAN 2 3 7014

Re: Monitoring Well Approval

Evergreen Express, 6331 Pamplico Hwy, Effingham, SC 29541

UST Permit # 03428

Release reported October 30, 1998

Request to Install Groundwater Monitoring Wells received January 21, 2014

Florence County

Dear Mr. Hudgins:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0592.

Sincerely,

Maia Milenkova, Hydrogeologist

Assessment Section

**UST Management Division** 



#### Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

## Monitoring Well Approval Form

Approval is hereby granted to: Terracon Consultants, Inc.

On behalf of: SCDOT UST Permit #: 03428

Facility: Evergreen Express, 6331 Pamplico Hwy, Effingham, SC

County: Florence

This approval is for the installation of four temporary wells. The temporary wells are to be installed in the approved locations and 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 Agency shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless another schedule has been approved by the Agency. 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 Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
- 5. If any of the information provided to the Agency changes, notification to Maia Milenkova (tel: 803 898-0592 or e-mail: <a href="milenkmp@dhec.sc.gov">milenkmp@dhec.sc.gov</a>) 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. Approval from The Agency 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:

January 21, 2014

Approval #: UMW-25375

Maia Milenkova, Hydrogeologist

Assessment Section

**UST Management Division** 



Cathetine B. Templeton, Director

Promoting and protecting the health of the public and the environment

March 28, 2014

Tim Hunter SC DOT P.O. Box 191 Columbia, SC 29202

Re: Midway Supply (DOT right of way)

6402 Pamlico Hwy, Effingham, SC 29511

MWA # UMW-25449

Request to Install Groundwater Monitoring Wells received March 27, 2014

Florence County

Dear Mr. Hunter:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0647.

Sincerely,

Denise M. Flace

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management

Site 9

## Monitoring Well Approval

Approval is hereby granted to:

Terracon Consultants, Inc.

On Behalf of:

SC DOT

Location:

6402 Pamplico Hwy, Effingham, SC

County:

Florence County

Permit:

16808

This approval is for the installation of monitoring wells. The monitoring wells are to be installed in the approved location. 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 Denise M. Place (tel: 803-898-0647 or e-mail: <a href="mailto:placedm@dhec.sc.gov">placedm@dhec.sc.gov</a>) 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:

3/28/14

Approval #: UMW-25449

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

MR REGAN NORRIS TERRACON CONSULTANTS INC 521 CLEMSON ROAD COLUMBIA SC 29229 MAR 2 8 2014

Re: Monitoring Well Approval

Webb's Grocery (former), 6411 Pamplico Highway, Evergreen, SC UST Permit #03563; Monitoring Well Approval #UMW-25450 Release reported August 16, 1991 Well Approval Request received via e-mail March 25, 2014

Well Approval Request received via e-mail March 25, 2014

Florence County

Dear Mr. Norris:

On behalf of the SCDOT, Terracon Consultants, Inc. submitted on March 25, 2014 a monitoring well application (DHEC Form 3736, 9/2007) for the installation of three (3) temporary monitoring wells at the referenced site. Accordingly, enclosed is monitoring well approval #UMW-25450 for the installation of temporary monitoring wells TW-1, TW-2, and TW-3.

Please note, as no financial pre-approval has been provided, costs associated with the work are not reimbursable from the State Underground Petroleum Environmental Response Bank account. Copies of the boring logs, construction details (1903 forms), and analytical results should be submitted to the Underground Storage Tank Management Division within thirty (30) days of well installation.

On all correspondence concerning this site, please reference **UST Permit #03563**. If you have any questions, please contact me by telephone at (803) 898-0671 or by e-mail to RiversMS@dhec.sc.gov.

Sincerely,

Michael Rivers, Hydrogeologist

Corrective Action Section

Underground Storage Tank Management Division

Bureau of Land and Waste Management

enc: Monitoring Well Approval

cc: Mr. Tim Hunter, SCDOT, P.O. Box 191, Columbia, SC 29202 (w/enc.)

Technical file (w/ enc.)

MR/MWAPPROV03.28.14



## Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

### Monitoring Well Approval

Approval is hereby granted to: Terracon Consultants, Inc.

(On behalf of): SCDOT

Facility: Webb's Grocery (former), 6411 Pamplico Highway, Evergreen, SC

**UST Permit Number: 03563** 

County: Florence

This approval is for the installation of three (3) temporary groundwater monitoring wells designated TW-1, TW-2, and TW-3. The monitoring wells are to be installed in the approved locations in accordance with the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

## Please note that R.61-71 requires the following:

- 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 (DHEC 1903) or other form provided or approved by the Agency shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless the Agency has approved another schedule. 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 Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
- 5. If any of the information provided to the Agency changes, notification to Mike Rivers at (803) 898-0671 or e-mail to RiversMS@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.
- 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. Agency 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.

Approval #: UMW-25450

Date of Issuance:

Michael Rivers, Hydrogeologist

Milial River

Corrective Action Section

Underground Storage Tank Management Division



and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18479

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- > Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- > If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

Monitor well approval enc:

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



## Temporary Monitoring Well Approval

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

6806 Pamplico Hwy

18479

Florence

This approval is for the installation of 3 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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. 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 the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
- 3. 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance: 1/21/14

Approval #: MW-09486

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



RECEIVED JAN 2 7 2014

#### Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

MR P MICHAEL HUDGINS TERRACON CONSULTANTS INC 521 CLEMSON ROAD COLUMBIA SC 29229 JAN 2 4 2014

Re:

**Monitoring Well Approval** 

Hyman Oil Company, 363 North Pamplico Highway, Pamplico, SC UST Permit #03462; Monitoring Well Approval #UMW-25380 Release reported December 9, 1991 Well Approval Request received via e-mail January 21, 2014 Florence County

Dear Mr. Hudgins:

On behalf of the SCDOT, Terracon Consultants, Inc. submitted on January 21, 2014 a monitoring well application (DHEC Form 3736, 9/2007) for the installation of 2 temporary monitoring wells (GeoProbe points) at the referenced site. Accordingly, enclosed is monitoring well approval #UMW-25380 for the installation of monitoring wells TMW-1 and TMW-2. Please note, as no financial pre-approval has been provided, costs associated with the work are not reimbursable from the SUPERB Account. Copies of the boring logs, construction details (1903 forms), and analytical results should be submitted to the UST Division within thirty days of well installation.

On all correspondence concerning this site, please reference **UST Permit #03462**. If you have any questions, please contact me by telephone at (803) 898-0671 or by e-mail to RiversMS@dhec.sc.gov.

Sincerely,

Michael Rivers, Hydrogeologist

Corrective Action Section

Underground Storage Tank Management Division

Bureau of Land and Waste Management

enc:

Monitoring Well Approval

cc:

Technical file (w/enc.)

MR/MWAPPROV01.22.14



## Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

### **Monitoring Well Approval**

Approval is hereby granted to: Terracon Consultants, Inc.

(On behalf of): SCDOT

Facility: Hyman Oil Company, 363 North Pamplico Highway, Pamplico, SC

**UST Permit Number: 03462** 

County: Florence

This approval is for the installation of two (2) temporary groundwater monitoring wells designated TMW-1 and TMW-2. The monitoring wells are to be installed adjacent to the former dispenser island in accordance with 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 (1903) or other form provided or approved by the Department shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless the Agency has approved another schedule. 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 Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
- 5. If any of the information provided to the Agency changes, notification to Michael Rivers, the project manager, (telephone: (803) 898-0671 or e-mail: RiversMS@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.

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: January 22, 2014

Approval #: UMW-25380

Michael Rivers, Hydrogeologist

Corrective Action Section

Muliar

Underground Storage Tank Management Division



Promoting and protecting the health of the public and the environment EIVED JAW 27 2014

MR P MICHAEL HUDGINS TERRACON CONSULTANTS INC 521 CLEMSON ROAD **COLUMBIA SC 29229** 

LIAN 2 4 2014

Re:

**Monitoring Well Approval** 

Gibbs Grocery, 863 North Pamplico Highway, Pamplico, SC UST Permit #03463; Monitoring Well Approval #UMW-25381 Release reported December 27, 1991 Well Approval Request received via e-mail January 21, 2014

Dear Mr. Hudgins:

Florence County

On behalf of the SCDOT, Terracon Consultants, Inc. submitted on January 21, 2014 a monitoring well application (DHEC Form 3736, 9/2007) for the installation of 3 temporary monitoring wells (GeoProbe points) at the referenced site and adjacent property located at 859 North Pamplico Highway. Accordingly, enclosed is monitoring well approval #UMW-25381 for the installation of monitoring wells TMW-1, TMW-1, and TMW-3. Please note, as no financial pre-approval has been provided, costs associated with the work are not reimbursable from the SUPERB Account. Copies of the boring logs, construction details (1903 forms), and analytical results should be submitted to the UST Division within thirty days of well installation.

On all correspondence concerning this site, please reference UST Permit #03463. If you have any questions, please contact me by telephone at (803) 898-0671 or by e-mail to RiversMS@dhec.sc.gov.

Sincerely,

Michael Rivers, Hydrogeologist

Corrective Action Section

Underground Storage Tank Management Division

Bureau of Land and Waste Management

enc:

Monitoring Well Approval

cc:

Technical file (w/ enc.)

MR/MWAPPROV01.22.14

Approval #: UMW-25381



## Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

### **Monitoring Well Approval**

Approval is hereby granted to: Terracon Consultants, Inc.

(On behalf of): SCDOT

Facility: Gibbs Grocery, 863 North Pamplico Highway, Pamplico, SC

**UST Permit Number: 03463** 

County: Florence

This approval is for the installation of three (3) temporary groundwater monitoring wells designated TMW-1, TMW-2, and TMW-3. The monitoring wells are to be installed at the Gibbs Grocery site and adjacent property located at 859 North Pamplico Highway in accordance with 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 (1903) or other form provided or approved by the Department shall be completed and submitted to the Agency within 30 days after well completion or abandonment unless the Agency has approved another schedule. 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 Agency within 30 days of receipt of laboratory results unless another schedule has been approved by the Agency as required by R.61-71.H.1.d.
- 5. If any of the information provided to the Agency changes, notification to Michael Rivers, the project manager, (telephone: (803) 898-0671 or e-mail: RiversMS@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.

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: January 22, 2014

Michael Rivers, Hydrogeologist

Corrective Action Section

Underground Storage Tank Management Division



## Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

January 22, 2014

Tim Hunter SC DOT P.O. Box 191 Columbia, SC 29202

Re: Raider Station

848 N. Pamlico Hwy, Pamplico, SC 29583

MWA # UMW-25377

Request to Install Groundwater Monitoring Wells received January 21, 2014

Florence County

Dear Mr. Hunter:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0647.

Sincerely,

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management

## Site 14

## **Monitoring Well Approval**

Approval is hereby granted to: Terracon Consultants, Inc.

On Behalf of: SC DOT

Location: 848 N. Pamplico Hwy, Pamplico, SC

County: Florence County

**Permit:** 19301

This approval is for the installation of monitoring wells. The monitoring wells are to be installed in the approved location. 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 Denise M. Place (tel: 803-898-0647 or e-mail: <a href="mailto:placedm@dhec.sc.gov">placedm@dhec.sc.gov</a>) 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: 1/22/14 Approval #: UMW-25377

Denise M. Place Regulatory Compliance Section UST Management Division Bureau of Land and Waste Management



South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18480

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- ➤ Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

853 N Pamplico Hwy

18480

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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. 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 the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
- 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09487

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division



South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re: Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18481

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- ➤ Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- ➤ Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon



### South Carolina Department of Health and Environmental Control

## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

1570 S Pamplico Hwy 18481

Florence

This approval is for the installation of 3 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 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.
- 4. 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.
- If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09488

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division

Bureau of Land & Waste Management



January 21, 2014

South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18482

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- ➤ Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon

521 Clemson Rd - Columbia, SC 29229



### South Carolina Department of Health and Environmental Control

## **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

1870 S Pamplico Hwy

18482

Florence

This approval is for the installation of 3 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 3. 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.
- 4. 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.
- If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09489

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division

Bureau of Land & Waste Management



January 21, 2014

South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re:

Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18483

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- ➤ Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathar G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon

521 Clemson Rd - Columbia, SC 29229



### South Carolina Department of Health and Environmental Control

# **Temporary Monitoring Well Approval**

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

1873 S Pamplico Hwy

18483

Florence

This approval is for the installation of 2 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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.
- 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 the Department has approved another
  schedule. The form should contain the "as-built" construction details and all other information required by R.6171.H.1.f
- 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09490

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division

Bureau of Land & Waste Management



January 21, 2014

South Carolina Department of Health and Environmental Control

Tim Hunter SCDOT P O Box 191 Columbia, SC 29202

Re: Temporary Monitoring Well Approval Request received 1/21/14

Florence County Site ID: 18484

Dear Mr. Hunter:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary monitoring well approval request submitted 1/21/14. The original temporary monitoring well approval has been sent to Michael Hudgins/Terracon, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 3/22/14. Please note the following:

- Well construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.
- ➤ Monitoring wells are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).
- ➤ If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Jonathan G. McInnis, Program Manager Federal & State Site Assessment Section

enc: Monitor well approval

cc: SCDHEC EQC Region

Michael Hudgins - Terracon

521 Clemson Rd - Columbia, SC 29229



### South Carolina Department of Health and Environmental Control

# Temporary Monitoring Well Approval

Approval is hereby granted to:

on behalf of:

Facility:

Site Identification:

County:

Michael Hudgins/Terracon

Tim Hunter/SCDOT

3032 S Pamplico Hwy

18484

Florence

This approval is for the installation of 6 temporary groundwater-monitoring wells. The temporary wells are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence dated 1/21/14. The temporary wells are to be installed following all of the applicable requirements of R.61-71.

### 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. 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 the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f
- 3. 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.
- 4. 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.
- 5. If any of the information provided to the Department changes, Jonathan McInnis (803 896-4061, mcinnijg@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to well construction 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.

Date of Issuance:

1/21/14

Approval #: MW-09491

Jonathan G. McInnis, Program Manager

Federal & State Site Assessment

Site Assessment Remediation & Revitalization Division

Bureau of Land & Waste Management



# Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

January 22, 2014

Tim Hunter SC DOT P.O. Box 191 Columbia, SC 29202

Re: Evans Grocery

3801 S. Pamlico Hwy, Pamplico, SC 29583

MWA # UMW-25379

Request to Install Groundwater Monitoring Wells received January 21, 2014

Florence County

Dear Mr. Hunter:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0647.

Sincerely,

# Site ZZ

### Monitoring Well Approval

Approval is hereby granted to: Terracon Consultants, Inc.

On Behalf of: SC DOT

Location: 3801 S. Pamplico Hwy, Pamplico, SC

County: Florence County

**Permit:** 03475

This approval is for the installation of monitoring wells. The monitoring wells are to be installed in the approved location. 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 Denise M. Place (tel: 803-898-0647 or e-mail: <a href="mailto:placedm@dhec.sc.gov">placedm@dhec.sc.gov</a>) 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: 1/22/14 Approval #: UMW-25379



# Catherine B. Templeton, Director Promoting and protecting the health of the public and the environment

January 22, 2014

Tim Hunter SC DOT P.O. Box 191 Columbia, SC 29202

Re:

Daniels Bros

3732 S. Pamlico Hwy, Pamplico, SC 29583

MWA # UMW-25378

Request to Install Groundwater Monitoring Wells received January 21, 2014

Florence County

Dear Mr. Hunter:

The UST Management Division has received your request to install monitoring wells at the referenced location. The submittal has been placed on file. Monitoring well approval to install monitoring wells/borings in accordance with *South Carolina Well Standards*, R.61-71 is enclosed. Please submit a monitoring well record form (DHEC Form 1903) and analytical results of all soil and/or groundwater sampling to me within 30 days of receipt of the analytical results.

On all correspondence concerning this facility, please reference the monitoring well approval number. If you have any questions, please contact me at (803) 898-0647.

Sincerely,

# Monitoring Well Approval

Approval is hereby granted to:

Terracon Consultants, Inc.

On Behalf of:

SC DOT

Location:

3732 S. Pamplico Hwy, Pamplico, SC

County:

Florence County

Permit:

03418

This approval is for the installation of monitoring wells. The monitoring wells are to be installed in the approved location. 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 Denise M. Place (tel: 803-898-0647 or e-mail: placedm@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:

1/22/14

Approval #: UMW-25378

# **APPENDIX B**

# **ANALYTICAL REPORTS AND CHAIN OF CUSTODIES**

**Access Analytical Report Nos.** 

214020715 - 2/17/14

214021509 - 2/28/14

214021278 - 3/11/14



### **ANALYTICAL REPORT**

### **CLIENT**

Terracon 521 Clemson Rd Columbia, SC 29201

### **ATTENTION**

Regan Norris

### **PROJECT ID**

Pamplico R/W Project

### LABORATORY REPORT NUMBER

214020715

**DATE** 

02/17/2014

Primary Data Review By

Secondary Data Review By

**Authorized Signature** 

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 Innovation Park Dr., 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 Innovation Park Dr. Baton Rouge, LA 70820

**Report Date** 02/17/2014

**GCAL Report** 214020715



Deliver To Terracon 521 Clemson Rd Columbia, SC 29201

Attn Regan Norris

Project Pamplico R/W Project

### CASE NARRATIVE

Client: Access Analytical Report: 214020715

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 EPA 8260B analysis, samples 21402071504 (SITE 21 TW-2), 21402071507 (SITE 21 SB-2 (2-4)), and 21402071509 (SITE 20 TW-2) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilutions are reflected in elevated detection 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.

**Authorized Signature** 

**GCAL REPORT** 214020715

THIS REPORT CONTAINS REPORT CONTAINS PA

# Report Sample Summary

Client ID	Matrix	Collect Date/Time	Receive Date/Time
SITE 23 SB-1 (2-4)	Solid	02/05/2014 00:00	02/07/2014 10:15
SITE 22 SB-2 (2-4)	Solid	02/05/2014 10:10	02/07/2014 10:15
SITE 21 TW-1	Water	02/05/2014 15:10	02/07/2014 10:15
SITE 21 TW-2	Water	02/05/2014 15:20	02/07/2014 10:15
SITE 21 TW-3	Water	02/05/2014 15:45	02/07/2014 10:15
SITE 21 TW-4	Water	02/05/2014 16:00	02/07/2014 10:15
SITE 21 SB-2 (2-4)	Solid	02/05/2014 15:00	02/07/2014 10:15
SITE 20 TW-1	Water	02/05/2014 17:00	02/07/2014 10:15
SITE 20 TW-2	Water	02/05/2014 17:00	02/07/2014 10:15
SITE 20 SB-1 (2-4)	Solid	02/05/2014 17:00	02/07/2014 10:15
TRIP BLANK	Water	02/05/2014 00:00	02/07/2014 10:15
	SITE 23 SB-1 (2-4) SITE 22 SB-2 (2-4) SITE 21 TW-1 SITE 21 TW-2 SITE 21 TW-3 SITE 21 TW-4 SITE 21 SB-2 (2-4) SITE 20 TW-1 SITE 20 TW-2 SITE 20 SB-1 (2-4)	SITE 23 SB-1 (2-4)       Solid         SITE 22 SB-2 (2-4)       Solid         SITE 21 TW-1       Water         SITE 21 TW-2       Water         SITE 21 TW-3       Water         SITE 21 TW-4       Water         SITE 21 SB-2 (2-4)       Solid         SITE 20 TW-1       Water         SITE 20 TW-2       Water         SITE 20 SB-1 (2-4)       Solid	SITE 23 SB-1 (2-4)       Solid       02/05/2014 00:00         SITE 22 SB-2 (2-4)       Solid       02/05/2014 10:10         SITE 21 TW-1       Water       02/05/2014 15:10         SITE 21 TW-2       Water       02/05/2014 15:20         SITE 21 TW-3       Water       02/05/2014 15:45         SITE 21 TW-4       Water       02/05/2014 16:00         SITE 21 SB-2 (2-4)       Solid       02/05/2014 15:00         SITE 20 TW-1       Water       02/05/2014 17:00         SITE 20 TW-2       Water       02/05/2014 17:00         SITE 20 SB-1 (2-4)       Solid       02/05/2014 17:00

# Summary of Compounds Detected

GCAL ID 21402071503	Client ID SITE 21 TW-1	<b>Matrix</b> Water			eceive Date/Time 2/07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		2.81	1.00	0.111	ug/L
108-88-3	Toluene		4.44	1.00	0.122	ug/L
100-41-4	Ethylbenzene		0.646J	1.00	0.109	ug/L
1330-20-7	Xylene (total)		1.60J	3.00	0.179	ug/L
91-20-3	Naphthalene		3.03J	5.00	0.176	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	eceive Date/Time	
21402071504	SITE 21 TW-2	Water	02/05/2014 15:20	02	2/07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)		31.8	5.00	0.240	ug/L
75-65-0	t-Butanol (TBA)		7.36J	10.0	0.290	ug/L
75-85-4	tert-amyl alcohol (TAA)		94.2	20.0	1.01	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		167	2.00	0.222	ug/L
108-88-3	Toluene		4.82	2.00	0.244	ug/L
100-41-4	Ethylbenzene		181	2.00	0.218	ug/L
1330-20-7	Xylene (total)		102	6.00	0.358	ug/L
91-20-3	Naphthalene		116	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		57.3	2.00	0.155	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		eceive Date/Time	
21402071505	SITE 21 TW-3	Water	02/05/2014 15:45	02	2/07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1.14	1.00	0.111	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	eceive Date/Time	
21402071506	SITE 21 TW-4	Water	02/05/2014 16:00	02	2/07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.958J	1.00	0.111	ug/L
108-88-3	Toluene		1.81	1.00	0.122	ug/L

# Summary of Compounds Detected (con't)

GCAL ID 21402071507	Client ID SITE 21 SB-2 (2-4)	<b>Matrix</b> Solid	Collect Date/Time 02/05/2014 15:00		eive Date/Time	
EPA 8260B	· · ·					
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		68.8J	177	1.80	ug/Kg
100-41-4	Ethylbenzene		3210	177	6.49	ug/Kg
1330-20-7	Xylene (total)		350J	354	8.75	ug/Kg
91-20-3	Naphthalene		1080	177	13.7	ug/Kg
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	eive Date/Time	
21402071508	SITE 20 TW-1	Water	02/05/2014 17:00	02/0	07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.455J	1.00	0.111	ug/L
91-20-3	Naphthalene		7.82	5.00	0.176	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	eive Date/Time	
21402071509	SITE 20 TW-2	Water	02/05/2014 17:00	02/0	07/2014 10:15	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)		77.8	20.0	1.01	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		6.23	2.00	0.222	ug/L
108-88-3	Toluene		51.7	2.00	0.244	ug/L
100-41-4	Ethylbenzene		168	2.00	0.218	ug/L
1330-20-7	Xylene (total)		557	6.00	0.358	ug/L
91-20-3	Naphthalene		110	10.0	0.352	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071501	SITE 23 SB-1 (2-4)	Solid	02/05/2014 00:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/11/2014 22:04	By Analytica CEK 525332	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.040U	3.92	0.040	ug/Kg
108-88-3	Toluene		0.084U	3.92	0.084	ug/Kg
100-41-4	Ethylbenzene		0.144U	3.92	0.144	ug/Kg
1330-20-7	Xylene (total)		0.194U	7.84	0.194	ug/Kg
91-20-3	Naphthalene		0.304U	3.92	0.304	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	36.5	35.6	ug/Kg	98	62 - 127
1868-53-7	Dibromofluoromethane	36.5	37.1	ug/Kg	102	65 - 130
2037-26-5	Toluene d8	36.5	34.8	ug/Kg	95	71 - 132
17060-07-0	1,2-Dichloroethane-d4	36.5	38.4	ug/Kg	105	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071502	SITE 22 SB-2 (2-4)	Solid	02/05/2014 10:10	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/11/2014 22:27	By Analytic CEK 525332	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.058U	5.77	0.058	ug/Kg
108-88-3	Toluene		0.123U	5.77	0.123	ug/Kg
100-41-4	Ethylbenzene		0.211U	5.77	0.211	ug/Kg
1330-20-7	Xylene (total)		0.285U	11.5	0.285	ug/Kg
91-20-3	Naphthalene		0.447U	5.77	0.447	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	53.9	53.6	ug/Kg	99	62 - 127
1868-53-7	Dibromofluoromethane	53.9	53.3	ug/Kg	99	65 - 130
2037-26-5	Toluene d8	53.9	51.6	ug/Kg	96	71 - 132
17060-07-0	1,2-Dichloroethane-d4	53.9	58	ug/Kg	108	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071503	SITE 21 TW-1	Water	02/05/2014 15:10	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/08/2014 22:58	By Anal CLH 5251	ytical Batch 30
CAS#	Parameter		Result	RDL	MD	L Units
71-43-2	Benzene		2.81	1.00	0.1	11 ug/L
108-88-3	Toluene		4.44	1.00	0.1	22 ug/L
100-41-4	Ethylbenzene		0.646J	1.00	0.1	09 ug/L
1330-20-7	Xylene (total)		1.60J	3.00	0.1	79 ug/L
91-20-3	Naphthalene		3.03J	5.00	0.1	76 ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.078U	1.00	0.0	78 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.1	16 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43	ug/L	86	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	45.2	ug/L	90	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.4	ug/L	97	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/08/2014 22:58	By Ana CLH 525	lytical Batch 29
CAS#	Parameter		Result	RDL	М	DL Units
994-05-8	t-amyl methyl ether (TAN	IE)	0.240U	5.00	0.2	40 ug/L
75-65-0	t-Butanol (TBA)		0.290U	10.0	0.2	90 ug/L
108-20-3	diisopropyl Ether (DIPE)		0.236U	5.00	0.2	36 ug/L
637-92-3	Ethyl tert-butyl ether (ETI	BE)	0.234U	5.00	0.2	34 ug/L
624-95-3	Ethyl tert-butanol (ETBA)		37.6U	100	3.	7.6 ug/L
64-17-5	Ethanol		125U	1000	1	25 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	0.4	87 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43	ug/L	86	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	45.2	ug/L	90	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.4	ug/L	97	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071504	SITE 21 TW-2	Water	02/05/2014 15:20	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 2	<b>Analyzed</b> 02/09/2014 15:56	<b>By</b> JCK	Analytical B 525142	atch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		167	2.00		0.222	ug/L
108-88-3	Toluene		4.82	2.00		0.244	ug/L
100-41-4	Ethylbenzene		181	2.00		0.218	ug/L
1330-20-7	Xylene (total)		102	6.00		0.358	ug/L
91-20-3	Naphthalene		116	10.0		0.352	ug/L
1634-04-4	tert-Butyl methyl ether (I	MTBE)	57.3	2.00		0.155	ug/L
107-06-2	1,2-Dichloroethane		0.232U	2.00		0.232	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Rec	covery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	87.8	ug/L		88	78 - 130
1868-53-7	Dibromofluoromethane	100	104	ug/L		104	77 - 127
2037-26-5	Toluene d8	100	92.7	ug/L		93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	96.9	ug/L		97	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytica	l Batch
			1	02/08/2014 23:21	CLH	525129	
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (	TAME)	31.8	5.00		0.240	ug/L
75-65-0	t-Butanol (TBA)		7.36J	10.0		0.290	ug/L
108-20-3	diisopropyl Ether (DIP	E)	0.236U	5.00		0.236	ug/L
637-92-3	Ethyl tert-butyl ether (F	ETBE)	0.234U	5.00		0.234	ug/L
624-95-3	Ethyl tert-butanol (ETE	3A)	37.6U	100		37.6	ug/L
64-17-5	Ethanol		125U	1000		125	ug/L
75-85-4	tert-amyl alcohol (TA	A)	94.2	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	% Re	covery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43.7	ug/L		87	78 - 130
1868-53-7	Dibromofluoromethane	50	52.7	ug/L		105	77 - 127
2037-26-5	Toluene d8	50	46.7	ug/L		93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50.1	ug/L		100	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071505	SITE 21 TW-3	Water	02/05/2014 15:45	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 02/09/2014 00:08	-	Analytical B 525130	atch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		1.14	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 (MT	BE)	0.078U	1.00		0.078	ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00		0.116	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	43.3	ug/L		87	78 - 130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	,	101	77 - 127
2037-26-5	Toluene d8	50	47.3	ug/L		95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L		97	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/09/2014 00:08	-	nalytical Batch 25129	
CAS#	Parameter		Result	RDL	ı	MDL Un	nits
994-05-8	t-amyl methyl ether (TAME	≣)	0.240U	5.00	(	0.240 u	g/L
75-65-0	t-Butanol (TBA)		0.290U	10.0	(	0.290 u	g/L
108-20-3	diisopropyl Ether (DIPE)		0.236U	5.00	(	0.236 u	g/L
637-92-3	Ethyl tert-butyl ether (ETB	E)	0.234U	5.00	(	0.234 u	g/L
624-95-3	Ethyl tert-butanol (ETBA)		37.6U	100		37.6 ug	g/L
64-17-5	Ethanol		125U	1000		125 u	g/L
75-85-4	tert-amyl alcohol (TAA)		1.01U	20.0		1.01 u	g/L
762-75-4	tert-butyl formate (TBF)		0.487U	50.0	(	0.487 u	g/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ry Rec Lim	nits
460-00-4	4-Bromofluorobenzene	50	43.3	ug/L	8	87 78 - 1	130
1868-53-7	Dibromofluoromethane	50	50.4	ug/L	10	01 77 - 1	127
2037-26-5	Toluene d8	50	47.3	ug/L	(	95 76 - 1	134
17060-07-0	1,2-Dichloroethane-d4	50	48.3	ug/L	9	97 71 - 1	127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071506	SITE 21 TW-4	Water	02/05/2014 16:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/09/2014 00:32	<b>By</b> CLH	Analytical 525130	Batch
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		0.958J	1.00		0.111	ug/L
108-88-3	Toluene		1.81	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 (M	TBE)	0.078U	1.00		0.078	ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00		0.116	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.8	ug/L		92	78 - 130
1868-53-7	Dibromofluoromethane	50	50.2	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	49.5	ug/L		99	71 - 127

71 02000							
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/09/2014 00:32	•	nalytical Batc 25129	:h
CAS#	Parameter		Result	RDL	I	MDL	Units
994-05-8	t-amyl methyl ether (T.	AME)	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 (DIP	E)	0.236U	5.00	(	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (F	ETBE)	0.234U	5.00	(	0.234	ug/L
624-95-3	Ethyl tert-butanol (ETE	BA)	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	% Recove	ry R	ec Limits
460-00-4	4-Bromofluorobenzene	50	45.8	ug/L	(	92	78 - 130
1868-53-7	Dibromofluoromethane	50	50.2	ug/L	10	00	77 - 127
2037-26-5	Toluene d8	50	47.6	ug/L	9	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	49.5	ug/L	9	99	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071507	SITE 21 SB-2 (2-4)	Solid	02/05/2014 15:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 50	<b>Analyzed</b> 02/15/2014 02:11	By Ana CLH 5255	lytical Batch 595
CAS#	Parameter		Result	RDL	ME	DL Units
71-43-2	Benzene		68.8J	177	1.	80 ug/Kg
108-88-3	Toluene		3.79U	177	3.	79 ug/Kg
100-41-4	Ethylbenzene		3210	177	6.	.49 ug/Kg
1330-20-7	Xylene (total)		350J	354	8.	75 ug/Kg
91-20-3	Naphthalene		1080	177	1;	3.7 ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	1550	1430	ug/Kg	93	62 - 127
1868-53-7	Dibromofluoromethane	1550	1440	ug/Kg	93	65 - 130
2037-26-5	Toluene d8	1550	1520	ug/Kg	98	71 - 132
17060-07-0	1,2-Dichloroethane-d4	1550	1930	ug/Kg	125	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071508	SITE 20 TW-1	Water	02/05/2014 17:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/10/2014 16:50	By Analytic CEK 525219	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.455J	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		7.82	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (M7	TBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	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	50.3	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	47.4	ug/L	95	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50.3	ug/L	101	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/10/2014 01:08	<b>By</b> CLH	Analytical 525153	Batch
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TAI	ΛE)	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 (ET	BE)	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	% Reco	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	44.7	ug/L		89	78 - 130
1868-53-7	Dibromofluoromethane	50	49.7	ug/L		99	77 - 127
2037-26-5	Toluene d8	50	45.8	ug/L		92	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.1	ug/L		96	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071509	SITE 20 TW-2	Water	02/05/2014 17:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 2	<b>Analyzed</b> 02/09/2014 16:20	By Analytic JCK 525142	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		6.23	2.00	0.222	ug/L
108-88-3	Toluene		51.7	2.00	0.244	ug/L
100-41-4	Ethylbenzene		168	2.00	0.218	ug/L
1330-20-7	Xylene (total)		557	6.00	0.358	ug/L
91-20-3	Naphthalene		110	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.155U	2.00	0.155	ug/L
107-06-2	1,2-Dichloroethane		0.232U	2.00	0.232	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	90.5	ug/L	91	78 - 130
1868-53-7	Dibromofluoromethane	100	106	ug/L	106	77 - 127
2037-26-5	Toluene d8	100	93.2	ug/L	93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	104	ug/L	104	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed		cal Batch
			I	02/09/2014 00:54	CLH 525129	
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME	<del>:</del> )	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 (ETBI	≣)	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)		77.8	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	45.8	ug/L	92	78 - 130
1868-53-7	Dibromofluoromethane	50	52.7	ug/L	105	77 - 127
2037-26-5	Toluene d8	50	46.3	ug/L	93	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	59.5	ug/L	119	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071510	SITE 20 SB-1 (2-4)	Solid	02/05/2014 17:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/11/2014 22:50	By Analytica CEK 525332	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.038U	3.74	0.038	ug/Kg
108-88-3	Toluene		U080U	3.74	0.080	ug/Kg
100-41-4	Ethylbenzene		0.137U	3.74	0.137	ug/Kg
1330-20-7	Xylene (total)		0.185U	7.48	0.185	ug/Kg
91-20-3	Naphthalene		0.290U	3.74	0.290	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	30.7	30.1	ug/Kg	98	62 - 127
1868-53-7	Dibromofluoromethane	30.7	31.2	ug/Kg	102	65 - 130
2037-26-5	Toluene d8	30.7	29.8	ug/Kg	97	71 - 132
17060-07-0	1,2-Dichloroethane-d4	30.7	32.5	ug/Kg	106	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402071511	TRIP BLANK	Water	02/05/2014 00:00	02/07/2014 10:15

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/08/2014 01:31	By Analys CLH 52509	tical Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.111U	1.00	0.11	ug/L
108-88-3	Toluene		0.122U	1.00	0.122	2 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	s ug/L
1634-04-4	tert-Butyl methyl ether (M7	BE)	0.078U	1.00	0.078	3 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.116	S ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.7	ug/L	91	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	50.5	ug/L	101	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/08/2014 01:31	•	Analytical Ba	atch
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TAN	ΛE)	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 (ET	BE)	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	% Recov	/ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	45.7	ug/L		91	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	50.5	ug/L		101	71 - 127

Analytical Batch 525098 Prep Batch N/A	:h 525098	Client ID GCAL ID	Client ID MB525098			LCS525098 1281340			LCSD525098 1281341			
<u>.</u>		Sample Type Method Blank	Method Blank			LCS			LCSD			
		Analytical Date	02/07/2014 19:19			02/07/2014 17:47			02/07/2014 18:10			
		Matrix	Water			Water			Water			
	EDA 9260E	۵	Units	ng/L	Spike	9000		Control	90000			RPD
	Er A 6200	ם	Result	RDL	Added	Nesul	% R	Limits % R	Nesall	% R	RPD	Limit
107-06-2	1,2-Dichloroethane	ane	0.116U	0.116	20.0	52.2	104	71 - 129	20.7	101	3	30
100-41-4	Ethylbenzene		0.109U	0.109	50.0	9:29	111	74 - 126		102	6	30
1634-04-4	tert-Butyl methy	tert-Butyl methyl ether (MTBE)	0.078U	0.078	20.0	52.6	105	71 - 125	53.3	107	_	30
1330-20-7	Xylene (total)		0.179U	0.179	150	169	113	74 - 127	155	103	6	30
91-20-3	Naphthalene		0.176U	0.176	20.0	49.8	100	57 - 138	52.5	105	2	35
71-43-2	Benzene		0.1110	0.111	20.0	56.9	114	70 - 129	54.5	109	4	20
108-88-3	Toluene		0.122U	0.122	50.0	52.8	106	72 - 120	51.7	103	2	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	42.3	82	20	47.7	92	78 - 130	47.2	94		
1868-53-7	Dibromofluoromethane	nethane	50.5	101	20	20	100	77 - 127	49.8	100		
2037-26-5	Toluene d8		47.4	96	20	49.4	66	76 - 134	49.6	66		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	48.4	26	50	50.2	100	71 - 127	50.1	100		

Analytical Batch 525130	: <b>h</b> 525130	Client ID	Client ID MB525130			LCS525130		_ <del>_</del>	LCSD525130			
Prep Batch N/A	N/A	GCAL ID	1281539			1281540		_	1281541			
		Sample Type Method Blank	Method Blank			CS		_	CSD			
		Analytical Date	02/08/2014 20:38			02/08/2014 19:04		_	02/08/2014 19:28			
		Matrix	Water			Water		_	Water			
	TO A ODE		Units	ng/L	Spike	41		Control	4			RPD
	ELA 0200D	n	Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
107-06-2	1,2-Dichloroethane	ıne	0.116U	0.116	50.0	49.0	86	71 - 129	51.5	103	2	3
100-41-4	Ethylbenzene		0.109U	0.109	50.0	48.6	26	74 - 126	46.0	92	2	g
1634-04-4	tert-Butyl methyl ether (MTBE)	ether (MTBE)	0.078U	0.078	20.0	51.0	102	71 - 125	52.9	106	4	30
1330-20-7	Xylene (total)		0.179U	0.179	150	147	86	74 - 127	145	26	_	೫
91-20-3	Naphthalene		0.176U	0.176	20.0	46.0	92	57 - 138	44.5	88	3	35
71-43-2	Benzene		0.1110	0.111	50.0	53.1	106	70 - 129	53.9	108	_	7
108-88-3	Toluene		0.122U	0.122	50.0	49.8	100	72 - 120	48.3	26	က	2(
Surrogate								_				
460-00-4	4-Bromofluorobenzene	enzene	44.8	06	20	45.9	92	78 - 130	46.4	93		
1868-53-7	Dibromofluoromethane	ethane	49.5	66	90	50.2	100	77 - 127	50.4	101		
2037-26-5	Toluene d8		46.7	93	20	47.1	94	76 - 134	47.1	94		
0-17060-07-0	1,2-Dichloroethane-d4	ane-d4	48.4	26	20	47.6	92	71 - 127	51.2	102		

Analytical Batch 525142	<b>ch</b> 525142	Client ID	Client ID MB525142			LCS525142			LCSD525142			
Prep Batch N/A	Sh N/A	GCAL ID	1281595			1281596			1281597			
		Sample Type   Method Blank	Method Blank			CCS			CSD			
		Analytical Date	02/09/2014 13:14			02/09/2014 10:58			02/09/2014 11:38			
		Matrix	Water			Water			Water			
	EDA 9260B	۵	Units	ng/L	Spike	411.000		Control	41.000			RPD
	EL A 0200	ם	Result	RDL	Added	Nesuli	% R	Limits % R	linean	% R	RPD	Limit
107-06-2	1,2-Dichloroethane	ane	0.116U	0.116	20.0	51.4	103	71 - 129	46.9	94	6	30
100-41-4	Ethylbenzene		0.109U	0.109	20.0	49.0	98	74 - 126	46.4	93	5	30
1634-04-4	tert-Butyl methyl ether (MTBE)	/I ether (MTBE)	0.078U	0.078	20.0	53.4	107	71 - 125	48.9	86	6	30
1330-20-7	Xylene (total)		0.179U	0.179	150	152	101	74 - 127	142	92	7	30
91-20-3	Naphthalene		0.176U	0.176	20.0	44.6	88	57 - 138	43.5	87	2	35
71-43-2	Benzene		0.111U	0.111	20.0	26.9	114	70 - 129	49.5	66	14	20
108-88-3	Toluene		0.122U	0.122	20.0	50.3	101	72 - 120	44.6	88	12	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	44.9	06	20	47.7	92	78 - 130	47.6	92		
1868-53-7	Dibromofluoromethane	nethane	6.09	102	20	53.2	106	77 - 127	53.1	106		
2037-26-5	Toluene d8		45.6	91	20	45.9	92	76 - 134	45.7	91		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	49.8	100	20	52.2	104	71 - 127	50.6	101		

Alialylical Dalc	Analytical Batch 525219	Client ID	Client ID   MB525219			LCS525219			LCSD525219			
Prep Batch N/A	h N/A	<b>GCAL ID</b> 1281930	1281930			1281931			1281932			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date 02/10/2014 13::	02/10/2014 13:36			02/10/2014 12:07			02/10/2014 12:32			
		Matrix	Water			Water			Water			
	03C0 V Q I	٥	Units	ng/L	Spike	4		Control	Al. 100			RPD
	ELA OZOUB	۵	Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
107-06-2	1,2-Dichloroethane	ane	0.116U	0.116	50.0	54.4	109	71 - 129	26.0	112	က	30
100-41-4	Ethylbenzene		0.109U	0.109	20.0	53.0	106	74 - 126	49.9	100	9	30
1634-04-4	tert-Butyl meth	tert-Butyl methyl ether (MTBE)	0.078U	0.078	50.0	9.99	113	71 - 125	53.0	106	7	30
1330-20-7	Xylene (total)		0.179U	0.179	150	175	117	74 - 127	153	102	13	30
91-20-3	Naphthalene		0.176U	0.176	20.0	58.4	117	57 - 138	58.8	118	_	35
71-43-2	Benzene		0.1110	0.111	20.0	29.7	119	70 - 129	58.6	117	7	20
108-88-3	Toluene		0.122U	0.122	50.0	58.5	117	72 - 120	22.7	111	2	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	55.3	111	20	55.8	112	78 - 130	50.2	100		
1868-53-7	Dibromofluoromethane	nethane	49.1	86	20	53.5	107	77 - 127	44.3	88		
2037-26-5	Toluene d8		54.9	110	20	53.6	107	76 - 134	51.4	103		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	6.09	102	20	52.8	106	71 - 127	51.7	103		

Analytical Batch 525332	ch 525332	Client ID	Client ID MB525332			LCS525332			2	-CSD525332			
Prep Batch N/A	ch N/A	<b>GCAL ID</b> 1282564	1282564			1282565			12	1282566			
		Sample Type Method Blank	Method Blank			CCS			2	CSD			
		Analytical Date	<b>Analytical Date</b> 02/11/2014 19:20			02/11/2014 18:10			02	02/11/2014 18:34			
		Matrix	Solid			Solid			တိ	Solid			
	EDA OSCOD	0	Units	ug/Kg	Spike	1100		Control		41			RPD
	Er A 0200	<u>0</u>	Result	RDL	Added	Result	% R	Limits % R	~	Result	% R	RPD	Limit
100-41-4	Ethylbenzene		0.183U	0.183	20.0	46.1	92	74 - 1	130	46.3	93	0	30
1330-20-7	Xylene (total)		0.247U	0.247	150	139	93	71 - 1	129	138	92	_	30
91-20-3	Naphthalene		0.388U	0.388	20.0	48.1	96	54 - 1	132	54.1	108	12	35
71-43-2	Benzene		0.051U	0.051	20.0	49.3	66	73 - 1	128	47.7	92	က	20
108-88-3	Toluene		0.107U	0.107	20.0	44.3	89	74 - 1	121	46.4	93	2	20
Surrogate													
460-00-4	4-Bromofluorobenzene	benzene	48.2	96	20	48.9	98	62 - 1	127	48.8	98		
1868-53-7	Dibromofluoromethane	methane	49.1	86	20	51.2	102	65 - 1	130	49.2	98		
2037-26-5	Toluene d8		49.8	100	20	49.8	100	71 - 1	132	49.5	66		
17060-07-0	1,2-Dichloroethane-d4	nane-d4	47.7	96	20	51.2	102	62 - 1	125	49.4	66		

Analytical Batch 525595	<b>h</b> 525595	Client ID	Client ID MB525595			LCS525595			LCSD525595			
Prep Batch N/A	h N/A	<b>GCAL ID</b> 1283892	1283892			1283893			1283894			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date	Analytical Date 02/14/2014 20:26			02/14/2014 18:57			02/14/2014 19:22			
		Matrix	Solid			Solid			Solid			
	EDA 9260B	Q	Units	ug/Kg	Spike	411100		Control	4100			RPD
	Er A 0200	<u>0</u>	Result	RDL	Added	Nesul	% R	Limits % R	lineau	% R	RPD	Limit
100-41-4	Ethylbenzene		9.15U	9.15	2500	2650	106	74 - 130	2510	100	2	30
1330-20-7	Xylene (total)		12.40	12.4	7500	1690	103	71 - 129		26	2	30
91-20-3	Naphthalene		19.40	19.4	2500	2410	96	54 - 132	2440	86	_	35
71-43-2	Benzene		2.54U	2.54	2500	2630	105	73 - 128	<u> </u>	102	က	20
108-88-3	Toluene		5.35U	5.35	2500	2510	100	74 - 121	2400	96	4	20
Surrogate												
460-00-4	4-Bromofluorobenzene	penzene	2270	91	2500	2360	94	62 - 127		26		
1868-53-7	Dibromofluoromethane	nethane	2530	101	2500	2570	103	65 - 130	2550	102		
2037-26-5	Toluene d8		2490	100	2500	2430	26	71 - 132		96		
17060-07-0	1,2-Dichloroethane-d4	nane-d4	2620	105	2500	2610	104	62 - 125	2610	104		

Analytical Batch 525096	<b>h</b> 525096	Client ID	Client ID MB525096			LCS525096			LCSD525096			
Prep Batch N/A	h N/A	<b>GCAL ID</b> 1281333	1281333			1281334			1281335			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		<b>Analytical Date</b> 02/07/2014 19:19	02/07/2014 19:19			02/07/2014 17:47			02/07/2014 18:10			
		Matrix	Water			Water			Water			
	EDA 8260B	α	Units	ng/L	Spike	Poenit		Control	#11300			RPD
	LL A 0200	ם	Result	RDL	Added	Nesdil	% R	Limits % R	Nesqu	% R	RPD	Limit
994-05-8	t-amyl methyl ether (TAME)	ther (TAME)	0.240U	0.240	20.0	53.1	106	50 - 150	53.6	107	_	20
75-65-0	t-Butanol (TBA)		0.290U	0.290	20.0	48.4	26	50 - 150	54.6	109	12	20
108-20-3	diisopropyl Ether (DIPE)	er (DIPE)	0.236U	0.236	20.0	54.6	109	50 - 150	54.5	109	0	20
637-92-3	Ethyl tert-butyl ether (ETBE)	ether (ETBE)	0.234U	0.234	20.0	55.3	111	50 - 150		106	4	20
624-95-3	Ethyl tert-butanol (ETBA)	ol (ETBA)	37.6U	37.6	2550	2150	84	50 - 150		100	17	20
64-17-5	Ethanol		125U	125	25200	24600	98	50 - 150	28500	113	15	20
75-85-4	tert-amyl alcohol (TAA)	ol (TAA)	1.010	1.01	200	173	87	50 - 150	204	102	16	20
762-75-4	tert-butyl formate (TBF)	te (TBF)	0.487U	0.487	20.0	48.4	26	50 - 150		96	_	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	42.3	85	20	47.7	92	78 - 130	47.2	94		
1868-53-7	Dibromofluoromethane	nethane	50.5	101	20	90	100	77 - 127	49.8	100		
2037-26-5	Toluene d8		47.4	96	20	49.4	66	76 - 134	49.6	66		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	48.4	26	20	50.2	100	71 - 127	50.1	100		

CCAL ID   1281536   Sample Type   Method Blan	Analytical Batch 525129	Client ID	Client ID MB525129			LCS525129		_ <del>_</del>	LCSD525129			
EPA 8260B       Sample Type Analytical Date Analytical Date Pater (D/08/2014 20:38 Nater (D/18/2014 Ether (D/18/2014 Ether (D/18/2014 Ether (D/18/2014 Ether (D/18/2014 Ether) (ETHE) (ETHE) (ETHE) (ETHE) (ETHE) (ETHE) (ETHE) (ETHE) (ETHE) (ETHER) (ETH	rep Batch N/A	GCAL ID	1281536			1281537		_	1281538			
EPA 8260B         Matrix Mater         Units Vater         ug           t-amyl methyl ether (TAME)         0.290U         0.290U           t-Butanol (TBA)         0.236U         0.234U           Ethyl tert-butyl ether (ETBE)         0.234U         37.6U           Ethanol         125U         125U           tert-amyl alcohol (TAA)         1.01U           tert-butyl formate (TBF)         0.487U		Sample Type	Method Blank			CS		_	CCSD			
EPA 8260B         Water           t-amyl methyl ether (TAME)         0.240U           t-Butanol (TBA)         0.236U           Ethyl tert-butyl ether (ETBE)         0.234U           Ethyl tert-butyl ether (ETBA)         37.6U           Ethanol         1.01U           tert-amyl alcohol (TAA)         0.487U		Analytical Date	02/08/2014 20:38			02/08/2014 19:04		_	02/08/2014 19:28			
EPA 8260B         Units         ug           t-amyl methyl ether (TAME)         0.240U           t-Butanol (TBA)         0.236U           diisopropyl Ether (DIPE)         0.236U           Ethyl tert-butyl ether (ETBE)         0.234U           Ethyl tert-butanol (ETBA)         37.6U           Ethanol         1.01U           tert-amyl alcohol (TAA)         0.487U		Matrix	Water			Water		_	Water			
t-amyl methyl ether (TAME) 0.240U t-Butanol (TBA) 0.290U diisopropyl Ether (DIPE) 0.236U Ethyl tert-butyl ether (ETBA) 37.6U Ethanol tert-amyl alcohol (TAA) 0.487U	CO VOJ	9	Units	ng/L	Spike	4100		Control	4100			RPD
t-amyl methyl ether (TAME) 0.240U t-Butanol (TBA) 0.290U diisopropyl Ether (DIPE) 0.236U Ethyl tert-butyl ether (ETBE) 37.6U Ethanol tert-amyl alcohol (TAA) 1.01U tert-butyl formate (TBF) 0.487U	Er A 02	9	Result	RDL	Added	linean	% R	Limits % R	Nesull	% R	RPD	Limit
t-Butanol (TBA)  diisopropyl Ether (DIPE)  Cityl tert-butyl ether (ETBE)  Ethyl tert-butyl ether (ETBA)  Ethanol  tert-amyl alcohol (TAA)  tert-butyl formate (TBF)  1250		l ether (TAME)	0.240U	0.240	50.0	52.4	105	50 - 150	55.1	110	2	20
diisopropyl Ether (DIPE) 0.236U Ethyl tert-butyl ether (ETBE) 0.234U Ethyl tert-butyl ether (ETBA) 37.6U Ethanol tert-amyl alcohol (TAA) 1.01U tert-butyl formate (TBF) 0.487U		8A)	0.290U	0.290	50.0	51.5	103	50 - 150	54.9	110	9	20
Ethyl tert-butyl ether (ETBE) 0.234U Ethyl tert-butanol (ETBA) 37.6U Ethanol tert-amyl alcohol (TAA) 1.01U tert-butyl formate (TBF) 0.487U		ther (DIPE)	0.236U	0.236	20.0	53.6	107	50 - 150	55.4	111	က	20
Ethyl tert-butanol (ETBA) 37.6U Ethanol tert-amyl alcohol (TAA) 1.01U tert-butyl formate (TBF) 0.487U		yl ether (ETBE)	0.234U	0.234	20.0	51.8	104	50 - 150	54.5	109	2	20
tert-amyl alcohol (TAA) 1.01U		anol (ETBA)	37.6U	37.6	2550	2300	06	50 - 150	2330	91	_	20
tert-amyl alcohol (TAA) 1.01U tert-butyl formate (TBF) 0.487U			125U	125	25200	30400	121	50 - 150	29200	116	4	20
tert-butyl formate (TBF) 0.487U		ohol (TAA)	1.010	1.01	200	193	26	50 - 150	193	26	0	20
		nate (TBF)	0.487U	0.487	20.0	51.3	103	50 - 150	50.4	101	7	20
1 D	gate							_				
4-Brornonuoropenzene		obenzene -	44.8	06	20	45.9	92	78 - 130	46.4	93		
2 1868-53-7 Dibromofluoromethane 49.5		omethane	49.5	66	20	50.2	100	77 - 127	50.4	101		

Analytical Batch 525129	Client ID	Client ID MB525129			LCS525129			LCSD525129			
Prep Batch N/A	<b>GCAL ID</b> 1281536	1281536			1281537			1281538			
	Sample Type Method Blank	Method Blank			CS			CSD			
	Analytical Date	Analytical Date 02/08/2014 20:38			02/08/2014 19:04			02/08/2014 19:28			
	Matrix Water	Water			Water			Water			
GDA 0360B	COD	Units	ng/L	Spike	410		Control	4100			RPD
ELA 07	900	Result	RDL	Added	Result	% R	% R Limits % R	Kesuit	% R	RPD Limit	Limit
2037-26-5 Toluene d8		46.7	93	20	47.1	94	76 - 134	47.1	94		
17060-07-0 1,2-Dichloroethane-d4	oethane-d4	48.4	26	50	47.6	92	71 - 127	51.2	102		

Analytical Batch 525153	25153	Client ID	Client ID MB525153			LCS525153			LCSD525153			
Prep Batch N/A	⋖	<b>GCAL ID</b> 1281625	1281625			1281626			1281627			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date   02/10/2014 00:45	02/10/2014 00:45			02/09/2014 23:12			02/09/2014 23:35			
		Matrix	Water			Water			Water			
	CDA 0260B	۵	Units	ng/L	Spike	4100		Control	41			RPD
<b>.</b>	0070 W	<u> </u>	Result	RDL	Added	Lesuit	% R	Limits % R	Result	% R	RPD	Limit
994-05-8 t-an	t-amyl methyl ether (TAME)	ther (TAME)	0.240U	0.240	20.0	57.2	114	50 - 150	299	113	-	20
75-65-0 t-Bu	t-Butanol (TBA)	_	0.290U	0.290	20.0	92.0	114	50 - 150	58.6	117	က	20
108-20-3 diiso	diisopropyl Ether (DIPE)	er (DIPE)	0.236U	0.236	20.0	57.2	114	50 - 150	9.99	113	_	20
637-92-3 Ethy	ıyl tert-butyl €	Ethyl tert-butyl ether (ETBE)	0.234U	0.234	20.0	54.5	109	50 - 150	53.8	108	_	20
624-95-3 Ethy	Ethyl tert-butanol (ETBA)	ol (ETBA)	37.6U	37.6	2550	2190	98	50 - 150		92	10	20
64-17-5 Eth	Ethanol		125U	125	25200	26600	106	50 - 150	N	114	00	20
75-85-4 tert-	tert-amyl alcohol (TAA)	ol (TAA)	1.010	1.01	200	187	94	50 - 150	214	107	13	20
762-75-4 tert-	tert-butyl formate (TBF)	te (TBF)	0.487U	0.487	20.0	49.8	100	50 - 150		105	2	20
Surrogate												
460-00-4 4-Bi	4-Bromofluorobenzene	enzene	46.7	93	20	46.6	93	78 - 130		94		
1868-53-7 Dibi	Dibromofluoromethane	nethane	43.7	87	20	50.1	100	77 - 127	51.6	103		
2037-26-5 Tolu	Toluene d8		45.4	91	20	46.1	92	76 - 134	. 46.2	92		
17060-07-0 1,2-	1,2-Dichloroethane-d4	ane-d4	46.2	92	20	49.4	66	71 - 127	49.4	66		

lote # Laboratory ID:	ACCESS	ANALYTICAL, INC.	7478 Carlisle Street Phone: (803) 781-4243 Irmo, SC 29063	WWW.AXS-Inc.COM  **Hosser/ative Codes (note corresponding # in allow above analyse (nect-  **Definition of # in allow a # in allow above analyse (nect-  **Definition of # in allow a # in allow above analyse (nect-  **Definition of # in allow a # in all a # in allow	Codes (place corresponding code in matrix co ound water NW = waste water DW = driving the transfer NW = water water DW = driving	Succession of the state of the	Container Type:  Contai	(if sample is a composite please use space below to note startifinish times & detes)								Client ID: 4565 - Access Analytical	SDG: 214020715	Due Date: 02/14/14	Date Time Samples Recid Sample Temp Upon (mm-dd-ys) (24H8) on 1ce Receipt (*C).	en 2.6.14 14:00 (°C) (NA)	3-6-14 1700	~ 2/7/14 1015 - 10 216 524 (N/A)	, ' ' ——Y —— (°C)(N/A)
PO #Access Quote #	Preservative 5   0	Container Type: G & G	#2G	5.1 2046		DESTEI PLAN		īδ	- Cu Suu 3	Cub 3 8 8 8 8 8 3	4 <b>(</b>	Gw 3 888 3	(42) 3	4 <b>( )                                  </b>	2 EXECUTE 7 MB	EN STREET	2 ************************************	下2 紫紫紫紫 2 1 四月	Helinquished By: Heceived By:	Jan Starming Gother Alle	KO Flater	Fed For Down	
Sales Order #	Company Name:	Report To:	Acon Zol State: Zip:	Fax: Fax:	Email: Nunoin: 50, temacous com	Project ID: R/W Project	5kow	College ted College ted College	Sile 23 TW 125-14	25-27-25-32			7-C122att>	1 Site 2258-2 (2-4)	1 Ste 21 Tw-1	5,16 21 TW-2	~ 5:16 21 Tou-3		***************************************		*Date Required:		ness day on date required) (specify)

Project Work Order #

Access Analytical - Chain of Custody Record

LAB USE ONLY

See Reverse for Terms and Conditions 5035-7503-9054 vellow Copy - Access File Copy Pink Copy - Access File Copy

(N/A) (N/A) (N/A) (N/A) Program Area Codes. CWA = Olean Water Act fror wastewaters; SDWA Sate Enrishing Water Act (for connuing waters) SHW = Solid and Hazardous Wastes (for soils, ground waters and wastes samples) \*\*Preservative Codes (place corresponding # in bits x about a shall distribute to the shall preservative the shall be a shall be a new to the shall be manual back to the shall be manual back to the shall be sha Phone: (803) 781-4243 Fax: 781-4303 (if sample is a composite please use space below to note start/finish times & dates) ANALYTICAL, INC. Matrix Codes (place confepolating code in matrix column)
GW = ground water, WW = waste Water, BW = dinking water, S = stoll
SL = slugger, A = air IW = industrial waste iNV = waste oil GT = other
Scotl via comments section. Sample Temp, Upon Receipt (°C) NOTES / COMMENTS E 24 ပ္ <u>(</u> ပ္ပ 0 Access www.axs-inc.com ر 2 1 Client ID: 4565 - Access Analytical \*Container Type: /// G/= Glass/P = Plastic Project Work Order # z Samples Recd Laboratory ID on Ice 7478 Carlisle Street Ž Irmo, SC 29063 214020715 Due Date: 02/14/14 00:5/ Time (24HR) 1015 SDG: 9 O خب カーのと  $\nearrow$ 2.6.14 Date (mm-ddsyy) 7 Access Quote # **back** Received By: SHAG B BTEX, 12.0h, MTBE, Oxygeules 4 4 4 20 Z'1 J BTEX U m Skown onthe T S 7 and in ancall rad sirylar Container Type: (\*see codes) arrandari Josephon Surrandari Surranda Surr zacelloc req | urylens becode per per striken susplana Loca collected onosinen # 0f container container collected polysts rog 🌡 Javiense KEÖNESLED I VB VNYTKSIS! Preservative: (\*see codes) Relinquished By: 82 101 101 101 d T 7 2 **建** 3 803-741-9800 1-60 # 0 3 \$ 2262 3 3 S J اشياع 1 Company Name: Terra con Consultants Afterned Collected rwinosiss Q temacon, com Project Location: Zip: Other S Z Showonek **Fax:** Report To: (specify) Project ID: Pamplize RIW project 8:4e 21 58-2 (2-4) 25+4 Address: State: Phone: 803-741-9000 LAB USE ONLY (For rush work, results emailed/faxed by end of busi-の全 ness day on date required) Turnaround Time: 10/1× Sit 20 rw-2 5:te 20 TW-1 sample III/Description Colymbia 5\*Date Required: 54e 20 58-6 Sales Order # Trip Blank Sampled By: Standard RUSH\* Email:

Access Analytical - Chain of Custody Record

See Reverse for Terms and Conditions

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

Pg 2 of 2

## SAMPLE RECEIVING CHECKLIST

Checklist

*
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N
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SAMPLE DELIVERY GROUP 214020715	UP 214020715	CHECKLIST	YES	9	Ž
Client	Transport Method	Were all samples received using proper thermal preservation?	[3]		
4505 - Access Analytical	- FEDEX	When used, were all custody seals intact?	13		
		Were all samples received in proper containers?	S		
Profile Number 78454	Received By Brown, Aaron D.	Were all samples received using proper chemical preservation?	5		
		Was preservative added to any container at the lab?		S	
line Item(s)	Donoity Date(c)	Were all containers received in good condition?	S		
1 - Soils	02/07/14	Were all VOA vials received with no head space?			
PAH/BTEX/Naphthalene 2 - Water		Do all sample labels match the Chain of Custody?			
BTEX//Naph/MfBE/1,2- DCA/PAH		Did the Chain of Custody list the sampling technician?	15		
		Was the COC maintained i.e. all signatures, dates and time of receipt included?	S		

LAB PRESERVATIONS	None		
DISCREPANCIES	None		
	Temp(°C)	5.6	-
	Thermometer ID: E24	9634	
COOLERS	Airbill	5035 7503 9634	

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Revision 1.4

NOTES



### **ANALYTICAL REPORT**

### **CLIENT**

Terracon 521 Clemson Rd Columbia, SC 29201

### **ATTENTION**

Regan Norris

### **PROJECT ID**

Pamplico Hwy RW Widening

### LABORATORY REPORT NUMBER

214021509

DATE

02/28/2014

Primary Data Review By

Secondary Data Review By

Authorized Signature

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 Innovation Park Dr., 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 Innovation Park Dr. Baton Rouge, LA 70820

**Report Date** 02/28/2014

**GCAL Report** 214021509



Deliver To Terracon 521 Clemson Rd Columbia, SC 29201

Attn Regan Norris

Project Pamplico Hwy RW Widening

### CASE NARRATIVE

Client: Access Analytical Report: 214021509

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 EPA 8260B - Gas Additives analysis, sample 21402150904 (SITE 3 TW-1) had to be diluted due to the presence of non-target background. This dilution is reflected in elevated detection limits.

In the EPA 8260B analysis, samples 21402150904 (SITE 3 TW-1), 21402150906 (SITE 3 SB-2 (2-4)), and 21402150913 (SITE 1 SB-2 (6-8)) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilutions are reflected in elevated detection limits.

In the EPA 8260B analysis, sample 21402150909 (SITE 2 SB-1 (2-4)) had to be diluted to eliminate interference from non-target background. The dilution is reflected in elevated detection limits.

### SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270D analysis, the recoveries for all surrogates are below the lower control limits for sample 21402150904 (SITE 3 TW-1). No sample volume was available for re-extraction and re-analysis of this sample.

### **MISCELLANEOUS**

The trip blank was not received by the laboratory. The client was contacted.

### 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.

Authorized Signature

**GCAL REPORT** 214021509

THIS REPORT CONTAINS ROOM PAGES

### Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150901	SITE 5 TW-1	Water	02/10/2014 09:15	02/15/2014 09:30
21402150902	SITE 5 TW-2	Water	02/10/2014 09:35	02/15/2014 09:30
21402150903	SITE 5 SB-2 (0-2)	Solid	02/10/2014 09:45	02/15/2014 09:30
21402150904	SITE 3 TW-1	Water	02/10/2014 10:30	02/15/2014 09:30
21402150905	SITE 3 TW-2	Water	02/10/2014 10:40	02/15/2014 09:30
21402150906	SITE 3 SB-2 (2-4)	Solid	02/10/2014 10:45	02/15/2014 09:30
21402150907	SITE 2 TW-1	Water	02/10/2014 13:00	02/15/2014 09:30
21402150908	SITE 2 TW-2	Water	02/10/2014 13:30	02/15/2014 09:30
21402150909	SITE 2 SB-1 (2-4)	Solid	02/10/2014 13:40	02/15/2014 09:30
21402150911	SITE 1 TW-1	Water	02/10/2014 13:50	02/15/2014 09:30
21402150912	SITE 1 TW-2	Water	02/10/2014 14:00	02/15/2014 09:30
21402150913	SITE 1 SB-2 (6-8)	Solid	02/10/2014 14:20	02/15/2014 09:30
21402181008	TRIP BLANK	Water	02/17/2014 00:00	02/18/2014 10:00

### Summary of Compounds Detected

GCAL ID 21402150901	Client ID SITE 5 TW-1	Matrix Water	Collect Date/Time 02/10/2014 09:15		ceive Date/Time 15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		4.04	1.00	0.111	ug/L
108-88-3	Toluene		7.71	1.00	0.122	ug/L
100-41-4	Ethylbenzene		0.907J	1.00	0.109	ug/L
1330-20-7	Xylene (total)		3.19	3.00	0.179	ug/L
91-20-3	Naphthalene		4.42J	5.00	0.176	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		ceive Date/Time	
21402150904	SITE 3 TW-1	Water	02/10/2014 10:30	02/15/2014 09:30		
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)		14.8J	20.0	0.580	ug/L
108-20-3	diisopropyl Ether (DIPE)		8.11J	10.0	0.472	ug/L
75-85-4	tert-amyl alcohol (TAA)		71.0	40.0	2.03	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		188	2.00	0.222	ug/L
108-88-3	Toluene		1.66J	2.00	0.244	ug/L
100-41-4	Ethylbenzene		8.11	2.00	0.218	ug/L
1330-20-7	Xylene (total)		2.71J	6.00	0.358	ug/L
91-20-3	Naphthalene		36.2	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		105	2.00	0.155	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	ceive Date/Time	
21402150905	SITE 3 TW-2	Water	02/10/2014 10:40	02/	15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		4.27	1.00	0.111	ug/L
108-88-3	Toluene		1.85	1.00	0.122	ug/L
100-41-4	Ethylbenzene		47.4	1.00	0.109	ug/L
1330-20-7	Xylene (total)		29.1	3.00	0.179	ug/L
91-20-3	Naphthalene		4.61J	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		0.735J	1.00	0.078	ug/L

### Summary of Compounds Detected (con't)

GCAL ID 21402150906	Client ID	Matrix			ceive Date/Time	
	SITE 3 SB-2 (2-4)	Solid	02/10/2014 10:45	02/	15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
100-41-4	Ethylbenzene		9220	630	23.0	ug/Kg
1330-20-7	Xylene (total)		11100	1260	31.1	ug/Kg
91-20-3	Naphthalene		9080	630	48.8	ug/Kg
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
21402150907	SITE 2 TW-1	Water	02/10/2014 13:00	02/	15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1.48	1.00	0.111	ug/L
108-88-3	Toluene		0.815J	1.00	0.122	ug/L
100-41-4	Ethylbenzene		0.634J	1.00 0.109		ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
21402150908	SITE 2 TW-2	Water	02/10/2014 13:30	02/	15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.635J	1.00	0.111	ug/L
100-41-4	Ethylbenzene		0.570J	1.00	0.109	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
21402150911	SITE 1 TW-1	Water	02/10/2014 13:50	02/	15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
100-41-4	Ethylbenzene		0.508J	1.00	0.109	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Po	ceive Date/Time	
21402150912	SITE 1 TW-2	Water	02/10/2014 14:00		15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)		28.5	20.0	1.01	ug/L
EPA 8260B	_		_			
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		40.3	1.00	0.111	ug/L
108-88-3	Toluene		44.5	1.00	0.122	ug/L
100-41-4	Ethylbenzene		69.2	1.00	0.109	ug/L

### Summary of Compounds Detected (con't)

GCAL ID 21402150912	Client ID SITE 1 TW-2	<b>Matrix</b> Water	Collect Date/Time 02/10/2014 14:00		ceive Date/Time 15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
1330-20-7 91-20-3 107-06-2	Xylene (total) Naphthalene 1,2-Dichloroethane		291 50.8 2.40	3.00 5.00 1.00	0.179 0.176 0.116	ug/L ug/L ug/L
GCAL ID 21402150913	Client ID SITE 1 SB-2 (6-8)	<b>Matrix</b> Solid	Collect Date/Time 02/10/2014 14:20		ceive Date/Time 15/2014 09:30	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2 108-88-3 100-41-4 1330-20-7 91-20-3	Benzene Toluene Ethylbenzene Xylene (total) Naphthalene		48.0J 1490 1990 12600 1170	270 270 270 540 270	2.74 5.77 9.88 13.3 20.9	ug/Kg ug/Kg ug/Kg ug/Kg ug/Kg
SW-846 82	70D Solid					
CAS#	Parameter		Result	RDL	MDL	Units
91-20-3	Naphthalene		30.6J	391	12.2	ug/Kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150901	SITE 5 TW-1	Water	02/10/2014 09:15	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 14:52	By Anal KRH 5257	ytical Batch '00
CAS#	Parameter		Result	RDL	ME	L Units
71-43-2	Benzene		4.04	1.00	0.1	11 ug/L
108-88-3	Toluene		7.71	1.00	0.1	22 ug/L
100-41-4	Ethylbenzene		0.907J	1.00	0.1	09 ug/L
1330-20-7	Xylene (total)		3.19	3.00	0.1	79 ug/L
91-20-3	Naphthalene		4.42J	5.00	0.1	76 ug/L
1634-04-4	tert-Butyl methyl ether (MT	BE)	0.078U	1.00	0.0	78 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.1	16 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.1	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	48.3	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L	97	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytica	l Batch
			1	02/17/2014 14:52	KRH	525699	
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (Ta	AME)	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 (DIP	E)	0.236U	5.00		0.236	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.234U	5.00		0.234	ug/L
624-95-3	Ethyl tert-butanol (ETE	BA)	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	% Red	covery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.1	ug/L		100	78 - 130
1868-53-7	Dibromofluoromethane	50	48.3	ug/L		97	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L		99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.6	ug/L		97	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150902	SITE 5 TW-2	Water	02/10/2014 09:35	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 15:16	By Analy KRH 52570	ytical Batch
CAS#	Parameter		Result	RDL	MD	L Units
71-43-2	Benzene		0.111U	1.00	0.11	1 ug/L
108-88-3	Toluene		0.122U	1.00	0.12	22 ug/L
100-41-4	Ethylbenzene		0.109U	1.00	0.10	9 ug/L
1330-20-7	Xylene (total)		0.179U	3.00	0.17	'9 ug/L
91-20-3	Naphthalene		0.176U	5.00	0.17	76 ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.078U	1.00	0.07	78 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.11	6 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	49.1	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47	ug/L	94	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytical	Batch
·	·	·	1	02/17/2014 15:16	KRH	525699	
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TA	AME)	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 (E	TBE)	0.234U	5.00		0.234	ug/L
624-95-3	Ethyl tert-butanol (ETB	A)	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	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L		99	78 - 130
1868-53-7	Dibromofluoromethane	50	49.1	ug/L		98	77 - 127
2037-26-5	Toluene d8	50	49.6	ug/L		99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	47	ug/L		94	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150903	SITE 5 SB-2 (0-2)	Solid	02/10/2014 09:45	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/18/2014 15:36	By Analytic JCK 525789	cal Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.038U	3.73	0.038	ug/Kg
108-88-3	Toluene		U080.0	3.73	0.080	ug/Kg
100-41-4	Ethylbenzene		0.137U	3.73	0.137	ug/Kg
1330-20-7	Xylene (total)		0.184U	7.46	0.184	ug/Kg
91-20-3	Naphthalene		0.289U	3.73	0.289	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	32.9	34.9	ug/Kg	106	62 - 127
1868-53-7	Dibromofluoromethane	32.9	35.8	ug/Kg	109	65 - 130
2037-26-5	Toluene d8	32.9	34.8	ug/Kg	106	71 - 132
17060-07-0	1,2-Dichloroethane-d4	32.9	38.5	ug/Kg	117	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150904	SITE 3 TW-1	Water	02/10/2014 10:30	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 2	<b>Analyzed</b> 02/19/2014 18:36	-	nalytical Batch 25929	
CAS#	Parameter		Result	RDL		MDL	Units
71-43-2	Benzene		188	2.00		0.222	ug/L
108-88-3	Toluene		1.66J	2.00		0.244	ug/L
100-41-4	Ethylbenzene		8.11	2.00		0.218	ug/L
1330-20-7	Xylene (total)		2.71J	6.00		0.358	ug/L
91-20-3	Naphthalene		36.2	10.0		0.352	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	105	2.00		0.155	ug/L
107-06-2	1,2-Dichloroethane		0.232U	2.00		0.232	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ery Red	Limits
460-00-4	4-Bromofluorobenzene	100	99	ug/L		99 7	8 - 130
1868-53-7	Dibromofluoromethane	100	96.8	ug/L		97 7	7 - 127
2037-26-5	Toluene d8	100	102	ug/L	1	02 7	6 - 134
17060-07-0	1,2-Dichloroethane-d4	100	93.5	ug/L		94 7	1 - 127

### EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	By Analy	tical Batch
			2	02/19/2014 18:36	CEK 52592	28
CAS#	Parameter		Result	RDL	MD	Units
994-05-8	t-amyl methyl ether (TAME)		0.480U	10.0	0.48	0 ug/L
75-65-0	t-Butanol (TBA)		14.8J	20.0	0.58	0 ug/L
108-20-3	diisopropyl Ether (DIPE)		8.11J	10.0	0.47	2 ug/L
637-92-3	Ethyl tert-butyl ether (ETBE	)	0.468U	10.0	0.46	8 ug/L
624-95-3	Ethyl tert-butanol (ETBA)		75.2U	200	75	2 ug/L
64-17-5	Ethanol		250U	2000	25	0 ug/L
75-85-4	tert-amyl alcohol (TAA)		71.0	40.0	2.0	3 ug/L
762-75-4	tert-butyl formate (TBF)		0.974U	100	0.97	4 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	100	99	ug/L	99	78 - 130
1868-53-7	Dibromofluoromethane	100	96.8	ug/L	97	77 - 127
2037-26-5	Toluene d8	100	102	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	100	93.5	ug/L	94	71 - 127

### EPA 8270D

Prep Date 02/15/2014 12:00	<b>Prep Batch</b> 525609	Prep Method EPA 3510C	<b>Dilution</b> 1	<b>Analyzed</b> 02/17/2014 14:48	<b>By</b> KCB	Analytical Batch 525676	
CAS#	Parameter		Result	RDL		MDL	Units
83-32-9	Acenaphthene		0.456U	12.5		0.456	ug/L
208-96-8	Acenaphthylene		0.461U	12.5		0.461	ug/L
120-12-7	Anthracene		0.269U	12.5		0.269	ug/L
56-55-3	Benzo(a)anthracene		0.308U	12.5		0.308	ug/L
50-32-8	Benzo(a)pyrene		0.213U	12.5		0.213	ug/L
205-99-2	Benzo(b)fluoranthene		0.231U	12.5		0.231	ug/L
191-24-2	Benzo(g,h,i)perylene		0.248U	12.5		0.248	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150904	SITE 3 TW-1	Water	02/10/2014 10:30	02/15/2014 09:30

### EPA 8270D

Prep Date 02/15/2014 12:00	Prep Batch 525609	Prep Method EPA 3510C	Dilution 1	<b>Analyzed</b> 02/17/2014 14:48	<b>By</b> KCB	Analytical Batc 525676	h
CAS#	Parameter		Result	RDL		MDL	Units
207-08-9	Benzo(k)fluoranthene		0.344U	12.5		0.344	ug/L
218-01-9	Chrysene		0.161U	12.5		0.161	ug/L
53-70-3	Dibenz(a,h)anthracene		0.268U	12.5		0.268	ug/L
206-44-0	Fluoranthene		0.294U	12.5		0.294	ug/L
86-73-7	Fluorene		0.448U	12.5		0.448	ug/L
193-39-5	Indeno(1,2,3-cd)pyrene		0.199U	12.5		0.199	ug/L
91-20-3	Naphthalene		0.583U	12.5		0.583	ug/L
85-01-8	Phenanthrene		0.236U	12.5		0.236	ug/L
129-00-0	Pyrene		0.508U	12.5		0.508	ug/L
CAS# S	urrogate	Conc. Spiked	Conc. Rec	Units	% Rec	overy Re	c Limits
4165-60-0 N	itrobenzene-d5	62.5	6.53	ug/L		10*	40 - 110
321-60-8 2-	-Fluorobiphenyl	62.5	7.25	ug/L		12*	50 - 110
1718-51-0 To	erphenyl-d14	62.5	8.66	ug/L		14*	50 - 135

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150905	SITE 3 TW-2	Water	02/10/2014 10:40	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 16:03	-	nalytical Batch 5700	
CAS#	Parameter		Result	RDL	N	MDL (	Units
71-43-2	Benzene		4.27	1.00	0	).111	ug/L
108-88-3	Toluene		1.85	1.00	0	).122	ug/L
100-41-4	Ethylbenzene		47.4	1.00	0	).109	ug/L
1330-20-7	Xylene (total)		29.1	3.00	0	).179	ug/L
91-20-3	Naphthalene		4.61J	5.00	0	).176	ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.735J	1.00	0	0.078	ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0	).116	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recover	ry Rec L	imits.
460-00-4	4-Bromofluorobenzene	50	48	ug/L	g	96 78	- 130
1868-53-7	Dibromofluoromethane	50	49.2	ug/L	9	98 77	- 127
2037-26-5	Toluene d8	50	49.2	ug/L	9	98 76	- 134
17060-07-0	1,2-Dichloroethane-d4	50	48	ug/L	9	96 71	- 127

71 02000						
Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 16:03	By Ana KRH 525	llytical Batch 699
CAS#	Parameter		Result	RDL	МІ	DL Units
994-05-8	t-amyl methyl ether (T.	AME)	0.240U	5.00	0.2	240 ug/L
75-65-0	t-Butanol (TBA)		0.290U	10.0	0.2	290 ug/L
108-20-3	diisopropyl Ether (DIP	E)	0.236U	5.00	0.2	236 ug/L
637-92-3	Ethyl tert-butyl ether (f	ETBE)	0.234U	5.00	0.2	234 ug/L
624-95-3	Ethyl tert-butanol (ETE	BA)	37.6U	100	3	7.6 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	0.4	187 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	49.2	ug/L	98	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48	ug/L	96	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150906	SITE 3 SB-2 (2-4)	Solid	02/10/2014 10:45	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 200	<b>Analyzed</b> 02/17/2014 15:37	By Analytica KRH 525712	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		6.38U	630	6.38	ug/Kg
108-88-3	Toluene		13.5U	630	13.5	ug/Kg
100-41-4	Ethylbenzene		9220	630	23.0	ug/Kg
1330-20-7	Xylene (total)		11100	1260	31.1	ug/Kg
91-20-3	Naphthalene		9080	630	48.8	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	5360	5270	ug/Kg	98	62 - 127
1868-53-7	Dibromofluoromethane	5360	5020	ug/Kg	94	65 - 130
2037-26-5	Toluene d8	5360	5210	ug/Kg	97	71 - 132
17060-07-0	1,2-Dichloroethane-d4	5360	6000	ug/Kg	112	62 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150907	SITE 2 TW-1	Water	02/10/2014 13:00	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 02/17/2014 16:26	By Analyt KRH 525700	ical Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1.48	1.00	0.111	ug/L
108-88-3	Toluene		0.815J	1.00	0.122	ug/L
100-41-4	Ethylbenzene		0.634J	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 (M	ΓBE)	0.078U	1.00	0.078	ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.116	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	50.1	ug/L	100	78 - 130
1868-53-7	Dibromofluoromethane	50	48.1	ug/L	96	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.4	ug/L	93	71 - 127

71 02000							
Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 02/17/2014 16:26	•	nalytical Bato 25699	ch
CAS#	Parameter		Result	RDL	ı	MDL	Units
994-05-8	t-amyl methyl ether (T.	AME)	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 (DIP	E)	0.236U	5.00	(	0.236	ug/L
637-92-3	Ethyl tert-butyl ether (f	ETBE)	0.234U	5.00	(	0.234	ug/L
624-95-3	Ethyl tert-butanol (ETE	BA)	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	% Recove	ry R	ec Limits
460-00-4	4-Bromofluorobenzene	50	50.1	ug/L	10	00	78 - 130
1868-53-7	Dibromofluoromethane	50	48.1	ug/L	9	96	77 - 127
2037-26-5	Toluene d8	50	49.2	ug/L	9	98	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	46.4	ug/L	(	93	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150908	SITE 2 TW-2	Water	02/10/2014 13:30	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 16:50	By Analys KRH 52570	<b>tical Batch</b> 0
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.635J	1.00	0.11	l ug/L
108-88-3	Toluene		0.122U	1.00	0.122	2 ug/L
100-41-4	Ethylbenzene		0.570J	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	s ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.078U	1.00	0.078	3 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.116	6 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	48.5	ug/L	97	77 - 127
2037-26-5	Toluene d8	50	51	ug/L	102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.4	ug/L	97	71 - 127

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/17/2014 16:50	•	Analytical E 525699	Batch
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (TAN	1E)	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 (ET	BE)	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	% Recov	ery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.3	ug/L		99	78 - 130
1868-53-7	Dibromofluoromethane	50	48.5	ug/L		97	77 - 127
2037-26-5	Toluene d8	50	51	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.4	ug/L		97	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150909	SITE 2 SB-1 (2-4)	Solid	02/10/2014 13:40	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 50	<b>Analyzed</b> 02/17/2014 14:17	By Analytica KRH 525712	al Batch
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1.57U	155	1.57	ug/Kg
108-88-3	Toluene		3.32U	155	3.32	ug/Kg
100-41-4	Ethylbenzene		5.68U	155	5.68	ug/Kg
1330-20-7	Xylene (total)		7.67U	310	7.67	ug/Kg
91-20-3	Naphthalene		12.0U	155	12.0	ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	1320	1250	ug/Kg	95	62 - 127
1868-53-7	Dibromofluoromethane	1320	1350	ug/Kg	102	65 - 130
2037-26-5	Toluene d8	1320	1330	ug/Kg	101	71 - 132
17060-07-0	1,2-Dichloroethane-d4	1320	1380	ug/Kg	104	62 - 125

### EPA 8270D

Prep Date 02/20/2014 09:30	<b>Prep Batch</b> 525956	Prep Method EPA 3550C	Dilution 1	<b>Analyzed</b> 02/20/2014 14:03	<b>By</b> KCB	Analytical Batch 525975	1
CAS#	Parameter		Result	RDL		MDL	Units
83-32-9	Acenaphthene		11.9U	388		11.9	ug/Kg
208-96-8	Acenaphthylene		7.93U	388		7.93	ug/Kg
120-12-7	Anthracene		7.98U	388		7.98	ug/Kg
56-55-3	Benzo(a)anthracene		7.24U	388		7.24	ug/Kg
50-32-8	Benzo(a)pyrene		4.86U	388		4.86	ug/Kg
205-99-2	Benzo(b)fluoranthene		7.66U	388		7.66	ug/Kg
191-24-2	Benzo(g,h,i)perylene		5.86U	388		5.86	ug/Kg
207-08-9	Benzo(k)fluoranthene		5.99U	388		5.99	ug/Kg
218-01-9	Chrysene		8.40U	388		8.40	ug/Kg
53-70-3	Dibenz(a,h)anthracene		5.57U	388		5.57	ug/Kg
206-44-0	Fluoranthene		6.31U	388		6.31	ug/Kg
86-73-7	Fluorene		6.99U	388		6.99	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene		9.34U	388		9.34	ug/Kg
91-20-3	Naphthalene		12.1U	388		12.1	ug/Kg
85-01-8	Phenanthrene		8.91U	388		8.91	ug/Kg
129-00-0	Pyrene		5.44U	388		5.44	ug/Kg
CAS# S	urrogate	Conc. Spiked	Conc. Rec	Units	% Reco	very Re	c Limits
4165-60-0 N	itrobenzene-d5	1670	1110	ug/Kg		67	35 - 100
321-60-8 2-	-Fluorobiphenyl	1670	1230	ug/Kg		74	15 - 105
1718-51-0 T	erphenyl-d14	1670	1740	ug/Kg		104	30 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150911	SITE 1 TW-1	Water	02/10/2014 13:50	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 02/17/2014 15:40	By Ana KRH 5257	lytical Batch 700
CAS#	Parameter		Result	RDL	ME	L Units
71-43-2	Benzene		0.111U	1.00	0.1	11 ug/L
108-88-3	Toluene		0.122U	1.00	0.1	22 ug/L
100-41-4	Ethylbenzene		0.508J	1.00	0.1	09 ug/L
1330-20-7	Xylene (total)		0.179U	3.00	0.1	79 ug/L
91-20-3	Naphthalene		0.176U	5.00	0.1	76 ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	0.078U	1.00	0.0	78 ug/L
107-06-2	1,2-Dichloroethane		0.116U	1.00	0.1	16 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	49.3	ug/L	99	77 - 127
2037-26-5	Toluene d8	50	49.7	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.5	ug/L	97	71 - 127

71 02000						
Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 1	<b>Analyzed</b> 02/17/2014 15:40	-	alytical Batch 5699
CAS#	Parameter		Result	RDL	N	IDL Unit
994-05-8	t-amyl methyl ether (T.	AME)	0.240U	5.00	0	.240 ug/
75-65-0	t-Butanol (TBA)		0.290U	10.0	0	.290 ug/
108-20-3	diisopropyl Ether (DIP	E)	0.236U	5.00	0	.236 ug/
637-92-3	Ethyl tert-butyl ether (f	ETBE)	0.234U	5.00	0	.234 ug/
624-95-3	Ethyl tert-butanol (ETE	BA)	37.6U	100	;	37.6 ug/
64-17-5	Ethanol		125U	1000		125 ug/
75-85-4	tert-amyl alcohol (TAA	.)	1.01U	20.0		1.01 ug/
762-75-4	tert-butyl formate (TBF	=)	0.487U	50.0	0	.487 ug/
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recover	y Rec Limit
460-00-4	4-Bromofluorobenzene	50	49.2	ug/L	9	8 78 - 13
1868-53-7	Dibromofluoromethane	50	49.3	ug/L	9	9 77 - 12
2037-26-5	Toluene d8	50	49.7	ug/L	9	9 76 - 13
17060-07-0	1,2-Dichloroethane-d4	50	48.5	ug/L	9	7 71 - 12

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150912	SITE 1 TW-2	Water	02/10/2014 14:00	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/19/2014 20:10	-	nalytical Batch 5929	
CAS#	Parameter		Result	RDL	ı	MDL	Units
71-43-2	Benzene		40.3	1.00	(	).111	ug/L
108-88-3	Toluene		44.5	1.00	(	).122	ug/L
100-41-4	Ethylbenzene		69.2	1.00	(	).109	ug/L
1330-20-7	Xylene (total)		291	3.00	(	).179	ug/L
91-20-3	Naphthalene		50.8	5.00	(	).176	ug/L
1634-04-4	tert-Butyl methyl ether (MTB	E)	0.078U	1.00	(	0.078	ug/L
107-06-2	1,2-Dichloroethane		2.40	1.00	(	).116	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recove	ry Red	Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L	Ç	99 78	8 - 130
1868-53-7	Dibromofluoromethane	50	47.9	ug/L	Ç	96 7	7 - 127
2037-26-5	Toluene d8	50	51	ug/L	10	)2 7	6 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.2	ug/L	(	96 7	1 - 127

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed	Ву	Analytical	Batch
			1	02/19/2014 20:10	CEK	525928	
CAS#	Parameter		Result	RDL		MDL	Units
994-05-8	t-amyl methyl ether (Ta	AME)	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 (DIPI	E)	0.236U	5.00		0.236	ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	0.234U	5.00		0.234	ug/L
624-95-3	Ethyl tert-butanol (ETE	BA)	37.6U	100		37.6	ug/L
64-17-5	Ethanol		125U	1000		125	ug/L
75-85-4	tert-amyl alcohol (TA	A)	28.5	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	% Rec	overy	Rec Limits
460-00-4	4-Bromofluorobenzene	50	49.7	ug/L		99	78 - 130
1868-53-7	Dibromofluoromethane	50	47.9	ug/L		96	77 - 127
2037-26-5	Toluene d8	50	51	ug/L		102	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	48.2	ug/L		96	71 - 127

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402150913	SITE 1 SB-2 (6-8)	Solid	02/10/2014 14:20	02/15/2014 09:30

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 100	<b>Analyzed</b> 02/17/2014 14:57	•	alytical Batch 712
CAS#	Parameter		Result	RDL	М	DL Units
71-43-2	Benzene		48.0J	270	2	2.74 ug/Kg
108-88-3	Toluene		1490	270	5	i.77 ug/Kg
100-41-4	Ethylbenzene		1990	270	9	0.88 ug/Kg
1330-20-7	Xylene (total)		12600	540	1	3.3 ug/Kg
91-20-3	Naphthalene		1170	270	2	20.9 ug/Kg
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	2280	2280	ug/Kg	100	62 - 127
1868-53-7	Dibromofluoromethane	2280	2190	ug/Kg	96	65 - 130
2037-26-5	Toluene d8	2280	2280	ug/Kg	100	71 - 132
17060-07-0	1,2-Dichloroethane-d4	2280	2370	ug/Kg	104	62 - 125

### SW-846 8270D Solid

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed		rtical Batch
02/19/2014 14:4	5 525956	EPA 3550C	1	02/20/2014 13:47	KCB 52597	75
CAS#	Parameter		Result	RDL	MDI	Units
83-32-9	Acenaphthene		12.0U	391	12.	0 ug/Kg
208-96-8	Acenaphthylene		8.00U	391	8.0	0 ug/Kg
120-12-7	Anthracene		8.05U	391	8.0	5 ug/Kg
56-55-3	Benzo(a)anthracene		7.30U	391	7.3	0 ug/Kg
50-32-8	Benzo(a)pyrene		4.91U	391	4.9	1 ug/Kg
205-99-2	Benzo(b)fluoranthene		7.73U	391	7.7	3 ug/Kg
191-24-2	Benzo(g,h,i)perylene		5.91U	391	5.9	1 ug/Kg
207-08-9	Benzo(k)fluoranthene		6.04U	391	6.0	4 ug/Kg
218-01-9	Chrysene		8.47U	391	8.4	7 ug/Kg
53-70-3	Dibenz(a,h)anthracene		5.62U	391	5.6	2 ug/Kg
206-44-0	Fluoranthene		6.36U	391	6.3	6 ug/Kg
86-73-7	Fluorene		7.05U	391	7.0	5 ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene		9.42U	391	9.4	2 ug/Kg
91-20-3	Naphthalene		30.6J	391	12.	2 ug/Kg
85-01-8	Phenanthrene		8.98U	391	8.9	8 ug/Kg
129-00-0	Pyrene		5.49U	391	5.4	9 ug/Kg
CAS# S	urrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
4165-60-0 N	itrobenzene-d5	1670	1090	ug/Kg	65	35 - 100
321-60-8 2	-Fluorobiphenyl	1670	1140	ug/Kg	68	45 - 105
1718-51-0 T	erphenyl-d14	1670	1550	ug/Kg	93	30 - 125

RESULTS REPORTED ON A DRY WEIGHT BASIS

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402181008	TRIP BLANK	Water	02/17/2014 00:00	02/18/2014 10:00

Prep Date	Prep Batch	Prep Method	Dilution 1	<b>Analyzed</b> 02/20/2014 17:27	By Analytic LBH 525950	al Batch
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 (M7	TBE)	0.078U	1.00	0.078	ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	50	55.4	ug/L	111	78 - 130
1868-53-7	Dibromofluoromethane	50	50.7	ug/L	101	77 - 127
2037-26-5	Toluene d8	50	52.2	ug/L	104	76 - 134
17060-07-0	1,2-Dichloroethane-d4	50	50.5	ug/L	101	71 - 127

### Revision 1

## GC/MS Volatiles Quality Control Summary

Analytical Batch 525700	<b>ch</b> 525700	Client ID	Client ID MB525700			LCS525700			LCSD525700			
Prep Batch N/A	ch N/A	<b>GCAL ID</b> 1284419	1284419			1284420			1284421			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date	Analytical Date 02/17/2014 14:08			02/17/2014 12:31			02/17/2014 12:54			
		Matrix	Water			Water		_	Water			
	EDA 9260B	٥	Units	ng/L	Spike	411100		Control	*11.000			RPD
	Er A 6200	<u>a</u>	Result	RDL	Added	Nesul	% R	Limits % R	lineau	% R	RPD	Limit
107-06-2	1,2-Dichloroethane	lane	0.116U	0.116	20.0	8.09	102	71 - 129	51.8	104	2	30
100-41-4	Ethylbenzene		0.109U	0.109	20.0	55.2	110	74 - 126	55.5	111	_	30
1634-04-4	tert-Butyl meth)	tert-Butyl methyl ether (MTBE)	0.078U	0.078	20.0	20.0	100	71 - 125	49.4	66	_	30
1330-20-7	Xylene (total)		0.179U	0.179	150	158	105	74 - 127	162	108	က	30
91-20-3	Naphthalene		0.176U	0.176	20.0	50.1	100	57 - 138	49.1	86	7	32
71-43-2	Benzene		0.1110	0.111	20.0	52.8	106	70 - 129	52.6	105	0	20
108-88-3	Toluene		0.122U	0.122	20.0	51.3	103	72 - 120	54.2	108	2	20
Surrogate												
460-00-4	4-Bromofluorobenzene	oenzene	20	100	20	50.8	102	78 - 130	52.4	105		
1868-53-7	Dibromofluoromethane	nethane	48.5	26	20	51.2	102	77 - 127	50.4	101		
2037-26-5	Toluene d8		49.6	66	20	49.3	66	76 - 134	49.4	66		
17060-07-0	1,2-Dichloroethane-d4	nane-d4	47.3	96	20	50.6	101	71 - 127	49.2	98		

Analytical Batch 525712	525712	Client ID	Client ID MB525712			LCS525712			LCSD525712			
Prep Batch N/A	N/A	<b>GCAL ID</b> 1284456	1284456			1284457			1284458			
		Sample Type Method Blank	Method Blank			SOT			CSD			
		Analytical Date	Analytical Date 02/17/2014 13:26			02/17/2014 06:58			02/17/2014 07:17			
		Matrix	Solid			Solid			Solid			
	EDA 0260B	٥	Units	ug/Kg	Spike	41		Control	4100			RPD
_	EL A 0200	۵	Result	RDL	Added	Result	% R	Limits % R	Mesult	% R	RPD	Limit
100-41-4	Ethylbenzene		9.15U	9.15	2500	2720	109	74 - 130	2530	101	7	30
1330-20-7	Xylene (total)		12.4U	12.4	7500	8000	107	71 - 129	7350	98	ω	30
91-20-3	Naphthalene		19.40	19.4	2500	2860	114	54 - 132	2720	109	2	32
71-43-2	Benzene		2.54U	2.54	2500	2660	106	73 - 128	2540	102	2	20
108-88-3	Toluene		5.35U	5.35	2500	2570	103	74 - 121	2400	96	7	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	2390	96	2500	2440	98	62 - 127	2430	26		
1868-53-7	Dibromofluoromethane	nethane	2470	66	2500	2560	102	65 - 130	2550	102		
2037-26-5	Toluene d8		2540	102	2500	2450	86	71 - 132	2420	26		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	2460	86	2500	2510	100	62 - 125	2590	104		

### Revision 1

## GC/MS Volatiles Quality Control Summary

Analytical Batch 525789	<b>ch</b> 525789	Client ID	Client ID MB525789			LCS525789			LCSD525789			
Prep Batch N/A	ch N/A	<b>GCAL ID</b> 1284799	1284799			1284800			1284801			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date	Analytical Date 02/18/2014 13:32			02/18/2014 11:14			02/18/2014 11:36			
		Matrix	Solid			Solid			Solid			
	EDA 0260D	٥	Units	ug/Kg	Spike	4100		Control	4100			RPD
	EL A 0200	۵	Result	RDL	Added	Result	% R	Limits % R	Mesull	% R	RPD	Limit
100-41-4	Ethylbenzene		0.183U	0.183	20.0	45.7	91	74 - 130	45.2	06	-	30
1330-20-7	Xylene (total)		0.247U	0.247	150	142	92	71 - 129		94	_	30
91-20-3	Naphthalene		0.388U	0.388	20.0	44.6	89	54 - 132	45.0	06	_	35
71-43-2	Benzene		0.051U	0.051	50.0	44.1	88	73 - 128	44.1	88	0	20
108-88-3	Toluene		0.107U	0.107	20.0	44.1	88	74 - 121	43.3	87	7	20
Surrogate												
460-00-4	4-Bromofluorobenzene	senzene	53.4	107	20	52.2	104	62 - 127	9.09	101		
1868-53-7	Dibromofluoromethane	nethane	51.9	104	20	50.9	102	65 - 130	51.4	103		
2037-26-5	Toluene d8		53.5	107	20	50.9	102	71 - 132	49.8	100		
17060-07-0	1,2-Dichloroethane-d4	lane-d4	51.8	104	50	51.8	104	62 - 125	51.2	102		

Analytical Batch 525929	25929	Client ID	Client ID MB525929			LCS525929		ì	LCSD525929			
Prep Batch N/A	I/A	<b>GCAL ID</b> 1285438	1285438			1285439			1285440			
		Sample Type Method Blank	Method Blank			CS			CSD			
		Analytical Date	Analytical Date 02/19/2014 18:13			02/19/2014 16:38			02/19/2014 17:02			
		Matrix	Water			Water			Water			
	EDA 0260B	۵	Units	ng/L	Spike	4100		Control	71			RPD
	0070 W L	۵	Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
107-06-2 1,2	1,2-Dichloroethane	ane	0.116U	0.116	20.0	50.3	101	71 - 129	52.5	105	4	30
100-41-4 Eth	Ethylbenzene		0.109U	0.109	20.0	56.4	113	74 - 126	53.8	108	2	30
1634-04-4 tert	rt-Butyl methy	tert-Butyl methyl ether (MTBE)	0.078U	0.078	20.0	49.0	98	71 - 125	52.0	104	9	30
1330-20-7 Xyl	Xylene (total)		0.179U	0.179	150	162	108	74 - 127	157	105	က	30
91-20-3 Nap	Naphthalene		0.176U	0.176	20.0	52.6	105	57 - 138	48.9	98	7	35
71-43-2 Ber	Benzene		0.1110	0.111	20.0	50.5	101	70 - 129	52.4	105	4	20
108-88-3 Tol	Toluene		0.122U	0.122	20.0	53.3	107	72 - 120	52.1	104	2	20
Surrogate												
460-00-4 4-B	4-Bromofluorobenzene	enzene	48.6	26	20	48.7	26	78 - 130	48.8	98		
1868-53-7 Dib	Dibromofluoromethane	nethane	47.4	96	20	47.9	96	77 - 127	49.5	66		
2037-26-5 Tol	Foluene d8		48.8	86	20	49.2	86	76 - 134	49.2	86		
17060-07-0 1,2	1,2-Dichloroethane-d4	ane-d4	48.4	26	20	46.2	92	71 - 127	48.4	97		

## GC/MS Volatiles Quality Control Summary

Analytical Batch 525699	: <b>h</b> 525699	Client ID	Client ID MB525699			LCS525699			LCSD525699			
Prep Batch N/A	h N/A	<b>GCAL ID</b> 1284416	1284416			1284417			1284418			
		Sample Type Method Blank	Method Blank			CCS			CSD			
		Analytical Date	Analytical Date 02/17/2014 14:08			02/17/2014 12:31			02/17/2014 12:54			
		Matrix	Water			Water			Water			
	EDA 9260B	۵	Units	ng/L	Spike	411100		Control	*11.00			RPD
	ELA 0200	۵	Result	RDL	Added	Result	% R	Limits % R	Mesull	% R	RPD	Limit
994-05-8	t-amyl methyl ether (TAME)	ther (TAME)	0.240U	0.240	20.0	55.9	112	50 - 150	53.8	108	4	20
75-65-0	t-Butanol (TBA)		0.290U	0.290	20.0	57.4	115	50 - 150	57.5	115	0	20
108-20-3	diisopropyl Ether (DIPE)	er (DIPE)	0.236U	0.236	20.0	53.1	106	50 - 150	54.8	110	က	20
637-92-3	Ethyl tert-butyl ether (ETBE)	ether (ETBE)	0.234U	0.234	20.0	53.4	107	50 - 150	52.8	106	_	20
624-95-3	Ethyl tert-butanol (ETBA)	ol (ETBA)	37.6U	37.6	2550	2220	87	50 - 150	2300	06	4	20
64-17-5	Ethanol		125U	125	25200	23600	94	50 - 150	24600	86	4	20
75-85-4	tert-amyl alcohol (TAA)	ol (TAA)	1.010	1.01	200	207	104	50 - 150	211	106	7	20
762-75-4	tert-butyl formate (TBF)	te (TBF)	0.487U	0.487	50.0	54.1	108	50 - 150	48.8	86	10	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	20	100	20	50.8	102	78 - 130	52.4	105		
1868-53-7	Dibromofluoromethane	nethane	48.5	26	20	51.2	102	77 - 127	50.4	101		
2037-26-5	Toluene d8		49.6	66	20	49.3	66	76 - 134	49.4	66		
17060-07-0	1,2-Dichloroethane-d4	ane-d4	47.3	95	20	50.6	101	71 - 127	49.2	98		

	Carried many many	כופורים	CIETIL ID INIDOZNOZO			LC2525928			LCSD525928			
Prep Batch N/A	N/A	<b>GCAL ID</b> 1285426	1285426			1285427			1285428			
		Sample Type   Method Blank	Method Blank			CS			CSD			
		Analytical Date	Analytical Date 02/19/2014 18:13			02/19/2014 16:38			02/19/2014 17:02			
		Matrix	Water			Water			Water			
	EDA 0260B	0	Units	ng/L	Spike	41		Control	4100			RPD
	ELA 02001	n	Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
994-05-8	t-amyl methyl ether (TAME)	her (TAME)	0.240U	0.240	20.0	48.9	86	50 - 150	51.0	102	4	20
75-65-0	t-Butanol (TBA)		0.290U	0.290	20.0	60.1	120	50 - 150	59.1	118	7	20
108-20-3	diisopropyl Ether (DIPE)	r (DIPE)	0.236U	0.236	20.0	49.8	100	50 - 150	50.4	101	_	20
637-92-3	Ethyl tert-butyl ether (ETBE)	ther (ETBE)	0.234U	0.234	20.0	47.7	92	50 - 150	51.4	103	7	20
624-95-3	Ethyl tert-butanol (ETBA)	ol (ETBA)	37.6U	37.6	2550	2760	108	50 - 150	2620	103	2	20
64-17-5	Ethanol		125U	125	25200	28300	112	50 - 150	26500	105	7	20
75-85-4	tert-amyl alcohol (TAA)	I (TAA)	1.010	1.01	200	225	113	50 - 150	223	112	_	20
762-75-4	tert-butyl formate (TBF)	e (TBF)	0.487U	0.487	20.0	49.5	66	50 - 150	49.5	66	0	20
Surrogate												
460-00-4	4-Bromofluorobenzene	enzene	48.6	26	20	48.7	26	78 - 130	48.8	98		
o 1868-53-7	Dibromofluoromethane	ethane	47.4	92	20	47.9	96	77 - 127	49.5	66		

### GCAL Report 214021509

## GC/MS Volatiles Quality Control Summary

Analytical Batch 525928	Client ID	Client ID MB525928			LCS525928			LCSD525928			
Prep Batch N/A	<b>GCAL ID</b> 1285426	1285426			1285427			1285428			
	Sample Type   Method Blank	Method Blank			CS			CSD			
	Analytical Date	Analytical Date 02/19/2014 18:13			02/19/2014 16:38			02/19/2014 17:02			
	Matrix Water	Water			Water			Water			
EDA 8260B	202	Units	ng/L	Spike	*I00		Control	*			RPD
Er A 92	900	Result	RDL	Added	lineau	% R	Limits % R	lineau	% R	RPD	Limit
2037-26-5 Toluene d8		48.8	86	20	49.2	86	76 - 134	49.2	86		
17060-07-0 1,2-Dichloroethane-d4	sethane-d4	48.4	26	20	46.2	92	71 - 127	48.4	26		

# GC/MS Semi-Volatiles Quality Control Summary

Prep Batch 525609         GCAL ID Sample Type Method Blank Prep Date O2/15/2014 12:00         Sample Type Method Blank Prep Date O2/15/2014 12:00           Analytical Date Matrix Mater Matrix Mater           C08-96-8 Acenaphthylene D6-36-55-3 Benzo(a)anthracene O.246U           205-99-2 Benzo(a)anthracene D6-36-55-3 Benzo(a)hinjperylene D6-32-8 Benzo(a)hinjperylene D6-32-8 Benzo(a)hinjperylene D6-32-8 Benzo(a)hinjperylene D6-32-8 Benzo(a)hinthracene D7-190U         0.198U           207-08-9 Benzo(a)hinthracene D7-32-8 Benzo(a)hinthracene D7-32-8 Benzo(a)hinthracene D7-190U         0.159U           208-32-8 Benzo(a)hinthracene D7-33-8 Benzo(a)hinthracene D7-190U         0.159U           218-01-9 Chrysene D1-9 Chrysene D7-32-8 Benzo(a)hinthracene D7-190U         0.159U           2218-01-9 Chrysene D1-9 Chrysene D7-32-8 Benzo(a)hinthracene D7-190U         0.159U           23-70-3 D1benz(a,h)anthracene D7-32-Benzo(a,hinthracene D7-32-Ben	Client ID MB525609		LCS525609			LCSD525609			
Method EPA 3510C  Sample Type Prep Date Analytical Date Anthracene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(a) pyrene Benzo(a,h,) perylene Benzo(a,h,) perylene Benzo(a,h,) anthracene			1284033			1284034			
Prep Date Analytical Date Matrix  EPA 8270D  3			SOT			CSD			
Analytical Date  Matrix  EPA 8270D  Acenaphthylene Anthracene Benzo(a) anthracene Benzo(a) pricanthene Benzo(a,h,i) perylene Benzo(a,h,i) anthracene Fluoranthene Fluoranthene Fluoranthene Acenaphthene			02/15/2014 12:00			02/15/2014 12:00			
EPA 8270D  Bear Acenaphthylene Anthracene Benzo(a) anthracene Benzo(b) fluoranthene Benzo(a) pyrene Benzo(a) pyrene Chrysene Dibenz(a,h) anthracene Fluoranthene Fluoranthene Fluoranthene Acenaphthene			02/17/2014 13:26			02/17/2014 13:42			
EPA 8270D  Re  Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Fluoranthene Fluoranthene Phenanthrene Acenaphthene Dyrene Acenaphthene Acenaphthene Acenaphthene Dyrene			Water			Water			
Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Fluoranthene Phenanthrene Acenaphthene Dyrene Acenaphthene Acenaphthene Acenaphthene Acenaphthene Acenaphthene Acenaphthene Acenaphthene Acenaphthene	Units ug/L	Spike	-	Cor	Control	ć			RPD
Acenaphthylene Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g,h,i)perylene Benzo(g,h,i)perylene Chrysene Olibenz(a,h)anthracene Fluoranthene Fluoranthene Fluoranthene Phenanthrene Acenaphthene Acenaphthene Pyrene Nitrohanzene-d5		Added	Kesult	% R Limit	Limits % R	Kesuit	% R	RPD	Limit
Anthracene Benzo(a)anthracene Benzo(b)fluoranthene Benzo(g)h,i)perylene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Fluoranthene Phenanthrene Acenaphthene Acenaphthene Pyrene Nitrohanzene-d5	0.369U 0.369	20.0	34.4	69 55	- 120	33.0	99	4	30
Benzo(a)anthracene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Naphthalene Naphthalene Phenanthrene Acenaphthene Acenaphthene Dirrohenzene-d5	0.215U 0.215	20.0	39.4	79 58	- 120	38.6	77	7	8
Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Phenanthrene Acenaphthene Pyrene	0.246U 0.246	20.0	37.6	75 56	- 120	35.6	71	2	8
Benzo(k)fluoranthene Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Indeno(1,2,3-cd)pyrene Naphthalene Acenaphthene Pyrene		20.0	39.1	78 55	- 120	38.5	77	2	30
Benzo(g,h,i)perylene Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluoranthene Indeno(1,2,3-cd)pyrene Naphthalene Acenaphthene Pyrene	0.275U 0.275	20.0	42.6	85 49	- 121	41.5	83	က	30
Benzo(a)pyrene Chrysene Dibenz(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Acenaphthene Pyrene	0.198U 0.198	20.0	37.1	74 44	- 132	34.7	69	7	30
Chrysene Dibenz(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Acenaphthene Pyrene	0.170 0.170	20.0	38.0	76 56	- 120	36.6	73	4	8
Dibenz(a,h)anthracene Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Acenaphthene Pyrene	0.129U 0.129	20.0	40.0	80 58	- 120	37.5	75	9	က
Fluoranthene Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Acenaphthene Pyrene		20.0	37.4	75 50	- 138	34.6	69	∞	8
Fluorene Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Acenaphthene Pyrene	0.235U 0.235	20.0	41.3	83 55	- 120	39.7	79	4	30
Indeno(1,2,3-cd)pyrene Naphthalene Phenanthrene Acenaphthene Pyrene	0.358U 0.358	20.0	38.0	76 54	- 120	36.1	72	2	က
Naphthalene Phenanthrene Acenaphthene Pyrene		20.0	31.5	63 43	- 133	31.7	63	_	8
Phenanthrene Acenaphthene Pyrene	0.466U 0.466	20.0	32.9	66 44	- 120	30.8	62	7	8
Acenaphthene Pyrene Nitrohenzene-d5	0.189U 0.189	20.0	37.4	75 58	- 120	38.2	92	2	30
Pyrene Nitrohenzene-d5	0.365U 0.365	20.0	34.7	69 52	- 120	32.0	64	80	9
Nitrohenzene-d5	0.406U 0.406	20.0	40.3	81 54	- 120	36.7	73	0	8
Nitrohenzene-d5									
	34.9 70	20	41.2	82 40	- 110	38.9	78		
321-60-8 2-Fluorobiphenyl 30.7	30.7 61	20	40.4	81 50	- 110	38.7	77		
1718-51-0 Terphenyl-d14 41.1	41.1 82	20	44.9	90 20	- 135	42.3	85		

Analytical Batch 525975	<b>:h</b> 525975	Client ID	Client ID MB525956			LCS525956			LCSD525956			
Prep Batc	Prep Batch 525956	GCAL ID 1285584	1285584			1285585			1285586			
Prep Metho	Prep Method EPA 3550C	Sample Type Method Blank	Method Blank			CS			CSD			
		Prep Date	<b>Prep Date</b> 02/19/2014 14:45			02/19/2014 14:45			02/19/2014 14:45			
		Analytical Date	Analytical Date 02/20/2014 12:57			02/20/2014 13:14			02/20/2014 13:30			
		Matrix	Solid			Solid			Solid			
	GDA 0270D		Units	ug/Kg	Spike	410		Control	410			RPD
	EF A 0270	5	Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
208-96-8	Acenaphthylene	91	6.75U	6.75	1670	1160	20	53 - 120	1160	20	0	30
120-12-7	Anthracene		06.79	6.79	1670	1180	71	52 - 120	1200	72	2	30

### Revision 1

### **GCAL Report** 214021509

# GC/MS Semi-Volatiles Quality Control Summary

Analytical Batch 525975	25975	Client ID	MB525956			LCS525956			LCSD525956			
Prep Batch 525956	25956	GCAL ID	1285584			1285585			1285586			
Prep Method EPA 3550C	:PA 3550C	Sample Type	Method Blank			CS			CSD			
		Prep Date	02/19/2014 14:45			02/19/2014 14:45			02/19/2014 14:45			
		Analytical Date	02/20/2014 12:57			02/20/2014 13:14			02/20/2014 13:30			
		Matrix	Solid			Solid			Solid			
	DA 0270	٥	Units	ug/Kg	Spike	4100		Control	41:000			RPD
<u> </u>	EFA 02/UD		Result	RDL	Added	Result	% R	Limits % R	Result	% R	RPD	Limit
56-55-3 Be	Benzo(a)anthracene	Icene	6.16U	6.16	1670	1210	73	48 - 120	1220	73	_	90
205-99-2 Be	Benzo(b)fluoranthene	nthene	6.52U	6.52	1670	1380	83	31 - 130	1400	84	_	8
207-08-9 Be	Benzo(k)fluoranthene	thene	5.10U	5.10	1670	1300	78	36 - 122	1370	82	2	8
191-24-2 Be	Benzo(g,h,i)perylene	ylene	4.99U	4.99	1670	1190	71	29 - 134	1320	79	10	8
50-32-8 Be	Benzo(a)pyrene	Ø)	4.14U	4.14	1670	1200	72	44 - 120	0 1240	74	က	30
218-01-9 CF	Chrysene		7.15U	7.15	1670	1240	74	51 - 120	0 1240	74	0	8
53-70-3 Di	Dibenz(a,h)anthracene	nracene	4.74U	4.74	1670	1180	71	27 - 129	9 1290	77	တ	30
206-44-0 Flı	Fluoranthene		5.37U	5.37	1670	1130	89	39 - 120	0 1160	20	က	8
86-73-7 FII	Fluorene		5.95U	5.92	1670	1170	20	48 - 120	0 1180	71	_	9
	Indeno(1,2,3-cd)pyrene	d)pyrene	7.95U	7.95	1670	1180	71	43 - 132		70	7	30
91-57-6	2-Methylnaphthalene	alene	4.76U	4.76	1670	1220	73	43 - 120	0 1250	75	2	8
91-20-3 Na	Naphthalene		10.3U	10.3	1670	1130	89	48 - 120	0 1160	70	က	9
85-01-8 PF	Phenanthrene		7.58U	7.58	1670	1210	73	53 - 120	1240	74	2	8
90-12-0	1-Methylnaphthalene	alene	6.100	6.10	1670	1280	77	37 - 120	` 	79	7	30
106-46-7	1,4-Dichlorobenzene	nzene	8.82U	8.82	1670	1080	65	42 - 120	1200	72	11	30
621-64-7 n-	n-Nitrosodi-n-propylamine	ropylamine	14.40	14.4	1670	1170	20	46 - 120	0 1210	73	က	30
120-82-1	1,2,4-Trichlorobenzene	enzene	10.5U	10.5	1670	1180	71	46 - 120	0 1250	75	9	30
83-32-9 Ac	Acenaphthene		10.10	10.1	1670	1160	20	50 - 120	1220	73	2	8
121-14-2 2,	2,4-Dinitrotoluene	ne	6.72U	6.72	1670	1240	74	45 - 120	0 1270	9/	2	30
129-00-0 Py	Pyrene		4.63U	4.63	1670	1470	88	38 - 136	3 1490	88	_	30
Surrogate												
4165-60-0 Ni	Nitrobenzene-d5	2	1110	29	1670	1180	71	35 - 100	0 1190	71		
321-60-8 2-	2-Fluorobiphenyl		1140	89	1670	1260	9/	45 - 105	5 1260	9/		
1718-51-0 Te	Terphenyl-d14		1500	06	1670	1620	97	30 - 125	5 1650	99		

LAB USE ONLY Sales, Order #		Access Po#	nalytical	•	nain of Access	n of Custo	Chain of Custody Record		Project Work Order # Laboratory ID:	775) (504)	
			Preservative (*see codes)	3	0			•		Access	9 
Jorn 18			De	9 6	9					Analytical, Inc	, NC.
tat	Ref. Zip:	\$ 2262	† SISX	<del>1</del> 00-2		- Ly		7478 Carlisle St Irmo, SC 29063	7478 Carlisle Street Phon Irmo, SC 29063 www.axs-inc.com	Phone: (803) 781-4243 Fax: 781-4303 inc.com	'81-4243 '81-4303
803-141-4000	Fax:	803-741-9 960		713		i	100	Preservative (0 = None 1 = 1 6 = Method 50	*** Theservative Codds** (pace corresponding # In block above analysis field 0=None 1 = HCE 2=HNO 3=HSO; 4 = NacO+ 5=NasSo. 6=Method 5035 set wit NatiSo. 8, ChiOH,77 = NaCH/2roAC,8 = HAPO.	dng # III block aboue Or 4 = NaOH 5 = Na OH 7 = NaOH/ZnOA	analysis field! S.O. 8 = H.P.O.
nail: NUMOSTIS Q (extendum)	I i			CHM				Materix Codes GW = ground w SL = sludge A	Matrix Codes (place corresponding code in matrix column) GW = ground water WW = waste water DW = drinking water S = soli SL = shidge A = air (W = notisthal waste MO = waste oil OT = other	de in mains column r DW = drinking water ster MO = waste oil C	S = soil T = other
+	Bu whom was		OOESTE	טיקאין ייט'י				Program Area Sate Dinnking V Wastes (for soil	y in comments section)  Tain Area Codes CWA = Clean (Mater Act for wastewaters). SDWA intring Water Act for othering waters) SHW = Solid and Hazardous strongers (For Solis and Mazerdous strongers).	Water Act (for wastew afers) SHW = Solid a aste samples)	aters); SDWA =
Nerrid Introd	Date Time Collected Collected	Type Materia Program	TOTAL	BIEK! BIEK!	ehas			Container Type	G = Gliess IOTES /	COMMENTS pace below to note start/finish	times & dates)
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	1300	(m)	て電視を開え		17	7 m		· -		<i>,</i>	7
	1330	33		15 N	er er	Clien	Client ID: 4565 -	4565 - Access Analytical	lytical		. γ⊂
St 25-1 (5-4)	32	5	2. %. %. %. %. %. %. %. %. %. %. %. %. %.	5	4.	SDG:	214021509	609			0
		3		4		Dne	<b>Due Date</b> : 02/21/14			240 110	21402 181008
Turnaround Time:	Project Location:	Relinquished B	hạơ By		Received By		Date (mp-dd-ng	Time	Samples Rec'd on Ice	Sample Temp (U Receipt (CO)	p. Upori O)
	<b>7</b> 8		. ?		N		2/11/14	1484	\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(0°)	(N/A)
6 *Date Required:	NC			150	X		2/4/14	1700	Z	(0,0)	(N/A)
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ing in the second secon		1	ee B	verse for Terms a	면 -	Conditions		: :	Origina Yeslow ( Pink Co	Original Copy - Returned w/Report Yellow Copy - Access File Copy Pink Copy - Client Copy	//Report Copy
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(V/A) (Z/A) (N/A) ₹Z Propram Area Codes: CNA = Clean Mater Act for westewaters; SDWA Sate Drinking Water Act for dimining waters; SHW = Solid and Hazardous Mastee/for suits, ground waters and water samples) ANALYTICAL, INC. Phone: (803) 781-4243 Fax: 781-4303 (if sample is a composite please use space below to note start/finish times & dates) Sample Temp Upon Receipt (\*C) Matrix Codes (plane curesponding code in main, rolum).

OW Egonomy waste, WW = waste, while with blue plinking water S = soil, see, shooked, a air, WW = indicatrial waste, WO = waste full (OT = other (specify it comments, section). NOTES / COMMENTS JOE (5) 0 (၃ <u>(</u> Access www.axs-inc.com \*Container Type: G = Glass P = Plastic Samples Recd Laboratory ID: Client ID: 4565 - Access Analytical 7478 Carlisle Street > Irmo, SC 29063 Time 124FB 454 63 B 214021509 Due Date: 02/21/14 Date SDG: N N 7 Access Quote # Received By: があり HAQ 0 Ś 7 S 5 10131 1-2 DUA N J Container Type: (\*see.codes) oliocro per iralisti nochenos benedico per pi asylans #10 % manistration percelleco prof trad Susjana Collected Continue e of the contraction of the cont Preservative: (\*see codes) REQUESTED LAB ANALYSIS: 4 Mished By Date Time Trpe Marix Program Total Collected Collected James Seconds Attel Collected Ú7 N Fax: 803-741-990 55 5×5 ₹-15 3.450 29228 3 # Od Ś Burnels I 1400 J ರ Email: 24014 1350 1420 Project Location: Zip: Other S S B Nevris (specify) Phone: 803-741-9660 \\ \text{\omega} K. State: GZI Clansan emailed/faxed by end of busi-Norn's Sampled By: ness day on date required) SHE 1 53-2 6-8 Turnaround Time: (For rush work, results 75.7 City: くらしている Sample ID/Description 137 Company Name: \*Date Required:\_ Sales Order # San plico Sandard hey my RUSH\* Project ID: Report To: Address 5)10

Project Work Order #

Access Analytical - Chain of Custody Record

LAB USE ONLY

See Reverse for Terms and Conditions

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

Pg 1 of 2

Revision

Page 1 of 1

### ANALYTICAL LABORATORIES

2/15/2014

## SAMPLE RECEIVING CHECKLIST

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NO NA				20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
YES	<b>E</b>	Œ	[ <u>\$</u> ]	<b>5</b>		<b>S</b>	B	<b>[S</b> ]	D	<b>N</b>
CHECKLIST	Were all samples received using proper thermal preservation?	When used, were all custody seals intact?	Were all samples received in proper containers?	Were all samples received using proper chemical preservation?	Was preservative added to any container at the lab?	Were all containers received in good condition?	Were all VOA vials received with no head space?	Do all sample labels match the Chain of Custody?	Did the Chain of Custody list the sampling technician?	Was the COC maintained i.e. all signatures, dates and time of receipt included?
OUP 214021509	Transport Method	Yana.		Received By Brown, Aaron D.		Receive Date(s)	02/15/14			
SAMPLE DELIVERY GROUP 214021509	Client	4000 - Access Alialylical		Profile Number 78454		Line Item(s)	1 - Soils	PAH/BIEX/Naphthalene	BTEX//Naph/MTBE/1,2- DCA/PAH	

	7			
COOLERS			DISCREPANCIES	LAB PRESERVATIONS
Airbill	Thermometer ID: E22	Temp(°C)	None	None
5035 7503 9690		2.0		
NOTES				

Revision 1.4



### **ANALYTICAL REPORT**

### **CLIENT**

Terracon 521 Clemson Rd Columbia, SC 29201

### **ATTENTION**

Regan Norris

### **PROJECT ID**

Hwy 51 Pamplico - R/W Widening

### LABORATORY REPORT NUMBER

214021278

### **DATE**

03/11/2014

Primary Data Review By	Secondary Data Review By
	Ashley B. Amick
Authorized Signature	Project Manager, Access Analytical, Inc.

### **PLEASE NOTE:**

- Unless otherwise noted, all analysis on this report performed at Gulf Coast Analytical Labs (GCAL), 7979 Innovation Park Dr., 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 Innovation Park Dr. Baton Rouge, LA 70820

**Report Date** 03/11/2014

**GCAL Report** 214021278



Deliver To Terracon 521 Clemson Rd Columbia, SC 29201

Attn Regan Norris

Project Hwy 51 Pamplico - R/W Widening

### CASE NARRATIVE

Client: Access Analytical Report: 214021278

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 EPA 8260B - Gas Additives analysis, samples 21402127801 (SITE 13 TW-1), 21402127802 (SITE 13 TW-2), 21402127806 (SITE 12 TW-1), 21402127807 (SITE 12 TW-2), 21402127809 (SITE 8 TW-4), 21402127821 (SITE 9 TW-1), 21402127822 (SITE 9 TW-2), 21402127824 (SITE 22 TW-1), 21402127825 (SITE 22 TW-2), 21402127840 (SITE 7 TW-1), 21402127832 (SITE 10 TW-1), 21402127833 (SITE 10 TW-2), 21402127834 (SITE 10 TW-3), 21402127836 (SITE 8 TW-2), and 21402127841 (SITE 7 TW-2) had to be diluted due to the presence of non-target background. This dilutions are reflected in elevated detection limits.

In the EPA 8260B analysis, samples 21402127801 (SITE 13 TW-1), 21402127802 (SITE 13 TW-2), 21402127803 (SITE 13 SB-2 (0-2)), 21402127806 (SITE 12 TW-1), 21402127807 (SITE 12 TW-2), 21402127808 (SITE 12 SB-1 (2-4)) 21402127809 (SITE 8 TW-4), 21402127810 (SITE 8 SB-3 (2-4)), 21402127821 (SITE 9 TW-1), 21402127822 (SITE 9 TW-2), 21402127824 (SITE 22 TW-1), 21402127825 (SITE 22 TW-2), 21402127832 (SITE 10 TW-1), 21402127833 (SITE 10 TW-2), 21402127834 (SITE 10 TW-3), 21402127835 (SITE 10 SB-1 (0-2)), 21402127836 (SITE 8 TW-2), 21402127840 (SITE 7 TW-1), 21402127841 (SITE 7 TW-2), and 21402127842 (SITE 7 SB-1 (0-2)) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. The dilutions are reflected in elevated detection limits.

In the EPA 8260B analysis, samples 21402127814 (SITE 18 SB-2 (6-8)) and 21402127823 (SITE 9 SB-1 (0-2)) had to be diluted due to the presence of non-target background. This dilution is reflected in the elevated detection limits.

### SEMI-VOLATILES MASS SPECTROMETRY

In the EPA 8270D analysis, samples 21402127825 (SITE 22 TW-2) and 21402127840 (SITE 7 TW-1) had to be diluted to bracket the concentration of target compounds within the calibration range of the instrument. This is reflected in elevated detection limits.

In the EPA 8270D analysis, sample 21402127809 (SITE 8 TW-4) had one surrogate recovery outside control limits in the base-neutral fraction.

#### 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 MΙ Indicates the result was subject to Matrix Interference Indicates the result was Too Numerous To Count TNTC **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.

Authorized Signature GCAL REPORT 214021278	
THIS REPORT CONTAINS	PAGES.

# Report Sample Summary

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402127801	SITE 13 TW-1	Water	02/05/2014 13:45	02/12/2014 09:50
21402127802	SITE 13 TW-2	Water	02/05/2014 14:10	02/12/2014 09:50
21402127803	SITE 13 SB-2 (0-2)	Solid	02/05/2014 14:20	02/12/2014 09:50
21402127804	SITE 15 TW-1	Water	02/05/2014 14:30	02/12/2014 09:50
21402127805	SITE 15 SB-1 (6-8)	Solid	02/05/2014 14:45	02/12/2014 09:50
21402127806	SITE 12 TW-1	Water	02/05/2014 15:00	02/12/2014 09:50
21402127807	SITE 12 TW-2	Water	02/05/2014 15:20	02/12/2014 09:50
21402127808	SITE 12 SB-1 (2-4)	Solid	02/05/2014 15:36	02/12/2014 09:50
21402127809	SITE 8 TW-4	Water	02/07/2014 12:00	02/12/2014 09:50
21402127810	SITE 8 SB-3 (2-4)	Solid	02/07/2014 12:05	02/12/2014 09:50
21402127811	SITE 19 TW-1	Water	02/06/2014 09:00	02/12/2014 09:50
21402127812	SITE 19 TW-2	Water	02/06/2014 09:15	02/12/2014 09:50
21402127813	SITE 19 SB-2 (2-4)	Solid	02/06/2014 09:20	02/12/2014 09:50
21402127814	SITE 18 SB-2 (6-8)	Solid	02/06/2014 10:15	02/12/2014 09:50
21402127815	SITE 18 TW-1	Water	02/06/2014 09:40	02/12/2014 09:50
21402127816	SITE 18 TW-2	Water	02/06/2014 09:50	02/12/2014 09:50
21402127817	SITE 14 TW-1	Water	02/06/2014 11:15	02/12/2014 09:50
21402127818	SITE 14 TW-2	Water	02/06/2014 11:30	02/12/2014 09:50
21402127819	SITE 14 TW-3	Water	02/06/2014 11:45	02/12/2014 09:50
21402127820	SITE 14 SB-2 (2-4)	Solid	02/06/2014 12:30	02/12/2014 09:50
21402127821	SITE 9 TW-1	Water	02/07/2014 14:00	02/12/2014 09:50
21402127822	SITE 9 TW-2	Water	02/07/2014 14:15	02/12/2014 09:50
21402127823	SITE 9 SB-1 (0-2)	Solid	02/07/2014 14:15	02/12/2014 09:50
21402127824	SITE 22 TW-1	Water	02/05/2014 11:35	02/12/2014 09:50
21402127825	SITE 22 TW-2	Water	02/05/2014 11:05	02/12/2014 09:50
21402127826	SITE 20 TW-2	Water	02/05/2014 17:00	02/12/2014 09:50
21402127827	SITE 21 TW-4	Water	02/05/2014 16:00	02/12/2014 09:50
21402127828	SITE 23 TW-1	Water	02/05/2014 13:05	02/12/2014 09:50
21402127829	SITE 11 TW-1	Water	02/07/2014 09:00	02/12/2014 09:50
21402127830	SITE 11 TW-2	Water	02/07/2014 09:50	02/12/2014 09:50
21402127831	SITE 11 TW-2 SITE 11 SB-1 (0-2)	Solid	02/07/2014 09:10	02/12/2014 09:50
21402127832	SITE 11 3B-1 (0-2) SITE 10 TW-1	Water	02/07/2014 09:10	02/12/2014 09:50
21402127833	SITE 10 TW-1	Water	02/07/2014 10:20	02/12/2014 09:50
21402127834	SITE 10 TW-2 SITE 10 TW-3	Water	02/07/2014 10:43	02/12/2014 09:50
21402127835	SITE 10 TW-3 SITE 10 SB-1 (0-2)	Solid	02/07/2014 11:05	02/12/2014 09:50
21402127836	SITE 10 3B-1 (0-2) SITE 8 TW-2	Water	02/07/2014 11:30	02/12/2014 09:50
21402127837	SITE 8 TW-1		02/07/2014 11:30	02/12/2014 09:50
21402127838	SITE 8 TW-3	Water Water	02/07/2014 11:45	
			02/07/2014 11:55	02/12/2014 09:50
21402127839	SITE 23 TW-2	Water		02/12/2014 09:50
21402127840	SITE 7 TW 2	Water Water	02/07/2014 15:00	02/12/2014 09:50
21402127841	SITE 7 SP 1 (0.2)		02/07/2014 15:20	02/12/2014 09:50
21402127842	SITE 7 SB-1 (0-2)	Solid	02/07/2014 15:30	02/12/2014 09:50
21402127843	SITE 6 TW 2	Water	02/07/2014 16:10	02/12/2014 09:50
21402127844	SITE 6 TW-2	Water	02/07/2014 16:20	02/12/2014 09:50
21402127845	SITE 6 SB-2 (0-2)	Solid	02/07/2014 17:00	02/12/2014 09:50
21402127847	TRIP BLANK	Water	02/07/2014 00:00	02/12/2014 09:50

## Summary of Compounds Detected

GCAL ID 21402127801	Client ID SITE 13 TW-1	Matrix Water	Collect Date/Time 02/05/2014 13:45		Receive Date/Time 02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1870	25.0	2.78	ug/L
108-88-3	Toluene		51.8	25.0	3.05	ug/L
100-41-4	Ethylbenzene		661	25.0	2.73	ug/L
1330-20-7	Xylene (total)		426	75.0	4.47	ug/L
91-20-3	Naphthalene		651	125	4.41	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		79.7	25.0	1.94	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)		7.65J	125	6.00	ug/L
108-20-3	diisopropyl Ether (DIPE)		85.5J	125	5.90	ug/L
75-85-4	tert-amyl alcohol (TAA)		312J	500	25.3	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127802	SITE 13 TW-2	Water	02/05/2014 14:10	(	02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		2050	50.0	5.55	ug/L
108-88-3	Toluene		1010	50.0	6.09	ug/L
100-41-4	Ethylbenzene		3340	50.0	5.45	ug/L
1330-20-7	Xylene (total)		7900	150	8.94	ug/L
91-20-3	Naphthalene		847	250	8.81	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		29.7J	50.0	3.89	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
108-20-3	diisopropyl Ether (DIPE)		180J	250	11.8	ug/L
75-85-4	tert-amyl alcohol (TAA)		919J	1000	50.7	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127803	SITE 13 SB-2 (0-2)	Solid	02/05/2014 14:20	(	02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		25400	8690	88.1	ug/Kg
108-88-3	Toluene		6950J	8690	186	ug/Kg
100-41-4	Ethylbenzene		199000	8690	318	ug/Kg
1330-20-7	Xylene (total)		414000	17400	429	ug/Kg
91-20-3	Naphthalene		95700	8690	674	ug/Kg

GCAL ID 21402127804	Client ID SITE 15 TW-1	Matrix Water	Collect Date/Time 02/05/2014 14:30		Receive Date/Time 02/12/2014 09:50	
EPA 8270D						
CAS#	Parameter		Result	RDL	MDL	Units
91-20-3	Naphthalene		32.5	11.1	0.518	ug/L
EPA 8260B						
	_					
CAS#	Parameter		Result	RDL	MDL	Units
108-20-3	diisopropyl Ether (DIPE)		3.14J	5.00	0.236	ug/L
75-85-4	tert-amyl alcohol (TAA)		42.7	20.0	1.01	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		39.0	1.00	0.111	ug/L
108-88-3	Toluene		17.9	1.00	0.122	ug/L
100-41-4	Ethylbenzene		35.8	1.00	0.109	ug/L
1330-20-7	Xylene (total)		43.4	3.00	0.179	ug/L
91-20-3	Naphthalene		21.4	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		0.845J	1.00	0.078	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127806	SITE 12 TW-1	Water	02/05/2014 15:00		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
108-20-3	diisopropyl Ether (DIPE)		1110J	1250	59.0	ug/L
75-85-4	tert-amyl alcohol (TAA)		12700	5000	253	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		24400	250	27.8	ug/L
108-88-3	Toluene		24900	250	30.5	ug/L
100-41-4	Ethylbenzene		2520	250	27.3	ug/L
1330-20-7	Xylene (total)		11400	750	44.7	ug/L
91-20-3	Naphthalene		1450	1250	44.1	ug/L
107-06-2	1,2-Dichloroethane		574	250	29.0	ug/L

GCAL ID 21402127807	Client ID SITE 12 TW-2	Matrix Water	Collect Date/Time 02/05/2014 15:20		Receive Date/Time 02/12/2014 09:50	
	OHE IZ IW-Z	vvalei	02/03/2014 13.20		02/12/2014 09.50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
108-20-3	diisopropyl Ether (DIPE)		1830	1250	59.0	ug/L
75-85-4	tert-amyl alcohol (TAA)		15700	5000	253	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		24100	250	27.8	ug/L
108-88-3	Toluene		26400	250	30.5	ug/L
100-41-4	Ethylbenzene		2450	250	27.3	ug/L
1330-20-7	Xylene (total)		10700	750	44.7	ug/L
91-20-3	Naphthalene		1160J	1250	44.1	ug/L
107-06-2	1,2-Dichloroethane		673	250	29.0	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127808	SITE 12 SB-1 (2-4)	Solid	02/05/2014 15:36		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1390	258	2.61	ug/Kg
108-88-3	Toluene		464	258	5.52	ug/Kg
100-41-4	Ethylbenzene		2260	258	9.43	ug/Kg
1330-20-7	Xylene (total)		5550	515	12.7	ug/Kg
91-20-3	Naphthalene		1410	258	20.0	ug/Kg
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127809	SITE 8 TW-4	Water	02/07/2014 12:00		02/12/2014 09:50	
EPA 8270D						·
CAS#	Parameter		Result	RDL	MDL	Units
86-73-7	Fluorene		1.30J	16.9	0.607	ug/L
91-20-3	Naphthalene		24.3	16.9	0.790	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)		37.0	25.0	1.20	ug/L
75-65-0	t-Butanol (TBA)		38.2J	50.0	1.45	ug/L
108-20-3	diisopropyl Ether (DIPE)		6.61J	25.0	1.18	ug/L
75-85-4	tert-amyl alcohol (TAA)		68.1J	100	5.07	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127809	SITE 8 TW-4	Water	02/07/2014 12:00	(	02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		49.4	5.00	0.555	ug/L
108-88-3	Toluene		3.62J	5.00	0.609	ug/L
100-41-4	Ethylbenzene		18.7	5.00	0.545	ug/L
1330-20-7	Xylene (total)		19.0	15.0	0.894	ug/L
91-20-3	Naphthalene		18.7J	25.0	0.881	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		477	5.00	0.389	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	ı	Receive Date/Time	
21402127810	SITE 8 SB-3 (2-4)	Solid	02/07/2014 12:05	(	02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		941J	3160	32.1	ug/Kg
100-41-4	Ethylbenzene		40400	3160	116	ug/Kg
1330-20-7	Xylene (total)		58300	6330	156	ug/Kg
91-20-3	Naphthalene		17600	3160	245	ug/Kg
GCAL ID	Client ID	Madaire	Collect Date/Time			
COALID	Client iD	Matrix	Collect Date/Time		Receive Date/Time	
21402127814	SITE 18 SB-2 (6-8)	Solid	02/06/2014 10:15		02/12/2014 09:50	
	SITE 18 SB-2 (6-8)					
21402127814	SITE 18 SB-2 (6-8)					Units
21402127814 EPA 8270D	SITE 18 SB-2 (6-8)		02/06/2014 10:15	(	02/12/2014 09:50	Units ug/Kg
21402127814 EPA 8270D cas#	SITE 18 SB-2 (6-8)  Parameter		02/06/2014 10:15 Result	RDL	02/12/2014 09:50 MDL	
21402127814 EPA 8270D cas# 91-20-3	SITE 18 SB-2 (6-8)  Parameter		02/06/2014 10:15 Result	RDL	02/12/2014 09:50 MDL	
21402127814 EPA 8270D cas# 91-20-3 EPA 8260B	SITE 18 SB-2 (6-8)  Parameter  Naphthalene		02/06/2014 10:15  Result  134J	RDL 394	02/12/2014 09:50 MDL 12.3	ug/Kg
21402127814 EPA 8270D cas# 91-20-3 EPA 8260B cas#	Parameter Naphthalene Parameter		02/06/2014 10:15  Result 134J  Result	RDL 394 RDL	MDL 12.3 MDL	ug/Kg Units
21402127814  EPA 8270D  CAS#  91-20-3  EPA 8260B  CAS#  71-43-2	Parameter Naphthalene  Parameter Benzene		02/06/2014 10:15  Result 134J  Result 20.2J	RDL 394 RDL 162	MDL 12.3 MDL 1.64	ug/Kg Units ug/Kg
21402127814  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 71-43-2 100-41-4	Parameter Naphthalene  Parameter Benzene Ethylbenzene		02/06/2014 10:15  Result 134J  Result 20.2J 76.6J	RDL 394 RDL 162 162	MDL 12.3 MDL 1.64 5.92	ug/Kg Units ug/Kg ug/Kg
21402127814  EPA 8270D  CAS#  91-20-3  EPA 8260B  CAS#  71-43-2  100-41-4  1330-20-7	Parameter Naphthalene  Parameter Benzene Ethylbenzene Xylene (total)		02/06/2014 10:15  Result 134J  Result 20.2J 76.6J 45.9J	RDL 394 RDL 162 162 323 162	MDL 12.3 MDL 1.64 5.92 7.99	ug/Kg Units ug/Kg ug/Kg ug/Kg
21402127814  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 71-43-2 100-41-4 1330-20-7 91-20-3	Parameter Naphthalene  Parameter Benzene Ethylbenzene Xylene (total) Naphthalene	Solid	02/06/2014 10:15  Result 134J  Result 20.2J 76.6J 45.9J 299	RDL 394 RDL 162 162 323 162	MDL 12.3 MDL 1.64 5.92 7.99 12.5	ug/Kg Units ug/Kg ug/Kg ug/Kg
21402127814  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 71-43-2 100-41-4 1330-20-7 91-20-3	Parameter Naphthalene  Parameter Benzene Ethylbenzene Xylene (total) Naphthalene  Client ID	Solid	02/06/2014 10:15  Result 134J  Result 20.2J 76.6J 45.9J 299  Collect Date/Time	RDL 394 RDL 162 162 323 162	MDL 12.3  MDL 1.64 5.92 7.99 12.5  Receive Date/Time	ug/Kg Units ug/Kg ug/Kg ug/Kg
21402127814  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 71-43-2 100-41-4 1330-20-7 91-20-3  GCAL ID 21402127815	Parameter Naphthalene  Parameter Benzene Ethylbenzene Xylene (total) Naphthalene  Client ID	Solid	02/06/2014 10:15  Result 134J  Result 20.2J 76.6J 45.9J 299  Collect Date/Time	RDL 394 RDL 162 162 323 162	MDL 12.3  MDL 1.64 5.92 7.99 12.5  Receive Date/Time	ug/Kg Units ug/Kg ug/Kg ug/Kg
21402127814  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 71-43-2 100-41-4 1330-20-7 91-20-3  GCAL ID 21402127815  EPA 8260B	Parameter Naphthalene  Parameter Benzene Ethylbenzene Xylene (total) Naphthalene  Client ID SITE 18 TW-1	Solid	02/06/2014 10:15  Result 134J  Result 20.2J 76.6J 45.9J 299  Collect Date/Time 02/06/2014 09:40	RDL 394 RDL 162 162 323 162	MDL 12.3  MDL 1.64 5.92 7.99 12.5  Receive Date/Time 02/12/2014 09:50	ug/Kg Units ug/Kg ug/Kg ug/Kg

GCAL ID 21402127816	Client ID SITE 18 TW-2	<b>Matrix</b> Water	Collect Date/Time 02/06/2014 09:50		ceive Date/Time 12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		0.414J	1.00	0.111	ug/L
GCAL ID 21402127821	Client ID SITE 9 TW-1	Matrix Water	Collect Date/Time 02/07/2014 14:00		ceive Date/Time 12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		420	5.00	0.555	ug/L
108-88-3	Toluene		5.78	5.00	0.609	ug/L
100-41-4	Ethylbenzene		67.8	5.00	0.545	ug/L
1330-20-7	Xylene (total)		35.4	15.0	0.894	ug/L
91-20-3	Naphthalene		299	25.0	0.881	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		257	5.00	0.389	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)		6.88J	25.0	1.20	ug/L
75-85-4	tert-amyl alcohol (TAA)		47.4J	100	5.07	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	ceive Date/Time	
21402127822	SITE 9 TW-2	Water	02/07/2014 14:15	02/	12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
994-05-8	t-amyl methyl ether (TAME)		9.44J	10.0	0.480	ug/L
75-65-0	t-Butanol (TBA)		41.1	20.0	0.580	ug/L
108-20-3	diisopropyl Ether (DIPE)		0.967J	10.0	0.472	ug/L
75-85-4	tert-amyl alcohol (TAA)		38.1J	40.0	2.03	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		6.83	2.00	0.222	ug/L
108-88-3	Toluene		3.38	2.00	0.244	ug/L
100-41-4	Ethylbenzene		4.90	2.00	0.218	ug/L
1330-20-7	Xylene (total)		4.90J	6.00	0.358	ug/L
91-20-3	Naphthalene		73.5	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		385	2.00	0.155	ug/L

GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
21402127823	SITE 9 SB-1 (0-2)	Solid	02/07/2014 14:35	02/	12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		11.5J	159	1.61	ug/Kg
100-41-4	Ethylbenzene		189	159	5.83	ug/Kg
91-20-3	Naphthalene		464	159	12.3	ug/Kg
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
21402127824	SITE 22 TW-1	Water	02/05/2014 11:35	02/	12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		13.4J	20.0	2.22	ug/L
108-88-3	Toluene		1280	20.0	2.44	ug/L
100-41-4	Ethylbenzene		828	20.0	2.18	ug/L
1330-20-7	Xylene (total)		4260	60.0	3.58	ug/L
91-20-3	Naphthalene		152	100	3.52	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Re	ceive Date/Time	
GCAL ID 21402127825	Client ID SITE 22 TW-2	<b>Matrix</b> Water	Collect Date/Time 02/05/2014 12:15		ceive Date/Time 12/2014 09:50	
21402127825						Units
21402127825 EPA 8270D	SITE 22 TW-2		02/05/2014 12:15	02/	12/2014 09:50	Units ug/L
21402127825 EPA 8270D cas#	SITE 22 TW-2 Parameter		02/05/2014 12:15 Result	02/ RDL	12/2014 09:50 MDL	
21402127825 EPA 8270D CAS# 91-20-3	SITE 22 TW-2 Parameter		02/05/2014 12:15 Result	02/ RDL	12/2014 09:50 MDL	
21402127825 EPA 8270D CAS# 91-20-3 EPA 8260B	Parameter Naphthalene		02/05/2014 12:15  Result  250	02/ RDL 23.8	MDL 1.11	ug/L
21402127825 EPA 8270D CAS# 91-20-3 EPA 8260B CAS#	Parameter Naphthalene Parameter		02/05/2014 12:15  Result 250  Result	02/ RDL 23.8 RDL	MDL 1.11 MDL	ug/L Units
21402127825 EPA 8270D CAS# 91-20-3 EPA 8260B CAS# 108-20-3	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE)		02/05/2014 12:15  Result	RDL 23.8 RDL 500	MDL 1.11 MDL 23.6	ug/L Units ug/L
21402127825 EPA 8270D CAS# 91-20-3 EPA 8260B CAS# 108-20-3 75-85-4	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE)		02/05/2014 12:15  Result	RDL 23.8 RDL 500	MDL 1.11 MDL 23.6	ug/L Units ug/L
21402127825  EPA 8270D  CAS#  91-20-3  EPA 8260B  CAS#  108-20-3  75-85-4  EPA 8260B	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE) tert-amyl alcohol (TAA)		02/05/2014 12:15  Result	RDL 23.8 RDL 500 2000	MDL 1.11 MDL 23.6 101	ug/L Units ug/L ug/L
21402127825  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 108-20-3 75-85-4  EPA 8260B  CAS#	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE) tert-amyl alcohol (TAA)  Parameter		02/05/2014 12:15  Result	RDL 23.8 RDL 500 2000	MDL 1.11 MDL 23.6 101	ug/L Units ug/L ug/L
21402127825  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 108-20-3 75-85-4  EPA 8260B  CAS# 71-43-2	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE) tert-amyl alcohol (TAA)  Parameter Benzene Toluene Ethylbenzene		02/05/2014 12:15  Result	RDL 23.8 RDL 500 2000	MDL 1.11 MDL 23.6 101 MDL 11.1	ug/L Units ug/L Units ug/L ug/L
21402127825  EPA 8270D  CAS# 91-20-3  EPA 8260B  CAS# 108-20-3 75-85-4  EPA 8260B  CAS# 71-43-2 108-88-3	Parameter Naphthalene  Parameter diisopropyl Ether (DIPE) tert-amyl alcohol (TAA)  Parameter Benzene Toluene		02/05/2014 12:15  Result	RDL 23.8 RDL 500 2000 RDL 100 100	MDL 1.11  MDL 23.6 101  MDL 11.1  12.2	ug/L Units ug/L Units ug/L

GCAL ID 21402127826	Client ID SITE 20 TW-2	<b>Matrix</b> Water	Collect Date/Time 02/05/2014 17:00		<b>Receive Date/Time</b> 02/12/2014 09:50	
EPA 8270D		Water	02/03/2014 17:00		02/12/2014 09.30	
CAS#	Parameter		Result	RDL	MDL	Units
86-73-7	Fluorene		0.526J	11.1	0.398	
91-20-3	Naphthalene		106	11.1	0.518	ug/L ug/L
85-01-8	Phenanthrene		0.345J	11.1	0.210	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127828	SITE 23 TW-1	Water	02/05/2014 13:05		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		4.12	1.00	0.111	ug/L
108-88-3	Toluene		11.3	1.00	0.122	ug/L
100-41-4	Ethylbenzene		1.57	1.00	0.109	ug/L
1330-20-7	Xylene (total)		5.29	3.00	0.179	ug/L
91-20-3	Naphthalene		3.57J	5.00	0.176	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127829	SITE 11 TW-1	Water	02/07/2014 09:00		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		11.3	1.00	0.111	ug/L
108-88-3	Toluene		17.1	1.00	0.122	ug/L
100-41-4	Ethylbenzene		5.28	1.00	0.109	ug/L
1330-20-7	Xylene (total)		18.3	3.00	0.179	ug/L
91-20-3	Naphthalene		4.71J	5.00	0.176	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127830	SITE 11 TW-2	Water	02/07/2014 08:50		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		1.42	1.00	0.111	ug/L
108-88-3	Toluene		2.99	1.00	0.122	ug/L
1330-20-7	Xylene (total)		7.24	3.00	0.179	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127832	SITE 10 TW-1	Water	02/07/2014 10:20		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		213	5.00	0.555	ug/L

GCAL ID 21402127832	Client ID SITE 10 TW-1	<b>Matrix</b> Water	Collect Date/Time 02/07/2014 10:20		eive Date/Time 12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
108-88-3	Toluene		44.0	5.00	0.609	ug/L
100-41-4	Ethylbenzene		659	5.00	0.545	ug/L
1330-20-7	Xylene (total)		777	15.0	0.894	ug/L
91-20-3	Naphthalene		109	25.0	0.881	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		118	5.00	0.389	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)		62.0J	100	5.07	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	eive Date/Time	
21402127833	SITE 10 TW-2	Water	02/07/2014 10:45	02/	2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		37.7	10.0	1.11	ug/L
108-88-3	Toluene		20.8	10.0	1.22	ug/L
100-41-4	Ethylbenzene		1140	10.0	1.09	ug/L
1330-20-7	Xylene (total)		1880	30.0	1.79	ug/L
91-20-3	Naphthalene		560	50.0	1.76	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Rec	eive Date/Time	
21402127834	SITE 10 TW-3	Water	02/07/2014 11:00	02/	2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		20.0	2.00	0.222	ug/L
108-88-3	Toluene		3.17	2.00	0.244	ug/L
100-41-4	Ethylbenzene		234	2.00	0.218	ug/L
1330-20-7	Xylene (total)		26.4	6.00	0.358	ug/L
91-20-3	Naphthalene		136	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		10.1	2.00	0.155	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Red	eive Date/Time	
21402127835	SITE 10 SB-1 (0-2)	Solid	02/07/2014 11:05	02/	2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
CA3#						
71-43-2	Benzene		38.0J	196	1.99	ug/Kg
	Benzene Toluene		38.0J 25.8J	196 196	1.99 4.20	ug/Kg ug/Kg

GCAL ID 21402127835	Client ID SITE 10 SB-1 (0-2)	Matrix Solid	Collect Date/Time 02/07/2014 11:05		eive Date/Time 2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
1330-20-7	Xylene (total)		414	393	9.70	ug/Kg
91-20-3	Naphthalene		1620	196	15.2	ug/Kg
GCAL ID	Client ID	Matrix	Collect Date/Time	Rec	eive Date/Time	
21402127836	SITE 8 TW-2	Water	02/07/2014 11:30	02/1	2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		43.5	2.00	0.222	ug/L
108-88-3	Toluene		19.3	2.00	0.244	ug/L
100-41-4	Ethylbenzene		71.9	2.00	0.218	ug/L
1330-20-7	Xylene (total)		87.0	6.00	0.358	ug/L
91-20-3	Naphthalene		44.8	10.0	0.352	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		2.75	2.00	0.155	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-65-0	t-Butanol (TBA)		198	20.0	0.580	ug/L
75-85-4	tert-amyl alcohol (TAA)		521	40.0	2.03	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time	Rec	eive Date/Time	
21402127837	SITE 8 TW-1	Water	02/07/2014 11:45	02/1	2/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		41.7	1.00	0.111	ug/L
108-88-3	Toluene		2.23	1.00	0.122	ug/L
100-41-4	Ethylbenzene		13.4	1.00	0.109	ug/L
1330-20-7	Xylene (total)		17.8	3.00	0.179	ug/L
91-20-3	Naphthalene		5.10	5.00	0.176	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)		81.8	20.0	1.01	ug/L

GCAL ID 21402127838	Client ID SITE 8 TW-3	<b>Matrix</b> Water	Collect Date/Time 02/07/2014 11:55		Receive Date/Time 02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
75-85-4	tert-amyl alcohol (TAA)		46.8	20.0	1.01	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		26.0	1.00	0.111	ug/L
108-88-3	Toluene		5.75	1.00	0.122	ug/L
100-41-4	Ethylbenzene		81.1	1.00	0.109	ug/L
1330-20-7	Xylene (total)		88.9	3.00	0.179	ug/L
91-20-3	Naphthalene		25.0	5.00	0.176	ug/L
1634-04-4	tert-Butyl methyl ether (MTBE)		2.35	1.00	0.078	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127840	SITE 7 TW-1	Water	02/07/2014 15:00		02/12/2014 09:50	
EPA 8270D						
CAS#	Parameter		Result	RDL	MDL	Units
83-32-9	Acenaphthene		0.935J	10.0	0.365	ug/L
86-73-7	Fluorene		0.700J	10.0	0.358	ug/L
EPA 8270D						
CAS#	Parameter		Result	RDL	MDL	Units
91-20-3	Naphthalene		596	50.0	2.33	ug/L
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		12.9J	25.0	2.78	ug/L
108-88-3	Toluene		31.9	25.0	3.05	ug/L
100-41-4	Ethylbenzene		950	25.0	2.73	ug/L
1330-20-7	Xylene (total)		3740	75.0	4.47	ug/L
91-20-3	Naphthalene		639	125	4.41	ug/L
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time	
21402127841	SITE 7 TW-2	Water	02/07/2014 15:20		02/12/2014 09:50	
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
71-43-2	Benzene		11.6	10.0	1.11	ug/L
108-88-3	Toluene		139	10.0	1.22	ug/L

GCAL ID 21402127841	Client ID Matrix Collect Date/Time			Receive Date/Time 02/12/2014 09:50			
	SITE 7 TW-2	Water	02/07/2014 15:20		02/12/2014 09:50		
EPA 8260B							
CAS#	Parameter		Result	RDL	MDL	Units	
100-41-4	Ethylbenzene		1570	10.0	1.09	ug/L	
1330-20-7	Xylene (total)		3150	30.0	1.79	ug/L	
91-20-3	Naphthalene		533		1.76	ug/L	
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time		
21402127842	SITE 7 SB-1 (0-2)	Solid	02/07/2014 15:30		02/12/2014 09:50		
EPA 8260B							
CAS#	Parameter		Result	RDL	MDL	Units	
108-88-3	Toluene		109000	14400	307	ug/Kg	
100-41-4	Ethylbenzene		170000	14400	526	ug/Kg	
1330-20-7	Xylene (total)		899000	28700	710	ug/Kg	
91-20-3	Naphthalene		66500	14400	1110	ug/Kg	
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time		
21402127843	SITE 6 TW-1	Water	02/07/2014 16:10		02/12/2014 09:50		
EPA 8260B							
CAS#	Parameter		Result		MDL	Units	
71-43-2	Benzene		0.963J	1.00	0.111	ug/L	
108-88-3	Toluene		0.631J	1.00	0.122	ug/L	
100-41-4	Ethylbenzene		4.31	1.00	0.109	ug/L	
1330-20-7	Xylene (total)		7.56	3.00	0.179	ug/L	
91-20-3	Naphthalene		3.91J	5.00	0.176	ug/L	
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time		
21402127844	SITE 6 TW-2	Water	02/07/2014 16:20		02/12/2014 09:50		
EPA 8260B							
CAS#	Parameter		Result	RDL	MDL	Units	
71-43-2	Benzene		0.871J	1.00	0.111	ug/L	
100-41-4	Ethylbenzene		6.61	1.00	0.109	ug/L	
1330-20-7	Xylene (total)		20.9	3.00	0.179	ug/L	
91-20-3	Naphthalene		5.76	5.00	0.176	ug/L	
GCAL ID	Client ID	Matrix	Collect Date/Time		Receive Date/Time		
21402127845	SITE 6 SB-2 (0-2)	Solid	02/07/2014 17:00		02/12/2014 09:50		
EPA 8260B							
CAS#	Parameter		Result	RDL	MDL	Units	
100-41-4	Ethylbenzene		2.91J	3.33	0.122	ug/Kg	

GCAL ID 21402127845	Client ID SITE 6 SB-2 (0-2)	<b>Matrix</b> Solid	Collect Date/Time 02/07/2014 17:00			
EPA 8260B						
CAS#	Parameter		Result	RDL	MDL	Units
1330-20-7	Xylene (total)		14.7	6.66	0.165	ug/Kg

GCAL ID	Client ID	Matrix	Collect Date/Time	Receive Date/Time
21402127801	SITE 13 TW-1	Water	02/05/2014 13:45	02/12/2014 09:50

#### EPA 8260B

Prep Date	Prep Batch	Prep Method	<b>Dilution</b> 25	<b>Analyzed</b> 02/15/2014 19:50	By Ana LBH 5256	lytical Batch 604
CAS#	Parameter		Result	RDL	М	DL Units
71-43-2	Benzene		1870	25.0	2	.78 ug/L
108-88-3	Toluene		51.8	25.0	3	.05 ug/L
100-41-4	Ethylbenzene		661	25.0	2	.73 ug/L
1330-20-7	Xylene (total)		426	75.0	4	.47 ug/L
91-20-3	Naphthalene		651	125	4	.41 ug/L
1634-04-4	tert-Butyl methyl ether (M	TBE)	79.7	25.0	1.	.94 ug/L
107-06-2	1,2-Dichloroethane		2.90U	25.0	2	.90 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	1250	1260	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	1250	1170	ug/L	94	77 - 127
2037-26-5	Toluene d8	1250	1240	ug/L	99	76 - 134
17060-07-0	1,2-Dichloroethane-d4	1250	1210	ug/L	97	71 - 127

#### EPA 8260B

Prep Date	Prep Batch	Prep Method	Dilution	Analyzed		tical Batch
			25	02/15/2014 19:50	LBH 52560	03
CAS#	Parameter		Result	RDL	MD	L Units
994-05-8	t-amyl methyl ether (	TAME)	7.65J	125	6.0	00 ug/L
75-65-0	t-Butanol (TBA)		7.25U	250	7.2	25 ug/L
108-20-3	diisopropyl Ether (DI	PE)	85.5J	125	5.9	00 ug/L
637-92-3	Ethyl tert-butyl ether (E	ETBE)	5.85U	125	5.8	35 ug/L
624-95-3	Ethyl tert-butanol (ETE	3A)	940U	2500	94	l0 ug/L
64-17-5	Ethanol		3120U	25000	312	20 ug/L
75-85-4	tert-amyl alcohol (TA	A)	312J	500	25	.3 ug/L
762-75-4	tert-butyl formate (TBF	<del>-</del> )	12.2U	1250	12	.2 ug/L
CAS#	Surrogate	Conc. Spiked	Conc. Rec	Units	% Recovery	Rec Limits
460-00-4	4-Bromofluorobenzene	1250	1260	ug/L	101	78 - 130
1868-53-7	Dibromofluoromethane	1250	1170	ug/L	94	77 - 127
2037-26-5	Toluene d8	1250	1240	ug/L	99	76 - 134
17060-07-0	1 2-Dichloroethane-d4	1250	1210	ua/l	97	71 - 127