D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

NOV 0 6 2012

MR ANKUR PATEL
SHREE GAJVAKRA LLC
205 FAIRWAY DR
LAURENS SC 29360-7700



Re: QAPP Contractor Addendum Directive for Tier I
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit # 12430
Release Reported June 7, 2012
Phase II Environmental Site Assessment Report received September 27, 2012
Greenville County

Dear Mr. Patel:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Synterra Corporation. The report indicates that groundwater concentrations of benzene, toluene, ethylbenzene, xylenes, methyl tert butyl ether, EDB, PAHs, naphthalene, and lead are above risk-based screening levels (RBSLs).

To determine what risk the referenced release may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier I Assessment as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. The Tier I must be conducted in accordance with the UST QAPP and in compliance with all applicable regulations once the site specific QAPP Contractor Addendum is approved. A copy of the UST QAPP is available at http://www.scdhec.gov/environment/lwm/ usthome/Qapp.htm. **Your contractor must complete and submit the QAPP Contractor Addendum within thirty (30) days of the date of this letter.** The QAPP should include sampling of each water supply well within 500 feet of this facility. **Please note that approval from the Agency must be issued before work begins.**

Please be aware that the release is not currently qualified for funding from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. SUPERB funds cannot be expended for site rehabilitation until a completed SUPERB application is on file with the Division of UST Management. The SUPERB application form should be completed and sent to this office to the attention of Denise Place. Our records indicate that a site rehabilitation contractor has not been selected for this release. **The enclosed form should be completed and returned to my attention within fifteen (15) days of the date of this letter.** A list of certified contractors is enclosed for your information.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST permit number 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6218. I can also be reached by email at fordrj@dhec.sc.gov or by fax at (803) 896-6245.

Sincerely,

Jamie Ford

Jamie Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: UST Owner/Operator Selection Form
List of Certified Contractors

cc: Synterra Corporation, 148 River St Ste 220, Greenville SC 29601-2567 (without enclosure)
Technical file (with Owner/Operator Selection Form)

Return to Jamie Ford

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit #12430, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ Tier I
☐ All future assessment scopes. **

Name of Contractor/Person(s) _____

Address _____

_____

_____

Telephone Number _____ Certification # _____

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? _____ Yes _____ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancée.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

_____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

_____ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Agency regardless of payment option.)

Underground Storage Tank Owner/Operator Signature _____

Printed Name _____

Date Signed _____

D H E C
PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

UST DOCKETING 2kch

MR MIKE WRIGHT
WESTSIDE QUIK SHOP INC
405 DOVE HILL CIR
EASLEY SC 29640-8907

JAN 09 2013

Re: QAPP Contractor Addendum Directive for Tier I
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit # 12430
Release Reported June 7, 2012
Phase II Environmental Site Assessment Report received September 27, 2012
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Synterra Corporation. The report indicates that groundwater concentrations of benzene, toluene, ethylbenzene, xylenes, methyl tert butyl ether, EDB, PAHs, naphthalene, and lead are above risk-based screening levels (RBSLs).

To determine what risk the referenced release may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier I Assessment as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. The Tier I must be conducted in accordance with the UST QAPP and in compliance with all applicable regulations once the site specific QAPP Contractor Addendum is approved. A copy of the UST QAPP is available at http://www.scdhec.gov/environment/lwm/ usthome/Qapp.htm. **Your contractor must complete and submit the QAPP Contractor Addendum within thirty (30) days of the date of this letter.** The QAPP should include sampling of each water supply well within 500 feet of this facility. **Please note that approval from the Agency must be issued before work begins.**

Please be aware that the release is not currently qualified for funding from the State Underground Petroleum Environmental Response Bank (SUPERB) Account. SUPERB funds cannot be expended for site rehabilitation until a completed SUPERB application is on file with the Division of UST Management. The SUPERB application form should be completed and sent to this office to the attention of Denise Place. Our records indicate that a site rehabilitation contractor has not been selected for this release. **The enclosed form should be completed and returned to my attention within fifteen (15) days of the date of this letter.** A list of certified contractors is enclosed for your information.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST permit number 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6218. I can also be reached by email at fordrj@dhec.sc.gov or by fax at (803) 896-6245.

Sincerely,

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: UST Owner/Operator Selection Form
List of Certified Contractors

cc: Synterra Corporation, 148 River St Ste 220, Greenville SC 29601-2567 (without enclosure)
Technical file (with Owner/Operator Selection Form)

Please Return to: James Ford, UST Management Division, SCDHEC, 2600 Bull St, Columbia, SC 29201

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit #12430, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ Tier I
☐ All future assessment scopes. **

Name of Contractor/Person(s) _____

Address _____

_____

_____

Telephone Number _____ Certification # _____

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? _____ Yes _____ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancée.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

_____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

_____ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Agency regardless of payment option.)

Underground Storage Tank Owner/Operator Signature _____

Printed Name _____

Date Signed _____

UST FEB 2 1 2013 PROGRAM

UST DOCKETING 3 Feb

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit #12430, I would like to use the contractor or person(s) listed below and request that they represent me for:

* IGWA

X All future assessment scopes. **

Name of Contractor/Person(s) Environmental Labs

Address 2181 Fox Ford Rd

Greenville SC 29617

Telephone Number 864-370-0637 Certification # 490

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

* indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above? ____ Yes __X__ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

Familial Relationship: A connection or association by family or relatives, in which a family member or relative has a material interest. Family or relatives include: father, mother, son, daughter, brother, sister, uncle, aunt, first cousin, nephew, niece, husband, wife, father-in-law, mother-in-law, son-in-law, daughter-in-law, stepfather, stepmother, stepson, stepdaughter, stepbrother, stepsister, half brother, half sister, grandparent, grandchild, great grandchild, step grandparent, step great grandparent, step grandchild, step great grandchild, or fiancée.

3. PAYMENT

The first $25,000.00 in eligible site rehabilitation costs will be applied against the applicable SUPERB deductible, upon submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment.

For eligible costs exceeding the $25,000.00 deductible, you can pay the contractor and, upon the submittal of the canceled check (front and back) or a notarized statement from the contractor verifying payment, be compensated from the SUPERB Account, or have payment issued directly from the SUPERB Account to the contractor. (check one)

____ For eligible costs exceeding the deductible, I request that payment be made to me after I have paid the contractor.

__X__ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Department regardless of payment option.)

Underground Storage Tank Owner/Operator Signature J Michael Wright

Printed Name J Michael Wright

Date Signed 2-20-2013

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

ANKUR PATEL
SHREE GAJVAKRA LLC
205 FAIRWAY DR
LAURENS SC 29360-7700

FEB 27 2013



Re: QAPP Contractor Addendum Directive for IGWA
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit # 12430
Release #2 reported October 23, 2012
Tank Tightness Test report received October 23, 2012
SUPERB Application received February 21, 2013
Greenville County

Dear Mr. Patel:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Environmental Laboratories, Incorporated. The report documents a failed tank tightness test for the premium gasoline UST.

To determine what risk the referenced release may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of an Initial Groundwater Assessment (IGWA) as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary. It is suggested that the IGWA monitoring well should be installed in the vicinity of the premium gasoline UST so that the impacts from the tank release may be effectively assessed. The IGWA must be conducted in accordance with the UST QAPP and must be conducted in compliance with all applicable regulations once the site specific QAPP Contractor Addendum is approved. A copy of the UST QAPP is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm. **Your contractor must complete and submit the QAPP Contractor Addendum within thirty (30) days of the date of this letter.** A cost agreement is not required unless your contractor thinks the initial monitoring well will exceed 25 feet or for each water supply well within 250 feet of the facility. **Please note that approval from the Agency must be issued before work begins.**

According to Division records, the release at the facility was reported to the Agency on October 23, 2012. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first $25,000 of site rehabilitation costs. To insure that costs made toward the IGWA apply to the $25,000 deductible, costs need to be preapproved and a cost agreement provided once the site specific QAPP contractor addendum is approved. Our records indicate that a site rehabilitation contractor has not been selected for this release. **The enclosed form should be completed and returned to my attention within fifteen (15) days of the date of this letter.** A list of certified contractors is enclosed for your information.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST Permit # 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at fordrj@dhec.sc.gov.

Sincerely,

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Site Map
Owner/Operator Lead Information Form
Certified Contractors List

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617 (without enc).
Technical file (with Owner/Operator Selection Form & Site Map)

Return to the attention of: James Ford, SCDHEC, UST Management Division, 2600 Bull St, Columbia, SC 29201

UNDERGROUND STORAGE TANK (UST) OWNER/OPERATOR LEAD INFORMATION SHEET

1. CONTRACTOR OF CHOICE

As the UST Owner/Operator of the UST Permit # 12430, I would like to use the contractor or person(s)* listed below and request that they represent me for:

☐ IGWA
☐ All future assessment scopes. **

Name of Contractor/Person(s) _____

Address _____

_____

_____

Telephone Number _____ SDHEC UST Contractor Certificate Number _____

Note: After September 20, 1997, rehabilitation activities must be performed by a SC Certified Site Rehabilitation Contractor.

*indicate if the person listed is your own employee

** if you would like the contractor to perform all future assessment activities at this and/or other UST sites that have confirmed releases, please provide a list of all sites on your letterhead and provide the information requested in items 2 and 3 below within the context of the letter.

2. FINANCIAL OR FAMILIAL RELATIONSHIP

Does a financial or familial relationship, as defined below, exist between you and the contractor/person that you listed above?
_____ Yes _____ No (please initial)

Financial Relationship: A connection or association through a material interest of sources of income which exceed five percent of annual gross income from a business entity.

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_____ For eligible costs exceeding the deductible, I request that payment be made directly to the contractor.

(Note: all costs must receive prior financial approval from the Agency regardless of payment option.)

Underground Storage Tank Owner/Operator Signature _____

Printed Name _____

Date Signed _____

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment

CERTIFIED MAIL
91 7108 2133 3939 6181 5817

MR MIKE WRIGHT
WESTSIDE QUIK SHOP INC
405 DOVE HILL CIR
EASLEY SC 29640-8907

APR 10 2013

UST DOCKETING 5 tech

Re: **Notice of Alleged Violation**
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit # 12430
Release #1 reported June 7, 2012
QAPP for Tier I Assessment Directed January 9, 2013
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) directed you in January 2013 to complete a Quality Assurance Project Plan (QAPP) Contractor Addendum for a Tier I with the QAPP due on or before February 11, 2013 and the report due 60 days after the QAPP was approved. To date the required QAPP and report have not been received. In accordance with Section 280.65 of the South Carolina Underground Storage Tank Regulations, the assessment must be conducted as chemicals of concern are above the risk-based-screening levels.

Implementation of this scope of work should proceed upon receipt of this correspondence. **Please submit the QAPP Contractor Addendum on or before May 10, 2013 and the report 60 days after QAPP approval. Should you not submit the QAPP Contractor Addendum and Tier I Assessment report on or before these dates, this office will initiate further enforcement action.**

On all correspondence regarding this site, please reference UST Permit # 12430. If you have any questions concerning this correspondence, please call me at (803) 896-6218.

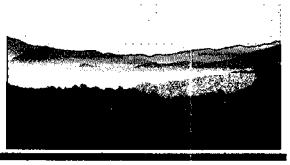
Sincerely,

James Ford

James Ford, Project Manager
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617
Contractor Certification File
Technical File

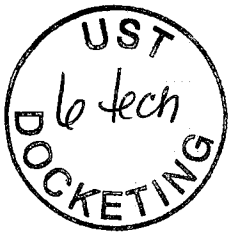
BLUE RIDGE ENVIRONMENTAL SERVICES, INC.



ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335





Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Jeffrey White, Environmental Scientist
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: April 29, 2013
Blue Ridge Environmental Services, Inc. (#095)

Approvals:

James Ford
SC DHEC Project Manager
_____ Date_____
Signature

Andy Kosse
Contractor QA Manager
Andrew J Kosse
_____ Date 4-29-13
Signature

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor
Joseph W Mully
_____ Date 4-29-13
Signature

Daniel J. Wright
Laboratory Director
Daniel J Wright
_____ Date 4-29-13
Signature

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

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BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
James Ford	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Fordrj@dhec.sc.gov
Joseph W. McMurray, P.G.	Class I – UST Site Rehabilitation Contractor	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-482-2111	704-482-4335	JoeM@Blueridge-esi.com
Joseph W. McMurray, P.G.	Field Manager	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-1513	704-482-4335	JoeM@Blueridge-esi.com
Joseph W. McMurray P.G.	Well Services/Driller	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-1513	704-482-4335	JoeM@Blueridge-esi.com
Andrew Kasse	QA Manager	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-9345	704-482-4335	AndyK@Blueridge-esi.com
Daniel J. Wright	Laboratory Director	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	DWright@ Shealylab.com

Table 1A Addendum Distribution List

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
SCDHEC Project Manager	James Ford	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Fordrj@dhec.sc.gov
Site Rehabilitation Contractor	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
Field Manager	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
Analytical Laboratory Director	Daniel J. Wright	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	DWright@ Shealylab.com
Soil Boring and Monitoring Well Driller	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
QA Manager	Andrew J. Kosse	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-9345	704-482-4335	AndyK@ Blueridge-esi.com

Table 2A Addendum Role Identification and Contact Information

SCDHEC Project Manager – Responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites. Project managers perform day to day review of plans and reports related to site rehabilitation activities on their assigned sites. These reviews include verification and

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

analysis of data submitted to the UST Management Division by site rehabilitation contractors and analytical laboratories and recommendations for future work. Project Managers are responsible for the review and approval of the site-specific QAPPs to ensure compliance with the UST Master QAPP. The Project Managers are also responsible for validating the Project Data.

Site Rehabilitation Contractor – This independent contractor is responsible for managing and coordinating field activities needed for assessments or cleanup. Site rehabilitation contractors that perform activities involving data analysis and interpretation must be registered with SCDHEC as a Class One Site Rehabilitation Contractor. The Contractor is also responsible for validating and verifying the Project Data.

Field Manager – They are responsible for managing and coordinating all aspects of field work to insure that the work performed is per the QAPP.

Analytical Laboratory Manager – This person is responsible for managing and coordinating all aspects of the SC certified analytical laboratory for the analysis of soil and water samples received from the site rehabilitation contractor. They perform the requested analyses and provide the analytical reports.

Soil Boring and Monitor Well Driller – The driller installs soil borings and monitor wells for the Site Rehabilitation Contractor and is certified by SC in accordance with South Carolina Well Standards R.61-71.

Project Verifier – Responsible for verification of the entire project including the data for not only completeness of the data but adherence to the QAPP.

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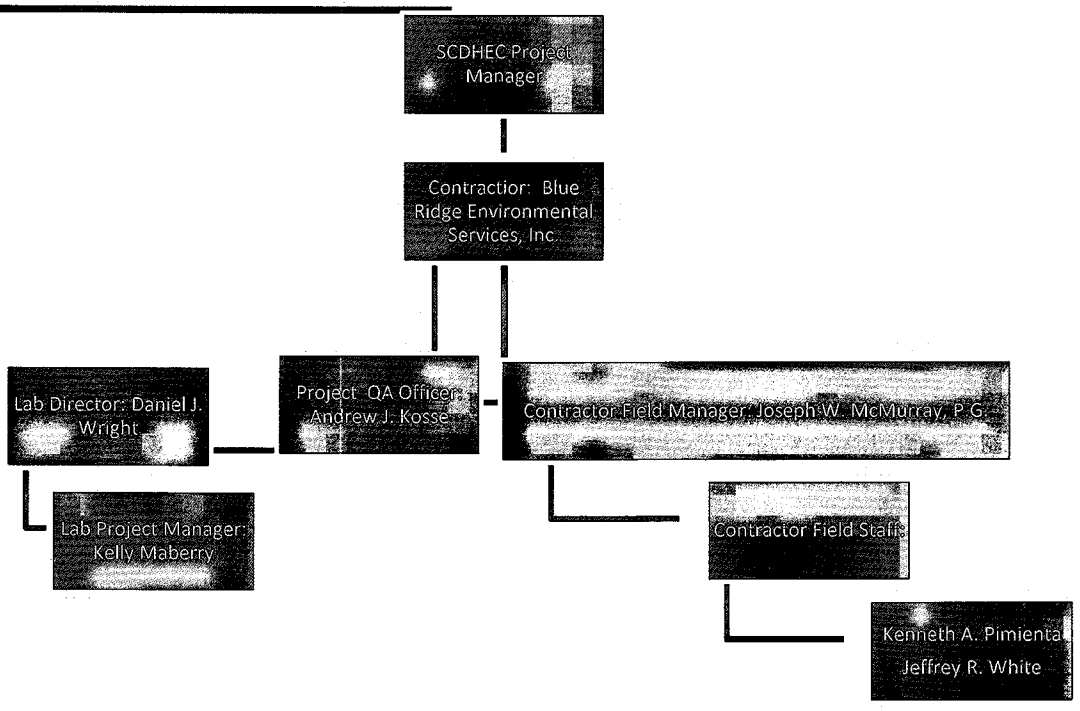

Figure 1A Organizational Chart

A5 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The subject site is located at 821 West Parker Road in Greenville, Greenville County, South Carolina. This site is being assessed in response to a Phase II Environmental Site Assessment (ESA) report submitted by synTerra. The analytical results of the soil and groundwater samples collected from temporary monitoring wells during the Phase II ESA confirmed petroleum constituents above the RBSLs were present in the soil and groundwater. The release report date is June 7, 2012.

According to previous reports, the cause of the release is unknown at this time. In order to determine the risk the apparent release may pose to human health and the environment, implementation of a Tier 1 Assessment as outlined in the UST Quality Assurance Program Plan (QAPP) is necessary.

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Please answer the following: Does this project fall under UST or Brownfields area?
UST

A6 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The next scope of work for this site is a standard Tier 1 Assessment pursuant to SCDHEC's Master QAPP. This will include the installation of eight soil borings and three monitoring wells and the collection of soil and groundwater samples. Fifteen feet of extra footage has been added to each monitoring well being installed, a total of 45 feet of extra footage, due to the depth to groundwater.

2. ***The work will begin within*** 6 WEEKS ***after cost approval and sampling should be complete by*** 8 WEEKS.

3. ***Are there any time or resource constraints? Include those factors that may interfere with the tentative schedule.***

   There are no known time or resource constraints at this time.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

See Attached Appendix A1: Topographic Site Map (USGS)
Site Map

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A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Environmental Scientist	Jeffrey R. White	OSHA 40hr HAZWOPER	February 21-25, 2011	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist-Project Manager	Kenneth A. Pimienta	OSHA 40hr HAZWOPER	November 2002	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist/Vice President	Andrew J. Kosse	USEPA 40hr HMIRO	January 27-31, 1997	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist/ President	Joseph W. McMurray, P.G.	OSHA 40hr HAZWOPER	1988	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
		N/A	March 27, 1997	SC Licensed Geologist	2111
		N/A	August 1987	SC Well Drillers License	734 B
Consultant/ Contractor	Blue Ridge Environmental Services, Inc.	N/A	November 24, 1997	Class 1-UST Site Rehabilitation Contractor	095
Lab Director	Daniel J. Wright, Shealy Environmental Services, Inc.	N/A	N/A	SC Certified Laboratory	32010

Table 3A Required Training and Licenses

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Joseph W. McMurray of Blue Ridge Environmental Services, Inc. is responsible for ensuring that personnel participating in this project receive the proper training. All training records for Blue Ridge personnel will be stored in the following location: Blue Ridge Environmental Services, Inc., 2315 Kings Rd. Ext., Shelby, NC 28152.

It is understood that training records will be produced if requested by SC DHEC.

The Following Laboratory will be used for this Project: Shealy Environmental Services, Inc.

Commercial Lab

Full Name of the Laboratory: Shealy Environmental Services, Inc.
Name of Lab Director: Daniel J. Wright
SC DHEC Certification Number: 32010
Parameters this Lab will analyze for this project: Groundwater will be analyzed for BTEX, Naphthalene, MTBE and 1,2 DCA by Method 8260B, PAHs by Method 8270D, Total and Filtered Lead by Method 6010C and EDB by Method 8011. Soils will be analyzed for BTEX, Naphthalene, and MTBE by Method 8260B, PAHs by Method 8270D, Total Lead by Method 6010C, Grain Size/Hydrometer (ASTM D422-63 by Schnabel Engineering) TPH (Total Petroleum Hydrocarbons)/Diesel Range Organics by Method 8015C and Total Organic Carbon by Method 9060A.

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A9 Documents and Records

Personnel (SCDHEC) will receive the most current version of the QAPP Addendum via: (Check all that apply)

_X_ US Mail ____Courier ____Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Horriba U-52	Electronic & Hard Copy	Download raw data monthly to network from equipment with data memory: Network storage Min. 5 yrs. Raw data equipment lacking stored in office: Min. 5 yrs.	Yes

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Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Final Reports	Blue Ridge Environmental Services, Inc.	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Field Work	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
Chain of Custody Forms	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
QAPP Addendum	Blue Ridge	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Internal QC Record	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes
Sampling Report	Shealy Environmental Services, Inc..	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
1903 Water Well Record Form	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Note: A = Date QAPP Addendum and Cost Agreement approved by SCDHEC.

Item	Start Date	End Date	Comments
Have site located	A + 35 days	N/A	To be determined by date of receipt of approved cost agreement.
Install 8 soil borings	A + 41 days	"	"
Install 3 new MW's	A + 43 days	"	"
Develop & Sample MW's	A + 50 days	"	"
Survey MW's, run slug tests	A + 60 days	"	"
Write Report	A + 70 days	"	"
Final QA Review	A + 75 days	"	"
Final Submittal	A + 80 days	"	"

Table 5A Sampling Activities

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B2 Sampling Methods

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

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	10 (SB-1 though SB-7 – Total and Filtered Lead, BTEX+Naph+MTBE+Oxygenates+ 1,2 DCA, PAH's & TPH. SB-8 – TOC, Hottest Boring – Grainsize & Duplicate Sample.
Field Screening Samples	0
Ground Water from monitoring wells	3 (Sample 3 Installed Wells)
From Drinking/Irrigation water wells	0
From surface water features	0
Field Duplicate	1 (1 GW Sampling)
Field Blank	1 (1 GW Sampling)
Trip Blank	2 (1 Soil Sampling & 1 GW Sampling)
Total number of soil samples	10
Total number of Water samples	7 (3 GW samples, 1 Duplicate, 1 Field Blank & 2 Trip Blanks)

The samples will be (check as many as apply): ____Homogenized ___Split __X__ Grab

For the sample matrices indicated above, please describe how samples will be collected and the equipment needed.

Pre-Drilling Protocol

Blue Ridge will contact a commercial utilities location service a minimum of 72 hours (per location service requirements) prior to mobilization of the drill crew to the project site. It will be the responsibility of the utilities location service to locate and delineate (by marking the ground surface), to the extent possible, buried or underground utilities which may be encountered during or impeded by drilling activities. This should include, but may not be limited to: electrical power services, private and/or municipal water and sewer services, telecommunication services, natural gas services, and/or other public or municipal utilities. Borehole locations will not be made closer than 36" from surface delineated utilities. If closer proximity to delineated utilities is required, bore hole advancement will be conducted by hand auger boring protocol.

Prior to commencement of drilling, the augers, down hole equipment and associated tools will be cleaned in a designated decontamination control area using a steam cleaner or high pressure washer. Bulk soil material which may remain inside or outside of the augers or tools will be removed. Augers will also be pressure washed between each successive bore hole to remove any soil material from the preceding boring.

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Before raising the drill rig mast, Blue Ridge drilling personnel will observe over-head conditions for the presence of aerial mounted utilities, tree limbs, canopies, awnings, building overhangs or other structural impedances to normal drill rig operations.

Drill Protocol and Techniques

Bore holes utilized in sub-surface intrusive investigations will be advanced using a trailer mounted Simco 2400 SK-1 drill rig equipped with 4.5 inch outside diameter solid stem augers or 3.25 inch hollow stem augers. If auger refusal is encountered, then a truck mounted Simco HD 2800 drill rig will be used for the air rotary drilling portion of the assessment.

Where warranted, shallow boring hole advancement may require utilization of a steel hand auger equipped with a 3" inside diameter barrel.

Monitoring Well Construction Protocol

Monitoring well bore hole advancement will be conducted utilizing 3.25 inch inside diameter hollow stem auger. For typical monitoring well construction, the bore hole will be advanced through the vadose zone (over burden soil) into the saturated zone to approximately 10 feet below the water table thereby allowing approximately 10 feet of hydrostatic head within the well. The boring will be converted into a groundwater monitoring well by the emplacement of 2 inch inside diameter schedule 40 PVC pipe (well screen and riser). The well screen will have a manufacturer machine cut 0.010 inch slot width and will be emplaced so the top of the well screen will be located above the anticipated seasonal high water table. The annular space surrounding the well screen will be backfilled utilizing an FX-2 filter sand (45 to 55 mm grain size) to approximately 2 feet above the top of the well screen. The filter pack will be isolated by the emplacement of approximately 2 feet of bentonite pellets and the bentonite seal will then be hydrated and allowed to seal. Following the bentonite seal hydration, the remaining annular space will be backfilled to the surface grade utilizing a neat Portland Type II cement or similar type grout. Typically the wells will be completed at grade level inside a traffic rated steel vault and the well sealed using a water-tight locking pressure cap. Where it is possible, the well vault will be raised above the existing surface grade approximately 1 inch to promote surface water run-off and reduce the potential for standing water above the well head.

Monitoring Well Sampling

- Water Level Measurement

Blue Ridge staff utilized an electronic water level indicator to perform water level measurements. For wells where free product is suspected, an Interface Probe will be used to gauge for the presence of measurable free product and to record water level measurements. Prior to usage, either indicator is decontaminated using a solution of Alconox or TSP detergent and water followed by a rinse in deionized water. The decontaminated water and rinse water will be collected and placed in drums, or otherwise water-tight vessels for proper off-site disposal at an approved facility. For water level or free product measurements, the probe tip is lowered slowly into the well; operated according to manufacturer instructions; then water level, product level, and/or product

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thickness are recorded to the nearest 0.01 feet. Each reading is double checked by raising and lowering the probe a second time. Total well depth measurements are collected by lowering the probe until touches well bottom, then double checking the measurement by raising and lowering the probe. All measurements recorded are based on the top of well pipe or casing. Following a total well depth measurement, the entire length of probe tape is decontaminated with Alconox or TSP detergent and water followed by a rinse in deionized water.

- Water Well Purging

Monitoring wells will be purged if: the well has not been previously sampled, if the well screen does not bracket the water table, if the screened interval is not known, or as otherwise requested by the SCDHEC Project Manager.

Staff will remove volumes of water from the well for purging using a new or dedicated teflon or polyethylene, disposable bailer suspended by nylon rope or monofilament. The bailer and rope may be disposed of after one use, or left suspended in the well for future use, depending on the site.

Prior to well purging, the current static water level will be recorded. Water will be purged from the well by bailer until a minimum of 3 well volumes has been removed, or until field measurements of pH, Specific Conductivity, Temperature and Turbidity have stabilized to within 10% of previously established values, or until well is bailed dry.

For purging wells >2" diameter, a submersible well pump such as a Proactive-Monsoon, or similar down-hole pump will be used. The pump will first be decontaminated using a solution of Alconox or TSP detergent and water; then rinsed with deionized water prior to use. Purge volumes will be measure by catching purge water in graduated 5-gallon plastic buckets.

All purge water bailed or pumped from the wells will be placed in drums, or other water-tight vessels for proper off-site disposal at an approved facility.

- Monitoring Well Sampling

No-purge sampling will be performed if: the water table is within the screened interval of the well, or if specifically requested by the SCDHEC project manager. Sampling of a purged well will be performed using the same sampling techniques.

Prior to sampling each well, staff will don clean nitrile gloves to avoid sample contamination and cross-contamination. Each laboratory provided, sterile, sample container will be labeled with sample name, sample ID, site name, required lab analyses, preservative, sampler initials, date and time of sample collection.

Groundwater samples will be collected using a new or dedicated, disposable Teflon or polyethylene bailer, suspended by nylon rope or monofilament line. The bailer will be slowly lowered into the water table; allowed to fill; then extracted from the well. The water samples will

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then be placed in the laboratory-provided and approved sample jars; sealed; logged onto a chain-of-custody form; then placed on ice in a cooler for cold storage.

When requested, passive diffusion bags (PDB) can be used to obtain no-purge samples from specific intervals within the water column. Prior to installation of a PDB, all equipment will be sterilized using a solution of Alconox or TSP and water; followed by a rinse with deionized water (DI water). The PDB will then be installed in the well per the manufacturer/ASTM sampling technique guidelines. Samples from the PDB will be collected in laboratory-provided and approved sample jars; sealed; logged onto a chain-of-custody form; then placed on ice in a cooler for cold storage.

One field duplicate sample will be collected for every 20 monitoring wells sampled at the site. This field duplicate sample will be collected from a monitoring well near the source area in accordance with the sampling procedures herein.

One field blank will be prepared for each day a site is sampled. A field blank is provided by the laboratory and is prepared using DI water in an approved sample jar. The field blank jar lid will be opened at the time one of the wells is sampled to duplicate field environmental conditions.

One trip blank per cooler used in sampling will be used at each site. The trip blank is provided by the laboratory using DI water in an approved sample jar and remains sealed throughout the round trip journey to the site and back to the laboratory.

Well conditions such as abnormal or strong odors, missing caps/locks, drastic changes in fluid levels or other well conditions will be noted by the field staff in their log bogs and brought to the attention of the Blue Ridge project manager.

- Water Supply Well and Surface Water Sampling

Water Supply Wells (WSW) will be sampled only with the prior permission of the site/well owner. Prior to sampling, the owner will notified verbally or in writing of our intent to sample their supply well. Water supply wells will be sampled from an available spigot nearest the wellhead, typically at the pressure tank location or well house. Prior to sampling, the line will be purged by allowing the water to run at the spigot until the well pump is noted to operate. Staff will don clean nitrile gloves; then collect and store samples as previously specified for monitoring well sampling.

Surface water samples will be collected at the nearest possible location as suggested to/by the SCDHEC project manager on the site map. A sample will be collected from non-stagnant water, by dipping a clean 1-liter glass jar for sample collection wearing clean nitrile gloves. The sample will be transferred o laboratory prepared jars and stored in accordance with the previously specified methods for monitoring well sampling.

Soil Sampling

Soil samples will be collected using a split spoon sampler and an auger drill rig, or by hand-auger

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when site access prohibits drill rig use. Drill augers are decontaminated prior to entering the site using high-pressure water from a pressure washer. On sites with high levels of impacts, augers will be decontaminated using the pressure washer between holes. The split-spoon sampler is driven into the subsoils at the bottom of the boring using a spool driven vertical hammer. Hand augers, as well as the split-spoon sampler, are decontaminated between samples using a mixture of water and Alconox or TSP; followed by a rinse with deionized water. The decontaminated water and rinse water will be collected and placed in drums, or otherwise watertight vessels for proper off-site disposal at an approved facility.

Samplers will wear clean nitrile gloves to transfer the samples from the split-spoon sampler, or hand auger, into clean plastic zip-lock type baggies. If requested by SCDHEC or deemed necessary by Blue Ridge field staff, sample baggies will be head-space screened for the presence of VOCs using a PID prior to transferring the samples into sterile, laboratory provided, sample jars. Soil sample jars will then be sealed, labeled, and stored in accordance with the previously outlined methods for groundwater sampling.

Will sampling equipment have to be cleaned and decontaminated or is everything disposable?
All equipment is disposable excluding electronic field instruments and drilling equipment.

If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.
Any non-disposable equipment is decontaminated using a solution of water and Alconox or TSP detergent and a scrub brush; followed by a rinse with DI water. Drilling augers are decontaminated prior to arrival onsite using high pressure water applied by a pressure washer; then allowed to bake dry on clean concrete. Auger decontamination between borings can be conducted as necessary depending on site conditions. The decontaminated water and rinse water will be collected and placed in drums, or otherwise watertight vessels for proper off-site disposal at an approved facility.

Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.
Laboratory Services: Shealy Environmental Services, Inc.
Drill Rig: Simco 2400 SK-1, Sampling equipment, drilling equipment (Blue Ridge)
Drill Rig: Simco 2800 (Blue Ridge)
Hand Auger Equipment (Blue Ridge)
Field Instruments Including: Water Level Meter, Horriba U-52 Water Meter (Blue Ridge)
Flat Bed Trailer: Auger soil spoils removal (Blue Ridge)
Field Trucks (Blue Ridge)

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Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Field meters not working.	Attempt to clean probes and recalibrate in the field. Change batteries. Fix the problem.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray
Wells not located.	Use metal detector, measure from known points or call DHEC Project Manager for additional information.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray

Table 6A Field Corrective Action

B3 Sample Handling and Custody

1. ***How will the samples get from the Site to the Lab to ensure holding requirements are met?***

Following sample collection and packaging in coolers, as previously described, the samples are transported back to the Blue Ridge office by truck or car. The chain of custody is completed for the sample batch by Blue Ridge field staff. If samples are picked up the same day at our office by the laboratory courier, the sample coolers are maintained with appropriate ice levels to maintain temperature until pick-up. If samples will be picked up the following day by the lab courier, then the samples may be transferred to our on-site refrigerator / freezers for cold storage until pick up. At the time of pickup, the chain of custody is signed and the Shealy staff courier drives the samples directly to their laboratory location. Shealy will contact Blue Ridge if for any reason hold times have been exceeded prior to performance of the requested analyses.

2. ***How will the contractors cool the samples and keep the samples cool?***

Ice will be used in coolers for storage of samples between project site and office. Once at office, samples, if held, to be maintained at 4° C +/- 2° in refrigerator/freezer at Blue Ridge office.

3. ***How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?***

Thermometer and temperature blank will be used to document sample temperature. The temperature blank is immediately checked by the sample receiving technician upon arrival at laboratory.

4. ***Where will the samples be stored in the Lab once they are received?***

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All samples are stored in clean refrigeration units monitored and maintained at 4° C +/- 2°. Volatile organic samples are stored separately from all other samples.

5. ***Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.***

Blue Ridge Environmental Services, Inc. sample chain of custody (COC) to be completed for each sampling event at each project site. COC to be signed by Blue Ridge staff and Shealy Environmental lab staff at time physical transfer of samples occurs to courier. Shealy uses the following COC procedures to protect sample integrity following pickup by their courier: A full time Sample Receiving Technician receives all samples and completes a Sample Receipt Checklist (SRC), which will identify anomalies, if any exist. The Sample Receiving Technician or the Project Manager must resolve the deviation internally and/or notify the client to resolve the anomaly. A copy of our Blue Ridge Environmental Services, Inc. sample Chain of Custody is provided for your review in Appendix A3.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Parameter	SOP ID*	Method Referenced	Equipment	Comments
BTEX+Naph+MTBE+Oxygenates+ 1,2 DCA	S-VO-002	8260B	GC/MS	
PAH's	S-SV-021	8270D	GC/MS	
Lead	S-IM-022	6010C	ICP	
EDB	S-SV-012	8011	GC	
Grain Size/Hydrometer	ASTM	ASTM D422-63	Sieves, balance, hydrometer	Sub-Contracted by Shealy to Schnabel
TPH	S-SV-001	8015C (DRO)	GC	
Total Organic Carbon	S-IN-030	Walkley-Blake	GC-FID	
pH, Conductivity, D.O., Temperature & Turbidity	N/A	Per manufacturers recommendation	Horiba-U52	Field Measurement

Table 7A Analytical SOPs and Referenced Methods

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- **This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

Abbreviation	Lab Identification of this SOP	Full Name of the SOP
S-VO-002	S-VO-002	GC/MS VOLATILES ANALYSIS BASED ON EPA METHODS 8260B AND 624 PREPARED BY EPA METHODS 5030B, 5035 AND 3585
S-SV-021	S-SV-021	GC/MS ANALYSIS BASED ON EPA METHOD 8270D PREPARED BY EPA METHODS 3520C, 3550C AND 3580A
S-SV-012	S-SV-012	GC/ECD ANALYSIS OF EDB AND DBCP BASED ON METHOD 8011 & 504.1
S-IM-022	S-IM-022	INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY-PECTROMETRIC METHOD for TRACE ELEMENT ANALYSES METHOD 6010C
S-IN-009	S-IN-009	FERROUS IRON (PHENANTHROLINE METHOD) STANDARD METHOD 3500-Fe D
S-IN-042	S-IN-042	NITRATE+NITRITE NITROGEN BY EPA METHOD 353.2, NITRATE NITROGEN BY 353.2 SUBTRACTION, AND NITRITE NITROGEN BY EPA METHOD 353.2
S-IN-010	S-IN-010	INORGANIC ANIONS BY ION CHROMATOGRAPHY EPA METHOD 300.0 and SW-846 9056 and 9056A
S-VO-004	S-VO-004	STANDARD OPERATING PROCEDURE GC ANALYSIS BASED ON METHOD RSKSOP-175
S-IN-030	S-IN-030	TOTAL ORGANIC CARBON (TOC) WALKLEY-BLACK PROCEDURE
S-SV-001	S-SV-001	GC/FID DIESEL RANGE ORGANICS ANALYSIS BASED ON METHOD 8015B and/or 8015C PREPARED BY EPA METHODS 3520C, 3550C and 3580A

Table 8A SOP Abbreviation Key

2. Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:

All laboratory corrective actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.

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Failure	Response	Documented Where?	Individual Responsible
COC or Sample Receiving issues	Call Client	Sample Receiving Checklist (SRC)	PM – Kelly Maberry kmaberry@shealylab.com
Analytical errors	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.com
QA/QC Failure	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com
On time delivery	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com

Table 9A Corrective Action Procedures

Identify sample disposal procedures.

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
BTEX+Naph+MTBE+Oxygenates	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
PAH's	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-	

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			Hazardous waste.	
EDB	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Lead	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	

Table 10A Sample Disposal

3. Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable). Not applicable.

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Keck-Interface Probe	370	Battery Replacement Cleaning	Annual Prior to Use and between wells	In-office Service / Licensed Service Provider: Geotech Environmental Equipment, Denver,Co.	Andrew J. Kosse
Slope Indicator-Water Level Indicator	18327	Batter Replacement Cleaning	Annual Prior to & Following Use and	In-office Service / Licensed Service Provider: Enviro-Equipment, Charlotte, NC	Andrew J. Kosse

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			Between Wells		
Slope Indicator-Water Level Indicator	160249	Battery Replacement Cleaning	Annual Prior to & Following Use and Between Wells	In-office Service / Licensed Service Provider: Enviro-Equipment, Charltote,NC	Andrew J. Kosse
David White-Instrument Level	17933	Cleaning and Calibration	Annual	In-office Cleaning / Licensed Service Provider: Duncan-Parnell, Charlotte, NC	Andrew J. Kosse
Horiba-U52	HGS No. TOKGTPH2	Battery Replacement Cleaning	As Necessary Prior to & Following Use and Between Wells	In-office Service / Licensed Service Provider: Enviro-Equipment	Andrew J. Kosse
MiniRae 2000 PID	110-008198	Cleaning	As Necessary	In-office Service / Licensed Service Provider: Enviro-Equipment	Andrew J. Kosse
Volatiles Mass Spec	ALL	Change traps, clean ion source, replace filaments	Periodic	Laboratory	MSV Analyst
Semivolatile Mass Spec	ALL	Injection port maintenance, ion source maintenance, column replacement	Periodic	Laboratory	MSSV Analyst
ECD GC	ALL	Injection Port Maintenance, column replacement	Periodic	Laboratory	GC Analyst
Dionex IC	ALL	Replace auto sampler filter, tubing, line filter, sample line and waste line as needed. Check reagent levels, flow	Periodic	Laboratory	IC Analyst

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		rate, waste line.			
ICP	ALL	Clean introduction system, auto sampler, torch, torch tubing and change spray chamber	Periodic	Laboratory	ICP Analyst
Leeman Mercury Analyzer	ALL	Clean GLS, Change pump tubing, Nafion Dryer, Lamp	Periodic	Laboratory	Mercury Analyst
Flow Injection Analysis – Lachat 8000	ALL	Replace sample and reagent lines, replace light source, re-wrap heating coil, replace column	Periodic / As Needed	Laboratory	Nitrate Analyst

Table 11A Instrument and Equipment Maintenance

2. Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
Keck-interface Probe #370	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Slope Indicator-Water Level Indicator #18327	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Slope Indicator-Water Level Indicator #160249	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
David-White Instrument Level	Field Check Using Level Loop	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Horiba-U52 # TOKGTPH2	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
MiniRae 2000 PID #110-008198	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use

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				until deficiency resolved
Volatiles Mass Spec	Daily Calibration Check	Method Requirements	MSV Analyst	Recalibrate or Maintenance
Semi-volatiles Mass Spec	Daily Calibration Check	Method Requirements	MSSV Analyst	Recalibrate or Maintenance
ECD GC	Daily Calibration Check	Method Requirements	GC Analyst	Recalibrate or Maintenance
Dionex IC	Daily Calibration Check	Method Requirements	Nitrate Analyst	Recalibrate or Maintenance
ICP	Daily Calibration Check	Method Requirements	ICP Analyst	Recalibrate or Maintenance
Leeman Mercury Analyzer	Daily Calibration Check	Method Requirements	Mercury Analyst	Recalibrate or Maintenance
Flow Injection Analysis – Lachat 8000	Daily and Continuing Calibration Check	See Calibration Criteria	INM Analyst	Recalibrate or Maintenance

Table 12A Instrument and Equipment Inspection

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.
2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Keck-interface Probe #370	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Calibration/Adjustment in-office by tip adjustment, or repair/calibration by service provider when in-office calibration fails.	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Slope Indicator-Water Level Indicator #18327	Checked vs. Standard	Annual	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Slope Indicator-Water Level	Checked vs. Standard	Annual	+/- 0.01' per 10' length	Repair or replace tape/probe by service provider	Andrew J. Kosse	BRESI QA/QC Manual 07-

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Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Indicator #160249						11
David-White Instrument Level	Calibrate per manual	Annual or as necessary	+/- 0.02' at 150'	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Horiba-U52 #TOKGTPH2	Calibrate per manual	Pre-use, mid-day, Post-use	**Temp:** +/- 0.1°C (at calib. point) **pH:** +/- 0.05pH (at calib. points) **DO:** +/- 0.2 mg/L (at 0 to 20 mg/L) +/- 0.5mg/L (at 20 to 50 mg/L **Conductivity**: +/- 0.05% F.S. (against standard solution) **Turbidity:** +/- 5% of Reading or NTU	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
MiniRae 2000 PID #110-008198	"0" check and 100ppm Span Gas Pump Check per manual	Pre-use, Post-use	+/- 1.0 ppm using 100ppm Calibration Gas	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSV Analyst	S-VO-002
Semi-volatile	Minimum of 5 calibration	When	Method Criteria	Detailed in SOP	MSSV	S-SV-021

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Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Mass Spec	standards for all compounds	indicated by calibration verification standard			Analyst	
GC ECD	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	GC Analyst	S-SV-012
Dionex IC	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	IC Analyst	S-IN-010
ICP	Minimum of 3 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	ICP Analyst	S-IM-022
Cetac Mercury Analyzer	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	Mercury Analyst	S-IM-006
Lacaht QuickChem 8000	Minimum of 5 calibration standards	Daily or when indicated by calibration verification standard	Method Criteria	Detailed in SOP	Nitrate Analyst	S-IN-042

Table 13A Instrument Calibration Criteria and Corrective Action

BRESI QA/AC Manual 07-11: Blue Ridge Environmental Services Quality Assurance/Quality Control Manual, Dated July 2011

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B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.
2. Identify the individual(s) responsible for this.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Nitrile Gloves	Enviro-Equipment	Factory Packaging Box Undamaged and Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Disposable Bailers	Sample Tech.	Factory Packaging Individual Bags Undamaged and Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Sample Containers-Glassware	Shealy Environmental Services, Inc.	Sterile Glassware Undamaged and Sealed by Snug Lids, Visibly Clean Inside.	Shelf in Office Warehouse	Andrew J. Kosse
Baggies	Varies	Sealed Factory Packaging Undamaged	Shelf in Office Warehouse	Andrew J. Kosse
Threaded Well PVC	Drillers Services, Inc.	Factory Packaging Individual Bags Undamaged and Sealed	Pipe Rack in Office Warehouse	Andrew J. Kosse
Sand, Bentonite, Concrete	Drillers Services, Inc.	Factory Packaging Individual Bags Undamaged and Dry	Pallets in Office Warehouse	Andrew J. Kosse
Span Gas, 100ppm	Enviro-Equipment	Factory Packaging and Gas Cylinder Undamaged and Sealed	In PID Hard Case	Andrew J. Kosse
De-Ionized Water	Food Lion	Factory Packaging Jugs Undamaged with Lids Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Monitoring Well Parts	Drillers Services, Inc.	Factory Packaging Undamaged and Sealed	Office Warehouse	Andrew J. Kosse

Table 14A List of Consumables and Acceptance Criteria

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.
3. Indicate the acceptance criteria for these data sources and/or models.

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Data Source	Used for	Justification for use in this project	Comments
synTerra	Background information	Was assessment work completed for this site	Phase II ESA
Google Earth	Mapping, Aerial Photographs for Project Figures	Data is compiled US Department of State Geographer.	Provides accurate site feature coordinates and current as well as historical aerial photography. No acceptance criteria necessary.
County GIS Websites	Mapping, Tax Maps, Parcel Boundaries, Parcel Owners.	Data is compiled by County GIS Departments.	Provides accurate parcel boundary and owner information. No acceptance criteria necessary.
www.Maptech.com & DeLorme USA	USGS topographic maps	Both digital sources of USGS topographic maps	None

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.

None required other than prior reports for work at site, which are on file at Blue Ridge.

B10 Data Management

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

See Management Flow Chart 16 on following page which describes the management of data from project initiation to final report archive storage.

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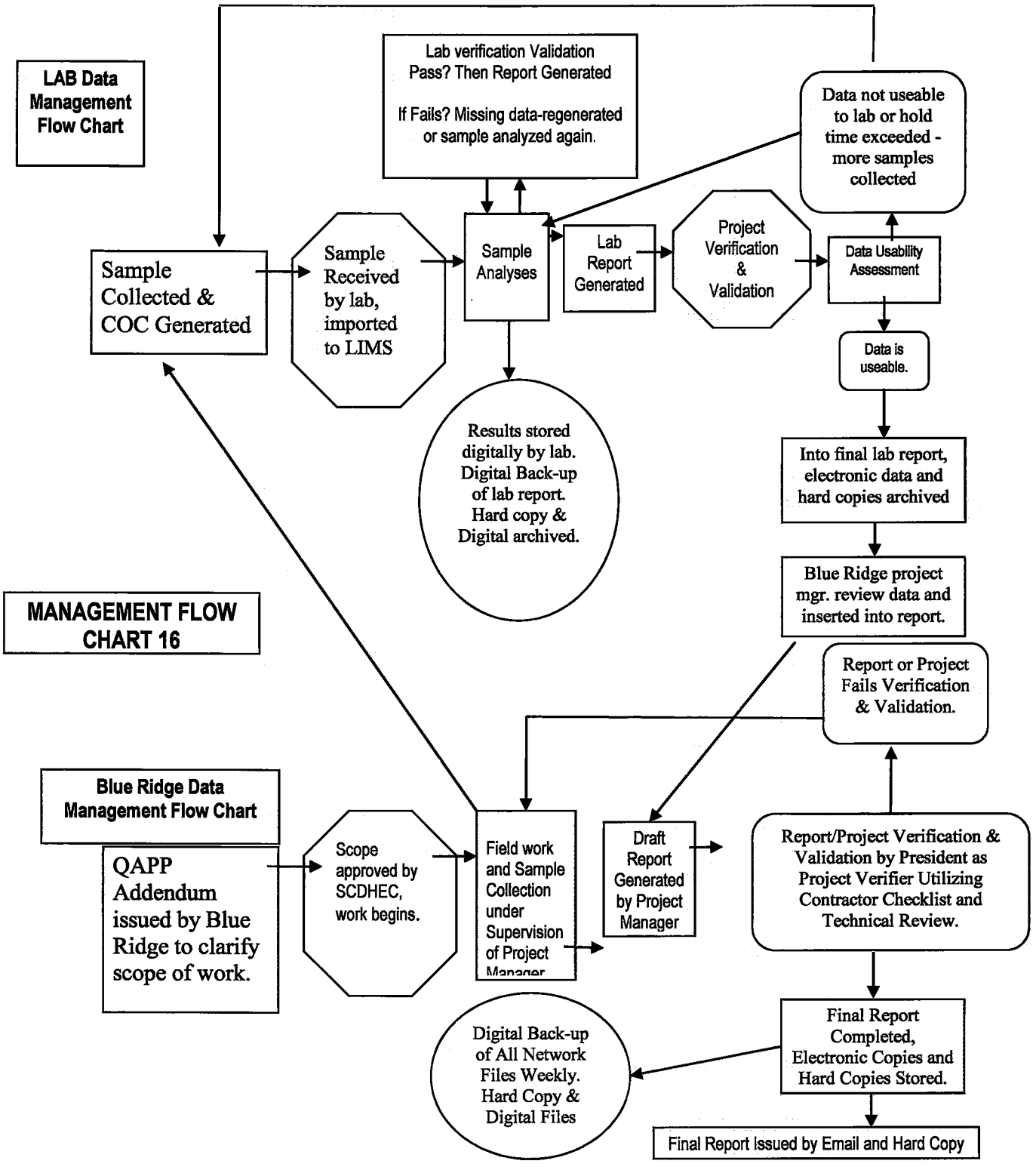

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2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Blue Ridge staff maintains a copy of the sample Chain of Custody (COC) to ensure no unauthorized changes are made to it. The COC is reviewed by the project manager then signed prior to turn-over of the samples to the laboratory courier. Field staff are required to use pen when taking field/project notes in their field books to prevent erasing/modification of field notes. Each field staff is responsible for the control of their field note book. All reporting is reviewed prior to issue by the President who is also the QA Officer to help ensure consistent report quality. Blue Ridge accepts full responsibility for restoring corrupt or lost data, but adequately manages this risk through the use of state-of-the-art computer software and hardware. The data collected is maintained in our possession at all times and our network is password protected. Blue Ridge field notes, sampling notes, reporting, and digital record keeping practices are in accordance with generally accepted environmental industry standards in this area at this time. The President/Project Verifier is the party responsible for oversight of our reporting and data management quality. **All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.**

3. How does the lab ensure that there are no errors in sample records including times when sample information is compiled, data calculated and/or transmitted.

All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Data hard copies are archived by placing copies of all project data and reports in the project folder. The project folders are maintained in the office file cabinet for approximately 2-5 years, depending on the project duration; then they are moved to the archive file storage boxes in our warehouse. Archive files are maintained for a minimum of 5 years. The hard copy files can then be retrieved during business hours in person by Blue Ridge staff. Blue Ridge digital files are stored in our network which includes a 2-terrabyte server. Report and data files are digitally stored in the file format in which they were created and typically in Adobe PDF format also. Digital copies of all network files are then backed up once per week by an external drive. Because of these file storage practices, Blue Ridge can reproduce hard copies or digital files for our projects immediately or within one business day of such request.

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Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. . Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?*

All sampling and field services are typically performed directly by Blue Ridge Environmental Services, Inc. In the rare occasion that a subcontractor is used, it is under the direct supervision of a Blue Ridge Project Manager, or higher level, position. The Blue Ridge Field Manager and President, Joseph W. McMurray is responsible for ensuring that field personnel perform SCDHEC UST project duties in accordance with Blue Ridge Environmental Services Quality Assurance/Quality Control Manual, Dated July 2011 and the SCDHEC UST Programmatic QAPP, Revision 1, dated January 2011. Mr. McMurray has the authority to stop work for any reason and agrees that field problems, which cannot be remedied internally, will be reported to the SCDHEC Project Manager within 24-hours by telephone and/or email.

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

The laboratory participates in annual Proficiency Testing through an approved vendor, Wibby Environmental Proficiency Testing. The results are provided to the SC Office of Environmental Laboratory Certification.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

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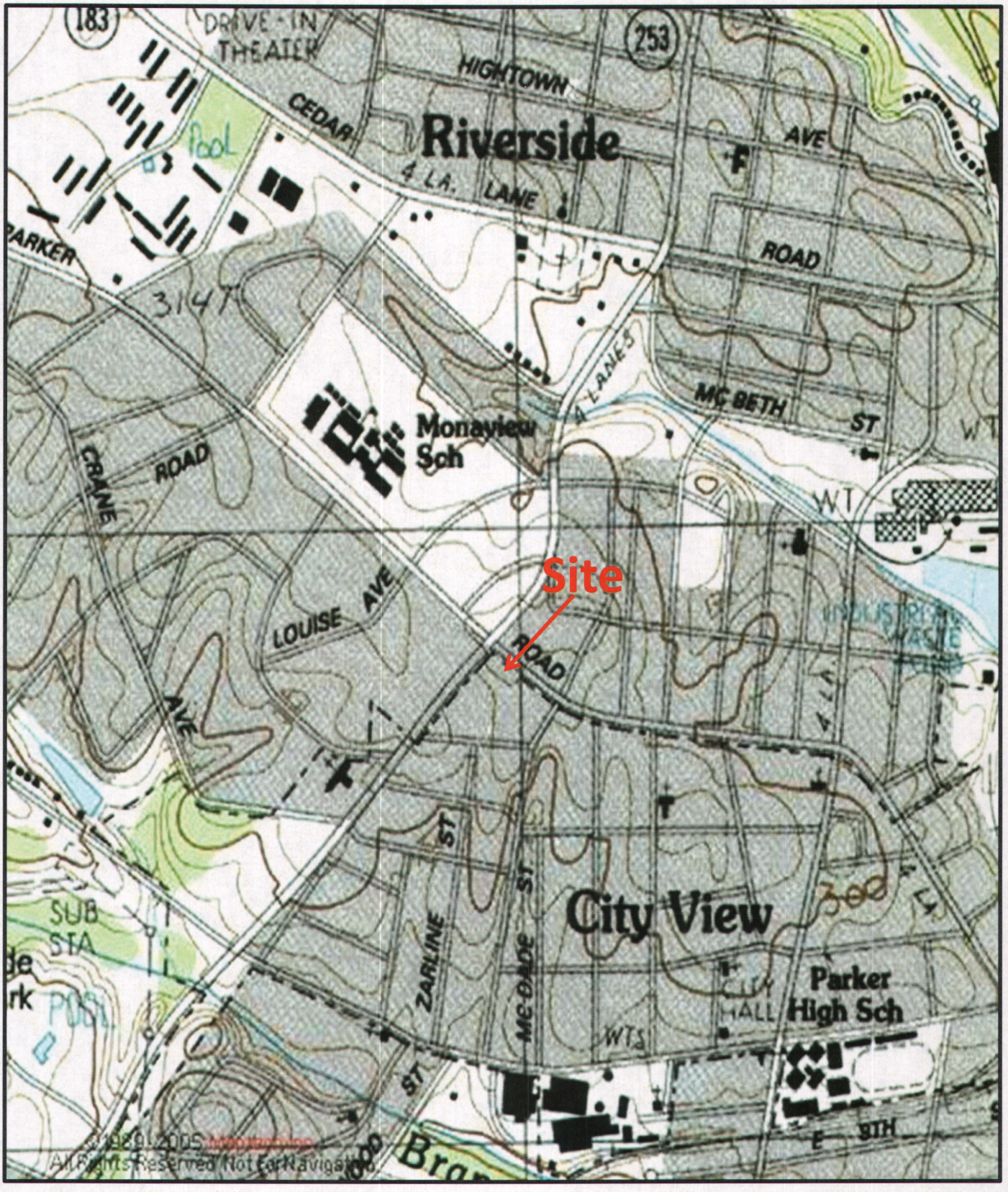
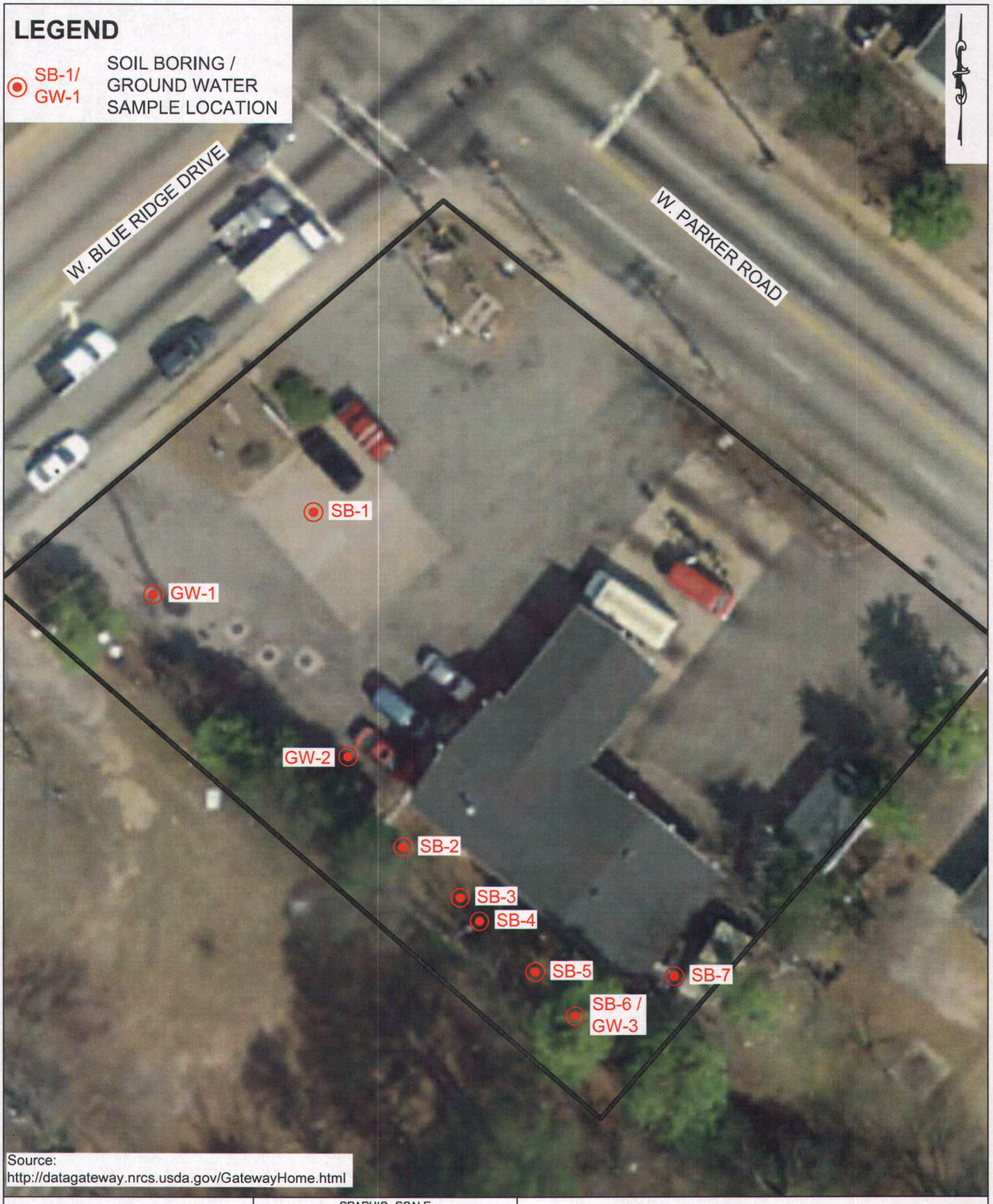
APPENDIX A1 – FIGURES



Topographic Map		North ▲	
BLUE RIDGE ENVIRONMENTAL SERVICES, INC. ENGINEERING • ENVIRONMENTAL • GEOLOGY 2315 Kings Road Ext. Shelby, North Carolina 28152 (704) 482-2111 Fax (704) 482-4335	Client:	Mr. Mike Wright	
	Project:	Westside Quick Stop	
	Location:	821 West Parker Road Greenville,SC	
	Source:	MapTech	
	Date: 1/17/13	UST Permit # 12430	Figure 1



synTerra

GRAPHIC SCALE
15 0 15 30
(IN FEET)

148 RIVER STREET, SUITE 220
GREENVILLE, SOUTH CAROLINA 29601
PHONE 864-421-9999
www.synterracorp.com

DRAWN BY: S. ARLEDGE DATE: 05/30/2012
PROJECT MANAGER: B. HUSK
LAYOUT:FIG 3 2008 AERIAL

06/05/2012 3:20 PM P:\Ankur Patel.1141\01.West Parker Rd\01.West Parker Rd\dwg\11410101-Figures.dwg

FIGURE 3
2008 AERIAL
WESTSIDE QUIK SHOP
809 W PARKER ROAD
GREENVILLE, SC

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APPENDIX A2 – SCDHEC COST AGREEMENT

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE

SOUTH CAROLINA

Department of Health and Environmental Control

Underground Storage Tank Management Division

State Underground Petroleum Environmental Response Bank Account

Facility Name: **Westview Quick Stop**

UST Permit #: 12430 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE		TOTAL
1. Plan*					
B. Tax Map		x	$50.00		$0.00
C. Tier II or Comp. Plan /QAPP Appendix B		x	$525.00		$0.00
2. Receptor Survey *		x	$500.00		$0.00
3. Survey (500 x 500 feet)					
A. Comprehensive Survey		x	$1,000.00		$0.00
B. Subsurface Geophysical Survey					
1. < 10 meters below grade		x	$2,750.00		$0.00
2. > 10 meters below grade		x	$3,250.00		$0.00
C. Geophysical UST or Drum Survey		x	$1,125.00		$0.00
4. Mob/Demob (Each)					
A. Equipment		x	$575.00		$0.00
B. Personnel		x	$290.00		$0.00
C. Adverse Terrain Vehicle to install wells		x	$575.00		$0.00
5. Soil Borings (hand auger)* (Feet)		feet x	$14.00		$0.00
6. Soil Borings (drilled) & Field Screening *					
Rate includes collection of water sample or soil sample, and lab or other analyses					
A. Standard		feet x	$17.00		$0.00
C. Fractured Rock		feet x	$27.50		$0.00
7. Soil Leachability Model (Each)		each x	$200.00		$0.00
8. Abandonment* (per foot)					
A. 2" diameter or less		feet x	$5.00		$0.00
B. Greater than 2" to 6" diameter		feet x	$5.50		$0.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$18.00		$0.00
9. Well Installation* (per foot)					
A. Water Table (hand augered)		feet x	$20.00		$0.00
B. Water Table (drill rig)	45	feet x	$38.00		$1,710.00
C. Telescoping/ Pit Cased		feet x	$58.00		$0.00
D. Rock Drilling		feet x	$58.00		$0.00
E. 2" Rock Coring		feet x	$45.00		$0.00
G. Rock Multi-sampling ports/screens		feet x	$47.20		$0.00
H. Recovery Well (4 inch diameter)		each x	$45.00		$0.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$18.50		$0.00
J. Rotosonic (2 inch diameter)		each x	$45.00		$0.00
10. Groundwater Sample Collection / Gauge Depth to Water or Product (Each)					
A. Groundwater Purge		wells x	$55.00		$0.00
B. Air or Vapors		samples x	$90.00		$0.00
C. Water Supply		samples x	$30.00		$0.00
D. Groundwater No Purge or Duplicate		samples x	$35.00		$0.00
E. Gauge Well only		per well x	$20.00		$0.00
F. Sample Below Product		wells x	$50.00		$0.00
G. Pasive Diffusion Bag		each x	$40.00		$0.00
H. Field Blank		each x	$5.00		$0.00
11. Laboratory Analyses-Groundwater (Each Sample)					
A1. BTEX+Naphth.+Oxyg's+ 1,2 DCA + Ethanol		samples x	$100.00		$0.00
AA. Lead, Filtered		samples x	$46.00		$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$143.00		$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$40.00		$0.00
D. PAH's		samples x	$120.00		$0.00
E. Lead, Unfiltered		samples x	$20.00		$0.00
F. EDB by EPA 8011		samples x	$55.00		$0.00
FF. EDB by EPA Method 8011 Rush		samples x	$75.00		$0.00
G. 8 RCRA Metals		samples x	$140.00		$0.00
H. TPH (9070)		samples x	$55.00		$0.00

I. pH		samples x	$10.00		$0.00
J. BOD		samples x	$40.00		$0.00
P1. Ethanol		samples x	$21.50		$0.00
11. Analyses-Soil (Each Sample)					
Q. BTEX + Naphth.		samples x	$100.00		$0.00
R. PAH's		samples x	$120.00		$0.00
S. 8 RCRA Metals		samples x	$150.00		$0.00
T. Oil & Grease (9071)		samples x	$60.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$65.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$65.00		$0.00
W. Grain size/hydrometer		samples x	$99.00		$0.00
X. Total Organic Carbon		samples x	$35.00		$0.00
11. Analyses-Air (Each Sample)					
Y. BTEX + Naphthalene		samples x	$247.50		$0.00
11. Analyses-Free Phase Product (Each Sample)					
Z. Hydrocarbon Fuel Identification		samples x	$620.00		$0.00
12. Aquifer Characterization*					
A. Pumping Test		hours x	$120.00		$0.00
B. Slug Test*		tests x	$150.00		$0.00
C. Fractured Rock		tests x	$500.00		$0.00
13. Free Product Recovery Rate Test* (Each)		tests x	$120.00		$0.00
14. Fate/Transport Modeling					
A. Mathematical Model		each x	$300.00		$0.00
B. Computer Model		each x	$500.00		$0.00
15. Risk Evaluation					
A. Tier I Risk Evaluation		x	$301.00		$0.00
B. Tier II Risk Evaluation		x	$500.00		$0.00
16. Subsequent Survey*		x	$300.00		$0.00
17. Disposal* (gallons or tons)					
A. Wastewater		gallons x	$0.80		$0.00
B1. Free Product		gallons x	$0.85		$0.00
C. Soil Treatment/Disposal		tons x	$72.50		$0.00
D. Drilling fluids		gallons x	$0.80		$0.00
18. Miscellaneous (attach receipts)					
		x			$0.00
		x			$0.00
		x			$0.00
20. Tier I Assessment (Use DHEC 3665 form)	1	x	$11,230.00		$11,230.00
21. IGWA (Use DHEC 3666 form)		x			$0.00
22. Corrective Action (Use DHEC 3667 form)		x			$0.00
23. Aggressive Fluid & Vapor Recovery (AFVR)					
A. 8-hour Event*		each x	$3,000.00		$0.00
B. AFVR per-hour Continuance		per hour x	$204.00		$0.00
C. Off-gas treatment per-hour Continuance		per hour x	$35.00		$0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:					
A. New GAC System Installation*		each x	$2,500.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$1,180.00		$0.00
C. Filter replacement/removal*		each x	$450.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$720.00		$0.00
E. GAC System housing		each x	$450.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$4.00		$0.00
25. Well Repair					
A. Additional Copies of the Report Delivered		each x	$32.50		$0.00
B. Repair 2x2 MW pad		each x	$100.00		$0.00
C. Repair 4x4 MW pad		each x	$150.00		$0.00
D. Repair well vault		each x	$225.00		$0.00
F. Replace well cover bolts		each x	$10.00		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$137.50		$0.00
I. Convert Flush-mount to Stick-up		each x	$175.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$125.00		$0.00
K. Replace missing/illegible well ID plate		each x	$22.50		$0.00
Report Prep & Project Management	0%	x	$12,940.00		$0.00
TOTAL					$12,940.00

*The appropriate mobilization cost can be added to complete these tasks, as necessary

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(O) 704.482.2111
(F) 704.482.4335

APPENDIX A3 – SAMPLE CHAIN OF CUSTODY

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bresi@blueridge-esi.com

PROJECT NAME/LOCATION

GROUNDWATER INCIDENT #:

STF CODE:

P.O.#:

LAB:

SAMPLERS:

PROJECT MANAGER:

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS							REMARKS

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

MR MIKE WRIGHT
WESTSIDE QUIK SHOP INC
405 DOVE HILL CIR
EASLEY SC 29640-8907

JUN 1 0 2013

UST Tech DOCKETING

Re: Tier I Directive
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit #12430; Cost Agreement #46069; MWA #UMW-25088
Release #1 reported June 7, 2012
Phase II Environmental Site Assessment Report received September 27, 2012
Site Specific QAPP Contractor Addendum received May 3, 2013
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report and site specific Quality Assurance Program Plan (QAPP) Contractor Addendum. The report indicates that chemicals of concern are present in the soil and groundwater at concentrations that exceed risk-based screening levels. To determine what risk the chemicals may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier I Assessment as outlined in the QAPP for the UST Management Division is necessary. The Tier I should be conducted in accordance with the QAPP for the UST Management Division and must be conducted in compliance with all applicable regulations and the submitted site specific QAPP Contractor Addendum. A copy of the QAPP for the UST Management Division is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm. All shallow wells are to be installed with screen intervals ten (10) feet in length that bracket the water table. Soil and groundwater samples will include duplicate samples, field and trip blanks.

According to Division records, the release at the facility was reported to the Agency on June 7, 2012. In accordance with Section 44-2-40(D) of the SUPERB Act, you are responsible for the first $25,000 of site rehabilitation costs. To ensure that expenditures made toward rehabilitation apply to the $25,000 deductible, the Division has pre-approved costs for implementing the Tier I and assigned a cost agreement number for tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

The Division has pre-approved a total of $12,940.00 for implementation of the Tier I. The total includes costs for completion of up to 75 feet of permanent monitoring well footage. A groundwater sample should be collected for each water supply well within 500 feet of the facility and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2 DCA, ethanol, and EDB. Additional monitoring well footage can be billed at the SUPERB allowable rate of $38 per foot as well as collection and laboratory analyses of groundwater from water supply wells, provided that the cost is pre-approved by the Division.

Upon receipt of a report of findings and a completed Tier I invoice with all necessary supporting documentation, up to $12,940.00 will be applied towards the $25,000 deductible. **The report, contractor checklist, and invoice should be submitted to the Division within sixty (60) days of the date of this correspondence.**

Implementation of the Tier I may proceed immediately upon receipt of this correspondence. Approval to install three permanent monitoring wells and for the site specific QAPP contractor addendum is enclosed. A copy has been provided to your site rehabilitation contractor. 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 Agency certified site rehabilitation contractor as required by R.61-98.

The Agency 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.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST Permit #12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 896-6218, fax me at (803) 896-6245, or e-mail me at fordrj@dhec.sc.gov.

Sincerely,

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)
Signed Site Specific QAPP Contractor Addendum

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617 (with enc.)
Blue Ridge Environmental Services, Inc., 2315 Kings Road Ext., Shelby, NC 28152 (with enc.)
Technical file (with enc.)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to:	Blue Ridge Environmental Services, Inc
On Behalf of:	Westside Quik Shop, Inc.
Facility:	Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit Number:	12430
County:	Greenville

This approval is for the installation of three (3) shallow groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. The monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the 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 James Ford (tel: 803-896-6218 or e-mail: fordrj@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. 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.

Date of Issuance: **May 28, 2013** **Approval #:** **UMW-25088**

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

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UST
MAY 0 3 2013
PROGRAM

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Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Jeffrey White, Environmental Scientist
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: April 29, 2013
Blue Ridge Environmental Services, Inc. (#095)

Approvals:
James Ford
SC DHEC Project Manager
_____ Signature Date 5/28/13

Andy Kosse
Contractor QA Manager
_____ Signature Date 4-29-13

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor
_____ Signature Date 4-29-13

Daniel J. Wright
Laboratory Director
_____ Signature Date 4-29-13

Approved Cost Agreement 46069

Facility: 12430 WESTSIDE QUICK STOP
FORDRJ
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	45.0000	38.00	1,710.00
20 TIER I						
			TIER I	1.0000	11,230.00	11,230.00
				Total Amount		12,940.00

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QAPP Contractor Addendum Initial

Westside Quick Stop – UST Permit # 12430
821 West Parker Road
Greenville, Greenville Co., South Carolina



Prepared By:

Blue Ridge Environmental Services, Inc.
Class 1 Site Rehabilitation Contractor # 095
2315 Kings Road Ext.
Shelby, North Carolina 28152

August 4, 2013

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Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Joseph W. McMurray, PG
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: August 4, 2013
Blue Ridge Environmental Services, Inc. (#095)

Approvals:

James Ford
SC DHEC Project Manager _____ Date_____
Signature

Andy Kosse
Contractor QA Manager _____ Date 8-4-13
Signature

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor _____ Date 8-4-13
Signature

Daniel J. Wright
Laboratory Director _____ Date 8-4-13
Signature

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A3 Distribution List

Name	Title	Organization/Address	Telephone Number	Fax Number	Email Address
James Ford	SC DHEC Technical Project Manager	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Fordrj@dhec.sc.gov
Joseph W. McMurray, P.G.	Class I – UST Site Rehabilitation Contractor	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-482-2111	704-482-4335	JoeM@Blueridge-esi.com
Joseph W. McMurray, P.G.	Field Manager	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-1513	704-482-4335	JoeM@Blueridge-esi.com
Joseph W. McMurray P.G.	Well Services/Driller	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-1513	704-482-4335	JoeM@Blueridge-esi.com
Andrew Kasse	QA Manager	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704-472-9345	704-482-4335	AndyK@Blueridge-esi.com
Daniel J. Wright	Laboratory Director	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	DWright@ Shealylab.com

Table 1A Addendum Distribution List

2315 Kings Road Extension
Shelby, North Carolina 28152
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(F) 704.482.4335

A4 Project Organization

Role from the UST Master QAPP	Name of person in this Role for this Project	Organization/Address	Telephone Number	Fax Number	Email Address
SCDHEC Project Manager	James Ford	SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-896-6218	803-896-6245	Fordrj@dhec.sc.gov
Site Rehabilitation Contractor	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
Field Manager	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
Analytical Laboratory Director	Daniel J. Wright	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803-791-9700	803-791-9111	DWright@ Shealylab.com
Soil Boring and Monitoring Well Driller	Joseph W. McMurray, P.G.	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-1513	704-482-4335	JoeM@ Blueridge-esi.com
QA Manager	Andrew J. Kosse	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28215	704-472-9345	704-482-4335	AndyK@ Blueridge-esi.com

Table 2A Addendum Role Identification and Contact Information

SCDHEC Project Manager – Responsible for direct oversight of contractors conducting assessment and site rehabilitation of releases at UST sites. Project managers perform day to day review of plans and reports related to site rehabilitation activities on their assigned sites. These reviews include verification and

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analysis of data submitted to the UST Management Division by site rehabilitation contractors and analytical laboratories and recommendations for future work. Project Managers are responsible for the review and approval of the site-specific QAPPs to ensure compliance with the UST Master QAPP. The Project Managers are also responsible for validating the Project Data.

Site Rehabilitation Contractor – This independent contractor is responsible for managing and coordinating field activities needed for assessments or cleanup. Site rehabilitation contractors that perform activities involving data analysis and interpretation must be registered with SCDHEC as a Class One Site Rehabilitation Contractor. The Contractor is also responsible for validating and verifying the Project Data.

Field Manager – They are responsible for managing and coordinating all aspects of field work to insure that the work performed is per the QAPP.

Analytical Laboratory Manager – This person is responsible for managing and coordinating all aspects of the SC certified analytical laboratory for the analysis of soil and water samples received from the site rehabilitation contractor. They perform the requested analyses and provide the analytical reports.

Soil Boring and Monitor Well Driller – The driller installs soil borings and monitor wells for the Site Rehabilitation Contractor and is certified by SC in accordance with South Carolina Well Standards R.61-71.

Project Verifier – Responsible for verification of the entire project including the data for not only completeness of the data but adherence to the QAPP.

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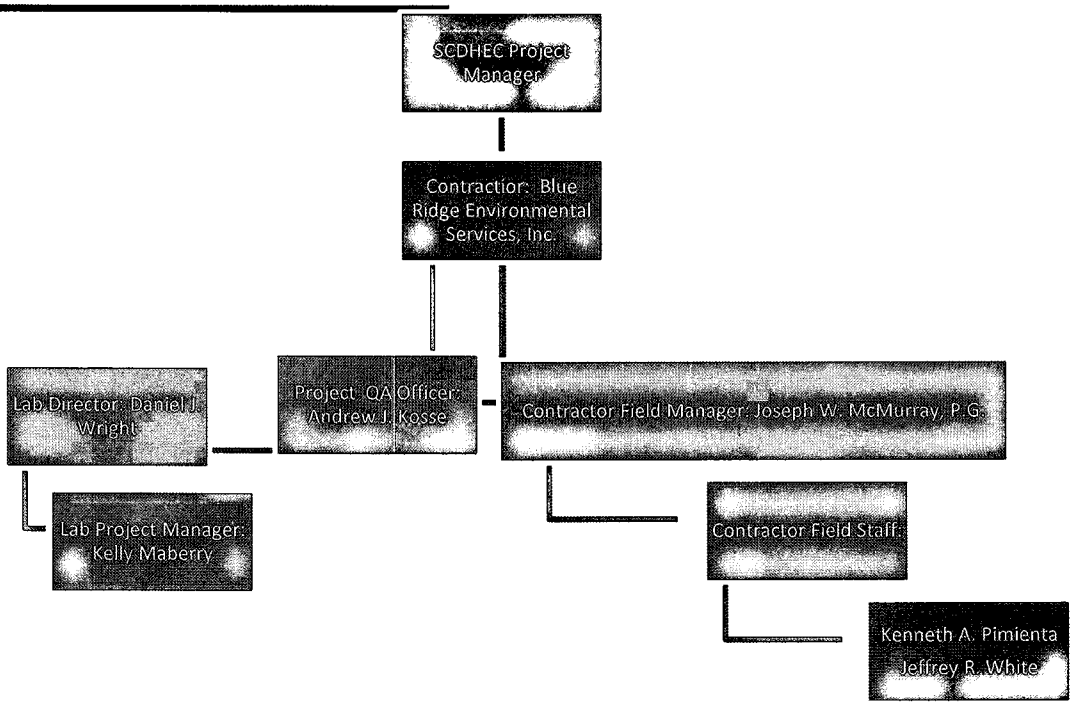

Figure 1A Organizational Chart

A5 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The subject site is located at 821 West Parker Road in Greenville, Greenville County, South Carolina. Reportedly the facility was constructed in approximately 1967 and was used as a full service gasoline/ service station. Also reportedly, the USTs were upgraded in 1999, lined and a cathodic protection system installed. A Phase I ESA, (SPECO Corporation, May 3, 2012 and a Phase II ESA (synTerra, June 5, 2012) have been previously completed for this site.

This site is currently being assessed for the SC DHEC by a Tier I in response to the Phase II Environmental Site Assessment (ESA) report dated June 5, 2012, submitted by synTerra as part of a real estate transaction. The analytical results of the soil and groundwater samples collected from temporary monitoring wells during the Phase II ESA confirmed petroleum constituents above the RBSLs were present in the soil and groundwater. The release report date is June 7, 2012.

According to the report, the cause of the release is unknown at this time. In order to determine the risk the apparent release may pose to human health and the environment, SCDHEC had requested the implementation of a Tier 1 Assessment as outlined in the UST Quality Assurance Program Plan (QAPP).

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This IGWA QAPP is being prepared in response to a failed UST tank tightness test on the premium unleaded gas UST.

Please answer the following: Does this project fall under UST or Brownfields area?
UST

A6 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The next scope of work for this site is a standard IGWA Assessment pursuant to SCDHEC's Master QAPP. This will include the installation of one monitoring well and the collection of soil and groundwater samples. Five feet of extra footage has been added to the monitoring well being installed due to the depth to groundwater.

2. ***The work will begin within*** 5 WEEKS ***after cost approval and sampling should be complete by*** 6 WEEKS.

3. ***Are there any time or resource constraints? Include those factors that may interfere with the tentative schedule.***

   The only known constraints is the current backlog of DHEC projects currently in progress.

A7 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

See Attached Appendix A1: Topographic Site Map (USGS)
Site Map

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A8 Training and Certificates

Required training and licenses:

Title/Job	Name	Training Required	Date training received	Type of License	License Number
Environmental Scientist	Jeffrey R. White	OSHA 40hr HAZWOPER	February 21-25, 2011	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist-Project Manager	Kenneth A. Pimienta	OSHA 40hr HAZWOPER	November 2002	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist/Vice President	Andrew J. Kosse	USEPA 40hr HMIRO	January 27-31, 1997	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
Geologist/ President	Joseph W. McMurray, P.G.	OSHA 40hr HAZWOPER	1988	Certificate	N/A
		HAZWOPER 8hr Refresher	February 15, 2013	Certificate	N/A
		N/A	March 27, 1997	SC Licensed Geologist	2111
		N/A	August 1987	SC Well Drillers License	734 B
Consultant/ Contractor	Blue Ridge Environmental Services, Inc.	N/A	November 24, 1997	Class 1-UST Site Rehabilitation Contractor	095
Lab Director	Daniel J. Wright, Shealy	N/A	N/A	SC Certified	32010

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Title/Job	Name	Training Required	Date training received	Type of License	License Number
	Environmental Services, Inc.			Laboratory	

Table 3A Required Training and Licenses

Joseph W. McMurray of Blue Ridge Environmental Services, Inc. is responsible for ensuring that personnel participating in this project receive the proper training. All training records for Blue Ridge personnel will be stored in the following location: Blue Ridge Environmental Services, Inc., 2315 Kings Rd. Ext., Shelby, NC 28152.

It is understood that training records will be produced if requested by SC DHEC.

The Following Laboratory will be used for this Project: Shealy Environmental Services, Inc.

Commercial Lab

Full Name of the Laboratory: Shealy Environmental Services, Inc.
Name of Lab Director: Daniel J. Wright
SC DHEC Certification Number: 32010
Parameters this Lab will analyze for this project: Groundwater will be analyzed for BTEX, Naphthalene, MTBE, PAHs, filtered lead, EDB and 1,2 DCA. Soils will be analyzed for BTEX, Naphthalene, MTBE and PAHs and total lead.

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A9 Documents and Records

Personnel (SCDHEC) will receive the most current version of the QAPP Addendum via: (Check all that apply)

_X_ US Mail ____Courier ____Hand delivered

Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Horriba U-52	Electronic & Hard Copy	Download raw data monthly to network from equipment with data memory: Network storage	Yes

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Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
			Min. 5 yrs. Raw data equipment lacking stored in office: Min. 5 yrs.	
Final Reports	Blue Ridge Environmental Services, Inc.	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Field Work	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
Chain of Custody Forms	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
QAPP Addendum	Blue Ridge	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Internal QC Record	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes
Sampling Report	Shealy Environmental Services, Inc..	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
1903 Water Well Record Form	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes

Table 4A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Note: A = Date QAPP Addendum and Cost Agreement approved by SCDHEC.

Item	Start Date	End Date	Comments
Mob to Site and install IGWA MW	A + 35 days	N/A	To be determined by date of receipt of approved cost agreement.
Sample MW and complete field work	A + 42 days	"	"
Wait on Lab Results	A + 52 days		
Write Report	A + 62 days	"	"
Final QA Review	A + 65 days	"	"
Final Submittal	A + 68 days	"	"

Table 5A Sampling Activities

B2 Sampling Methods

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

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	1
Field Screening Samples	0
Ground Water from monitoring wells	1
From Drinking/Irrigation water wells	0
From surface water features	0
Field Duplicate	1
Field Blank	1
Trip Blank	1
Total number of soil samples	1
Total number of Water samples	4

The samples will be (check as many as apply): ___Homogenized __Split __X__ Grab

For the sample matrices indicated above, please describe how samples will be collected and the equipment needed.

Pre-Drilling Protocol

Blue Ridge will contact the SC Onecall utility location service a minimum of 72 hours (per location service requirements) prior to mobilization of the drill crew to the project site. It will be the responsibility of the utilities location service to locate and delineate (by marking the ground surface), to the extent possible, buried or underground utilities which may be encountered during or impeded by drilling activities. This should include, but may not be limited to: electrical power services, private and/or municipal water and sewer services, telecommunication services, natural gas services, and/or other public or municipal utilities. Borehole locations will not be made closer than 36" from surface delineated utilities. If closer proximity to delineated utilities is required, bore hole advancement will be conducted by hand auger boring protocol.

Prior to commencement of drilling, the augers, down hole equipment and associated tools will be cleaned using a high pressure washer. Bulk soil material which may remain inside or outside of the augers or tools will be removed. Augers will also be pressure washed between each successive bore hole to remove any soil material from the preceding boring.

Before raising the drill rig mast, Blue Ridge drilling personnel will observe over-head conditions for the presence of aerial mounted utilities, tree limbs, canopies, awnings, building overhangs or other structural impedances to normal drill rig operations.

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Drill Protocol and Techniques

Bore holes utilized in sub-surface intrusive investigations will be advanced using a trailer mounted Simco 2400 SK-1 drill rig equipped with 4.5 inch outside diameter solid stem augers or 3.25 inch hollow stem augers. If auger refusal is encountered, then a truck mounted Simco HD 2800 drill rig will be used for the air rotary drilling portion of the assessment.

Where warranted, shallow boring hole advancement may require utilization of a steel hand auger equipped with a 3" inside diameter barrel.

Monitoring Well Construction Protocol

Monitoring well bore hole advancement will be conducted utilizing 4.5 inch outside diameter augers. For typical monitoring well construction, the bore hole will be advanced through the vadose zone (over burden soil) into the saturated zone to approximately 10 feet below the water table thereby allowing approximately 10 feet of hydrostatic head within the well. The boring will be converted into a groundwater monitoring well by the emplacement of 2 inch inside diameter schedule 40 PVC pipe (well screen and riser). The well screen will have a manufacturer machine cut 0.010 inch slot width and will be emplaced so the top of the well screen will be located above the anticipated seasonal high water table. The annular space surrounding the well screen will be backfilled utilizing an FX-2 filter sand (45 to 55 mm grain size) to approximately 2 feet above the top of the well screen. The filter pack will be isolated by the emplacement of approximately 2 feet of bentonite pellets and the bentonite seal will then be hydrated and allowed to seal. Following the bentonite seal hydration, the remaining annular space will be backfilled to the surface grade utilizing a neat Portland Type II cement or similar type grout. Typically the wells will be completed at grade level inside a traffic rated steel vault and the well sealed using a water-tight locking pressure cap. Where it is possible, the well vault will be raised above the existing surface grade approximately 1 inch to promote surface water run-off and reduce the potential for standing water above the well head.

Monitoring Well Sampling

- Water Level Measurement

Blue Ridge staff utilized an electronic water level indicator to perform water level measurements. For wells where free product is suspected, an Interface Probe will be used to gauge for the presence of measurable free product and to record water level measurements. Prior to usage, either indicator is decontaminated using a solution of Alconox or TSP detergent and water followed by a rinse in deionized water. For water level or free product measurements, the probe tip is lowered slowly into the well; operated according to manufacturer instructions; then water level, product level, and/or product thickness are recorded to the nearest 0.01 feet. Each reading is double checked by raising and lowering the probe a second time. Total well depth measurements are collected by lowering the probe until touches well bottom, then double checking the measurement by raising and lowering the probe. All measurements recorded are based on the top of well pipe or casing. Following a total well depth measurement, the entire length of probe tape is decontaminated with Alconox or TSP detergent and water followed by a rinse in deionized water.

- Water Well Purging

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Monitoring wells will be purged if: the well has not been previously sampled, if the well screen does not bracket the water table, if the screened interval is not known, or as otherwise requested by the SCDHEC Project Manager.

Staff will remove volumes of water from the well for purging using a new or dedicated teflon or polyethylene, disposable bailer suspended by nylon rope or monofilament or by 12 volt "Waterspout II" type submersible pump or equivalent. The bailer and rope may be disposed of after one use, or left suspended in the well for future use, depending on the site.

Prior to well purging, the current static water level will be recorded. Water will be purged from the well by bailer until a minimum of 3 well volumes has been removed, or until field measurements of pH, Specific Conductivity, Temperature and Turbidity have stabilized to within 10% of previously established values, or until well is bailed dry.

For purging wells >2" diameter, a submersible well pump such as a Waterspout II, or similar down-hole pump will be used. The pump will first be decontaminated using a solution of Alconox or TSP detergent and water; then rinsed with deionized water prior to use. Purge volumes will be measure by catching purge water in 5-gallon buckets.

All purge water bailed or pumped from the wells will be placed in drums, or other water-tight vessels for proper off-site disposal at an approved facility.

- Monitoring Well Sampling

No-purge sampling will be performed if: the water table is within the screened interval of the well, the well has been sampled in the last 12 months or if specifically requested by the SCDHEC project manager. Sampling of a purged well will be performed using the same sampling techniques.

Prior to sampling each well, staff will don clean nitrile gloves to avoid sample contamination and cross-contamination. Each laboratory provided, sterile, sample container will be labeled with sample name, sample ID, site name, required lab analyses, preservative, sampler initials, date and time of sample collection.

Groundwater samples will be collected using a new or dedicated, disposable Teflon or polyethylene bailer, suspended by nylon rope or monofilament line. The bailer will be slowly lowered into the water table; allowed to fill; then extracted from the well. The water samples will then be placed in the laboratory-provided and approved sample jars; sealed; logged onto a chain-of-custody form; then placed on ice in a cooler for cold storage.

When requested, passive diffusion bags (PDB) can be used to obtain no-purge samples from specific intervals within the water column. Prior to installation of a PDB, all equipment will be sterilized using a solution of Alconox or TSP and water; followed by a rinse with deionized water (DI water). The PDB will then be installed in the well per the manufacturer/ASTM sampling

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technique guidelines. Samples from the PDB will be collected in laboratory-provided and approved sample jars; sealed; logged onto a chain-of-custody form; then placed on ice in a cooler for cold storage.

One field duplicate sample will be collected for every 20 monitoring wells sampled at the site. This field duplicate sample will be collected from a monitoring well near the source area in accordance with the sampling procedures herein.

One field blank will be prepared for each day a site is sampled. A field blank is provided by the laboratory and is prepared using DI water in an approved sample jar. The field blank jar lid will be opened at the time one of the wells is sampled to duplicate field environmental conditions.

One trip blank per cooler used in sampling will be used at each site. The trip blank is provided by the laboratory using DI water in an approved sample jar and remains sealed throughout the round trip journey to the site and back to the laboratory.

Well conditions such as abnormal or strong odors, missing caps/locks, drastic changes in fluid levels or other well conditions will be noted by the field staff in their log bogs and brought to the attention of the Blue Ridge project manager.

- Water Supply Well and Surface Water Sampling

Water Supply Wells (WSW) will be sampled only with the prior permission of the site/well owner. Prior to sampling, the owner will notified verbally or in writing of our intent to sample their supply well. Water supply wells will be sampled from an available spigot nearest the wellhead, typically at the pressure tank location or well house. Prior to sampling, the line will be purged by allowing the water to run at the spigot until the well pump is noted to operate. Staff will don clean nitrile gloves; then collect and store samples as previously specified for monitoring well sampling.

Surface water samples will be collected at the nearest possible location as suggested to/by the SCDHEC project manager on the site map. A sample will be collected from non-stagnant water, by dipping a clean 1-liter glass jar for sample collection wearing clean nitrile gloves. The sample will be transferred o laboratory prepared jars and stored in accordance with the previously specified methods for monitoring well sampling.

Soil Sampling

Soil samples will be collected using a split spoon sampler and an auger drill rig, or by hand-auger. Drill or hand augers are decontaminated prior to entering the site using high-pressure water from a pressure washer. On sites with high levels of impacts, augers will be decontaminated using the pressure washer between holes. The split-spoon sampler is driven into the subsoils at the bottom of the boring using a spool driven vertical hammer. Hand augers, as well as the split-spoon sampler, are decontaminated between samples using a mixture of water and Alconox or TSP; followed by a rinse with deionized water. The decontaminated water and rinse water will be collected and placed in drums, or otherwise watertight vessels for proper off-site disposal at an approved facility.

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Samplers will wear clean nitrile gloves to transfer the samples from the split-spoon sampler, or hand auger, into clean plastic zip-lock type baggies. If requested by SCDHEC or deemed necessary by Blue Ridge field staff, sample baggies will be head-space screened for the presence of VOCs using a PID prior to transferring the samples into sterile, laboratory provided, sample jars. Soil sample jars will then be sealed, labeled, and stored in accordance with the previously outlined methods for groundwater sampling.

Will sampling equipment have to be cleaned and decontaminated or is everything disposable?
With the exception of the 12 volt submersible pump, all equipment is disposable excluding electronic field instruments and drilling equipment.

If sampling equipment must be cleaned please give a detailed description of how this is done and the disposal of by-products from the cleaning and decontamination.
Any non-disposable equipment is decontaminated using a solution of water and Alconox or TSP detergent and a scrub brush; followed by a rinse with DI water. Drilling augers are decontaminated prior to arrival onsite using high pressure water applied by a pressure washer; then allowed to bake dry on clean concrete. Auger decontamination between borings can be conducted as necessary depending on site conditions.

Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.
Laboratory Services: Shealy Environmental Services, Inc.
Drill Rig: Simco 2400 SK-1, Sampling equipment, drilling equipment (Blue Ridge)
Drill Rig: Simco 2800 (Blue Ridge)
Hand Auger Equipment (Blue Ridge)
Field Instruments Including: Water Level Meter, Horriba U-52 Water Meter (Blue Ridge)
Flat Bed Trailer: Auger soil spoils removal (Blue Ridge)
Field Trucks (Blue Ridge)

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Field meters not working.	Attempt to clean probes and recalibrate in the field. Change batteries. Fix the problem.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray
Wells not located.	Use metal detector,	Record on field sheets	Joseph W. McMurray

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	measure from known points or call DHEC Project Manager for additional information.	and notify Joe McMurray.	

Table 6A Field Corrective Action

B3 Sample Handling and Custody

1. How will the samples get from the Site to the Lab to ensure holding requirements are met?
Following sample collection and packaging in coolers, as previously described, the samples are transported back to the Blue Ridge office by truck or car. The chain of custody is completed for the sample batch by Blue Ridge field staff. If samples are picked up the same day at our office by the laboratory courier, the sample coolers are maintained with appropriate ice levels to maintain temperature until pick-up. If samples will be picked up the following day by the lab courier, then the samples may be transferred to our on-site refrigerator / freezers for cold storage until pick up. At the time of pickup, the chain of custody is signed and the Shealy staff courier drives the samples directly to their laboratory location. Shealy will contact Blue Ridge if for any reason hold times have been exceeded prior to performance of the requested analyses.

2. How will the contractors cool the samples and keep the samples cool?
Ice will be used in coolers for storage of samples between project site and office. Once at office, samples, if held, to be maintained at 4° C +/- 2° in refrigerator/freezer at Blue Ridge office.

3. How will the lab determine the temperature of the samples upon receipt? Will they be using a temperature blank?
Thermometer and temperature blank will be used to document sample temperature. The temperature blank is immediately checked by the sample receiving technician upon arrival at laboratory.

4. Where will the samples be stored in the Lab once they are received?
All samples are stored in clean refrigeration units monitored and maintained at 4° C +/- 2°. Volatile organic samples are stored separately from all other samples.

5. Describe the chain of custody procedure and attach a copy of each chain of custody that will be used. If a Chain of Custody SOP exists from the Lab and the Contractor is willing to adhere to it, then this may be attached.
Blue Ridge Environmental Services, Inc. sample chain of custody (COC) to be completed for each sampling event at each project site. COC to be signed by Blue Ridge staff and Shealy Environmental lab staff at time physical transfer of samples occurs to courier. Shealy uses the following COC procedures to protect sample integrity following pickup by their courier: A full time Sample Receiving Technician receives all samples and completes a Sample Receipt Checklist (SRC), which will identify anomalies, if any exist. The Sample Receiving Technician or the Project Manager must resolve the

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deviation internally and/or notify the client to resolve the anomaly. A copy of our Blue Ridge Environmental Services, Inc. sample Chain of Custody is provided for your review in Appendix A3.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Parameter	SOP ID*	Method Referenced	Equipment	Comments
BTEX+Naph+MTBE+Oxygenates+ 1,2 DCA	S-VO-002	8260B	GC/MS	
PAH's	S-SV-021	8270D	GC/MS	
Lead	S-IM-022	6010C	ICP	
EDB	S-SV-012	8011	GC	
Grain Size/Hydrometer	ASTM	ASTM D422-63	Sieves, balance, hydrometer	Sub-Contracted by Shealy to Schnabel
TPH	S-SV-001	8015C (DRO)	GC	
Total Organic Carbon	S-IN-030	Walkley-Blake	GC-FID	
pH, Conductivity, D.O., Temperature & Turbidity	N/A	Per manufacturers recommendation	Horiba-U52	Field Measurement

Table 7A Analytical SOPs and Referenced Methods

- **This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

Abbreviation	Lab Identification of this SOP	Full Name of the SOP
S-VO-002	S-VO-002	GC/MS VOLATILES ANALYSIS BASED ON EPA METHODS 8260B AND 624 PREPARED BY EPA METHODS 5030B, 5035 AND 3585
S-SV-021	S-SV-021	GC/MS ANALYSIS BASED ON EPA METHOD 8270D PREPARED BY EPA METHODS 3520C, 3550C AND 3580A
S-SV-012	S-SV-012	GC/ECD ANALYSIS OF EDB AND DBCP BASED ON METHOD 8011 & 504.1

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S-IM-022	S-IM-022	INDUCTIVELY COUPLED PLASMA ATOMIC EMISSION SPECTROSCOPY-PECTROMETRIC METHOD for TRACE ELEMENT ANALYSES METHOD 6010C
S-IN-009	S-IN-009	FERROUS IRON (PHENANTHROLINE METHOD) STANDARD METHOD 3500-Fe D
S-IN-042	S-IN-042	NITRATE+NITRITE NITROGEN BY EPA METHOD 353.2, NITRATE NITROGEN BY 353.2 SUBTRACTION, AND NITRITE NITROGEN BY EPA METHOD 353.2
S-IN-010	S-IN-010	INORGANIC ANIONS BY ION CHROMATOGRAPHY EPA METHOD 300.0 and SW-846 9056 and 9056A
S-VO-004	S-VO-004	STANDARD OPERATING PROCEDURE GC ANALYSIS BASED ON METHOD RSKSOP-175
S-IN-030	S-IN-030	TOTAL ORGANIC CARBON (TOC) WALKLEY-BLACK PROCEDURE
S-SV-001	S-SV-001	GC/FID DIESEL RANGE ORGANICS ANALYSIS BASED ON METHOD 8015B and/or 8015C PREPARED BY EPA METHODS 3520C, 3550C and 3580A

Table 8A SOP Abbreviation Key

2. Identify procedures to follow when failures occur, identify the individual responsible for corrective action and appropriate documentation:

All laboratory corrective actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.

Failure	Response	Documented Where?	Individual Responsible
COC or Sample Receiving issues	Call Client	Sample Receiving Checklist (SRC)	PM – Kelly Maberry kmaberry@shealylab.com
Analytical errors	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.co

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QA/QC Failure	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com
On time delivery	Corrective Action Form (CAF)	CAF filled out by PM	Lab Director –Daniel J. Wright DWright@shealylab.com QA/QC Officer – Jami Savje Jsavje@shealylab.com

Table 9A Corrective Action Procedures

Identify sample disposal procedures.

Analysis	Matrix	Schedule for disposal	Method for disposal	Comments
BTEX+Naph+MTBE+Oxygenates	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
PAH's	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
EDB	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	
Lead	Waters/Soils	Six Weeks	Tested for Hazardous Constituents and disposed as Hazardous or non-Hazardous waste.	

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Table 10A Sample Disposal

3. Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here. If attached please note that it is an attachment and where it is located (if applicable). Not applicable.

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all field and laboratory equipment needing periodic maintenance, the schedule for this, and the person responsible. Note the availability and location of spare parts.

Instrument	Serial Number	Type of Maintenance	Frequency	Parts needed/Location	Person responsible
Keck-Interface Probe	370	Battery Replacement Cleaning	Annual Prior to Use and between wells	In-office Service / Licensed Service Provider: Geotech Environmental Equipment, Denver,Co.	Andrew J. Kosse
Slope Indicator-Water Level Indicator	18327	Batter Replacement Cleaning	Annual Prior to & Following Use and Between Wells	In-office Service / Licensed Service Provider: Enviro-Equipment, Charlotte, NC	Andrew J. Kosse
Slope Indicator-Water Level Indicator	160249	Battery Replacement Cleaning	Annual Prior to & Following Use and Between Wells	In-office Service / Licensed Service Provider: Enviro-Equipment, Charltote,NC	Andrew J. Kosse
David White-Instrument Level	17933	Cleaning and Calibration	Annual	In-office Cleaning / Licensed Service Provider: Duncan-	Andrew J. Kosse

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				Parnell, Charlotte, NC	
Horiba-U52	HGS No. TOKGTPH2	Battery Replacement Cleaning	As Necessary Prior to & Following Use and Between Wells	In-office Service / Licensed Service Provider: Enviro-Equipment	Andrew J. Kosse
MiniRae 2000 PID	110-008198	Cleaning	As Necessary	In-office Service / Licensed Service Provider: Enviro-Equipment	Andrew J. Kosse
Volatiles Mass Spec	ALL	Change traps, clean ion source, replace filaments	Periodic	Laboratory	MSV Analyst
Semivolatile Mass Spec	ALL	Injection port maintenance, ion source maintenance, column replacement	Periodic	Laboratory	MSSV Analyst
ECD GC	ALL	Injection Port Maintenance, column replacement	Periodic	Laboratory	GC Analyst
Dionex IC	ALL	Replace auto sampler filter, tubing, line filter, sample line and waste line as needed. Check reagent levels, flow rate, waste line.	Periodic	Laboratory	IC Analyst
ICP	ALL	Clean introduction system, auto sampler, torch, torch tubing and change spray chamber	Periodic	Laboratory	ICP Analyst
Leeman Mercury Analyzer	ALL	Clean GLS, Change pump tubing, Nafion Dryer, Lamp	Periodic	Laboratory	Mercury Analyst
Flow Injection Analysis – Lachat 8000	ALL	Replace sample and reagent lines, replace light source, re-wrap heating coil, replace	Periodic / As Needed	Laboratory	Nitrate Analyst

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		column			

Table 11A Instrument and Equipment Maintenance

2. Identify the testing criteria for each lab or field instrument that is used to ensure the equipment is performing properly. Indicate how deficiencies, if found, will be resolved, re-inspections performed, and effectiveness of corrective action determined and documented. Give the person responsible for this

Instrument/Equipment & Serial Number	Type of Inspection	Requirement	Individual Responsible	Resolution of Deficiencies
Keck-interface Probe #370	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Slope Indicator-Water Level Indicator #18327	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Slope Indicator-Water Level Indicator #160249	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
David-White Instrument Level	Field Check Using Level Loop	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Horiba-U52 # TOKGTPH2	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
MiniRae 2000 PID #110-008198	Visual	Before Each Use	Field Staff	Contact Field Mgr., Remove from use until deficiency resolved
Volatiles Mass Spec	Daily Calibration Check	Method Requirements	MSV Analyst	Recalibrate or Maintenance
Semi-volatiles Mass Spec	Daily Calibration Check	Method Requirements	MSSV Analyst	Recalibrate or Maintenance
ECD GC	Daily Calibration Check	Method Requirements	GC Analyst	Recalibrate or Maintenance
Dionex IC	Daily Calibration Check	Method Requirements	Nitrate Analyst	Recalibrate or Maintenance
ICP	Daily Calibration Check	Method Requirements	ICP Analyst	Recalibrate or Maintenance

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Leeman Mercury Analyzer	Daily Calibration Check	Method Requirements	Mercury Analyst	Recalibrate or Maintenance
Flow Injection Analysis – Lachat 8000	Daily and Continuing Calibration Check	See Calibration Criteria	INM Analyst	Recalibrate or Maintenance

Table 12A Instrument and Equipment Inspection

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.
2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
Keck-interface Probe #370	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Calibration/Adjustment in-office by tip adjustment, or repair/calibration by service provider when in-office calibration fails.	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Slope Indicator-Water Level Indicator #18327	Checked vs. Standard	Annual	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Slope Indicator-Water Level Indicator #160249	Checked vs. Standard	Annual	+/- 0.01' per 10' length	Repair or replace tape/probe by service provider	Andrew J. Kosse	BRESI QA/QC Manual 07-11
David-White Instrument Level	Calibrate per manual	Annual or as necessary	+/- 0.02' at 150'	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Horiba-U52 #TOKGTPH2	Calibrate per manual	Pre-use, mid-day, Post-use	**Temp:** +/- 0.1°C (at calib. point) **pH:** +/- 0.05pH (at calib. points)	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11

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Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
			DO: +/- 0.2 mg/L (at 0 to 20 mg/L) +/- 0.5mg/L (at 20 to 50 mg/L **Conductivity**: +/- 0.05% F.S. (against standard solution) **Turbidity:** +/- 5% of Reading or NTU			
MiniRae 2000 PID #110-008198	"0" check and 100ppm Span Gas Pump Check per manual	Pre-use, Post-use	+/- 1.0 ppm using 100ppm Calibration Gas	Calibration/Adjustment in-office or by service provider as necessary	Andrew J. Kosse	BRESI QA/QC Manual 07-11
Volatiles Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSV Analyst	S-VO-002
Semi-volatile Mass Spec	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	MSSV Analyst	S-SV-021
GC ECD	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	GC Analyst	S-SV-012
Dionex IC	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	IC Analyst	S-IN-010

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Instrument	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA	SOP Reference*
ICP	Minimum of 3 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	ICP Analyst	S-IM-022
Cetac Mercury Analyzer	Minimum of 5 calibration standards for all compounds	When indicated by calibration verification standard	Method Criteria	Detailed in SOP	Mercury Analyst	S-IM-006
Lacaht QuickChem 8000	Minimum of 5 calibration standards	Daily or when indicated by calibration verification standard	Method Criteria	Detailed in SOP	Nitrate Analyst	S-IN-042

Table 13A Instrument Calibration Criteria and Corrective Action

BRESI QA/AC Manual 07-11: Blue Ridge Environmental Services Quality Assurance/Quality Control Manual, Dated July 2011

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B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. Identify critical supplies and consumables for field and laboratory, noting supply source, acceptance criteria, and procedures for tracking, storing and retrieving these materials.
2. Identify the individual(s) responsible for this.

Item	Vendor	Acceptance criteria	Handling/Storage Conditions	Person responsible for inspection and tracking.
Nitrile Gloves	Enviro-Equipment	Factory Packaging Box Undamaged and Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Disposable Bailers	Sample Tech.	Factory Packaging Individual Bags Undamaged and Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Sample Containers-Glassware	Shealy Environmental Services, Inc.	Sterile Glassware Undamaged and Sealed by Snug Lids, Visibly Clean Inside.	Shelf in Office Warehouse	Andrew J. Kosse
Baggies	Varies	Sealed Factory Packaging Undamaged	Shelf in Office Warehouse	Andrew J. Kosse
Threaded Well PVC	Drillers Services, Inc.	Factory Packaging Individual Bags Undamaged and Sealed	Pipe Rack in Office Warehouse	Andrew J. Kosse
Sand, Bentonite, Concrete	Drillers Services, Inc.	Factory Packaging Individual Bags Undamaged and Dry	Pallets in Office Warehouse	Andrew J. Kosse
Span Gas, 100ppm	Enviro-Equipment	Factory Packaging and Gas Cylinder Undamaged and Sealed	In PID Hard Case	Andrew J. Kosse
De-Ionized Water	Food Lion	Factory Packaging Jugs Undamaged with Lids Sealed	Shelf in Office Warehouse	Andrew J. Kosse
Monitoring Well Parts	Drillers Services, Inc.	Factory Packaging Undamaged and Sealed	Office Warehouse	Andrew J. Kosse

Table 14A List of Consumables and Acceptance Criteria

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to project.
3. Indicate the acceptance criteria for these data sources and/or models.

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Data Source	Used for	Justification for use in this project	Comments
synTerra	Background information	Was assessment work completed for this site	Phase II ESA
Google Earth	Mapping, Aerial Photographs for Project Figures	Data is compiled US Department of State Geographer.	Provides accurate site feature coordinates and current as well as historical aerial photography. No acceptance criteria necessary.
County GIS Websites	Mapping, Tax Maps, Parcel Boundaries, Parcel Owners.	Data is compiled by County GIS Departments.	Provides accurate parcel boundary and owner information. No acceptance criteria necessary.
www.Maptech.com & DeLorme USA	USGS topographic maps	Both digital sources of USGS topographic maps	None

Table 15A Non-Direct Measurements

4. Identify key resources/support facilities needed.

None required other than prior reports for work at site, which are on file at Blue Ridge.

B10 Data Management

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

See Management Flow Chart 16 on following page which describes the management of data from project initiation to final report archive storage.

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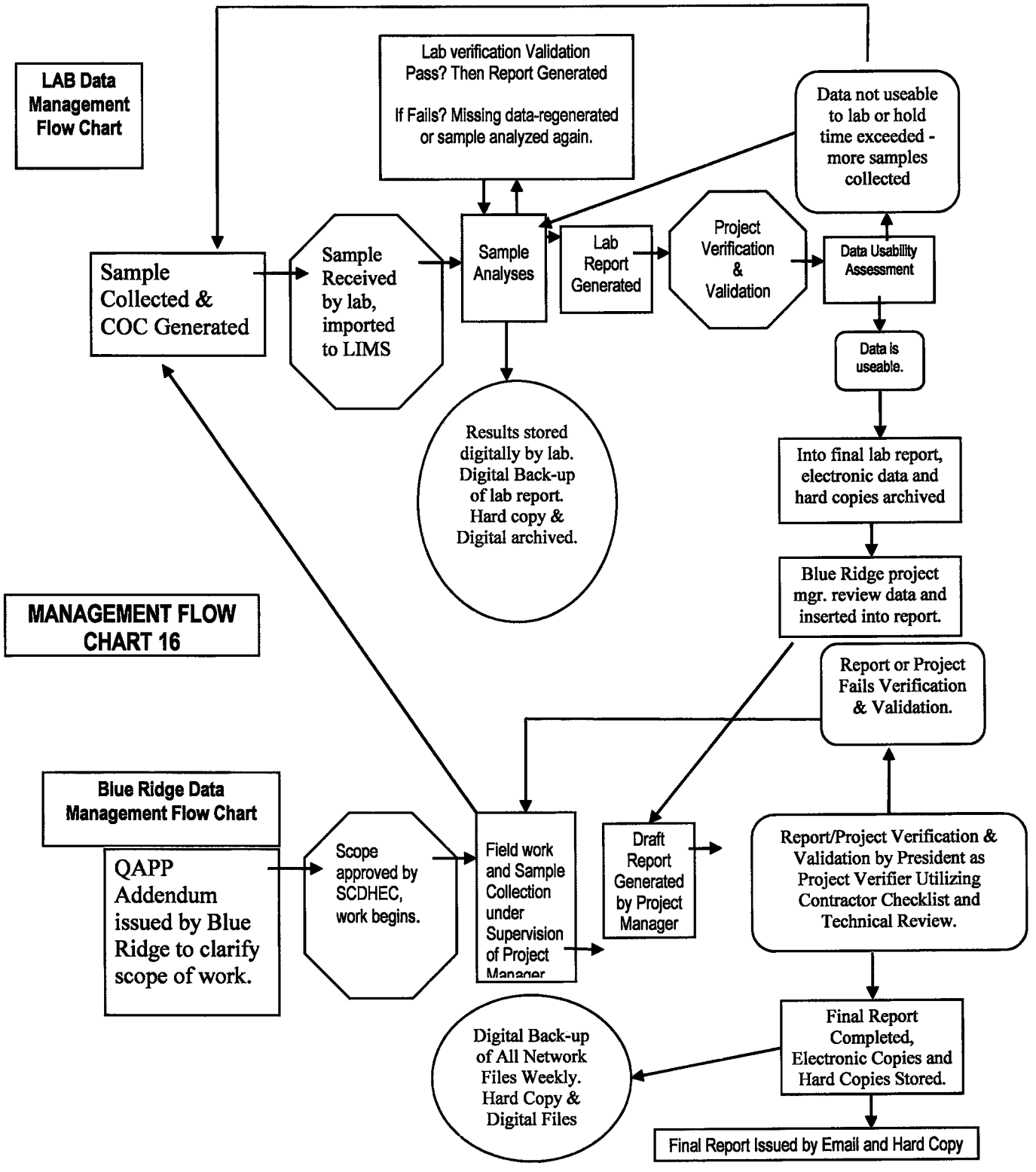

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(F) 704.482.4335

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Blue Ridge staff maintains a copy of the sample Chain of Custody (COC) to ensure no unauthorized changes are made to it. The COC is reviewed by the project manager then signed prior to turn-over of the samples to the laboratory courier. Field staff are required to use pen when taking field/project notes in their field books to prevent erasing/modification of field notes. Each field staff is responsible for the control of their field note book. All reporting is reviewed prior to issue by the President who is also the QA Officer to help ensure consistent report quality. Blue Ridge accepts full responsibility for restoring corrupt or lost data, but adequately manages this risk through the use of state-of-the-art computer software and hardware. The data collected is maintained in our possession at all times and our network is password protected. Blue Ridge field notes, sampling notes, reporting, and digital record keeping practices are in accordance with generally accepted environmental industry standards in this area at this time. The President/Project Verifier is the party responsible for oversight of our reporting and data management quality. **All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.**

3. How does the lab ensure that there are no errors in sample records including times when sample information is compiled, data calculated and/or transmitted.

All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 9 dated 3/18/11.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Data hard copies are archived by placing copies of all project data and reports in the project folder. The project folders are maintained in the office file cabinet for approximately 2-5 years, depending on the project duration; then they are moved to the archive file storage boxes in our warehouse. Archive files are maintained for a minimum of 5 years. The hard copy files can then be retrieved during business hours in person by Blue Ridge staff. Blue Ridge digital files are stored in our network which includes a 2-terrabyte server. Report and data files are digitally stored in the file format in which they were created and typically in Adobe PDF format also. Digital copies of all network files are then backed up once per week by an external drive. Because of these file storage practices, Blue Ridge can reproduce hard copies or digital files for our projects immediately or within one business day of such request.

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Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. . Please state who is responsible for doing this and what observations will be made. Will this person have the authority to stop work if severe problems are seen?*

All sampling and field services are typically performed directly by Blue Ridge Environmental Services, Inc. In the rare occasion that a subcontractor is used, it is under the direct supervision of a Blue Ridge Project Manager, or higher level, position. The Blue Ridge Field Manager and President, Joseph W. McMurray is responsible for ensuring that field personnel perform SCDHEC UST project duties in accordance with Blue Ridge Environmental Services Quality Assurance/Quality Control Manual, Dated July 2011 and the SCDHEC UST Programmatic QAPP, Revision 1, dated January 2011. Mr. McMurray has the authority to stop work for any reason and agrees that field problems, which cannot be remedied internally, will be reported to the SCDHEC Project Manager within 24-hours by telephone and/or email.

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

The laboratory participates in annual Proficiency Testing through an approved vendor, Wibby Environmental Proficiency Testing. The results are provided to the SC Office of Environmental Laboratory Certification.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

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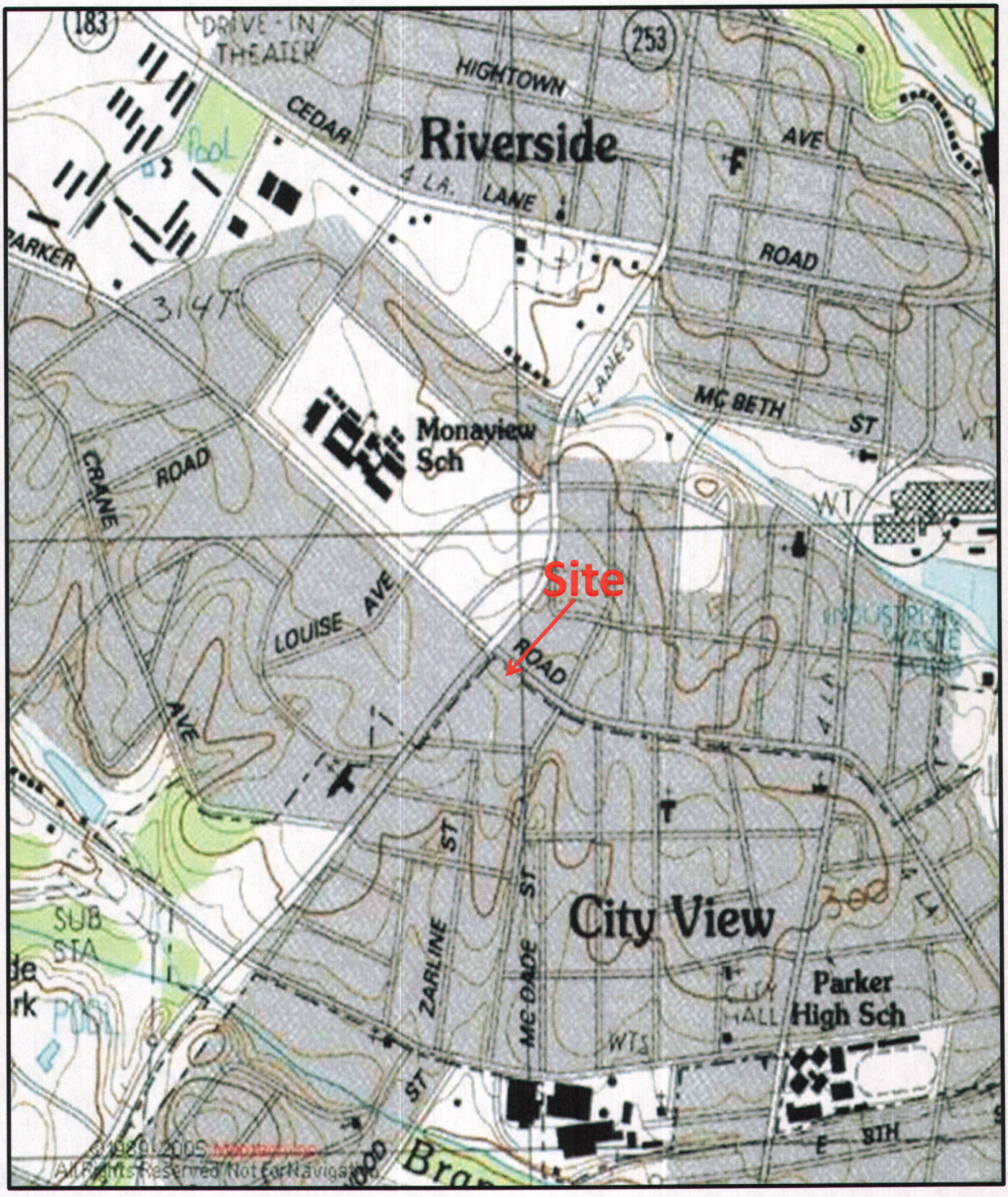
APPENDIX A1 – FIGURES



Topographic Map

North ▲

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2315 Kings Road Ext.
Shelby, North Carolina 28152
(704) 482-2111
Fax (704) 482-4335

Client:	Mr. Mike Wright
Project:	Westside Quick Stop
Location:	821 West Parker Road
	Greenville,SC
Source:	MapTech
Date: 1/17/13	UST Permit # 12430

Figure 1



Google earth

feet 200

meters 80

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APPENDIX A2 – SCDHEC COST AGREEMENT

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: Westside Quick Stop

UST Permit #: 12430 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE		TOTAL
1. Plan*					
B. Tax Map		x	$50.00		$0.00
C. Tier II or Comp. Plan /QAPP Appendix B		x	$525.00		$0.00
2. Receptor Survey *		x	$500.00		$0.00
3. Survey (500 x 500 feet)					
A. Comprehensive Survey		x	$1,000.00		$0.00
B. Subsurface Geophysical Survey					
1. < 10 meters below grade		x	$2,750.00		$0.00
2. > 10 meters below grade		x	$3,250.00		$0.00
C. Geophysical UST or Drum Survey		x	$1,125.00		$0.00
4. Mob/Demob (Each)					
A. Equipment		x	$575.00		$0.00
B. Personnel		x	$290.00		$0.00
C. Adverse Terrain Vehicle to install wells		x	$575.00		$0.00
5. Soil Borings (hand auger)* (Feet)		feet x	$14.00		$0.00
6. Soil Borings (drilled) & Field Screening *					
Rate includes collection of water sample or soil sample, and lab or other analyses					
A. Standard		feet x	$17.00		$0.00
C. Fractured Rock		feet x	$27.50		$0.00
7. Soil Leachability Model (Each)		each x	$200.00		$0.00
8. Abandonment* (per foot)					
A. 2" diameter or less		feet x	$5.00		$0.00
B. Greater than 2" to 6" diameter		feet x	$5.50		$0.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$18.00		$0.00
9. Well Installation* (per foot)					
A. Water Table (hand augered)		feet x	$20.00		$0.00
B. Water Table (drill rig)	5	feet x	$38.00		$190.00
C. Telescoping/ Pit Cased		feet x	$58.00		$0.00
D. Rock Drilling		feet x	$58.00		$0.00
E. 2" Rock Coring		feet x	$45.00		$0.00
G. Rock Multi-sampling ports/screens		feet x	$47.20		$0.00
H. Recovery Well (4 inch diameter)		each x	$45.00		$0.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$18.50		$0.00
J. Rotosonic (2 inch diameter)		each x	$45.00		$0.00
10. Groundwater Sample Collection / Gauge Depth to Water or Product (Each)					
A. Groundwater Purge		wells x	$55.00		$0.00
B. Air or Vapors		samples x	$90.00		$0.00
C. Water Supply		samples x	$30.00		$0.00
D. Groundwater No Purge or Duplicate		samples x	$35.00		$0.00
E. Gauge Well only		per well x	$20.00		$0.00
F. Sample Below Product		wells x	$50.00		$0.00
G. Pasive Diffusion Bag		each x	$40.00		$0.00
H. Field Blank		each x	$5.00		$0.00
11. Laboratory Analyses-Groundwater (Each Sample)					
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol		samples x	$100.00		$0.00
AA. Lead, Filtered		samples x	$46.00		$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$143.00		$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$40.00		$0.00
D. PAH's		samples x	$120.00		$0.00
E. Lead, Unfiltered		samples x	$20.00		$0.00
F. EDB by EPA 8011		samples x	$55.00		$0.00
FF. EDB by EPA Method 8011 Rush		samples x	$75.00		$0.00
G. 8 RCRA Metals		samples x	$140.00		$0.00
H. TPH (9070)		samples x	$55.00		$0.00

I. pH		samples x	$10.00		$0.00
J. BOD		samples x	$40.00		$0.00
P1. Ethanol		samples x	$21.50		$0.00
11. **Analyses-Soil (Each Sample)**					
Q. BTEX + Naphth.		samples x	$100.00		$0.00
R. PAH's		samples x	$120.00		$0.00
S. 8 RCRA Metals		samples x	$150.00		$0.00
T. Oil & Grease (9071)		samples x	$60.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$65.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$65.00		$0.00
W. Grain size/hydrometer		samples x	$99.00		$0.00
X. Total Organic Carbon		samples x	$35.00		$0.00
11. **Analyses-Air (Each Sample)**					
Y. BTEX + Naphthalene		samples x	$247.50		$0.00
11. **Analyses-Free Phase Product (Each Sample)**					
Z. Hydrocarbon Fuel Identification		samples x	$620.00		$0.00
12. **Aquifer Characterization***					
A. Pumping Test		hours x	$120.00		$0.00
B. Slug Test*		tests x	$150.00		$0.00
C. Fractured Rock		tests x	$500.00		$0.00
13. **Free Product Recovery Rate Test* (Each)**		tests x	$120.00		$0.00
14. **Fate/Transport Modeling**					
A. Mathematical Model		each x	$300.00		$0.00
B. Computer Model		each x	$500.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		x	$301.00		$0.00
B. Tier II Risk Evaluation		x	$500.00		$0.00
16. **Subsequent Survey***		x	$300.00		$0.00
17. **Disposal* (gallons or tons)**					
A. Wastewater		gallons x	$0.80		$0.00
B1. Free Product		gallons x	$0.85		$0.00
C. Soil Treatment/Disposal		tons x	$72.50		$0.00
D. Drilling fluids		gallons x	$0.80		$0.00
18. **Miscellaneous (attach receipts)**					
		x			$0.00
		x			$0.00
		x			$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		x			$0.00
21. **IGWA (Use DHEC 3666 form)**	1	x	$3,760.00		$3,760.00
22. **Corrective Action (Use DHEC 3667 form)**		x			$0.00
23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A. 8-hour Event*		each x	$3,000.00		$0.00
B. AFVR per-hour Continuance		per hour x	$204.00		$0.00
C. Off-gas treatment per-hour Continuance		per hour x	$35.00		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A. New GAC System Installation*		each x	$2,500.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$1,180.00		$0.00
C. Filter replacement/removal*		each x	$450.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$720.00		$0.00
E. GAC System housing		each x	$450.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$4.00		$0.00
25. **Well Repair**					
A. Additional Copies of the Report Delivered		each x	$32.50		$0.00
B. Repair 2x2 MW pad		each x	$100.00		$0.00
C. Repair 4x4 MW pad		each x	$150.00		$0.00
D. Repair well vault		each x	$225.00		$0.00
F. Replace well cover bolts		each x	$10.00		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$137.50		$0.00
I. Convert Flush-mount to Stick-up		each x	$175.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$125.00		$0.00
K. Replace missing/illegible well ID plate		each x	$22.50		$0.00
Report Prep & Project Management	15%	x	$0.00		$0.00
TOTAL					$3,950.00

*The appropriate mobilization cost can be added to complete these tasks, as necessary

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APPENDIX A3 – SAMPLE CHAIN OF CUSTODY

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bresi@blueridge-esi.com

PROJECT NAME/LOCATION

STF CODE:

P.O.#:

LAB:

GROUNDWATER INCIDENT #:

SAMPLERS:

PROJECT MANAGER:

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS							REMARKS

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

ANKUR PATEL
SHREE GAJVAKRA LLC
205 FAIRWAY DR
LAURENS SC 29360-7700

SEP 0 4 2013

UST 9dech DOCKETING

Re: IGWA Directive
Westside Quick Stop, 821 W. Parker Rd., Greenville, SC
UST Permit #12430; Cost Agreement #45434; MWA #UMW-25205
Release #2 reported October 23, 2012
Tank Tightness Test report received October 23, 2012
Site Specific QAPP Contractor Addendum received August 8, 2013
Greenville County

Dear Mr. Patel:

The Underground Storage Tank Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report and site specific Quality Assurance Project Plan (QAPP) Contractor Addendum. The report documents a failed tank tightness test for the premium gasoline UST, and as a result a second release has been declared at this facility. To determine what risk the chemicals may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of an Initial Groundwater Assessment (IGWA) as outlined in the UST QAPP is necessary. The IGWA should be conducted in accordance with the UST QAPP and must be conducted in compliance with all applicable regulations and the submitted site specific QAPP Contractor Addendum. A copy of the UST QAPP is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm. All shallow wells are to be installed with screen intervals that bracket the water table. Groundwater samples will include duplicate samples, field and trip blanks. The IGWA well should be installed in the vicinity of the premium gas UST, as proposed in the submitted QAPP.

According to Division records, the release at the facility was reported to the Agency on October 23, 2012. In accordance with Section 44-2-40(D) of the SUPERB Act, you are responsible for the first $25,000 of site rehabilitation costs. To ensure that expenditures made toward rehabilitation apply to the $25,000 deductible, the Division has pre-approved costs for implementing the IGWA and assigned a cost agreement number for tracking. By law, the SUPERB Account cannot compensate any costs that are not pre-approved.

The Division has pre-approved a total of $3,950.00 for implementation of the IGWA. The total includes costs for completion of up to 30 feet of permanent monitoring well footage. A groundwater sample should be collected from each water supply well within 250 feet of the facility and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2-DCA, ethanol, and EDB. Additional monitoring well footage can be billed at the SUPERB allowable rate of $38 per foot, as well as collection and laboratory analyses of groundwater from water supply wells provided that the cost is pre-approved by the Division. Upon receipt of a report of findings, and a completed IGWA invoice with all necessary supporting documentation, up to $3,950.00 will be applied towards the $25,000 deductible. **The report, contractor checklist, and invoice should be submitted to the Division within sixty (60) days of the date of this correspondence.**

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

Implementation of the IGWA may proceed immediately upon receipt of this correspondence. Approval to install one permanent monitoring well, and for the site specific QAPP contractor addendum 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 Agency-certified site rehabilitation contractor as required by R.61-98.

The Agency 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 #12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 898-0599, fax me at (803) 898-0673, or e-mail me at fordrj@dhec.sc.gov.

Sincerely,

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)
Signed Site Specific QAPP Contractor Addendum Title and Approval Page

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617 (with enc)
Blue Ridge Environmental Services, Inc., 2315 Kings Rd Ext., Shelby, NC 28152 (with enc)
Technical file (with enc)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to:	Blue Ridge Environmental Services, Inc
On Behalf of:	Shree Gajvakra LLC
Facility:	Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit Number:	12430
County:	Greenville

This approval is for the installation of one (1) shallow groundwater monitoring well. The monitoring well is to be installed in the approved location. The 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 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 James Ford (tel: 803-898-0599 or e-mail: fordrj@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. 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.

Date of Issuance: August 14, 2013 **Approval #: UMW-25205**

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

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Section A: Project Management

A1 Title and Approval Page

Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Joseph W. McMurray, PG
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: August 4, 2013
Blue Ridge Environmental Services, Inc. (#095)

Approvals:
James Ford
SC DHEC Project Manager — Signature — Date 8/14/13

Andy Kosse
Contractor QA Manager — Signature — Date 8-4-13

Blue Ridge Environmental Services, Inc.
Site Rehabilitation Contractor — Signature — Date 8-4-13

Daniel J. Wright
Laboratory Director — Signature — Date 8-4-13

Approved Cost Agreement 45434

Facility: 12430 WESTSIDE QUICK STOP

FORDRJ

PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
09 WELL INSTALLATION						
		B	WATER TABLE (DRILLED)	5.0000	38.00	190.00
21 INITIAL GROUNDWATER ASSESSMENT						
		IGWA		1.0000	3,760.00	3,760.00
				Total Amount		3,950.00

Tier 1 Assessment Report





Westside Quick Stop
809 West Parker Road
Greenville, South Carolina 29611
UST Permit Number 12430

Prepared for:
Westside Quik Shop INC.
Attn: Mr. Mike Wright
405 Dove Hill Circle
Easley, South Carolina 29640

September 11, 2013

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

Prepared by:
Blue Ridge Environmental Services, Inc.
2315 Kings Rd. Extension
Shelby, North Carolina 28152
704-482-2111
Fax 704-482-4335
SC Contractor # 0095

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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

TIER 1 ASSESSMENT REPORT OF FINDINGS

I. INTRODUCTION

A. UST Facility Name: Westside Quick Stop

UST Permit Number: 12430

Address: 809 West Parker Road, Greenville, SC 29611

Phone Number: (864) 271-9400

B. UST Owner: Mike Wright

Address: 405 Dove Hill Circle, Easley, SC 29640

Phone Number: N/A

C. UST Operator: Westside Quick Stop

Address: 809 West Parker Road, Greenville, SC 29611

Phone Number: (864) 271-9400

D. Property Owner Name: Westside Quik Shop INC.

Address: 809 West Parker Road, Greenville, SC 29611

Phone Number: (864) 271-9400

E. SCDHEC Certified Contractor Name: Blue Ridge Environmental Services, Inc.

Address: 2315 Kings Road Ext., Shelby, NC 28152

SCDHEC Certified Contractor Number: 0095

F. SCDHEC Well Driller Name: Joseph McMurray

Address: 2315 Kings Road Ext., Shelby, NC 28152

SCDHEC Well Driller Number: 734

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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

G. SCDHEC Certified Laboratory: Shealy Environmental Services, Inc.

Address: 106 Vantage Point Drive in West Columbia, South Carolina, 29172

Phone Number: (803) 791-9700

SCDHEC Certified Laboratory Certification Number: 32010

H. Facility Information

Address: 809 West Parker Road, Greenville, SC 29611

Site Land Use: The site is currently a gasoline station/convenience store. The USTs located onsite were installed in November 1989 and were placed in operation in November 1990. A Phase II Environmental Site Assessment (ESA) report submitted by synTerra, revealed soil and groundwater results confirming petroleum constituents above the RBSLs were present on site. A release was reported to South Carolina Department of Health and Envrironmental Control (SCDHEC) on June 7, 2012.

Adjacent Land Use: Properties to the north consists of a commercial business (God Bless America Tire/Carwash and residences. Properties west of the site consist of a vacant lot beyond which lies a residence. The properties to the south and east of the site consist of residences. Adjacent property owners are listed on the table below:

Adjacent Property Owners

Parcel Number	Property Owner	Address
0135000100200 (Site)	Westside Quik Shop INC	809 West Parker Road Greenville, SC 29611
0135000100900	Westside Quik Shop INC	809 West Parker Road Greenville, SC 29611
0135000101800	Bobbie Jean Roberson and Mendel F. Roberson	114 Lakeside Road Greenville, SC 29611
0135000101700	Paul H. Mcintyre	118 Wicklon Court Easley, SC 29642
0135000101200	Leslie Guerra and David Espinoza	2209 West Blue Ridge Drive Greenville, SC 29611
Unknown21	N/A	N/A
0134000500400	Robert Jackson	108 Yown Road Greenville, SC 29611
0143000301000	Roxana Lima	1000 Lenhardt Drive Greenville, SC 29611

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Adjacent Property Owners Continued

Parcel Number	Property Owner	Address
0143000300900	RTC Real Estate II LLC.	149 Lake Forest Circle Easley, SC 29642
0143000300800	Michael L. Poore in care of Jean Cobb	149 Lake Forest Circle Easley, SC 29642

- Keyed to Figure 6

I. Facility History

Date Release Reported to SCDHEC: June 7, 2012

Estimated Quantity of Product Released: Unknown

Cause of Release: Leaking UST System

UST System Information

UST #	Size (Gallons)	Product	Date Installed (Year)	Currently in use (Yes or No)	Date Removed	Removed (Yes or No)
1	6,000	Gasoline	1989	Yes	N/A	No
2	6,000	Gasoline	1989	Yes	N/A	No
3	1,000	Diesel	1989	Yes	N/A	No
4	4,000	Gasoline	1989	No	N/A	No

- N/A: Not applicable.

Other Releases at this site? Yes

Status of Release: Tier I Assessment and IGWA

No Further Action Date: Pending

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II. SITE CHARACTERISTICS

A. Site Geography

Topography of the site and surrounding area:

The site is located on a sloping ridgeline which is covered by a building, asphalt, concrete and grass. An unnamed tributary to Long Branch is located approximately 750 feet southeast of the source area. Long Branch flows into the Reedy River.

Mean Elevation of Site: 1,000 to 1,020 feet above sea level.

B. Water Supply Well Owners

No Water Supply Wells (WSWs) were identified within 1,000 feet of the subject site.

C. Exposure Analysis

Potential receptors and preferential pathways within a 1000-foot radius of the site:

Description of Receptor	Distance/Direction from Site
Water Line	Approximately 127 feet north of the UST Basin
Sewer Line	Approximately 127 feet north of the UST Basin
Electric Line	Approximately 13 feet south of the UST Basin
Telephone Line	Approximately 15 feet south of the UST Basin
Natural Gas Line	Approximately 21 feet north of the UST Basin

D. Utilities Survey

Utilities on site, and adjacent to the site within a 250-foot radius, which could serve as exposure points or as preferential pathways:

Description of Receptor	Distance/Direction from Site
Water Line	Approximately 127 feet north of the UST Basin
Sewer Line	Approximately 127 feet north of the UST Basin
Electric Line	Approximately 13 feet south of the UST Basin
Telephone Line	Approximately 15 feet south of the UST Basin
Natural Gas Line	Approximately 21 feet north of the UST Basin

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E. Site Geology & Hydrogeology

The Westside Quick Stop site is located in the inner Piedmont block within the Piedmont Physiographic Province. The Inner Piedmont block is a composite stack of thrust sheets containing a variety of gneisses, schists, amphibolites, sparse ultramafic bodies and intrusive granitoids. The thrust streak appears to contain metamorphic complexes of different tectonic affinities (Goldsmith and others, 1988). The igneous and metamorphic rocks are weathered to saprolite and near the surface to residual soil. Depths and thickness of the soil and saprolite vary widely, from less than one to hundreds of feet thick; generally it is thin on ridges and thicker on slopes and broad uplands.

The Piedmont groundwater system is a two-part system consisting of regolith, composed of a granular layer of soil and saprolite and thin, discontinuous alluvial deposits, overlying fractured, crystalline bedrock. Hydraulically, the regolith functions as the reservoir of the system and the bedrock fractures as pipelines that transmit water from the regolith to natural discharge areas. In detail, the regolith consists of a porous and permeable soil zone that grades downward into saprolite, which in turn, grades into unweathered rock. In saprolite, water flows through interstitial pore space while in unweathered rocks, flow is via fractures. Groundwater in the Piedmont occurs in a shallow saturated zone in saprolite and also more commonly in a much thicker bedrock "aquifer". Saturated saprolite is hydraulically connected in most areas to the underlying bedrock.

The site is underlain predominately by fine grained soils ranging from sandy silts to silty sands, red to brown in color, commonly micaceous to depths of approximately 30 feet below grade level (bgl). Bedrock was not encountered during the installation of the monitoring wells. A grain size distribution sample collected from 12430-MW-1 at a depth of 25 to 27 feet bgl indicated a composition of: 0.0% gravel, 48.0% sand, 43.9% silt, and 8.1% clay. A copy of the grain size distribution report is included as Appendix B. Please refer to the boring logs (Appendix D) and well construction records (Appendix E) for additional lithology at site specific locations.

F. Soil Boring Data

Drilling Dates: July 26, 2013

Justification for the location of the soil borings:

- 12430-SB-1: Installed adjacent to the current dispenser/piping to a total depth of 10 feet. A laboratory sample was obtained at a depth of 10 feet.
- 12430-SB-2: Installed adjacent to the current dispenser/piping to a total depth of 10 feet. A laboratory sample was obtained at a depth of 10 feet.

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- 12430-SB-3: Installed adjacent to the current dispenser/piping to a total depth of 10 feet. A laboratory sample was obtained at a depth of 10 feet.
- 12430-SB-4: Installed adjacent to the current dispenser/piping to a total depth of 10 feet. A laboratory sample was obtained at a depth of 10 feet.
- 12430-SB-5: Installed adjacent to the former dispenser/piping to a total depth of 10 feet. A laboratory sample was obtained at a depth of 8 feet.
- 12430-SB-6: Installed adjacent to the current UST Basin to a total depth of 25 feet. A laboratory sample was obtained at a depth of 25 feet.
- 12430-SB-7: Installed adjacent to the current UST Basin to a total depth of 25 feet. A laboratory sample was obtained at a depth of 20 feet.
- 12430-SB-8: Installed approximately 161 east of the UST Basin to a total depth of 10 feet and a background laboratory sample was collected.

Please refer to Appendix D for Organic Vapor Analyzer (OVA) readings obtained during soil boring installation.

Eight soil samples (12430-SB-1 through 12430-SB-8 and 12430-SB-6 Duplicate) were collected prior to monitor well installations using an auger drill rig to advance the boring and a split spoon sampler to gather samples at appropriate intervals. Samplers wore clean nitrile gloves during soil sample collection. Soil samples were screened for the presence of VOCs using a MinRae 2000 PID to determine the interval to be submitted for analysis. The samples were placed into sterile, laboratory provided sample jars. Soil sample jars were then sealed and labeled; logged onto a chain-of-custody form; then placed on ice in a cooler for cold storage. Soil samples were laboratory analyzed to obtain values for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX), MTBE and Naphthalene by EPA method 8260B, PAH's by EPA method 8270D and Lead by EPA method 7439-92-1. Copies of the laboratory report are included as Appendix C. Soil analytical results are listed on the table below:

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Summary of Soil Analytical Results

COC	RBSL[1] (Mg/Kg)	12430 SB-1	12430 SB-2	12430 SB-3	12430 SB-4	12430 SB-5	12430 SB-6	12430 SB-6 Duplicate	12430 SB-7	12430 SB-8
Benzene	0.003	<.0061	<.0049	<.0059	<.0055	<.0062	.013	.0083	<.0071	N/A
Toluene	0.627	<.0061	<.0049	<.0059	<.0055	.017	.0085	<.0076	<.0071	N/A
Ethylbenzene	1.551	<.0061	<.0049	<.0059	<.0055	.25	<.0064	<.0076	<.0071	N/A
Xylenes	13.010	.011	.0063	.0066	.0064	1.5	.011	.01	.0071	N/A
Total BTEX	N/A	.011	.0063	.0066	.0064	1.767	.0325	.0183	.0071	N/A
MTBE	N/A	.0066	<.0049	.015	<.0055	<.0062	.28	.22	1.4	N/A
Naphthalene (8260B)	0.047	<.0061	<.0049	<.0059	<.0055	.35	<.0064	<.0076	<.0071	N/A
Lead	N/A	49	42	41	94	25	13	12	22	N/A
Benzo(a)anthracene	0.066*	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
Benzo(b)flouranthene	0.066*	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
Benzo(k)flouranthene	0.066*	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
Chrysene	0.066*	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
Dibenz(a,h)anthracite	0.066*	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
Naphthalene (8270D)	0.036	<.40	<.39	<.43	<.40	<.46	<.45	<.51	<.49	N/A
TPH	N/A	N/A	N/A	N/A	N/A	N/A	<9.1	N/A	N/A	N/A
TOC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	190

- Keyed to Figure 3.
- Results reported in mg/kg.
- [1]: RBSLs for Clay-rich Soil.
- * Limits are increased to levels above the calculated values to reasonably attainable laboratory reporting limits.
- Concentrations in bold exceed RBSLs.
- <: Less than reporting limit.
- N/A: Not applicable.

Horizontal and vertical extent of COC in soil:

No soil contaminants above RBSLs for Clay-rich Soil were reported in borings 12430-SB-1 through12430-SB-7 and 12430-SB-6 Duplicate. Based on OVA readings, the worst case soil boring was 10370-SB-6 and is located adjacent to the UST basin. Detectable lead concentrations were reported in soil samples 12430-SB-1 through12430-SB-7 and 12430-SB-6 Duplicate. Please note that soil sample 12430-SB-4 had the highest reported concentration of lead. Soil boring 10370-SB-8 had a TOC concentration of 190 mg/Kg. Please refer to Figure 3 - Soil Chemical of Concern Map. The vertical extent of the impacted soil analyzed during this assessment extends to a depth of 24 to 25 feet where reported contaminant concentrations were present.

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G. Chemicals of Concern – Groundwater

Well Installation Information

Well ID	Sample Interval Depth (Ft.)	Installation Date	Development Date	Sampling Date
12430-MW-1	24-25	8/2/13	8/2/13	8/13/13
12430-MW-2	N/A	8/2/13	8/2/13	8/13/13
12430-MW-3	9-10	8/2/13	8/2/13	8/13/13

Monitoring Well and Groundwater Data

Well ID	TOC Elevation (Ft.)	Screened Interval (Ft.)	Depth to Product (Ft.)	Depth to Water (Ft.)	Water Table Elevation (Ft.)
12430-MW-1	1005.33	15-30	N/A	17.97	987.36
12430-MW-2	1006.19	15-30	N/A	18.85	987.34
12430-MW-3	1008.51	15-30	N/A	21.00	987.51

- Keyed to Figure 5.
- N/A: Not applicable.

Groundwater Flow Direction: West/Northwest

Based on the data obtained from the soil samples screened for the presence of VOCs using a MinRae 2000 PID, one permanent Type II monitoring well (12430-MW-1) was installed in the immediate vicinity of soil sample 12430-SB-6. One permanent Type II monitoring well (12430-MW-2) was installed approximately 37 feet north of 12430-MW-1. One permanent Type II monitoring well (12430-MW-3) was installed approximately 182 feet east of 12430-MW-1 and was selected to serve as a background well. All newly installed wells were developed on August 2, 2013.

Blue Ridge removed 1.0 gallons of groundwater from each of the newly installed wells during development and 30 gallons of groundwater was purged from the 3 wells during sampling using a "waterspout II" 12 volt pump. Water was purged from the wells by pump or bailer until enough solids, muds and fluids were removed to provide relatively sediment-free groundwater that was typical of the aquifer. All purge water from the wells was placed in a drum for proper off-site disposal at an approved facility. The locations of all monitoring wells associated with the Westside Quick Stop site are depicted on Figure 2.

Prior to sampling each well, Blue Ridge staff used clean nitrile gloves to avoid sample contamination and cross-contamination. The laboratory provided sterile sample

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containers that Blue Ridge staff labeled with sample name, sample ID, site name, required lab analyses, preservative, sampler initials and date and time of sample collection. In addition, groundwater samples were collected using a new or dedicated, disposable polyethylene bailer, suspended by monofilament line. Each bailer was slowly lowered into the water table, allowed to fill and then extracted from the well. The water samples were placed in the laboratory-provided and approved sample jars, sealed, logged onto a chain-of-custody form and then placed on ice in a cooler for cold storage.

One field duplicate sample (12430-MW-1 Duplicate) was collected from 12430-MW-1, which was adjacent to the UST Basin. One field blank was prepared for the site during the groundwater sampling event. The field blank was provided by the laboratory and was prepared using DI water in an approved sample jar. The field blank jar lid was opened at the time of the groundwater sampling event to duplicate field environmental conditions. One trip blank per cooler was used each time at the site. The trip blank was provided by the laboratory using DI water in an approved sample jar and remained sealed throughout the round trip journey to the site and back to the laboratory. Copies of the laboratory report are included as Appendix C. Groundwater analytical results are listed on the table below:

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Summary of Groundwater Analytical Results

COC	RBSL (ug/L)	12430 MW-1	12430 MW-1 Duplicate	12430 MW-2	12430 MW-3
Free Product Thickness (ft)	N/A	N/A	N/A	N/A	N/A
Benzene	5	**27,000**	**27,000**	**1,000**	<1
Toluene	1,000	**54,000**	**54,000**	**1,100**	<1
Ethylbenzene	700	**2,700**	**2,700**	200	<1
Xylenes	10,000	**13,000**	**13,000**	570	<1
Total BTEX	N/A	96,700	96,700	2,870	<4
MTBE	40	**5,200**	**5,200**	23	<1
Naphthalene (EPA Method 8260B)	25	**<500**	**<500**	<20	<1
Naphthalene (EPA Method 8270D)	25	**420**	**380**	8.4	<5.1
1,2-Dichloroethane	5	**<500**	**<500**	**<20**	<1
Benzo(a)anthracene	10	<5.2	<5.1	<5.1	<5.1
Benzo(b)flouranthracene	10	<5.2	<5.1	<5.1	<5.1
Benzo(k)flouranthene	10	<5.2	<5.1	<5.1	<5.1
Chrysene	10	<5.2	<5.1	<5.1	<5.1
Dibenz(a,h)anthracene	10	<5.2	<5.1	<5.1	<5.1
Acenaphthene	10	<5.2	<5.1	<5.1	<5.1
Anthracene	10	<5.2	<5.1	<5.1	<5.1
Fluoranthene	10	<5.2	<5.1	<5.1	<5.1
Fluorene	10	<5.2	<5.1	<5.1	<5.1
Phenanthrene	10	<5.2	<5.1	<5.1	<5.1
Pyrene	10	<5.2	<5.1	<5.1	<5.1
Lead (mg/L)	Site Specific	<0.010	<0.010	<0.010	<0.010
EDB	0.05	**0.90**	**0.93**	<0.019	<0.020
Di isopropyl Ether	N/A	2,600	2,600	<100	<5
Ethanol	N/A	<50,000	<50,000	<2,000	<100
Ethyl tert-Butyl Alcohol	N/A	<10,000	<10,000	<400	<20
Ethyl tert-Butyl Ether	N/A	<500	<500	<20	<1
t-amyl Alcohol	N/A	27,000	28,000	910	<20
Tert-Amyl Methyl Ether	N/A	<5,000	<5,000	<200	<10
Tertiary Butyl Alcohol	N/A	<10,000	<10,000	<400	<20
t-Butyl Formate	N/A	<2,500	<2,500	<100	<5

- Keyed to Figure 4.
- Results reported in ug/L.
- Concentrations in bold exceed RBSLs.
- N/A: Not applicable.

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Summary of Groundwater Analytical Results Continued

COC	RBSL (ug/L)	12430 Field Blank	12430 Trip Blank
Free Product Thickness (ft)	N/A	N/A	N/A
Benzene	5	<1	<1
Toluene	1,000	<1	<1
Ethylbenzene	700	<1	<1
Xylenes	10,000	<1	<1
Total BTEX	N/A	<4	<4
MTBE	40	<1	<1
Naphthalene (EPA Method 8260B)	25	<1	<1
Naphthalene (EPA Method 8270D)	25	N/A	N/A
1,2-Dichloroethane	5	<1	<1
Benzo(a)anthracene	10	N/A	N/A
Benzo(b)flouranthracene	10	N/A	N/A
Benzo(k)flouranthene	10	N/A	N/A
Chrysene	10	N/A	N/A
Dibenz(a,h)anthracene	10	N/A	N/A
Acenaphthene	10	N/A	N/A
Anthracene	10	N/A	N/A
Fluoranthene	10	N/A	N/A
Fluorene	10	N/A	N/A
Phenanthrene	10	N/A	N/A
Pyrene	10	N/A	N/A
Lead (mg/L)	Site Specific	N/A	N/A
EDB	0.05	N/A	N/A
Di isopropyl Ether	N/A	<5	<5
Ethanol	N/A	<100	<100
Ethyl tert-Butyl Alcohol	N/A	<20	<20
Ethyl tert-Butyl Ether	N/A	<1	<1
t-amyl Alcohol	N/A	<20	<20
Tert-Amyl Methyl Ether	N/A	<10	<10
Tertiary Butyl Alcohol	N/A	<20	<20
t-Butyl Formate	N/A	<5	<5

- Keyed to Figure 4.
- Results reported in mg/kg.
- Concentrations in bold exceed RBSLs.
- N/A: Not applicable.

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Groundwater analytical results indicated that of the three monitoring wells sampled, two (12430-MW-1and 12430-MW-2) had detectable concentrations of BTEX, MTBE, Naphthalene, 1,2-DCA and/or EDB above Risk-Based Screening Levels (RBSLs) for one or more constituents. A duplicate groundwater sample collected from 12430-MW-1 also had detectable concentrations above the RBSLs for BTEX, MTBE, Naphthalene, 1,2-DCA and EDB. The chemicals of concern (COCs) reported in 12430-MW-3 were below the RBSLs. Two monitoring wells (12430-MW-1 and 12430-MW-2) had detectable concentrations of IPE and/or TAA present for one or more constituents. Monitor well 10370-MW-1 was selected to serve as the "worst case well" and had a total BTEX concentration of 96,700 ug/L, Naphthalene (420 ug/L), MTBE (5,200 ug/L), 1,2-DCA (<500 ug/L) and EDB (0.90 ug/L).

H. Aquifer Characteristics

Slug tests were performed during the Tier I assessment on monitor wells 12430-MW-1 and 12430-MW-2. The results are summarized below.

Hydraulic Conductivity Values from Slug Tests

Unit	12430-MW-1	12430-MW-2	Avg. K value
Ft./Day	2.729×10^{-6}	3.072×10^{-6}	2.90×10^{-6}

Hydraulic conductivity values were calculated using the Bouwer-Rice method. K-values ranged from 2.729×10^{-6} Ft./Day in 12430-MW-1 to 3.072×10^{-6} Ft./Day in 12430-MW-2. A hydraulic gradient value of 0.0027 Ft./Ft. was calculated based on the data obtained from 12430-MW-1 and 12430-MW-2. An estimated seepage velocity of 1.145×10^{-5} Ft./Year was calculated from the slug test information obtained. Slug Test information is enclosed as Appendix F.

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III. Tier 1 Evaluation

Potential receptors or human exposure pathways within a 1,000-foot radius for current land use.

A. Current Land Use:

Media	Exposure Route	Pathway selected for Evaluation?	Exposure point or Reason for Non-Selection	Data Requirements
Air	**Inhalation** Explosion Hazard	**Yes**	In an event where the soil is disturbed	N/A
Groundwater	Ingestion Dermal Contact Inhalation	No	No exposure points intersect the zone of saturation	N/A
Surface Water	Ingestion Dermal Contact Inhalation	No	No surface water bodies are located within 1,000 feet of source area	N/A
Surficial Soil	Ingestion Dermal contact Inhalation	No	No exposure points on the surface	N/A
Subsurface Soil	Ingestion **Dermal contact** **Volatile Inhalation** **Leaching to groundwater**	**Yes**	The possibility exists for contaminants to leach to the groundwater	In an event where underground utilities maybe installed or repaired

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Potential receptors or human exposure pathways within a 1,000-foot radius for projected land use.

B. Future Land Use:

Media	Exposure Route	Pathway selected for Evaluation?	Exposure point or Reason for Non-Selection	Data Requirements
Air	**Inhalation** Explosion Hazard	**Yes**	In an event where the soil is disturbed	N/A
Groundwater	Ingestion Dermal Contact Inhalation	No	No exposure points intersect the zone of saturation	N/A
Surface Water	Ingestion Dermal Contact Inhalation	No	No surface water bodies are located within 1,000 feet of source area	N/A
Surficial Soil	Ingestion Dermal contact Inhalation	No	No exposure points on the surface	N/A
Subsurface Soil	Ingestion **Dermal contact** **Volatile Inhalation** **Leaching to groundwater**	**Yes**	Leaching to groundwater	In an event where underground utilities maybe installed or repaired

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C. Summary of Findings and Recommendations:

- No water supply wells were identified within 1,000 feet of the site.
- Public water is available to the site and to the surrounding area within 1,000 feet of the site.
- An unnamed tributary to Long Branch is located approximately 750 feet southeast of the source area.
- Potential and existing exposure points for possible inhalation of vapors, dermal contact and/or ingestion were identified. The exposure points include natural gas, telephone, electric, sewer and water utilities systems.
- No soil contaminants above RBSLs for Clay-rich Soil were reported in borings 12430-SB-1 through12430-SB-7 and 12430-SB-6 Duplicate.
- Soil samples obtained from 12430-SB-1 through12430-SB-7 and 12430-SB-6 Duplicate indicated detectable concentrations of lead. Please note that the highest concentration of lead was reported in soil sample 12430-SB-4.
- Soil boring 10370-SB-8 had a TOC concentration of 190 mg/Kg.
- Monitor well 10370-MW-1 was selected to serve as the "worst case well" and had a total BTEX concentration of 96,700 ug/L, Naphthalene (420 ug/L), MTBE (5,200 ug/L), 1,2-DCA (<500 ug/L) and EDB (0.90 ug/L).
- A groundwater sample obtained from 12430-MW-1 Duplicate indicated a total BTEX concentration of 96,700 ug/L, Naphthalene (380 ug/L), MTBE (5,200 ug/L), 1,2-DCA (<500 ug/L) and EDB (0.93 ug/L).
- Monitoring wells 12430-MW-1 and 12430-MW-2 had detectable concentrations of IPE and/or TAA present for one or more constituents.
- No contaminant concentrations were found to be present in the groundwater sample collected from 12430-MW-3.
- The calculated direction of groundwater flow is primarily to the West/Northwest based on groundwater elevations obtained on August 13, 2013.
- Based on the information obtained during this assessment, additional sampling may be required.

D. Limitations:

This assessment has been performed in accordance with generally accepted environmental and hydrogeologic practices and under the guidelines of the South Carolina Department of Health and Environmental Control. No other warranty is expressed or implied. Our conclusions and recommendations are based upon information provided to us by others and our site observations. Although we cannot be

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

responsible for the accuracy of the data provided to us by others, we have no reason to suspect that any of the information provided is inaccurate unless it has been otherwise noted.

Comprehensive analysis of aquifer contamination generally requires data collection over long periods of time because groundwater flow rates can be extremely slow. Therefore, the accuracy of any evaluation of groundwater contamination may be dependent upon project time and monitoring requirements. A monitor well penetrates a very small portion of an aquifer, therefore, water quality test results for monitor well samples represent groundwater quality only in the immediate vicinity of the well. Interpolation of the specific monitor well data is difficult due to the hydrogeologic characteristics affecting leachate movement, which may produce wide variations over short distances and time periods.

The monitor wells were installed and groundwater samples were obtained for chemical testing to provide information approximating the in-situ groundwater quality at the depth and location screened in the aquifer. Consistent sampling techniques were established and used to minimize chemical changes during sampling including carbon dioxide degassing, rising pH, and loss of volatile organic compounds and other chemical compounds due to oxidation, precipitation and absorption. In evaluating groundwater chemical test data, one must consider spatial and temporal variability of chemical constituents in soil-aquifer systems. Although proper EPA recommended Quality Assurance/Quality Control procedures are utilized, the possibility exists for errors to be incurred during the procurement, transport and testing of samples and the reporting of data.

Blue Ridge Environmental Services, Inc., by virtue of providing the services described in this report, does not assume the responsibility of the person(s) in charge of the site, or otherwise undertake responsibility for reporting to any local state or federal public agencies any conditions at the site that may present a potential danger to public health, safety or the environment. The client or his agent will be responsible to notify the appropriate local, state or federal public agencies as required by law, or otherwise to disclose, in a timely manner, any information that may be necessary to prevent any danger to public health, safety, or the environment. In addition, disposal of any samples determined to be a hazardous waste will be the responsibility of the client.

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If you have any questions regarding this matter, please do not hesitate to contact us at (704) 482-2111.

Respectfully Submitted:
Blue Ridge Environmental Services, Inc.

Kenneth A. Pimienta
Geologist

JOSEPH WILLIAM McMURRAY
REGISTERED
No. 2111
SOUTH CAROLINA
PROFESSIONAL GEOLOGIST

Joseph W. McMurray, P.G.
S.C. Registration No. 2111

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Enclosures

Figures

1. Topographic Map
2. Site Map
3. Soil Chemicals of Concern Map
4. Groundwater Chemicals of Concern Map
5. Groundwater Potentiometric Map
6. Tax Map

Tables (located in text)

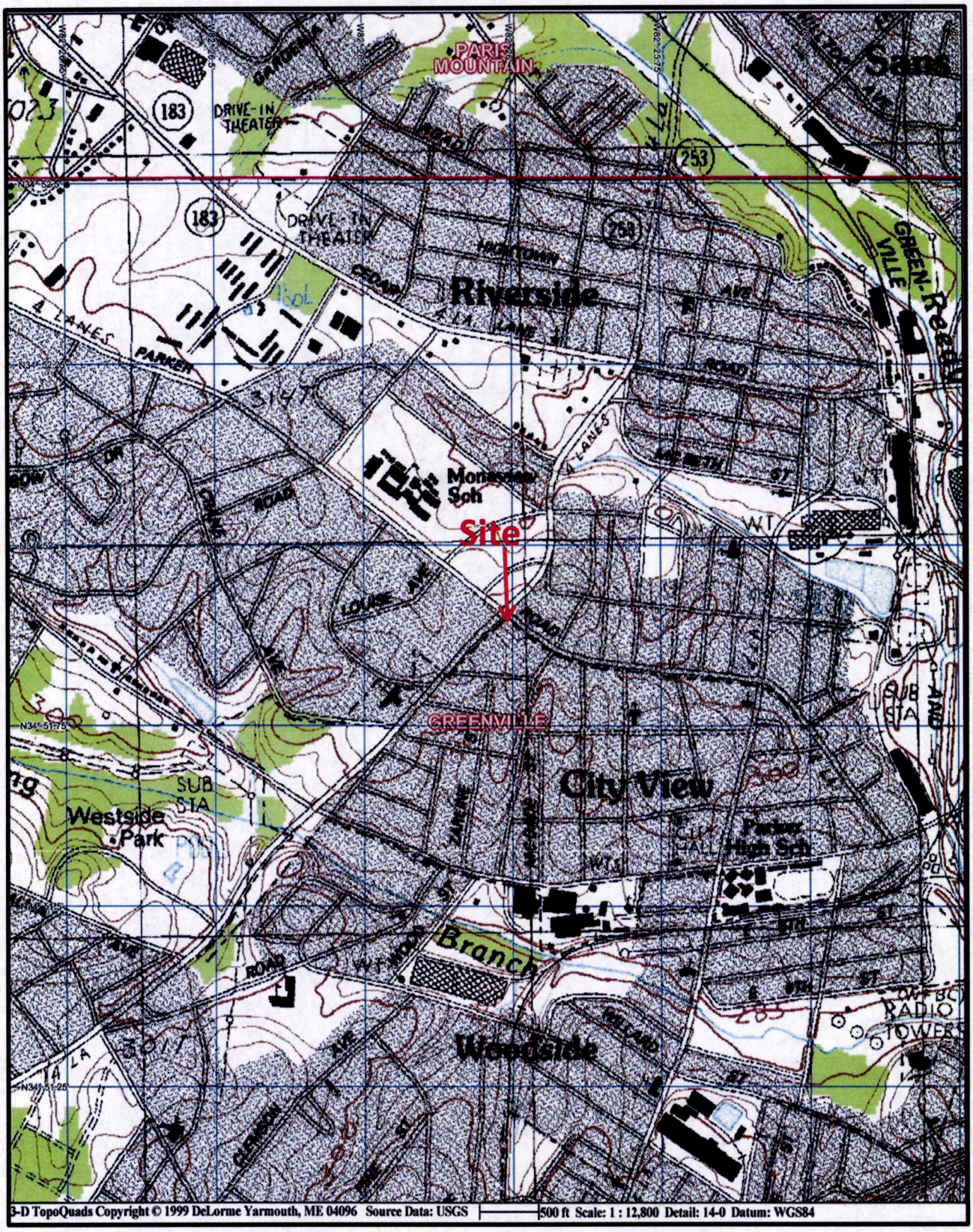
- Adjacent Property Owners
- UST System Information
- Summary of Soil Analytical Results
- Well Installation Information
- Monitoring Well and Groundwater Data
- Summary of Groundwater Analytical Results
- Hydraulic Conductivity Values from Slug Tests

Appendices

Appendix A: Groundwater Measurements & Groundwater Purge Data
Appendix B: Grain Size Distribution Report (Conducted by Schnabel Engineering)
Appendix C: Laboratory Analytical Data and Chain of Custody Record
Appendix D: Boring Logs

Appendix E: Monitor Well Construction Records
Appendix F: Slug Test Data Graphs (MW-1 & MW-2)
Appendix G: Disposal Manifest (Soil and Groundwater)
Appendix H: Contractor Checklist

FIGURES



Topographic Map

0 1,250

North

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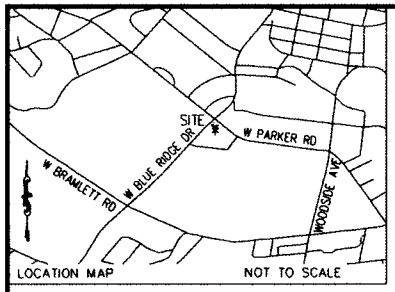
2315 Kings Road Ext.
Shelby, North Carolina 28152
(704) 482-2111
Fax (704) 482-4335

Client:	Mr. Mike Wright
Project:	Westside Quick Stop
Location:	821 West Parker Road
	Greenville, SC 29611
Approximate Scale:	1" = 1,250'
Date: 8/15/13	UST Permit # 12430

Figure 1



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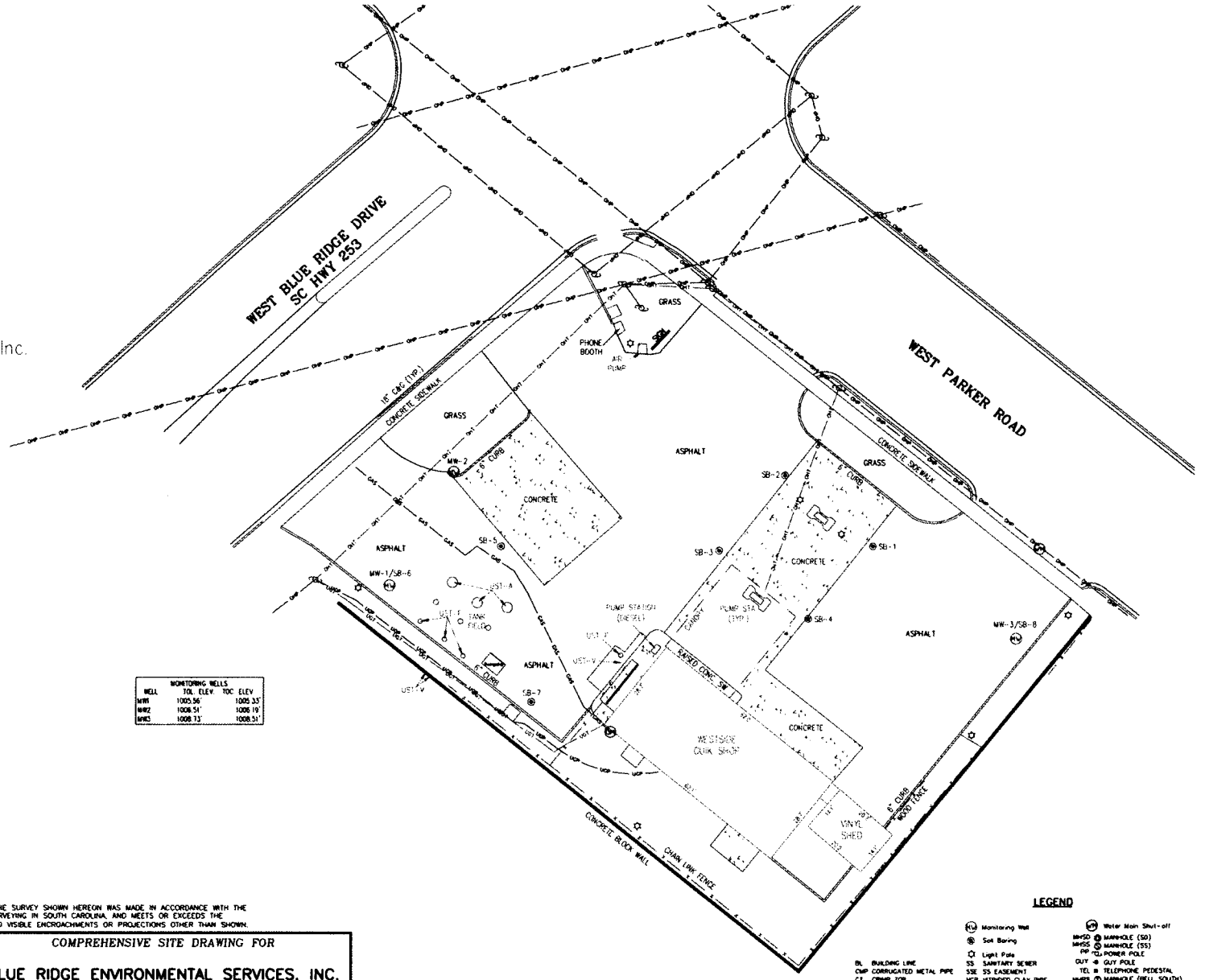
SITE MAP
Figure 2



MONITORING WELLS		
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LEGEND

BL BUILDING LINE
CMP CORRUGATED METAL PIPE
CT CRIMP TOP
DE DRAINAGE EASEMENT
EP EDGE OF PAVEMENT
IPO IRON PIN OLD
IPS IRON PIN SET
N&C NAIL & CAP
OT OPEN TOP
RB REBAR
RCP REINFORCED CONC PIPE
R/W RIGHT OF WAY
SD STORM DRAIN
MW Monitoring Well
SB Soil Boring
LP Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VITRIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
ELEC TRANS ELECTRIC TRANSFORMER
EL. ELEVATION
FH FIRE HYDRANT
IP IRON PIN
LP LIGHT POLE
CO CLEAN OUT
EM ELECTRIC METER
WM Water Main Shut-off
MHSD MANHOLE (SD)
MHSS MANHOLE (SS)
PP POWER POLE
GUY GUY POLE
TEL TELEPHONE PEDESTAL
MHBS MANHOLE (BELL SOUTH)
GM GAS METER
UGT Underground Telephone
UGP Underground Electric
GAS Natural Gas
CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
OHP OVERHEAD POWER
OHT OVERHEAD TELEPHONE
SD STORM DRAIN
SS SANITARY SEWER

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WILLIAM T. LAVENDER, P.S. SC 28138

104 ABBOT DRIVE GREER, SC 29651
PH: (864) 723-1043

213-090

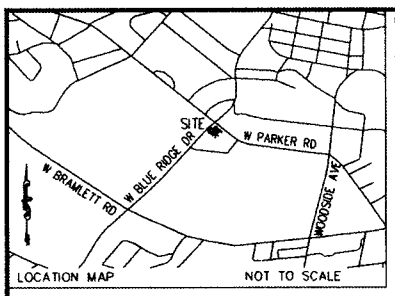
SOUTH CAROLINA GREER SURVEYING AND MAPPING, LLC No. CO 4349 CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE DRAWING FOR

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

GREENVILLE COUNTY, SOUTH CAROLINA

SCALE	PROPERTY ADDRESS	TAX PIN
1" = 20'	809 WEST PARKER ROAD	0135000100200
DATE	20 0 20 40	FIELD CREW / DRAWN BY
8/28/13		KG/WL / WTL



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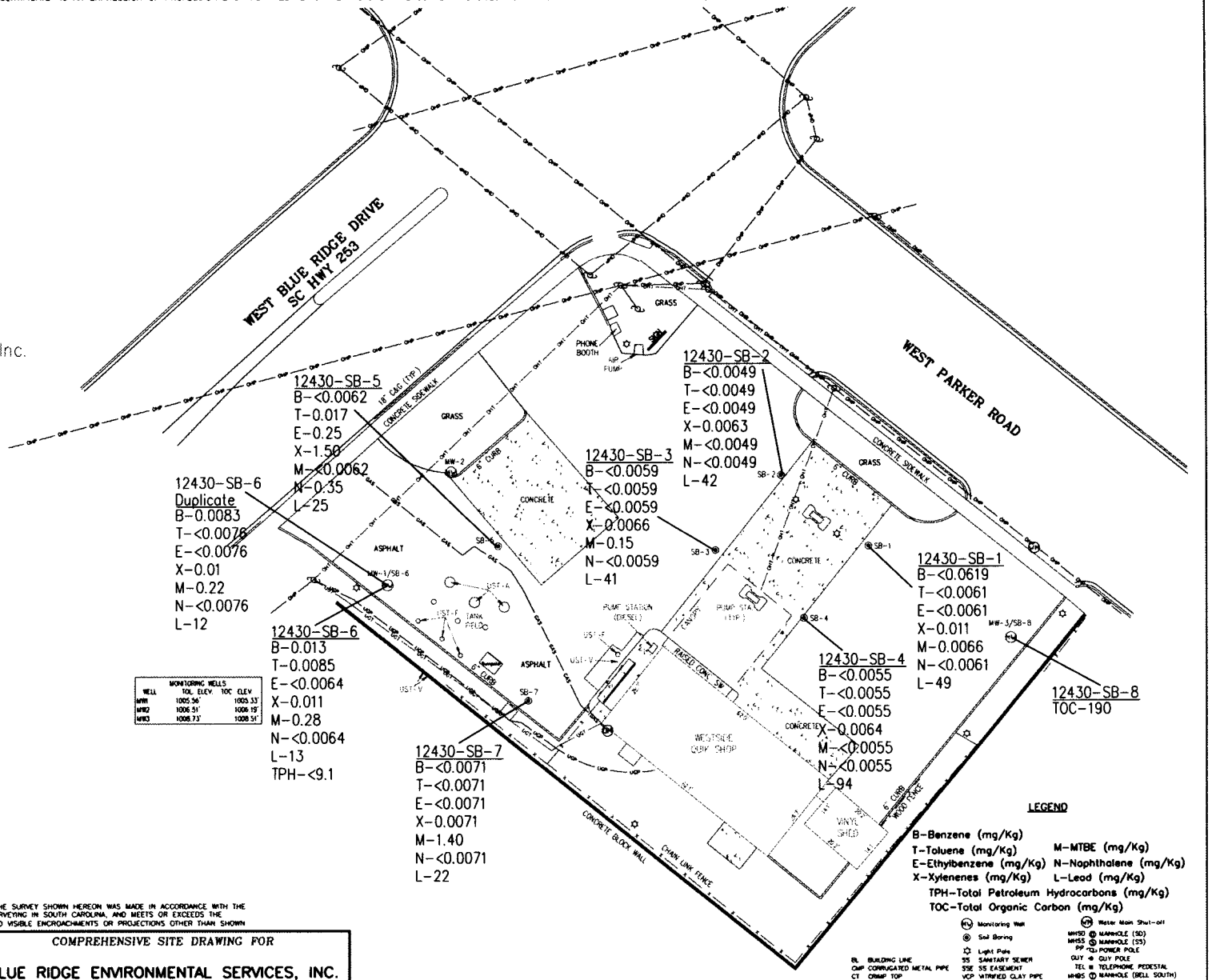
Soil Chemicals of Concern Map
Figure 3



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SB REFERS TO SOIL BORING

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CERTIFICATE OF AUTHORIZATION

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1" = 20'	809 WEST PARKER ROAD	0135000100200
DATE	20 0 20 40	FIELD CREW / DRAWN BY
8/28/13		KG/WL / WTL

BL BUILDING LINE
CMP CORRUGATED METAL PIPE
CT CRIMP TOP
DE DRAINAGE EASEMENT
EP EDGE OF PAVEMENT
IPO IRON PIN OLD
IPS IRON PIN SET
N&C NAIL & CAP
OT OPEN TOP
RB REBAR
RCP REINFORCED CONC PIPE
R/W RIGHT OF WAY
SD STORM DRAIN

Monitoring Well
Soil Boring
Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VITRIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
UT ELEC TRANS
ELEVATION
FIRE HYDRANT
IP IRON PIN
LP LIGHT POLE
CO CLEAN OUT
EM ELECTRIC METER

Water Main Shut-off
MHSD MANHOLE (SD)
MHSS MANHOLE (SS)
PP POWER POLE
GUY GUY POLE
TEL TELEPHONE PEDESTAL
MHBS MANHOLE (BELL SOUTH)
GM GAS METER
UGT Underground Telephone
UGP Underground Electric
GAS Natural Gas
CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
OHP OVERHEAD POWER
OHT OVERHEAD TELEPHONE
SD STORM DRAIN
SS SANITARY SEWER

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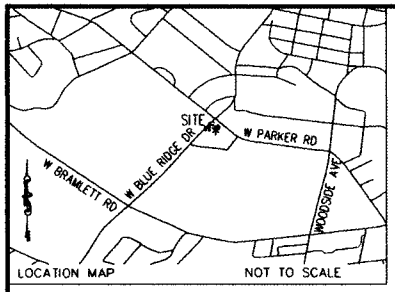

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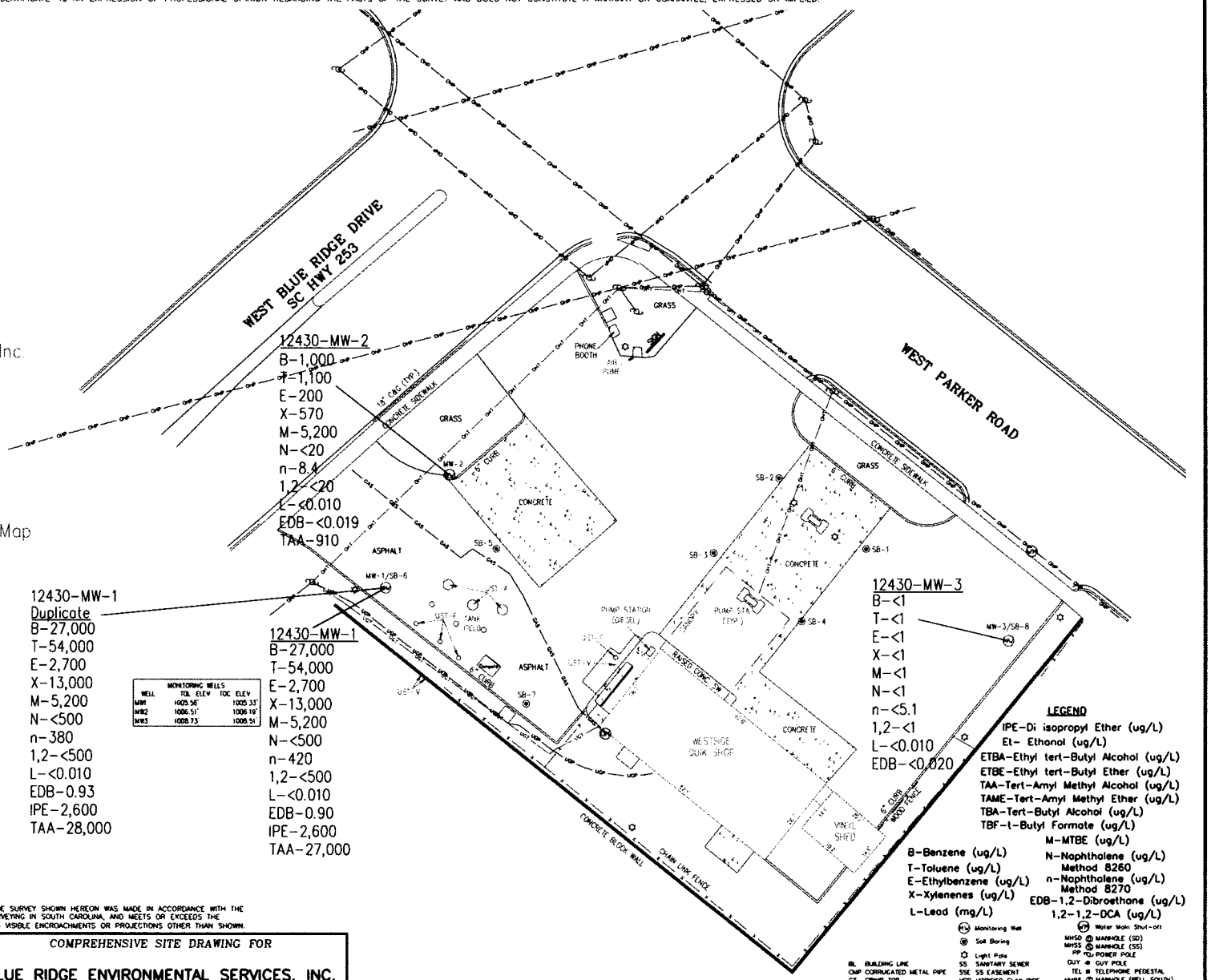
Groundwater Chemicals of Concern Map
Figure 4



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SB REFERS TO SOIL BORING

LEGEND

IPE-Di isopropyl Ether (ug/L)
Et- Ethanol (ug/L)
ETBA-Ethyl tert-Butyl Alcohol (ug/L)
ETBE-Ethyl tert-Butyl Ether (ug/L)
TAA-Tert-Amyl Methyl Alcohol (ug/L)
TAME-Tert-Amyl Methyl Ether (ug/L)
TBA-Tert-Butyl Alcohol (ug/L)
TBF-t-Butyl Formate (ug/L)
M-MTBE (ug/L)
B-Benzene (ug/L)
T-Toluene (ug/L)
E-Ethylbenzene (ug/L)
X-Xylenenes (ug/L)
L-Lead (mg/L)
N-Naphthalene (ug/L) Method 8260
n-Naphthalene (ug/L) Method 8270
EDB-1,2-Dibroethone (ug/L)
1,2-1,2-DCA (ug/L)

Monitoring Well
Soil Boring
Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VERIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
E ELEC. TRANS
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UGP Underground Electric
GAS Natural Gas
X CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
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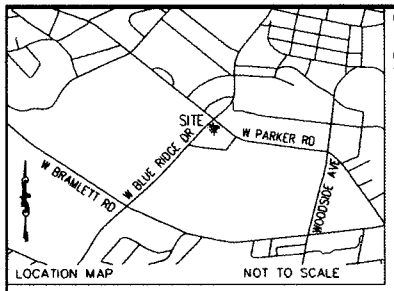

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Groundwater Potentiometric Map
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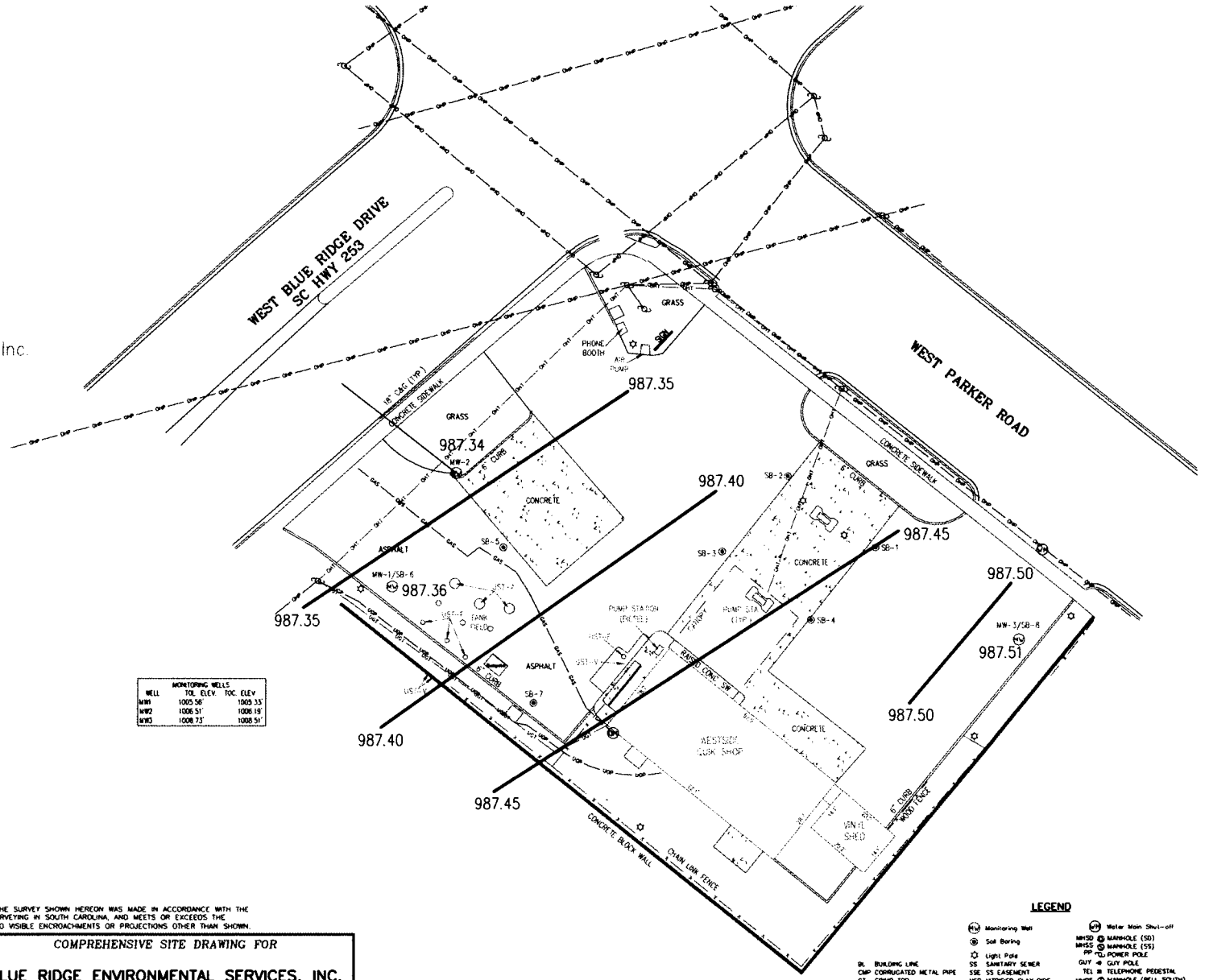

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1) THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHTS OF WAY, ZONING ORDINANCES, AND RESTRICTIONS OF RECORD OR NOT OF RECORD, THAT A CURRENT TITLE SEARCH MAY DISCLOSE.
2) ELEVATIONS ARE TAKEN FROM S.C. STATE PLANE COORDINATE SYSTEM NAD88 DATUM (BASED ON AN OBSERVATION FROM S.C.V.R.S.)
3) THIS DRAWING IS NOT FOR THE PURPOSE OF RECORDATION FOR COUNTY RECORDS, OR FOR THE CONVEYANCE OF PROPERTY.
4) THIS IS NOT A BOUNDARY SURVEY.
5) THIS FIELD WORK WAS DONE UNDER THE DIRECT SUPERVISION OF A REGISTERED LAND SURVEYOR.
6) AST REFERS TO 'ABOVE GROUND STORAGE TANK'
UST-A REFERS TO 'UNDERGROUND STORAGE TANK - ACCESS'
UST-F REFERS TO 'UNDERGROUND STORAGE TANK - FILL'
UST-V REFERS TO 'UNDERGROUND STORAGE TANK - VENT'
SB REFERS TO SOIL BORING

EXEMPTION FROM REVIEW PROCESS
This plat is a SURVEY of an existing lot of record with no new lots created.

X_____
WILLIAM T. LAVENDER, PS No.28138

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

WILLIAM T. LAVENDER, P.S. SC#28138

104 Abbot Drive Greer, SC 29651
PH: (864) 723-1042

213-090

GREER SURVEYING AND MAPPING, LLC
SOUTH CAROLINA
CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE DRAWING FOR

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

GREENVILLE COUNTY, SOUTH CAROLINA

Scale	Property Address	Tax PIN
1" = 20'	809 WEST PARKER ROAD	0135000100200
Contour Interval 0.50		
Date: 8/28/13	20 0 20 40	Field Crew: KG/WL; Drawn By: WTL

Groundwater Measurements Collected on August 13, 2013
Contour Interval Equals 0.50 Feet
Groundwater Elevations Shown in Feet

LEGEND

BL BUILDING LINE
CMP CORRUGATED METAL PIPE
CT CRIMP TOP
DE DRAINAGE EASEMENT
EP EDGE OF PAVEMENT
IPO IRON PIN OLD
IPS IRON PIN SET
N&C NAIL & CAP
OT OPEN TOP
RB REBAR
RCP REINFORCED CONC PIPE
R/W RIGHT OF WAY
SD STORM DRAIN

Monitoring Well
Soil Boring
Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VITRIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
ELEC TRANS
ELEVATION
FIRE HYDRANT
IP IRON PIN
LP LIGHT POLE
CO CLEAN OUT
EM ELECTRIC METER

Water Main Shut-off
MHSD MANHOLE (SD)
MHSS MANHOLE (SS)
PP POWER POLE
GUY GUY POLE
TEL TELEPHONE PEDESTAL
MHBS MANHOLE (BELL SOUTH)
GM GAS METER
UGT Underground Telephone
UGP Underground Electric
GAS Natural Gas
CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
OHP OVERHEAD POWER
OHT OVERHEAD TELEPHONE
SD STORM DRAIN
SS SANITARY SEWER



Tax Map		North ▲	
BLUE RIDGE ENVIRONMENTAL SERVICES, INC. ENGINEERING • ENVIRONMENTAL • GEOLOGY	2315 Kings Road Ext. Shelby, North Carolina 28152 (704) 482-2111 Fax (704) 482-4335	Client:	Mr. Mike Wright	
		Project:	Westside Quick Stop	
		Location:	821 West Parker Road	
			Greenville, SC 29611	
		Source:	Greenville County GIS	
		Date: 8/20/13	UST Permit # 12430	Figure 6

APPENDICES

APPENDIX A

Appendix A
SCDHEC UST Permit #12430
Westside Quick Stop
Groundwater Measurements
(August 13, 2013)

Blue Ridge Personel	Ken Pimienta & Joe McMurray					
Weather	91^0 F and Sunny					
Horiba Calibration (HGS No. TOKGTPH2)	8/13/13					
Tme (military)	12:39					
pH (su)	4.02					
Spec Conductivity (mS/cm)	5.01					
Turbidity (NTU)	0.0					
Dissolved Oxygen (mg/L)	6.62					
12430-MW-1	8/13/13					
Volume (gal)	10				Sample	Duplicate
Tme (military)	13:50				13:55	14:05
pH (su)						
Spec Conductivity (mS/cm)						
Water Temperature (°C)						
Turbidity (NTU)						
Dissolved Oxygen (mg/L)						
Remarks	Hot Sample/No Readings Taken					
12430-MW-2	8/13/13					
Volume (gal)	6/Dry	8/Dry	8.5/Dry	10/Dry		Sample
Tme (military)	15:10	15:12	15:15	15:18		15:30
pH (su)	4.69	4.46	4.54	4.53		
Spec Conductivity (mS/cm)	.035	.034	.033	.034		
Water Temperature (°C)	24.36	23.50	22.81	22.78		
Turbidity (NTU)	0.0	0.0	0.0	0.0		
Dissolved Oxygen (mg/L)	4.69	4.46	4.54	4.53		

Appendix A
SCDHEC UST Permit #12430
Westside Quick Stop
Groundwater Measurements
(August 13, 2013)

12430-MW-3	8/13/13					
Volume (gal)	4.50	7/Dry	8/DRY	10/Dry		Sample
Tme (military)	13:06	13:15	13:19	13:25		13:45
pH (su)	4.39	4.83	4.82	4.79		
Spec Conductivity (mS/cm)	.178	.041	.039	.039		
Water Temperature (°C)	22.31	22.33	21.89	21.75		
Turbidity (NTU)	0.0	0.0	0.0	0.0		
Dissolved Oxygen (mg/L)	10.01	9.08	9.92	9.96		

	Depth To Water (Ft.)	Well Depth (Ft.)	Screen Interval (Ft.)	Water Column (FT.)	1 Well Vol (FT.)
12430-MW-1	17.97	30	15-30	12.03	1.96

Water Column Calculation: (Well Depth - Depth To Water) = 30.00 Ft. - 17.97 Ft. = 12.03 Ft.
Well Volume Calculation: (Water Column * 0.163) = 1.96 Ft.

12430-MW-2	18.85	30	15-30	11.15	1.82

Water Column Calculation: (Well Depth - Depth To Water) = 30.00 Ft. -18.85 Ft. = 11.15 Ft.
Well Volume Calculation: (Water Column * 0.163) = 1.82 Ft.

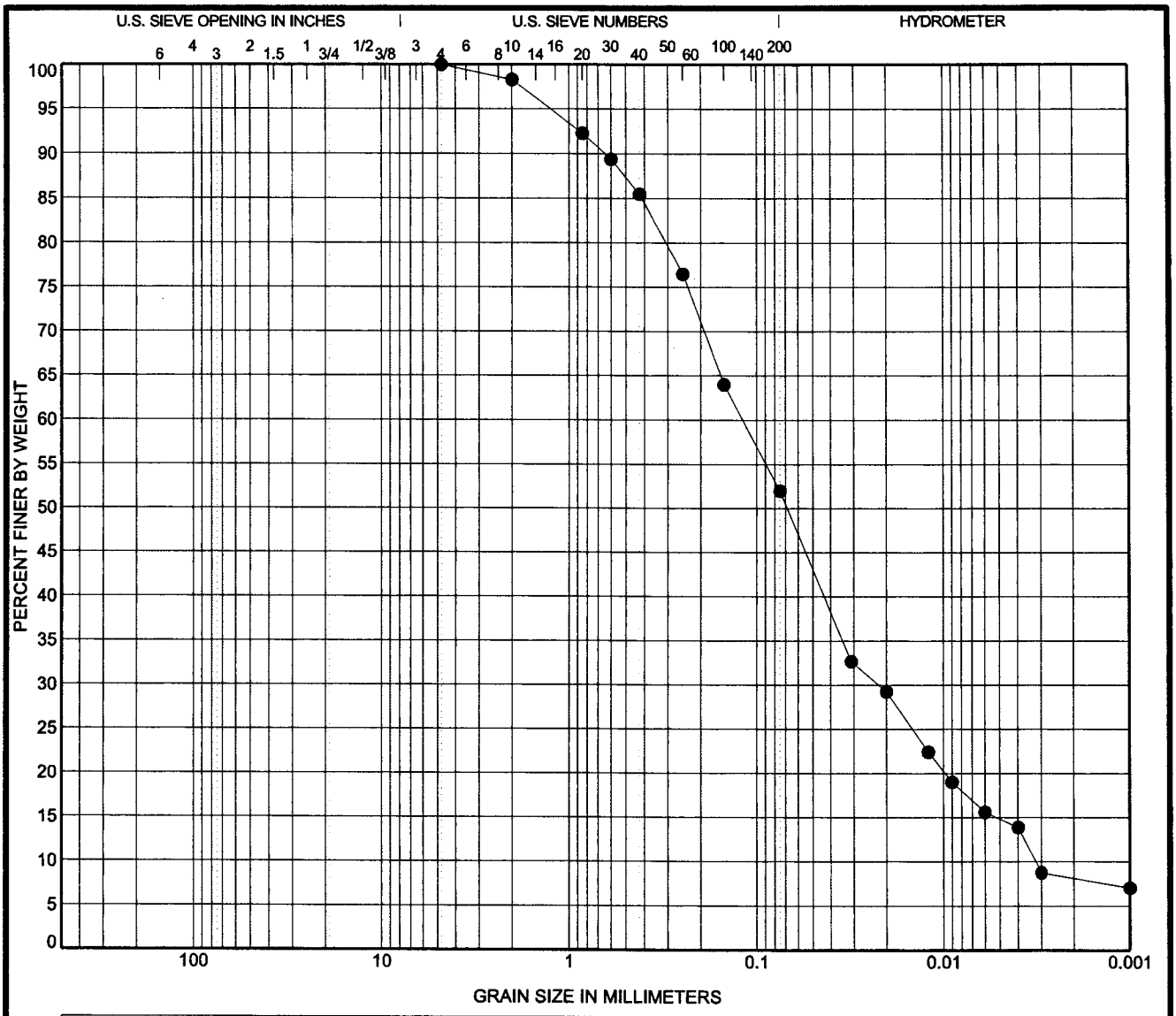
12430-MW-3	21.00	30	15-30	9.00	1.47

Water Column Calculation: (Well Depth - Depth To Water) = 30.00 Ft. - 21.00 Ft. = 9.00 Ft.
Well Volume Calculation: (Water Column * 0.163) = 1.47 Ft.

Appendix A
SCDHEC UST Permit #12430
Westside Quick Stop
Groundwater Purge Data

Well Development	8/2/13
Volume (gal)	3
12430-MW-1	8/13/13
Volume (gal)	10
12430-MW-2	8/13/13
Volume (gal)	10
12430-MW-3	8/13/13
Volume (gal)	10
12430 Total Gallons Purged	8/13/13
Volume (gal)	**33.00**

APPENDIX B



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen		Sample Description	LL	PL	PI		
● 12430/MW-1	1.0 ft	**Sandy Silt, brown (ML) Visual description**	--	--	--		

Test Method	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
ASTM D1140					**0.0**	**48.0**	**43.9**	**8.1**

Percent Finer

Sieve Size	200	100	60	40	30	20	10	4
% Finer	52.0	64.0	76.5	85.5	89.4	92.3	98.3	100.0

Tested By	Tested Date	Reviewed By	Calc By
LAW	8/21/13	SRH	MDE

Schnabel ENGINEERING

GRADATION CURVE

Project: Shealy Laboratory
OH 15070
West Columbia, SC

Contract: 08190058.00.194

SIEVE 1/SHEET HYDROMETERS-3.GPJ SCHNABEL DATA TEMPLATE 2008_04_22.GDT 8/23/13

APPENDIX C

File

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Blue Ridge Environmental Services
2315 Kings Road Ext.
Shelby, NC 28152
Attention: Joe McMurray

Project Name: **Westside Quick Stop**

Lot Number: **OH01057**
Date Completed: **08/08/2013**

Kelly M. Maberry
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative

Blue Ridge Environmental Services

Lot Number: OH01057

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary

Blue Ridge Environmental Services

Lot Number: OH01057

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	12430-SB-1	Solid	07/26/2013 1342	08/01/2013
002	12430-SB-2	Solid	07/26/2013 1408	08/01/2013
003	12430-SB-3	Solid	07/26/2013 1435	08/01/2013
004	12430-SB-4	Solid	07/26/2013 1452	08/01/2013
005	12430-SB-5	Solid	07/26/2013 1511	08/01/2013
006	12430-SB-6	Solid	07/26/2013 1530	08/01/2013
007	12430-SB-6 Duplicate	Solid	07/26/2013 1531	08/01/2013
008	12430-SB-7	Solid	07/26/2013 1553	08/01/2013
009	12430-SB-8	Solid	07/26/2013 1615	08/01/2013

(9 samples)

Executive Summary
Blue Ridge Environmental Services
Lot Number: OH01057

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	12430-SB-1	Solid	Methyl tertiary butyl ether (MTBE)	8260B	6.6		ug/kg	5
001	12430-SB-1	Solid	Xylenes (total)	8260B	11		ug/kg	5
001	12430-SB-1	Solid	Lead	6010C	49		mg/kg	6
002	12430-SB-2	Solid	Xylenes (total)	8260B	6.3		ug/kg	7
002	12430-SB-2	Solid	Lead	6010C	42		mg/kg	8
003	12430-SB-3	Solid	Methyl tertiary butyl ether (MTBE)	8260B	15		ug/kg	9
003	12430-SB-3	Solid	Xylenes (total)	8260B	6.6		ug/kg	9
003	12430-SB-3	Solid	Lead	6010C	41		mg/kg	10
004	12430-SB-4	Solid	Xylenes (total)	8260B	6.4		ug/kg	11
004	12430-SB-4	Solid	Lead	6010C	94		mg/kg	12
005	12430-SB-5	Solid	Ethylbenzene	8260B	250		ug/kg	13
005	12430-SB-5	Solid	Naphthalene	8260B	350		ug/kg	13
005	12430-SB-5	Solid	Toluene	8260B	17		ug/kg	13
005	12430-SB-5	Solid	Xylenes (total)	8260B	1500		ug/kg	13
005	12430-SB-5	Solid	Phenanthrene	8270D	950		ug/kg	13
005	12430-SB-5	Solid	Lead	6010C	25		mg/kg	14
006	12430-SB-6	Solid	Benzene	8260B	13		ug/kg	15
006	12430-SB-6	Solid	Methyl tertiary butyl ether (MTBE)	8260B	280		ug/kg	15
006	12430-SB-6	Solid	Toluene	8260B	8.5		ug/kg	15
006	12430-SB-6	Solid	Xylenes (total)	8260B	11		ug/kg	15
006	12430-SB-6	Solid	Lead	6010C	13		mg/kg	16
007	12430-SB-6 Duplicate	Solid	Benzene	8260B	8.3		ug/kg	17
007	12430-SB-6 Duplicate	Solid	Methyl tertiary butyl ether (MTBE)	8260B	220		ug/kg	17
007	12430-SB-6 Duplicate	Solid	Xylenes (total)	8260B	10		ug/kg	17
007	12430-SB-6 Duplicate	Solid	Lead	6010C	12		mg/kg	18
008	12430-SB-7	Solid	Methyl tertiary butyl ether (MTBE)	8260B	1400		ug/kg	19
008	12430-SB-7	Solid	Xylenes (total)	8260B	7.1		ug/kg	19
008	12430-SB-7	Solid	Lead	6010C	22		mg/kg	20
009	12430-SB-8	Solid	TOC	Walkley-Black	190		mg/kg	21

(29 detections)

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-1**
Date Sampled: **07/26/2013 1342**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-001**
Matrix: **Solid**
% Solids: **82.8** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1418	JJG		26449	4.95

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		6.1	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		6.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**6.6**		**6.1**	**ug/kg**	**1**
Naphthalene	91-20-3	8260B	ND		6.1	ug/kg	1
Toluene	108-88-3	8260B	ND		6.1	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**11**		**6.1**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		127	53-142
Bromofluorobenzene		105	47-138
Toluene-d8		111	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1427	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		400	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		400	ug/kg	1
Anthracene	120-12-7	8270D	ND		400	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		400	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		400	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		400	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		400	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		400	ug/kg	1
Chrysene	218-01-9	8270D	ND		400	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		400	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		400	ug/kg	1
Fluorene	86-73-7	8270D	ND		400	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		400	ug/kg	1
Naphthalene	91-20-3	8270D	ND		400	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		400	ug/kg	1
Pyrene	129-00-0	8270D	ND		400	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-1**
Date Sampled: **07/26/2013 1342**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-001**
Matrix: **Solid**
% Solids: **82.8** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		49	33-102
Nitrobenzene-d5		57	22-109
Terphenyl-d14		61	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	2	08/05/2013 2033	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**49**		**1.1**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-2**
Date Sampled: **07/26/2013 1408**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-002**
Matrix: **Solid**
% Solids: **83.6** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1442	JJG		26449	6.04

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		4.9	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		4.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		4.9	ug/kg	1
Naphthalene	91-20-3	8260B	ND		4.9	ug/kg	1
Toluene	108-88-3	8260B	ND		4.9	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**6.3**		**4.9**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		124	53-142
Bromofluorobenzene		99	47-138
Toluene-d8		108	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1546	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		390	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		390	ug/kg	1
Anthracene	120-12-7	8270D	ND		390	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		390	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		390	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		390	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		390	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		390	ug/kg	1
Chrysene	218-01-9	8270D	ND		390	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		390	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		390	ug/kg	1
Fluorene	86-73-7	8270D	ND		390	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		390	ug/kg	1
Naphthalene	91-20-3	8270D	ND		390	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		390	ug/kg	1
Pyrene	129-00-0	8270D	ND		390	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-2**
Date Sampled: **07/26/2013 1408**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-002**
Matrix: **Solid**
% Solids: **83.6** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		54	33-102
Nitrobenzene-d5		63	22-109
Terphenyl-d14		61	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	1	08/02/2013 1922	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**42**		**0.55**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-3**
Date Sampled: **07/26/2013 1435**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-003**
Matrix: **Solid**
% Solids: **75.5** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1506	JJG		26449	5.58

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		5.9	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.9	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**15**		**5.9**	**ug/kg**	**1**
Naphthalene	91-20-3	8260B	ND		5.9	ug/kg	1
Toluene	108-88-3	8260B	ND		5.9	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**6.6**		**5.9**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		126	53-142
Bromofluorobenzene		107	47-138
Toluene-d8		105	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1638	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		430	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		430	ug/kg	1
Anthracene	120-12-7	8270D	ND		430	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		430	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		430	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		430	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		430	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		430	ug/kg	1
Chrysene	218-01-9	8270D	ND		430	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		430	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		430	ug/kg	1
Fluorene	86-73-7	8270D	ND		430	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		430	ug/kg	1
Naphthalene	91-20-3	8270D	ND		430	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		430	ug/kg	1
Pyrene	129-00-0	8270D	ND		430	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-3**
Date Sampled: **07/26/2013 1435**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-003**
Matrix: **Solid**
% Solids: **75.5** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		48	33-102
Nitrobenzene-d5		52	22-109
Terphenyl-d14		55	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	5	08/05/2013 2048	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**41**		**3.1**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-4**
Date Sampled: **07/26/2013 1452**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-004**
Matrix: **Solid**
% Solids: **79.6** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1530	JJG		26449	5.74

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		5.5	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		5.5	ug/kg	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.5	ug/kg	1
Naphthalene	91-20-3	8260B	ND		5.5	ug/kg	1
Toluene	108-88-3	8260B	ND		5.5	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**6.4**		**5.5**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		126	53-142
Bromofluorobenzene		100	47-138
Toluene-d8		107	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1704	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		400	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		400	ug/kg	1
Anthracene	120-12-7	8270D	ND		400	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		400	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		400	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		400	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		400	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		400	ug/kg	1
Chrysene	218-01-9	8270D	ND		400	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		400	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		400	ug/kg	1
Fluorene	86-73-7	8270D	ND		400	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		400	ug/kg	1
Naphthalene	91-20-3	8270D	ND		400	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		400	ug/kg	1
Pyrene	129-00-0	8270D	ND		400	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-4**
Date Sampled: **07/26/2013 1452**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-004**
Matrix: **Solid**
% Solids: **79.6** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		61	33-102
Nitrobenzene-d5		72	22-109
Terphenyl-d14		59	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	5	08/05/2013 2052	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**94**		**2.9**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-5**
Date Sampled: **07/26/2013 1511**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-005**
Matrix: **Solid**
% Solids: **71.8** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/05/2013 1823	AAC		26524	5.61
2	5035	8260B	50	08/07/2013 1203	AAC		26715	5.18

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		6.2	ug/kg	1
Ethylbenzene	**100-41-4**	**8260B**	**250**		**6.2**	**ug/kg**	**1**
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		6.2	ug/kg	1
Naphthalene	**91-20-3**	**8260B**	**350**		**6.2**	**ug/kg**	**1**
Toluene	**108-88-3**	**8260B**	**17**		**6.2**	**ug/kg**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**1500**		**340**	**ug/kg**	**2**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	53-142		100	53-142
Bromofluorobenzene		119	47-138		97	47-138
Toluene-d8		118	68-124		105	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1730	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		460	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		460	ug/kg	1
Anthracene	120-12-7	8270D	ND		460	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		460	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		460	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		460	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		460	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		460	ug/kg	1
Chrysene	218-01-9	8270D	ND		460	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		460	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		460	ug/kg	1
Fluorene	86-73-7	8270D	ND		460	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		460	ug/kg	1
Naphthalene	91-20-3	8270D	ND		460	ug/kg	1
Phenanthrene	**85-01-8**	**8270D**	**950**		**460**	**ug/kg**	**1**
Pyrene	129-00-0	8270D	ND		460	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-5**
Date Sampled: **07/26/2013 1511**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-005**
Matrix: **Solid**
% Solids: **71.8** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		59	33-102
Nitrobenzene-d5		56	22-109
Terphenyl-d14		54	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	2	08/05/2013 2104	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**25**		**1.4**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-6**
Date Sampled: **07/26/2013 1530**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-006**
Matrix: **Solid**
% Solids: **72.4** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1554	JJG		26449	5.43

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	**71-43-2**	**8260B**	**13**		**6.4**	**ug/kg**	**1**
Ethylbenzene	100-41-4	8260B	ND		6.4	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**280**		**6.4**	**ug/kg**	**1**
Naphthalene	91-20-3	8260B	ND		6.4	ug/kg	1
Toluene	**108-88-3**	**8260B**	**8.5**		**6.4**	**ug/kg**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**11**		**6.4**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		124	53-142
Bromofluorobenzene		108	47-138
Toluene-d8		108	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1757	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		450	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		450	ug/kg	1
Anthracene	120-12-7	8270D	ND		450	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		450	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		450	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		450	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		450	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		450	ug/kg	1
Chrysene	218-01-9	8270D	ND		450	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		450	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		450	ug/kg	1
Fluorene	86-73-7	8270D	ND		450	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		450	ug/kg	1
Naphthalene	91-20-3	8270D	ND		450	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		450	ug/kg	1
Pyrene	129-00-0	8270D	ND		450	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-6**
Date Sampled: **07/26/2013 1530**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-006**
Matrix: **Solid**
% Solids: **72.4** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		56	33-102
Nitrobenzene-d5		59	22-109
Terphenyl-d14		52	41-120

TPH - DRO

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8015C	1	08/07/2013 1512	AMY	08/05/2013 1837	26530

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
TPH-DRO		8015C	ND		9100	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
o - Terphenyl		78	55-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	5	08/05/2013 2107	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**13**		**3.3**	**mg/kg**	**1**

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
D = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-6 Duplicate**
Date Sampled: **07/26/2013 1531**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-007**
Matrix: **Solid**
% Solids: **63.1** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/03/2013 1618	JJG		26449	5.21

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	**71-43-2**	**8260B**	**8.3**		**7.6**	**ug/kg**	**1**
Ethylbenzene	100-41-4	8260B	ND		7.6	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**220**		**7.6**	**ug/kg**	**1**
Naphthalene	91-20-3	8260B	ND		7.6	ug/kg	1
Toluene	108-88-3	8260B	ND		7.6	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**10**		**7.6**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		120	53-142
Bromofluorobenzene		109	47-138
Toluene-d8		109	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1823	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		510	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		510	ug/kg	1
Anthracene	120-12-7	8270D	ND		510	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		510	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		510	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		510	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		510	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		510	ug/kg	1
Chrysene	218-01-9	8270D	ND		510	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		510	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		510	ug/kg	1
Fluorene	86-73-7	8270D	ND		510	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		510	ug/kg	1
Naphthalene	91-20-3	8270D	ND		510	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		510	ug/kg	1
Pyrene	129-00-0	8270D	ND		510	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-6 Duplicate**
Date Sampled: **07/26/2013 1531**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-007**
Matrix: **Solid**
% Solids: **63.1** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		55	33-102
Nitrobenzene-d5		64	22-109
Terphenyl-d14		50	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	2	08/05/2013 2111	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**12**		**1.6**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-7**
Date Sampled: **07/26/2013 1553**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-008**
Matrix: **Solid**
% Solids: **67.1** **08/01/2013 2203**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	08/05/2013 1759	AAC		26524	5.26
2	5035	8260B	50	08/07/2013 1139	AAC		26715	5.23

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	71-43-2	8260B	ND		7.1	ug/kg	1
Ethylbenzene	100-41-4	8260B	ND		7.1	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**1400**		**360**	**ug/kg**	**2**
Naphthalene	91-20-3	8260B	ND		7.1	ug/kg	1
Toluene	108-88-3	8260B	ND		7.1	ug/kg	1
Xylenes (total)	**1330-20-7**	**8260B**	**7.1**		**7.1**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		115	53-142		95	53-142
Bromofluorobenzene		105	47-138		84	47-138
Toluene-d8		104	68-124		93	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	08/06/2013 1849	RBH	08/05/2013 0932	26477

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		490	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		490	ug/kg	1
Anthracene	120-12-7	8270D	ND		490	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		490	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		490	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		490	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		490	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		490	ug/kg	1
Chrysene	218-01-9	8270D	ND		490	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		490	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		490	ug/kg	1
Fluorene	86-73-7	8270D	ND		490	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		490	ug/kg	1
Naphthalene	91-20-3	8270D	ND		490	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		490	ug/kg	1
Pyrene	129-00-0	8270D	ND		490	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-7**
Date Sampled: **07/26/2013 1553**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-008**
Matrix: **Solid**
% Solids: **67.1** **08/01/2013 2203**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		59	33-102
Nitrobenzene-d5		57	22-109
Terphenyl-d14		62	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	2	08/05/2013 2115	CDF	08/02/2013 0918	26363

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**22**		**1.4**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-SB-8**
Date Sampled: **07/26/2013 1615**
Date Received: **08/01/2013**

Laboratory ID: **OH01057-009**
Matrix: **Solid**
% Solids: **92.0** **08/01/2013 2203**

Inorganic non-metals

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1		(TOC) Walkley-Black	1	08/05/2013 1547	HBB		26531

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
TOC		**Walkley-Bla**	**190**		**100**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Inorganic non-metals - MB

Sample ID: OQ26531-001 **Matrix:** Solid
Batch: 26531
Analytical Method: Walkley-Black

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
TOC	ND		1	100	mg/kg	08/05/2013 1547

Inorganic non-metals - LCS

Sample ID: OQ26531-002 **Matrix:** Solid
Batch: 26531
Analytical Method: Walkley-Black

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	1000	1200		1	117	80-120	08/05/2013 1547

Inorganic non-metals - LCSD

Sample ID: OQ26531-003 **Matrix:** Solid
Batch: 26531
Analytical Method: Walkley-Black

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	1000	1200		1	115	1.6	80-120	20	08/05/2013 1547

Inorganic non-metals - MS

Sample ID: OH01057-009MS **Matrix:** Solid
Batch: 26531
Analytical Method: Walkley-Black

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TOC	190	990	1300		1	110	70-130	08/05/2013 1547

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Inorganic non-metals - MSD

Sample ID: OH01057-009MD
Batch: 26531
Analytical Method: Walkley-Black

Matrix: Solid

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TOC	190	990	1300		1	110	0.25	70-130	20	08/05/2013 1547

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ26449-001
Batch: 26449
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Benzene	ND		1	5.0	ug/kg	08/03/2013 1331
Ethylbenzene	ND		1	5.0	ug/kg	08/03/2013 1331
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	ug/kg	08/03/2013 1331
Naphthalene	ND		1	5.0	ug/kg	08/03/2013 1331
Toluene	ND		1	5.0	ug/kg	08/03/2013 1331
Xylenes (total)	ND		1	5.0	ug/kg	08/03/2013 1331

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	47-138
1,2-Dichloroethane-d4		128	53-142
Toluene-d8		104	68-124

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ26449-002
Batch: 26449
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	45		1	89	69-123	08/03/2013 1155
Ethylbenzene	50	42		1	85	59-128	08/03/2013 1155
Methyl tertiary butyl ether (MTBE)	50	45		1	89	70-130	08/03/2013 1155
Naphthalene	50	46		1	91	54-131	08/03/2013 1155
Toluene	50	43		1	86	61-129	08/03/2013 1155
Xylenes (total)	100	86		1	86	58-128	08/03/2013 1155

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		119	47-138
1,2-Dichloroethane-d4		116	53-142
Toluene-d8		116	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ26449-003
Batch: 26449
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	47		1	93	4.3	69-123	20	08/03/2013 1219
Ethylbenzene	50	43		1	86	1.5	59-128	20	08/03/2013 1219
Methyl tertiary butyl ether (MTBE)	50	45		1	91	1.8	70-130	20	08/03/2013 1219
Naphthalene	50	46		1	92	0.92	54-131	20	08/03/2013 1219
Toluene	50	45		1	91	4.9	61-129	20	08/03/2013 1219
Xylenes (total)	100	88		1	88	2.1	58-128	20	08/03/2013 1219

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		120	47-138
1,2-Dichloroethane-d4		115	53-142
Toluene-d8		118	68-124

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ26524-001
Batch: 26524
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Benzene	ND		1	5.0	ug/kg	08/05/2013 1249
Ethylbenzene	ND		1	5.0	ug/kg	08/05/2013 1249
Methyl tertiary butyl ether (MTBE)	ND		1	5.0	ug/kg	08/05/2013 1249
Naphthalene	ND		1	5.0	ug/kg	08/05/2013 1249
Toluene	ND		1	5.0	ug/kg	08/05/2013 1249
Xylenes (total)	ND		1	5.0	ug/kg	08/05/2013 1249

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	47-138
1,2-Dichloroethane-d4		129	53-142
Toluene-d8		106	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ26524-002
Batch: 26524
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	45		1	90	69-123	08/05/2013 1113
Ethylbenzene	50	42		1	84	59-128	08/05/2013 1113
Methyl tertiary butyl ether (MTBE)	50	48		1	96	70-130	08/05/2013 1113
Naphthalene	50	42		1	83	54-131	08/05/2013 1113
Toluene	50	43		1	87	61-129	08/05/2013 1113
Xylenes (total)	100	85		1	85	58-128	08/05/2013 1113

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		131	47-138
1,2-Dichloroethane-d4		120	53-142
Toluene-d8		121	68-124

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ26524-003
Batch: 26524
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	45		1	90	0.16	69-123	20	08/05/2013 1137
Ethylbenzene	50	41		1	82	1.8	59-128	20	08/05/2013 1137
Methyl tertiary butyl ether (MTBE)	50	49		1	98	1.3	70-130	20	08/05/2013 1137
Naphthalene	50	42		1	84	0.27	54-131	20	08/05/2013 1137
Toluene	50	43		1	86	1.3	61-129	20	08/05/2013 1137
Xylenes (total)	100	84		1	84	0.86	58-128	20	08/05/2013 1137

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		130	47-138
1,2-Dichloroethane-d4		118	53-142
Toluene-d8		118	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ26715-001
Batch: 26715
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Methyl tertiary butyl ether (MTBE)	ND		50	250	ug/kg	08/07/2013 1610
Xylenes (total)	ND		50	250	ug/kg	08/07/2013 1610

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		101	47-138
1,2-Dichloroethane-d4		122	53-142
Toluene-d8		115	68-124

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ26715-002
Batch: 26715
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	2500	2500		50	98	70-130	08/07/2013 1634
Xylenes (total)	5000	5600		50	111	58-128	08/07/2013 1634

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		108	47-138
1,2-Dichloroethane-d4		113	53-142
Toluene-d8		112	68-124

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ26715-003
Batch: 26715
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	2500	2700		50	109	10	70-130	20	08/07/2013 1658
Xylenes (total)	5000	5500		50	110	1.1	58-128	20	08/07/2013 1658

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ26715-003
Batch: 26715
Analytical Method: 8260B

Matrix: Solid
Prep Method: 5035

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	47-138
1,2-Dichloroethane-d4		111	53-142
Toluene-d8		118	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: OQ26477-001
Batch: 26477
Analytical Method: 8270D
Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acenaphthene	ND		1	330	ug/kg	08/05/2013 1542
Acenaphthylene	ND		1	330	ug/kg	08/05/2013 1542
Anthracene	ND		1	330	ug/kg	08/05/2013 1542
Benzo(a)anthracene	ND		1	330	ug/kg	08/05/2013 1542
Benzo(a)pyrene	ND		1	330	ug/kg	08/05/2013 1542
Benzo(b)fluoranthene	ND		1	330	ug/kg	08/05/2013 1542
Benzo(g,h,i)perylene	ND		1	330	ug/kg	08/05/2013 1542
Benzo(k)fluoranthene	ND		1	330	ug/kg	08/05/2013 1542
Chrysene	ND		1	330	ug/kg	08/05/2013 1542
Dibenzo(a,h)anthracene	ND		1	330	ug/kg	08/05/2013 1542
Fluoranthene	ND		1	330	ug/kg	08/05/2013 1542
Fluorene	ND		1	330	ug/kg	08/05/2013 1542
Indeno(1,2,3-c,d)pyrene	ND		1	330	ug/kg	08/05/2013 1542
Naphthalene	ND		1	330	ug/kg	08/05/2013 1542
Phenanthrene	ND		1	330	ug/kg	08/05/2013 1542
Pyrene	ND		1	330	ug/kg	08/05/2013 1542

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		73	33-102
Nitrobenzene-d5		79	22-109
Terphenyl-d14		78	41-120

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ26477-002
Batch: 26477
Analytical Method: 8270D
Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	3300	2500		1	75	46-114	08/05/2013 1609
Acenaphthylene	3300	2900		1	86	44-122	08/05/2013 1609
Anthracene	3300	2500		1	76	50-119	08/05/2013 1609
Benzo(a)anthracene	3300	2600		1	78	47-121	08/05/2013 1609
Benzo(a)pyrene	3300	3100		1	92	55-134	08/05/2013 1609
Benzo(b)fluoranthene	3300	2900		1	88	28-139	08/05/2013 1609
Benzo(g,h,i)perylene	3300	2200		1	66	36-125	08/05/2013 1609
Benzo(k)fluoranthene	3300	2800		1	85	47-130	08/05/2013 1609
Chrysene	3300	2400		1	72	45-126	08/05/2013 1609
Dibenzo(a,h)anthracene	3300	2400		1	73	45-122	08/05/2013 1609

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ26477-002
Batch: 26477
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoranthene	3300	2700		1	83	50-123	08/05/2013 1609
Fluorene	3300	2600		1	79	48-117	08/05/2013 1609
Indeno(1,2,3-c,d)pyrene	3300	2500		1	74	45-123	08/05/2013 1609
Naphthalene	3300	2400		1	71	36-110	08/05/2013 1609
Phenanthrene	3300	2400		1	73	49-117	08/05/2013 1609
Pyrene	3300	2600		1	79	47-119	08/05/2013 1609

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		70	33-102
Nitrobenzene-d5		85	22-109
Terphenyl-d14		63	41-120

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: OH01057-001MS
Batch: 26477
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	ND	4000	2400		1	60	30-130	08/06/2013 1453
Acenaphthylene	ND	4000	2600		1	64	30-130	08/06/2013 1453
Anthracene	ND	4000	2600		1	65	30-130	08/06/2013 1453
Benzo(a)anthracene	ND	4000	2800		1	69	30-130	08/06/2013 1453
Benzo(a)pyrene	ND	4000	3200		1	80	30-130	08/06/2013 1453
Benzo(b)fluoranthene	ND	4000	3100		1	77	30-130	08/06/2013 1453
Benzo(g,h,i)perylene	ND	4000	2900		1	72	30-130	08/06/2013 1453
Benzo(k)fluoranthene	ND	4000	2900		1	73	30-130	08/06/2013 1453
Chrysene	ND	4000	2500		1	62	30-130	08/06/2013 1453
Dibenzo(a,h)anthracene	ND	4000	3000		1	76	30-130	08/06/2013 1453
Fluoranthene	ND	4000	2800		1	70	30-130	08/06/2013 1453
Fluorene	ND	4000	2600		1	65	30-130	08/06/2013 1453
Indeno(1,2,3-c,d)pyrene	ND	4000	3100		1	76	30-130	08/06/2013 1453
Naphthalene	ND	4000	2000		1	50	30-130	08/06/2013 1453
Phenanthrene	ND	4000	2500		1	63	30-130	08/06/2013 1453
Pyrene	ND	4000	2700		1	67	30-130	08/06/2013 1453

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MS

Sample ID: OH01057-001MS
Batch: 26477
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		51	33-102
Nitrobenzene-d5		60	22-109
Terphenyl-d14		54	41-120

Semivolatile Organic Compounds by GC/MS - MSD

Sample ID: OH01057-001MD
Batch: 26477
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 932

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Acenaphthene	ND	3900	2600		1	65	7.0	30-130	40	08/06/2013 1520
Acenaphthylene	ND	3900	2800		1	70	8.1	30-130	40	08/06/2013 1520
Anthracene	ND	3900	2600		1	67	1.9	30-130	40	08/06/2013 1520
Benzo(a)anthracene	ND	3900	2800		1	70	0.036	30-130	40	08/06/2013 1520
Benzo(a)pyrene	ND	3900	3200		1	81	0.31	30-130	40	08/06/2013 1520
Benzo(b)fluoranthene	ND	3900	3100		1	80	1.7	30-130	40	08/06/2013 1520
Benzo(g,h,i)perylene	ND	3900	2900		1	73	1.2	30-130	40	08/06/2013 1520
Benzo(k)fluoranthene	ND	3900	3000		1	76	2.2	30-130	40	08/06/2013 1520
Chrysene	ND	3900	2500		1	64	1.9	30-130	40	08/06/2013 1520
Dibenzo(a,h)anthracene	ND	3900	3100		1	79	2.0	30-130	40	08/06/2013 1520
Fluoranthene	ND	3900	2800		1	72	0.46	30-130	40	08/06/2013 1520
Fluorene	ND	3900	2800		1	71	7.0	30-130	40	08/06/2013 1520
Indeno(1,2,3-c,d)pyrene	ND	3900	3100		1	79	2.2	30-130	40	08/06/2013 1520
Naphthalene	ND	3900	2200		1	57	11	30-130	40	08/06/2013 1520
Phenanthrene	ND	3900	2600		1	65	2.6	30-130	40	08/06/2013 1520
Pyrene	ND	3900	2700		1	69	2.2	30-130	40	08/06/2013 1520

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		58	33-102
Nitrobenzene-d5		69	22-109
Terphenyl-d14		57	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TPH - DRO - MB

Sample ID: OQ26530-001
Batch: 26530
Analytical Method: 8015C
Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 1837

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
TPH-DRO	ND		1	6700	ug/kg	08/07/2013 1409

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		91	55-120

TPH - DRO - LCS

Sample ID: OQ26530-002
Batch: 26530
Analytical Method: 8015C
Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 1837

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	83000	80000		1	96	70-130	08/07/2013 1430

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		101	55-120

TPH - DRO - MS

Sample ID: OH01057-006MS
Batch: 26530
Analytical Method: 8015C
Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 1837

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
TPH-DRO	ND	120000	95000		1	83	70-130	08/07/2013 1533

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		80	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

TPH - DRO - MSD

Sample ID: OH01057-006MD
Batch: 26530
Analytical Method: 8015C

Matrix: Solid
Prep Method: 3550C
Prep Date: 08/05/2013 1837

Parameter	Sample Amount (ug/kg)	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
TPH-DRO	ND	120000	97000		1	85	2.3	70-130	20	08/07/2013 1554

Surrogate	Q	% Rec	Acceptance Limit
o - Terphenyl		83	55-120

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - MB

Sample ID: OQ26363-001 **Matrix:** Solid
Batch: 26363 **Prep Method:** 3050B
Analytical Method: 6010C **Prep Date:** 08/02/2013 918

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Lead	ND		1	0.50	mg/kg	08/02/2013 1852

ICP-AES - LCS

Sample ID: OQ26363-002 **Matrix:** Solid
Batch: 26363 **Prep Method:** 3050B
Analytical Method: 6010C **Prep Date:** 08/02/2013 918

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Lead	250	240		1	94	80-120	08/02/2013 1856

ICP-AES - LCSD

Sample ID: OQ26363-003 **Matrix:** Solid
Batch: 26363 **Prep Method:** 3050B
Analytical Method: 6010C **Prep Date:** 08/02/2013 918

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Lead	250	240		1	97	3.0	80-120	20	08/02/2013 1859

ICP-AES - MS

Sample ID: OH01057-001MS **Matrix:** Solid
Batch: 26363 **Prep Method:** 3050B
Analytical Method: 6010C **Prep Date:** 08/02/2013 918

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Lead	49	290	310		2	92	75-125	08/05/2013 2037

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

South Carolina

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bres@blueridge-esi.com

PROJECT NAME/LOCATION: Westside Quick Stop

STF CODE:

P.O.#: 17762

LAB: Shealy

GROUNDWATER INCIDENT #:

SAMPLERS: Joe McMurray/Jeff White

PROJECT MANAGER: Ken Pimienta

OH01057

SAMPLE ID	DATE	TIME	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS	BTEX Naph VOSBE 8260	PAHs 8270	TOC	TPH	Total Lead		REMARKS
12430-SB-1	7/26/13	1342	✓		Soil sample @ 10'		6	X	X			X		
12430-SB-2		1408	✓		Soil sample @ 10'		6	X	X			X		
12430-SB-3		1435	✓		Soil sample @ 10'		6	X	X			X		
12430-SB-4		1452	✓		Soil sample @ 10'		6	X	X			X		
12430-SB-5		1511	✓		Soil sample @ 8'		6	X	X			X		
12430-SB-6		1530	✓		Soil sample @ 25'		7	X	X		X	X		
12430-SB-6 Duplicate		1531	✓		Soil sample @ 25'		6	X	X			X		
12430-SB-7		1553	✓		Soil sample @ 20		6	X	X			X		
12430-SB-8		1615	✓		Soil sample @ 10		1			X				

F = 1.0

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
Ken Pimienta	8.1.13	1010	[signature]	8.1.13	1010
[signature]	8.1.13	1710	[signature]	8.1.13	1710

Shealy Environmental Services, Inc.
Document Number: F-SA-S-010
Revision Number: 11

Page 1 of 1
Revision Date: 05/28/13
Effective Date: 06/18/13

Sample Receipt Checklist (SRC)

Client: Blue Ridge ENV Cooler Inspected by/date: ECC 8/01/13 Lot #: OH01057

Means of receipt: ☐ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑	1. Were custody seals present on the cooler?
Yes ☐	No ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt: #27 / 1.9 °C / °C / °C / °C

Method: ☐ Temperature Blank ☑ Against Bottles

Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC: phone, note (circle one), other: (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a. Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☐	No ☑		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☐	No ☑		15. Were there any excess samples not listed on COC?
Yes ☐	No ☐	NA ☑	16. Were bubbles present >"pea size" (¼" or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with: _____ (H_2SO_4, HNO_3, HCl, NaOH) with the SR # (number)

Sample(s) _____ were received with bubbles >6 mm in diameter.

Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol.

Sample labels verified by: [signature] Date: 8/1/13

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: Date of response:

Comments:

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Blue Ridge Environmental Services
2315 Kings Road Ext.
Shelby, NC 28152
Attention: Joe McMurray

Project Name: **Westside Quick Stop**

Lot Number: **OH15070**
Date Completed: **08/27/2013**

Kelly M. Maberry
Project Manager

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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
Blue Ridge Environmental Services
Lot Number: OH15070

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

EDB
The sample results for -001 and -002 have a P qualifier because the relative percent difference (RPD) between the two dissimilar phase GC columns exceeds 40%. Section 7.10.4 of SW-846 method 8000B states the higher of the two results is reported; however the lower results are reported for these samples. The higher result for sample -001 was 1.83 ug/L. The higher result for sample -002 was 2.02 ug/L.

Sample Summary
Blue Ridge Environmental Services
Lot Number: OH15070

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	12430-MW-1	Aqueous	08/13/2013 1355	08/15/2013
002	12430-MW-1 Duplicate	Aqueous	08/13/2013 1405	08/15/2013
003	12430-MW-2	Aqueous	08/13/2013 1530	08/15/2013
004	12430-MW-3	Aqueous	08/13/2013 1345	08/15/2013
005	12430-Field Blank	Aqueous	08/13/2013 1540	08/15/2013
006	12430-Trip Blank	Aqueous	08/13/2013	08/15/2013
007	12430-MW-1	Solid	08/02/2013 1310	08/15/2013

(7 samples)

Executive Summary
Blue Ridge Environmental Services
Lot Number: OH15070

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	12430-MW-1	Aqueous	tert-Amyl alcohol (TAA)	8260B	27000		ug/L	5
001	12430-MW-1	Aqueous	Benzene	8260B	27000		ug/L	5
001	12430-MW-1	Aqueous	Diisopropyl ether (IPE)	8260B	2600		ug/L	5
001	12430-MW-1	Aqueous	Ethylbenzene	8260B	2700		ug/L	5
001	12430-MW-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	5200		ug/L	5
001	12430-MW-1	Aqueous	Toluene	8260B	54000		ug/L	5
001	12430-MW-1	Aqueous	Xylenes (total)	8260B	13000		ug/L	5
001	12430-MW-1	Aqueous	Naphthalene	8270D	420		ug/L	6
001	12430-MW-1	Aqueous	1,2-Dibromoethane (EDB)	8011	0.90	P	ug/L	6
002	12430-MW-1 Duplicate	Aqueous	tert-Amyl alcohol (TAA)	8260B	28000		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Benzene	8260B	27000		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Diisopropyl ether (IPE)	8260B	2600		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Ethylbenzene	8260B	2700		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	5300		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Toluene	8260B	54000		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Xylenes (total)	8260B	13000		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Naphthalene	8270D	380		ug/L	8
002	12430-MW-1 Duplicate	Aqueous	1,2-Dibromoethane (EDB)	8011	0.93	P	ug/L	8
003	12430-MW-2	Aqueous	tert-Amyl alcohol (TAA)	8260B	910		ug/L	9
003	12430-MW-2	Aqueous	Benzene	8260B	1000		ug/L	9
003	12430-MW-2	Aqueous	Ethylbenzene	8260B	200		ug/L	9
003	12430-MW-2	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	23		ug/L	9
003	12430-MW-2	Aqueous	Toluene	8260B	1100		ug/L	9
003	12430-MW-2	Aqueous	Xylenes (total)	8260B	570		ug/L	9
003	12430-MW-2	Aqueous	Naphthalene	8270D	8.4		ug/L	10

(25 detections)

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OH15070-001**
Description: **12430-MW-1** | Matrix: **Aqueous**
Date Sampled: **08/13/2013 1355**
Date Received: **08/15/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	500	08/24/2013 1812	RGB		27954

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	**75-85-4**	**8260B**	**27000**		**10000**	**ug/L**	**1**
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		5000	ug/L	1
Benzene	**71-43-2**	**8260B**	**27000**		**500**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		2500	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		500	ug/L	1
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**2600**		**2500**	**ug/L**	**1**
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		10000	ug/L	1
Ethanol	64-17-5	8260B	ND		50000	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**2700**		**500**	**ug/L**	**1**
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		500	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**5200**		**500**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		500	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		10000	ug/L	1
Toluene	**108-88-3**	**8260B**	**54000**		**500**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**13000**		**500**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		91	70-130
Bromofluorobenzene		97	70-130
Toluene-d8		100	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1247	JRG	08/16/2013 1151	27411
2	3520C	8270D	5	08/19/2013 1420	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.2	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.2	ug/L	1
Anthracene	120-12-7	8270D	ND		5.2	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.2	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.2	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.2	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.2	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.2	ug/L	1
Chrysene	218-01-9	8270D	ND		5.2	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.2	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.2	ug/L	1
Fluorene	86-73-7	8270D	ND		5.2	ug/L	1

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time
ND = Not detected at or above the PQL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OH15070-001**
Description: **12430-MW-1** | Matrix: **Aqueous**
Date Sampled: **08/13/2013 1355**
Date Received: **08/15/2013**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1247	JRG	08/16/2013 1151	27411
2	3520C	8270D	5	08/19/2013 1420	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.2	ug/L	1
Naphthalene	**91-20-3**	**8270D**	**420**		**26**	**ug/L**	**2**
Phenanthrene	85-01-8	8270D	ND		5.2	ug/L	1
Pyrene	129-00-0	8270D	ND		5.2	ug/L	1

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
2-Fluorobiphenyl		75	37-129		80	37-129
Nitrobenzene-d5		67	38-127		72	38-127
Terphenyl-d14		42	10-148		40	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	8011	8011	2	08/20/2013 1735	RBH	08/16/2013 0940	27413

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	**106-93-4**	**8011**	**0.90**	**P**	**0.039**	**ug/L**	**2**

Surrogate	Q	Run 2 % Recovery	Run 2 Acceptance Limits
1,1,1,2-Tetrachloroethane		109	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	08/19/2013 2143	CDF	08/19/2013 1106	27488

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time
ND = Not detected at or above the PQL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OH15070-002**
Description: **12430-MW-1 Duplicate** | Matrix: **Aqueous**
Date Sampled: **08/13/2013 1405**
Date Received: **08/15/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	500	08/24/2013 1834	RGB		27954

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	**75-85-4**	**8260B**	**28000**		**10000**	**ug/L**	**1**
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		5000	ug/L	1
Benzene	**71-43-2**	**8260B**	**27000**		**500**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		2500	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		500	ug/L	1
Diisopropyl ether (IPE)	**108-20-3**	**8260B**	**2600**		**2500**	**ug/L**	**1**
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		10000	ug/L	1
Ethanol	64-17-5	8260B	ND		50000	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**2700**		**500**	**ug/L**	**1**
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		500	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**5300**		**500**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		500	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		10000	ug/L	1
Toluene	**108-88-3**	**8260B**	**54000**		**500**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**13000**		**500**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		92	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		100	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1310	JRG	08/16/2013 1151	27411
2	3520C	8270D	5	08/19/2013 1443	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.1	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.1	ug/L	1
Anthracene	120-12-7	8270D	ND		5.1	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.1	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.1	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.1	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.1	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.1	ug/L	1
Chrysene	218-01-9	8270D	ND		5.1	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.1	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.1	ug/L	1
Fluorene	86-73-7	8270D	ND		5.1	ug/L	1

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time
ND = Not detected at or above the PQL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-MW-1 Duplicate**
Date Sampled: **08/13/2013 1405**
Date Received: **08/15/2013**

Laboratory ID: **OH15070-002**
Matrix: **Aqueous**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1310	JRG	08/16/2013 1151	27411
2	3520C	8270D	5	08/19/2013 1443	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.1	ug/L	1
Naphthalene	**91-20-3**	**8270D**	**380**		**26**	**ug/L**	**2**
Phenanthrene	85-01-8	8270D	ND		5.1	ug/L	1
Pyrene	129-00-0	8270D	ND		5.1	ug/L	1

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
2-Fluorobiphenyl		77	37-129		80	37-129
Nitrobenzene-d5		67	38-127		71	38-127
Terphenyl-d14		44	10-148		43	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
2	8011	8011	2	08/20/2013 1546	RBH	08/16/2013 0940	27413

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	**106-93-4**	**8011**	**0.93**	**P**	**0.039**	**ug/L**	**2**

Surrogate	Q	Run 2 % Recovery	Run 2 Acceptance Limits
1,1,1,2-Tetrachloroethane		118	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	08/19/2013 2146	CDF	08/19/2013 1106	27488

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OH15070-003**
Description: **12430-MW-2** | Matrix: **Aqueous**
Date Sampled: **08/13/2013 1530**
Date Received: **08/15/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	20	08/24/2013 1917	RGB		27954

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	**75-85-4**	**8260B**	**910**		**400**	**ug/L**	**1**
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		200	ug/L	1
Benzene	**71-43-2**	**8260B**	**1000**		**20**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		20	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		100	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		400	ug/L	1
Ethanol	64-17-5	8260B	ND		2000	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**200**		**20**	**ug/L**	**1**
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		20	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**23**		**20**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		20	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		400	ug/L	1
Toluene	**108-88-3**	**8260B**	**1100**		**20**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**570**		**20**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	70-130
Bromofluorobenzene		99	70-130
Toluene-d8		101	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1333	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.1	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.1	ug/L	1
Anthracene	120-12-7	8270D	ND		5.1	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.1	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.1	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.1	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.1	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.1	ug/L	1
Chrysene	218-01-9	8270D	ND		5.1	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.1	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.1	ug/L	1
Fluorene	86-73-7	8270D	ND		5.1	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.1	ug/L	1

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time
ND = Not detected at or above the PQL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OH15070-003**
Description: **12430-MW-2** | Matrix: **Aqueous**
Date Sampled: **08/13/2013 1530**
Date Received: **08/15/2013**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1333	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Naphthalene	**91-20-3**	**8270D**	**8.4**		**5.1**	**ug/L**	**1**
Phenanthrene	85-01-8	8270D	ND		5.1	ug/L	1
Pyrene	129-00-0	8270D	ND		5.1	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		59	37-129
Nitrobenzene-d5		42	38-127
Terphenyl-d14		55	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	08/20/2013 0250	RBH	08/16/2013 0940	27413

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		94	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	08/19/2013 2150	CDF	08/19/2013 1106	27488

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-MW-3**
Date Sampled: **08/13/2013 1345**
Date Received: **08/15/2013**

Laboratory ID: **OH15070-004**
Matrix: **Aqueous**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/24/2013 1602	RGB		27954

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5.0	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	ug/L	1
Ethanol	64-17-5	8260B	ND		100	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		100	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1357	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.1	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.1	ug/L	1
Anthracene	120-12-7	8270D	ND		5.1	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.1	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.1	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.1	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.1	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.1	ug/L	1
Chrysene	218-01-9	8270D	ND		5.1	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.1	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.1	ug/L	1
Fluorene	86-73-7	8270D	ND		5.1	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.1	ug/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** Laboratory ID: **OH15070-004**
Description: **12430-MW-3** Matrix: **Aqueous**
Date Sampled: **08/13/2013 1345**
Date Received: **08/15/2013**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	08/19/2013 1357	JRG	08/16/2013 1151	27411

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Naphthalene	91-20-3	8270D	ND		5.1	ug/L	1
Phenanthrene	85-01-8	8270D	ND		5.1	ug/L	1
Pyrene	129-00-0	8270D	ND		5.1	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		75	37-129
Nitrobenzene-d5		65	38-127
Terphenyl-d14		56	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	08/20/2013 0311	RBH	08/16/2013 0940	27413

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		98	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	08/19/2013 2154	CDF	08/19/2013 1106	27488

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** Laboratory ID: **OH15070-005**

Description: **12430-Field Blank** Matrix: **Aqueous**

Date Sampled: **08/13/2013 1540**

Date Received: **08/15/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2013 2316	TAF		27947

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5.0	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	ug/L	1
Ethanol	64-17-5	8260B	ND		100	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		89	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		96	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	08/20/2013 0333	RBH	08/16/2013 0940	27413

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		103	57-137

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** Laboratory ID: **OH15070-006**

Description: **12430-Trip Blank** Matrix: **Aqueous**

Date Sampled: **08/13/2013**

Date Received: **08/15/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	08/23/2013 2338	TAF		27947

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5.0	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	ug/L	1
Ethanol	64-17-5	8260B	ND		100	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		90	70-130
Bromofluorobenzene		98	70-130
Toluene-d8		99	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ27947-001
Batch: 27947
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	20	ug/L	08/23/2013 2232
tert-Amyl methyl ether (TAME)	ND		1	10	ug/L	08/23/2013 2232
Benzene	ND		1	1.0	ug/L	08/23/2013 2232
tert-Butyl formate (TBF)	ND		1	5.0	ug/L	08/23/2013 2232
1,2-Dichloroethane	ND		1	1.0	ug/L	08/23/2013 2232
Diisopropyl ether (IPE)	ND		1	5.0	ug/L	08/23/2013 2232
3,3-Dimethyl-1-butanol	ND		1	20	ug/L	08/23/2013 2232
Ethanol	ND		1	100	ug/L	08/23/2013 2232
Ethylbenzene	ND		1	1.0	ug/L	08/23/2013 2232
Ethyl-tert-butyl ether (ETBE)	ND		1	1.0	ug/L	08/23/2013 2232
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	ug/L	08/23/2013 2232
Naphthalene	ND		1	1.0	ug/L	08/23/2013 2232
tert-butyl alcohol (TBA)	ND		1	20	ug/L	08/23/2013 2232
Toluene	ND		1	1.0	ug/L	08/23/2013 2232
Xylenes (total)	ND		1	1.0	ug/L	08/23/2013 2232

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		97	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27947-002
Batch: 27947
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	950		1	95	70-130	08/23/2013 2105
tert-Amyl methyl ether (TAME)	50	50		1	100	70-130	08/23/2013 2105
Benzene	50	50		1	99	70-130	08/23/2013 2105
tert-Butyl formate (TBF)	250	220		1	87	70-130	08/23/2013 2105
1,2-Dichloroethane	50	49		1	99	70-130	08/23/2013 2105
Diisopropyl ether (IPE)	50	50		1	100	70-130	08/23/2013 2105
3,3-Dimethyl-1-butanol	1000	940		1	94	70-130	08/23/2013 2105
Ethanol	5000	6000		1	120	70-130	08/23/2013 2105
Ethylbenzene	50	52		1	104	70-130	08/23/2013 2105
Ethyl-tert-butyl ether (ETBE)	50	55		1	109	70-130	08/23/2013 2105
Methyl tertiary butyl ether (MTBE)	50	49		1	98	70-130	08/23/2013 2105

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27947-002
Batch: 27947
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Naphthalene	50	54		1	109	70-130	08/23/2013 2105
tert-butyl alcohol (TBA)	1000	1100		1	109	70-130	08/23/2013 2105
Toluene	50	51		1	102	70-130	08/23/2013 2105
Xylenes (total)	100	100		1	103	70-130	08/23/2013 2105

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		97	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		93	70-130

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ27947-003
Batch: 27947
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	940		1	94	1.4	70-130	20	08/23/2013 2127
tert-Amyl methyl ether (TAME)	50	49		1	99	1.1	70-130	20	08/23/2013 2127
Benzene	50	49		1	98	0.95	70-130	20	08/23/2013 2127
tert-Butyl formate (TBF)	250	210		1	86	1.7	70-130	20	08/23/2013 2127
1,2-Dichloroethane	50	49		1	98	0.70	70-130	20	08/23/2013 2127
Diisopropyl ether (IPE)	50	49		1	99	0.70	70-130	20	08/23/2013 2127
3,3-Dimethyl-1-butanol	1000	920		1	92	2.5	70-130	20	08/23/2013 2127
Ethanol	5000	6100		1	121	0.75	70-130	20	08/23/2013 2127
Ethylbenzene	50	50		1	99	4.5	70-130	20	08/23/2013 2127
Ethyl-tert-butyl ether (ETBE)	50	54		1	108	1.4	70-130	20	08/23/2013 2127
Methyl tertiary butyl ether (MTBE)	50	50		1	100	2.2	70-130	20	08/23/2013 2127
Naphthalene	50	52		1	104	4.8	70-130	20	08/23/2013 2127
tert-butyl alcohol (TBA)	1000	1100		1	106	3.7	70-130	20	08/23/2013 2127
Toluene	50	50		1	100	1.2	70-130	20	08/23/2013 2127
Xylenes (total)	100	100		1	100	2.9	70-130	20	08/23/2013 2127

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		87	70-130
Toluene-d8		95	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ27954-001
Batch: 27954
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	20	ug/L	08/24/2013 1202
tert-Amyl methyl ether (TAME)	ND		1	10	ug/L	08/24/2013 1202
Benzene	ND		1	1.0	ug/L	08/24/2013 1202
tert-Butyl formate (TBF)	ND		1	5.0	ug/L	08/24/2013 1202
1,2-Dichloroethane	ND		1	1.0	ug/L	08/24/2013 1202
Diisopropyl ether (IPE)	ND		1	5.0	ug/L	08/24/2013 1202
3,3-Dimethyl-1-butanol	ND		1	20	ug/L	08/24/2013 1202
Ethanol	ND		1	100	ug/L	08/24/2013 1202
Ethylbenzene	ND		1	1.0	ug/L	08/24/2013 1202
Ethyl-tert-butyl ether (ETBE)	ND		1	1.0	ug/L	08/24/2013 1202
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	ug/L	08/24/2013 1202
Naphthalene	ND		1	1.0	ug/L	08/24/2013 1202
tert-butyl alcohol (TBA)	ND		1	20	ug/L	08/24/2013 1202
Toluene	ND		1	1.0	ug/L	08/24/2013 1202
Xylenes (total)	ND		1	1.0	ug/L	08/24/2013 1202

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		89	70-130
Toluene-d8		97	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27954-002
Batch: 27954
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	900		1	90	70-130	08/24/2013 1033
tert-Amyl methyl ether (TAME)	50	51		1	102	70-130	08/24/2013 1033
Benzene	50	49		1	98	70-130	08/24/2013 1033
tert-Butyl formate (TBF)	250	220		1	88	70-130	08/24/2013 1033
1,2-Dichloroethane	50	51		1	101	70-130	08/24/2013 1033
Diisopropyl ether (IPE)	50	50		1	101	70-130	08/24/2013 1033
3,3-Dimethyl-1-butanol	1000	870		1	87	70-130	08/24/2013 1033
Ethanol	5000	5800		1	116	70-130	08/24/2013 1033
Ethylbenzene	50	51		1	102	70-130	08/24/2013 1033
Ethyl-tert-butyl ether (ETBE)	50	56		1	113	70-130	08/24/2013 1033
Methyl tertiary butyl ether (MTBE)	50	54		1	108	70-130	08/24/2013 1033

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27954-002
Batch: 27954
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Naphthalene	50	49		1	98	70-130	08/24/2013 1033
tert-butyl alcohol (TBA)	1000	1000		1	100	70-130	08/24/2013 1033
Toluene	50	50		1	101	70-130	08/24/2013 1033
Xylenes (total)	100	100		1	102	70-130	08/24/2013 1033

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		96	70-130
1,2-Dichloroethane-d4		86	70-130
Toluene-d8		94	70-130

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ27954-003
Batch: 27954
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	920		1	92	1.7	70-130	20	08/24/2013 1055
tert-Amyl methyl ether (TAME)	50	53		1	106	3.3	70-130	20	08/24/2013 1055
Benzene	50	51		1	102	4.3	70-130	20	08/24/2013 1055
tert-Butyl formate (TBF)	250	230		1	92	4.3	70-130	20	08/24/2013 1055
1,2-Dichloroethane	50	52		1	103	1.9	70-130	20	08/24/2013 1055
Diisopropyl ether (IPE)	50	52		1	103	2.8	70-130	20	08/24/2013 1055
3,3-Dimethyl-1-butanol	1000	930		1	93	6.0	70-130	20	08/24/2013 1055
Ethanol	5000	6300		1	125	7.9	70-130	20	08/24/2013 1055
Ethylbenzene	50	52		1	103	1.5	70-130	20	08/24/2013 1055
Ethyl-tert-butyl ether (ETBE)	50	59		1	117	3.8	70-130	20	08/24/2013 1055
Methyl tertiary butyl ether (MTBE)	50	57		1	115	5.5	70-130	20	08/24/2013 1055
Naphthalene	50	55		1	111	13	70-130	20	08/24/2013 1055
tert-butyl alcohol (TBA)	1000	1100		1	107	6.3	70-130	20	08/24/2013 1055
Toluene	50	53		1	105	4.1	70-130	20	08/24/2013 1055
Xylenes (total)	100	100		1	104	2.6	70-130	20	08/24/2013 1055

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	70-130
1,2-Dichloroethane-d4		88	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: OQ27411-001
Batch: 27411
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/16/2013 1151

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acenaphthene	ND		1	5.0	ug/L	08/19/2013 0939
Acenaphthylene	ND		1	5.0	ug/L	08/19/2013 0939
Anthracene	ND		1	5.0	ug/L	08/19/2013 0939
Benzo(a)anthracene	ND		1	5.0	ug/L	08/19/2013 0939
Benzo(a)pyrene	ND		1	5.0	ug/L	08/19/2013 0939
Benzo(b)fluoranthene	ND		1	5.0	ug/L	08/19/2013 0939
Benzo(g,h,i)perylene	ND		1	5.0	ug/L	08/19/2013 0939
Benzo(k)fluoranthene	ND		1	5.0	ug/L	08/19/2013 0939
Chrysene	ND		1	5.0	ug/L	08/19/2013 0939
Dibenzo(a,h)anthracene	ND		1	5.0	ug/L	08/19/2013 0939
Fluoranthene	ND		1	5.0	ug/L	08/19/2013 0939
Fluorene	ND		1	5.0	ug/L	08/19/2013 0939
Indeno(1,2,3-c,d)pyrene	ND		1	5.0	ug/L	08/19/2013 0939
Naphthalene	ND		1	5.0	ug/L	08/19/2013 0939
Phenanthrene	ND		1	5.0	ug/L	08/19/2013 0939
Pyrene	ND		1	5.0	ug/L	08/19/2013 0939

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		57	37-129
Nitrobenzene-d5		62	38-127
Terphenyl-d14		52	10-148

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27411-002
Batch: 27411
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/16/2013 1151

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	100	82		1	82	30-130	08/19/2013 1005
Acenaphthylene	100	89		1	89	30-130	08/19/2013 1005
Anthracene	100	79		1	79	30-130	08/19/2013 1005
Benzo(a)anthracene	100	77		1	77	30-130	08/19/2013 1005
Benzo(a)pyrene	100	81		1	81	30-130	08/19/2013 1005
Benzo(b)fluoranthene	100	86		1	86	30-130	08/19/2013 1005
Benzo(g,h,i)perylene	100	84		1	84	30-130	08/19/2013 1005
Benzo(k)fluoranthene	100	85		1	85	30-130	08/19/2013 1005
Chrysene	100	76		1	76	30-130	08/19/2013 1005
Dibenzo(a,h)anthracene	100	93		1	93	30-130	08/19/2013 1005

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ27411-002
Batch: 27411
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 08/16/2013 1151

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoranthene	100	81		1	81	30-130	08/19/2013 1005
Fluorene	100	77		1	77	30-130	08/19/2013 1005
Indeno(1,2,3-c,d)pyrene	100	89		1	89	30-130	08/19/2013 1005
Naphthalene	100	72		1	72	30-130	08/19/2013 1005
Phenanthrene	100	78		1	78	30-130	08/19/2013 1005
Pyrene	100	81		1	81	30-130	08/19/2013 1005

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		78	37-129
Nitrobenzene-d5		85	38-127
Terphenyl-d14		52	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

EDB & DBCP by Microextraction - MB

Sample ID: OQ27413-001
Batch: 27413
Analytical Method: 8011

Matrix: Aqueous
Prep Method: 8011
Prep Date: 08/16/2013 940

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	ug/L	08/19/2013 2023

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		100	57-137

EDB & DBCP by Microextraction - LCS

Sample ID: OQ27413-002
Batch: 27413
Analytical Method: 8011

Matrix: Aqueous
Prep Method: 8011
Prep Date: 08/16/2013 940

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.29		1	115	60-140	08/19/2013 2045

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		101	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - LCS

Sample ID: OQ27488-002
Batch: 27488
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/19/2013 1106

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Lead	0.40	0.41		1	102	80-120	08/19/2013 2054

ICP-AES - LCSD

Sample ID: OQ27488-003
Batch: 27488
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 08/19/2013 1106

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Lead	0.40	0.40		1	101	1.5	80-120	20	08/19/2013 2058

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Blue Ridge Environmental Services, Inc.
2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Brest@blueridge-es.com

CHAIN OF CUSTODY

South Carolina

PROJECT NAME/LOCATION: Interstate Quick Stop
STF CODE:
P.O.#: 17183
LAB: Shealy
GROUNDWATER INCIDENT #:
SAMPLERS: Ken Finnicum, Joe McMurray
PROJECT MANAGER:

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS	BTEX w/ MTBE + Naphthalene	MTBE 8260	EDB 504	Edible Lead	Lead (Unleaded)	REMARKS
12430-MW-1	8/13/13	1355		✓	Groundwater Sample			X	X	X	X		
12430-MW-1 Duplicate	8/13/13	1405		✓				X	X	X	X		
12430-MW-2	8/13/13	1535		✓				X	X	X	X		
12430-MW-3	8/13/13	1345		✓				X	X	X	X		
12430-Field Blank	8/13/13	1540		✓				X		X			
12430-Trip Blank	--	--		✓				X					
12430-MW-1	8/2/13	1310	✓		Grab Soil @ 25.87							X	

OA/92

T = 1.0°

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
[signature]	8/13/13	1010	[signature]	8/13/13	1010
RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
[signature]	8/13/13	1520	[signature]	8/13/13	1540

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Shealy Environmental Services, Inc.
Document Number: [illegible]
Revision Number: [illegible]

Page 1 of 1
Replaces Date: 01/28/13
Effective Date: 04/18/13

Sample Receipt Checklist (SRC)

Client: [illegible] Cooler Inspected by/date: [illegible] Lot #: [illegible]

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐		2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt 1.0 °C / °C / °C / °C
Method: ☐ Temperature Blank ☑ Against Bottles
Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one). other: _____ (For coolers received via commercial courier, PMs are to be notified immediately.
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No		9. Did all samples arrive in the proper containers for each test?
Yes ☑	No		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☐	No ☑		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☐	No ☑		15. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all metals/O&G/HLM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with: _____ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number) _____

Sample(s) _____ were received with bubbles >6 mm in diameter.

Sample(s) _____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: _____ Date: 5/15/13

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐
SESI employee: _____ Date of response: _____
Comments: _____

APPENDIX D

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

Soil Boring Log

Westside Quick Stop
UST Permit Number: 12430
Date Started: 7/25/13
Date Completed: 7/25/13
Driller: Joseph McMurray

	Strata Depth (Ft.)		Soil Lithologhy	PID Readings (ppm)
Sample ID	From	To	Soil Description and Remarks	
12430-SB-1	0	2	Dark Brown Micaceous Sandy Silt	0.0
	2	4	Dark Brown Micaceous Sandy Silt	0.0
	4	6	Reddish Brown Clayey Silt	0.0
	6	8	Light Brown Sily Sand/Sandy Silt	0.0
	8	10	Light Brown Sily Sand/Sandy Silt	0.0
12430-SB-2	0	2	Dark Brown Micaceous Sandy Silt	0.0
	2	4	Dark Brown Micaceous Sandy Silt	0.0
	4	6	Reddish Brown Clayey Silt	0.0
	6	8	Light Brown Sily Sand/Sandy Silt	0.0
	8	10	Light Brown Sily Sand/Sandy Silt	0.0

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

Soil Boring Log

Westside Quick Stop
UST Permit Number: 12430
Date Started: 7/25/13
Date Completed: 7/25/13
Driller: Joseph McMurray

	Strata Depth (Ft.)		Soil Lithologhy	PID Readings (ppm)
Sample ID	From	To	Soil Description and Remarks	
12430-SB-3	0	2	Dark Brown Micaceous Sandy Silt	243
	2	4	Dark Brown Micaceous Sandy Silt	39.5
	4	6	Dark Brown Micaceous Sandy Silt	36.5
	6	8	Reddish Brown Micaceous Clayey Silt	54.3
	8	10	Reddish Brown Micaceous Clayey Silt	803
12430-SB-4	0	2	Dark Brown Micaceous Sandy Silt	0.0
	2	4	Dark Brown Micaceous Sandy Silt	0.0
	4	6	Reddish Brown Clayey Silt	46.8
	6	8	Reddish Brown Clayey Silt	15.2
	8	10	Reddish Brown Clayey Silt	190

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Soil Boring Log

Westside Quick Stop
UST Permit Number: 12430
Date Started: 7/25/13
Date Completed: 7/25/13
Driller: Joseph McMurray

	Strata Depth (Ft.)		Soil Lithologhy	PID Readings (ppm)
Sample ID	From	To	Soil Description and Remarks	
12430-SB-5	0	2	Light Brown Silt	0.0
	2	4	Light Brown Silt	75.7
	4	6	Reddish Brown Clayey Silt	752
	6	8	Reddish Brown Clayey Silt	1,451
	8	10	Reddish Brown Clayey Silt	290
12430-SB-6	0	5	Light Brown Silt	48
	5	10	Light Brown Silt	31
	10	15	Brown Clayey Micaceous Silt	3.1
	15	20	Light Brown Micaceous Silt	278
	20	25	Light Brown Micaceous Silt	2,582

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

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Soil Boring Log

Westside Quick Stop
UST Permit Number: 12430
Date Started: 7/25/13
Date Completed: 7/25/13
Driller: Joseph McMurray

	Strata Depth (Ft.)		Soil Lithologhy	PID Readings (ppm)
Sample ID	From	To	Soil Description and Remarks	
12430-SB-7	0	5	Light Brown Silt	0.0
	5	10	Light Brown Silt	150
	10	15	Reddish Brown Silt	194
	15	20	Brown Silt	798
	20	25	Brown Silt	697
12430-SB-8	0	2	Reddish Brown Silt	0.0
	2	4	Reddish Brown Silt	0.0
	4	6	Light Brown Minor Sandy Silt	0.0
	6	8	Light Brown Minor Sandy Silt	0.0
	8	10	Light Brown Minor Sandy Silt	0.0

APPENDIX E

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Wright (last) Mike (first)
Address: 405 Dove Hill Circle
City: Easley State: SC Zip: 29640-8907
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Street Address: 809 West Parker Road
City: Greenville Zip: 29611-0000
Latitude: 34N 51' 53.3261 Longitude: 82W 26' 1.5396"

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from 0 ft. to 13 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Light Brown Silt	10	10
Brown Clayey Micaceous Silt	5	15
Light Brown Micaceous Silt	10	25
Dark Reddish Brown Micaceous	5	30
Silt*		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
12430-MW-1

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

7. PERMIT NUMBER: UMW-25088

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

9. WELL DEPTH (completed) Date Started: 8/2/13
30 ft. Date Completed: 8/2/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 15 ft. depth
in. to ft. depth
Height: Above/Below ✓
Surface 0 ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: 0.01 Length: 15
Set Between: 15 ft. and 30 ft. NOTE: MULTIPLE SCREENS
ft. and ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 17.97 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13 ft. to 30 ft.
Effective size #2 Uniformity Coefficient Sand

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other
Depth: From 0 ft. to 13 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: Joseph McMurray CERT. NO.: 734
Address: (Print) Level: A (B) C D (circle one)
2315 Kings Road Ext.
Shelby, NC 28152
Telephone No.: (704) 482-2111 Fax No.: (704) 482-4335

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 8/3/13

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004)

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Wright (last) Mike (first)
Address: 405 Dove Hill Circle
City: Easley State: SC Zip: 29640-8907
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Street Address: 809 West Parker Road
City: Greenville Zip: 29611-0000
Latitude: 34N 51' 53.5674 Longitude: 82W 26' 1.2438"

3. PUBLIC SYSTEM NAME: PUBLIC SYSTEM NUMBER:

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from 0 ft. to 13 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Light Brown Silt	4	4
Reddish Brown Clayey Silt	6	10
Orange Brown Sandy Silt	5	15
Light Brown Sandy Silt	5	20
Silt		
Dark Reddish Brown Micaceous	10	30
Silt		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
12430-MW-2

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

7. PERMIT NUMBER: UMW-25088

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

9. WELL DEPTH (completed) 30 ft. Date Started: 8/2/13 Date Completed: 8/2/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 15 ft. depth
in. to ft. depth
Height: Above/Below ✓ Surface 0 ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: 0.01 Length: 15
Set Between: 15 ft. and 30 ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 18.85 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13 ft. to 30 ft.
Effective size #2 Uniformity Coefficient Sand

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other
Depth: From 0 ft. to 13 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: Joseph McMurray CERT. NO.: 734
Address: (Print) Level: A B C D (circle one) ✓
2315 Kings Road Ext.
Shelby, NC 28152
Telephone No.: (704) 482-2111 Fax No.: (704) 482-2111

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: Joseph W McMurray Date: 8/3/13
Well Driller

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004)

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Wright (last) Mike (first)
Address: 405 Dove Hill Circle
City: Easley State: SC Zip: 29640-8907
Telephone: Work: Home:

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Street Address: 809 West Parker Road
City: Greenville Zip: 29611-0000
Latitude: 34N 51' 53.1858 Longitude: 82W 26' 59.4222"

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from 0 ft. to 13 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Reddish Brown Silt Silt	4	4
Light Brown Minor Sandy Silt	6	10
Light Brown Micaceous Sandy Silt	5	15
Light Brown Sandy Silt	15	30
Silt		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
12430-MW-3

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

7. PERMIT NUMBER: UMW-25088

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

9. WELL DEPTH (completed) Date Started: 8/2/13
30 ft. Date Completed: 8/2/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
0 in. to 15 ft. depth
in. to ft. depth
Height: Above/Below ✓
Surface U ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: PVC Diam.: 2 Inch
Slot/Gauge: 0.01 Length: 15
Set Between: 15 ft. and 30 ft. NOTE: MULTIPLE SCREENS
ft. and ft. USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☑ No

12. STATIC WATER LEVEL 21.00 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13 ft. to 30 ft.
Effective size #2 Uniformity Coefficient Sand

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other
Depth: From 0 ft. to 13 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: Joseph McMurray CERT. NO.: 734
Address: (Print) Level: A (B) C D (circle one)
2315 Kings Road Ext.
Shelby, NC 28152
Telephone No.: (704) 482-2111 Fax No.: (704) 482-4335

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 8/3/13

If D Level Driller, provide supervising driller's name

DHEC 1903 (03/2004) COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

APPENDIX F

SOUTH CAROLINA
Department of Health and Evnironmental Control
Summary of Slug Test Form

Site Data

UST Permit # 12430 County: Greenville

Facility Name Westside Quick Stop

Slug Data

See Appendix F Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by Manually .
(Hermit Data Logger, Manually with Water Level Indicator, etc.) (List Method).

Complete the following table for each well tested.

COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED

Slug Test Conducted in well(s) number	12430-MW-1	12340-MW-2
Initial Rise/Drawdown in well (feet)	3.47	1.55
Radius of Well Casing (feet)	0.083	0.083
Effective Radius of Well (feet)	0.33	0.33
Static Saturated Aquifer Thickness (feet)	15	10
Length of Well Screen (feet)	15	10
Static Height of Water Column in Well (ft)	9.97	6.05

Calculations

See Appendix F Table_____ Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer-Rice

Calculated values by well were as follows:

Slug Test Conducted in well(s) number	12430-MW-1	10370-MW-2
Hydraulic Conductivity	0.000002729 Ft/day	0.000008701 Ft/day

Thickness of the aquifer used to calculate hydraulic conductivity was 15 feet.

The aquifer is _____ confined _____ semi-confined X water table (Check as appropriate).

The estimated seepage velocity is 0.00005305 feet per year based on a hydraulic conductivity of 0.0000029 Ft/day, a hydraulic gradient of 0.0027 Ft, and a porosity of 0.25 per cent for Silty Sand soil (list type i.e., silty sand ,clay, etc).

WELL ID: Westside Quick Stop

Local ID: 12430-MW-1
Date: 8/25/2013
Time: 12:30

INPUT

Construction:		
Casing dia. (d_c)	0.083	Inch
Annulus dia. (d_w)	2	Inch
Screen Length (L)	15	Feet
Depths to:		
water level (DTW)	20.92	Feet
top of screen (TOS)	15	Feet
Base of Aquifer (DTB)	30	Feet
Annular Fill:		
across screen -- Coarse Sand		
above screen -- Bentonite		
Aquifer Material -- Fine Sand		

COMPUTED

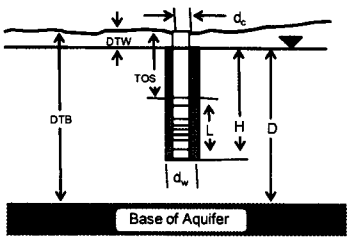
L_{wetted}	9.08	Feet
D =	9.08	Feet
H =	9.08	Feet
L/r_w =	108.96	
$y_{0\text{-DISPLACEMENT}}$ =	20.92	Feet
$y_{0\text{-SLUG}}$ =	1741.91	Feet

From look-up table using L/r_w

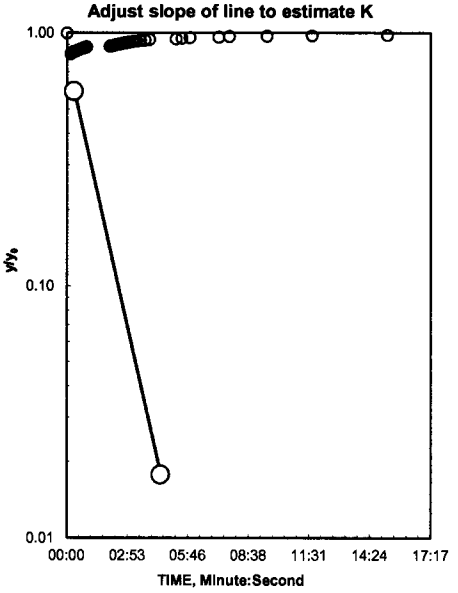
Fully penetrate C =	4.634	
ln(Re/rw) =	3.610	
Re =	3.08	Feet
Slope =	0.006147209	$\log_{10}$/sec
$t_{90\%}$ recovery =	163	sec

K= 0.0029 is less than extreme minimum of 0.05 for Fine Sand

K = 0.000003072 Feet/Day



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	12:30:00.0	0.00
2	12:30:11.0	3.58
3	12:30:13.0	3.48
4	12:30:15.0	3.38
5	12:30:18.0	3.28
6	12:30:24.0	3.18
7	12:30:27.0	3.08
8	12:30:31.0	2.98
9	12:30:35.0	2.88
10	12:30:40.0	2.78
11	12:30:45.0	2.68
12	12:30:50.0	2.58
13	12:30:56.0	2.48
14	12:32:02.0	2.38
15	12:32:09.0	2.28
16	12:32:16.0	2.18
17	12:32:22.0	2.08
18	12:32:30.0	1.98
19	12:32:38.0	1.88
20	12:32:47.0	1.78
21	12:32:56.0	1.68
22	12:33:07.0	1.58
23	12:33:18.0	1.48
24	12:33:29.0	1.38
25	12:33:42.0	1.28
26	12:33:55.0	1.18
27	12:35:11.0	1.08
28	12:35:28.0	0.98
29	12:35:51.0	0.88
30	12:37:13.0	0.78
31	12:37:43.0	0.68
32	12:39:30.0	0.58
33	12:41:39.0	0.48
34	12:45:13.0	0.38

K= 0.0029 is less than likely minimum of 3 for Fine Sand

REMARKS: Bouwer and Rice analysis of slug test, WRR 1976

WELL ID: Westside Quick Stop

Local ID: 12430-MW-2
Date: 8/25/2013
Time: 12:00

INPUT

Construction:

Casing dia. (d_c)	0.083	Inch
Annulus dia. (d_w)	2	Inch
Screen Length (L)	15	Feet

Depths to:

water level (DTW)	20.34	Feet
top of screen (TOS)	15	Feet
Base of Aquifer (DTB)	30	Feet

Annular Fill:

across screen -- Coarse Sand
above screen -- Bentonite

Aquifer Material -- Fine Sand

COMPUTED

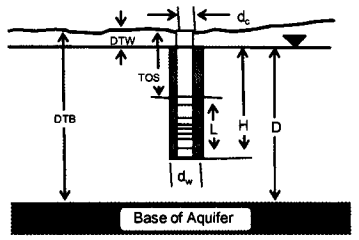
L_{wetted}	9.97	Feet
D =	9.97	Feet
H =	9.97	Feet
L/r_w =	119.64	
$y_{0\text{-DISPLACEMENT}}$ =	20.03	Feet
$y_{0\text{-SLUG}}$ =	1741.91	Feet

From look-up table using L/r_w

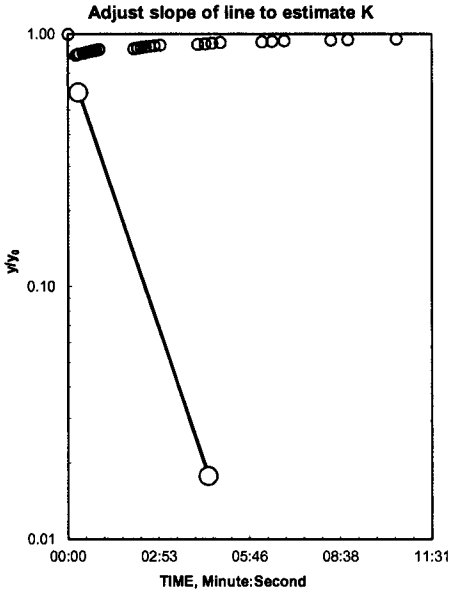
Fully penetrate C =	4.999	
ln(Re/rw) =	3.681	
Re =	3.31	Feet
Slope =	0.006147209	log_{10}/sec
$t_{90\%}$ recovery =	163	sec

K= 0.0027 is less than extreme minimum of 0.05 for Fine Sand

K = 0.000002729 Feet/Day



Adjust slope of line to estimate K



Entry	Reduced Data Time, Hr:Min:Sec	Water Level
1	12:00:00.0	0.00
2	12:00:15.0	3.47
3	12:00:17.0	3.37
4	12:00:21.0	3.27
5	12:00:29.0	3.17
6	12:00:33.0	3.07
7	12:00:38.0	2.97
8	12:00:43.0	2.87
9	12:00:48.0	2.77
10	12:00:53.0	2.67
11	12:00:59.0	2.57
12	12:02:05.0	2.47
13	12:02:12.0	2.37
14	12:02:19.0	2.27
15	12:02:27.0	2.17
16	12:02:35.0	2.07
17	12:02:44.0	1.97
18	12:02:55.0	1.87
19	12:04:07.0	1.77
20	12:04:21.0	1.67
21	12:04:34.0	1.57
22	12:04:50.0	1.47
23	12:06:09.0	1.37
24	12:06:28.0	1.27
25	12:06:51.0	1.17
26	12:08:20.0	1.07
27	12:08:52.0	0.97
28	12:10:24.0	0.87

K= 0.0027 is less than likely minimum of 3 for Fine Sand

REMARKS: Bouwer and Rice analysis of slug test, WRR 1976

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

SEEPAGE VELOCITY CALCULATION

Seepage Velocity Calculation
See bottom of page for equations solved.

Site Name	Westside	
Date	8/23/13	
Distance Unit	ft	
Time Unit	days	
Chemical	mtbe	
Porosity	0.25	
Fraction Organic Carbon		
Hydraulic Conductivity (K)	.000002	ft/day
Upgradient Location (x_1,y_1)	0, 0	
Downgradient Location (x_2,y_2)	0, 37	
Head unit	ft	
Upgradient Water Level (h_1)	987.4	
Downgradient Water Level (h_2)	987.3	

K_{oc}	11

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

SEEPAGE VELOCITY CALCULATION

Hydraulic Conductivity (K)	0.000002	ft/day
Bulk Density (r_b)	1.99	
k_d	0.	
Retardation factor (R)	1.00	
Gradient (i)	-0.0027	
Seepage Velocity (q_s)	0.00001145 ft/yr	ft/yr
Retarded Seepage Velocity (q_s)	0.00001145 ft/yr	

seepage velocity $q_s = v = -K\,i\,/\,q$

$q_s = v$ = seepage velocity [L/T]
K = hydraulic conductivity [L/T]
i = hydraulic gradient [L/L]
q = porosity [L/L]

retardation factor $R = 1 + r_b k_d\,/q$

R = retardation factor
r_b = bulk density = $r_s(1-q)$
r_s = solids density
q = porosity
k_d = (soil) distribution coefficient = $f_{oc}\,K_{oc}$
f_{oc} = fraction organic carbon
K_{oc} = organic carbon/water partition coefficient

APPENDIX G

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE MANIFEST	1. Generator's US EPA ID No. CE3QG	Manifest Document No. 05275	2. Page 1 of 1

3. Generator's Name and Mailing Address
Blue Ridge Environmental, Inc
2915 Kings Road Ext
Shelby, NC 28150
4. Generator's Phone (704) 482-2111

5. Transporter 1 Company Name	6. US EPA ID Number	A. State Transporter's ID
Blue Ridge Environmental Services,		B. Transporter 1 Phone (704)482-2111
7. Transporter 2 Company Name	8. US EPA ID Number	C. State Transporter's ID
		D. Transporter 2 Phone
9. Designated Facility Name and Site Address	10. US EPA ID Number	E. State Facility's ID
Advanced Environmental Options, 25 Stan Perkins Road Spartanburg, SC 29307	SCR000074575	F. Facility's Phone (864)488-9111

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. NON/DOT NON/RCRA Regulated Materials (Contains Water)	1	TP	00033	G
b.	0			
c.	0			
d.	0			

G. Additional Descriptions for Materials Listed Above
a) L/-

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
Emergency Contact: David Hitchens 864-488-9111, Cell 864-590-4648
Job # 9932

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

Printed/Typed Name	Signature	Date Month	Day	Year
Jeffrey A White	[signature]	[illegible]	[illegible]	[illegible]

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year
Jeffrey A White	[signature]	[illegible]	[illegible]	[illegible]

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month	Day	Year

19. Discrepancy Indication Space

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

Printed/Typed Name	Signature	Date Month	Day	Year
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GENERATOR

TRANSPORTER

FACILITY

NON-HAZARDOUS WASTE

CF14 © 2002 LABELMASTER® (800) 621-5808 www.labelmaster.com

PRINTED ON RECYCLED PAPER USING SOYBEAN INK PRINTED WITH SOY INK

PO # 17769

Environmental Soils Inc.

PO Box 295 • Lattimore, NC 28089
Phone 704-434-0075 • Fax 704-434-9533

Non-Hazardous Waste Manifest # 32990

Date 8/6/13 Load Number 1

(numbered sequentially as trucks are dispatched)

ENVIRONMENTAL CONSULTANT: Blue Ridge Environmental

Contact: Ken Pimienta Phone: (704) 482-2111 Fax: (704) 482-4335

GENERATOR: Westside Quick Stop

Address: 821 West Parker Road, Greenville County: Greenville

Contact: N/A Phone:

WASTE ORIGINATION POINT: Complete Address: 821 West Parker Road Greenville, SC

Class & Type of Contaminate in soil Petrolcum Based Soil

SOURCE OF CONTAMINATION: (ex. UST or other source) UST

GENERATORS CERTIFICATION OF WASTE CONSTITUENTS: In lieu of submitting analytical data (methods 8240 and 8270) verifying that the waste in question does not contain organic constituents other than those which would normally appear in analysis of virgin petroleum product residue, I am submitting this Certificate of Waste Constituents. I certify that I am familiar with the source of contamination of the soil and further certify the source, to the best of my knowledge, contains no contaminants other than that listed above.

Generators Signature: Ken Pimienta (Blue Ridge) Date: 8/6/13

TRANSPORTER: Ken Pimienta (Blue Ridge)

Contact: Ken Pimienta Phone: (704) 482-2111

As the carrier, I certify that the materials described above being shipped under this non-hazardous materials manifest are properly classified, packaged, labeled, secured, and are in proper condition for transport in commerce under the applicable regulations governing transportation, and I hereby receive this material for delivery to the facility designate.

Carrier Signature: Ken Pimienta Date: 8/6/13

TRUCK #: 1 TAG #: VOLUME: 10840 9300 1540 - 1770

TRUCK DRIVER SIGNATURE: Ken Pimienta DATE: 8/6/13

DESTINATION: Environmental Soils Inc. 910 Crowder Rd, Shelby, NC 28150 Dedicated Land Application Site Permit #SR0300038

I certify that the carrier has delivered the materials described above to this facility, and I hereby accept this material for treatment and/or disposal in a manner that has been authorized by the Sate of North Carolina.

Facility Signature: Matt Rose Date: 8/6/13

Signature: William Brown Date: 8/6/13

Company Name ESI Title:

White/Facility Canary/Invoice Pink/Carrier Goldenrod/Generator

APPENDIX H

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

Westside Quick Stop
UST Permit # 12430

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	✓		
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?	✓		
9	Are the receptor survey results provided as required?	✓		
10	Has current use of the site and adjacent land been described?	✓		
11	Has the site-specific geology and hydrogeology been described?	✓		
12	Has the primary soil type been described?	✓		
13	Have field screening results been described?	✓		
14	Has a description of the soil sample collection and preservation been detailed?	✓		
15	Has the field screening methodology and procedure been detailed?	✓		
16	Has the monitoring well installation and development dates been provided?	✓		
17	Has the method of well development been detailed?	✓		
18	Has justification been provided for the locations of the monitoring wells?	✓		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?	✓		
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?	✓		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	✓		
24	If free-product is present, has the thickness been provided?	✓		
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?	✓		
27	Does the report include a brief discussion of the fate & transport models used?			✓

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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

Westside Quick Stop
UST Permit # 12430

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)	✓		
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	✓		
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?	✓		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	✓		
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)	✓		
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	✓		
40	Has the site potentiometric map been provided? (Figure 5)	✓		
41	Have the geologic cross-sections been provided? (Figure 6)			✓
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)	✓		
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	✓		
45	Is the laboratory performing the analyses properly certified?	✓		
46	Has the tax map been included with all necessary elements? (Appendix C)	✓		
47	Have the soil boring/field screening logs been provided? (Appendix D)	✓		
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	✓		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)	✓		
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

UST
OCT 0 9 2013
PROGRAM

Initial Groundwater Assessment Report

UST
11 tech
DOCKETING

Westside Quick Stop
809 West Parker Road
Greenville, South Carolina 29611
UST Permit Number 12430

Prepared for:
Shree Gajvakra LLC.
Attn: Mr. Ankur Patel
205 Fairway Drive
Laurens, South Carolina 29360

October 2, 2013

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

Prepared by:
Blue Ridge Environmental Services, Inc.
2315 Kings Rd. Extension
Shelby, North Carolina 28152
704-482-2111
Fax 704-482-4335
SC Contractor # 0095

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

Initial Groundwater Assessment Report

Facility Name: Westside Quick Stop
Facility Address: 809 West Parker Road, Greenville, SC 29611
Facility Telephone Number: (864) 271-9400
UST Permit Number: 12430

UST Owner and Operator's Name: Shree Gajvakra LLC. Attn: Ankur Patel
Address: 205 Fairway Drive, Laurens, SC 29360
Phone Number: N/A

Property Owner's Name: Westside Quick Shop INC.
Address: 809 West Parker Road, Greenville, SC 29611
Phone Number: N/A

Contractor: Blue Ridge Environmental Services, Inc. Cert.#: 0095
Address: 2315 Kings Road Extension, Shelby, NC 28152
Phone Number: (704) 482-211

Well Driller: Joseph McMurray Cert.#: 734
Phone Number: (704) 482-2111

Receptor and Site Data

Receptor Survey Questions	No	Yes*
Are any drinking water supply wells (public or private) or surface water supply intakes within 1,000 feet of the UST?	X	
Are irrigation or other non-drinking water wells located within 1,000 feet of the UST?	X	
Are other potential receptors (i.e., utilities, surface waters, wetlands) less than 500 feet from the UST?	X	

* If "yes" provide additional information below:

Were any water supply wells or surface waters within 250 ft. sampled?
Yes___ No X

Is a public water supply line in the area? Yes X No___

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Is the current use of the facility and surrounding properties commercial, residential, agricultural or industrial? The current use of the facility is commercial. The surrounding property use is a mixture of commercial and residential properties.

Site: The site is an active Filling Station/Convenience Store.

Adjacent Properties:
North: God Bless America Tire/Carwash and Residences
East: Residences
South: Residences
West: Vacant Lot and Residences

Soil Boring/Monitoring Well Data

Primary Soil Type: Red Orange to Reddish Brown Micaceous Silty Sand.

Well Installation Method and Date: Auger installation performed on September 16, 2013.

Development Method and Date: A "Waterspout II" 12 Volt Pump was used to develop the well on September 16, 2013.

Soil Sample obtained from 15 feet below grade level (bgl).

SOIL ANALYTICAL DATA

12430-MW-4 (15')

Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Naphthalene (mg/kg)	MTBE (mg/kg)
0.023	0.0180	<0.0055	<0.0055	<0.0055	0.51
Benzo (a)-anthracene (mg/kg)	Benzo (b)-fluoranthene (mg/kg)	Benzo (k)-fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenz (a,h) anthracene (mg/kg)	Lead (mg/kg)
<0.44	<0.44	<0.44	<0.44	<0.44	39
Benzo (a) pyrene (mg/kg)	Fluoranthene (mg/kg)	Pyrene (mg/kg)			
<0.44	<0.44	<0.44			

- Concentrations in bold exceed Sandy Soil RBSL.

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SC Contractor # 0095

12430-MW-4 (15') Duplicate

Benzene (ug/kg)	Toluene (ug/kg)	Ethylbenzene (ug/kg)	Xylenes (ug/kg)	Naphthalene (ug/kg)	MTBE (ug/kg)
0.036	0.042	<0.006	0.0088	<0.006	0.59
Benzo (a)-anthracene (ug/kg)	Benzo (b)-fluoranthene (ug/kg)	Benzo (k)-fluoranthene (ug/kg)	Chrysene (ug/kg)	Dibenz (a,h) anthracene (ug/kg)	Lead (mg/kg)
<0.43	<0.43	<0.43	<0.43	<0.43	340
Benzo (a) pyrene (ug/kg)	Fluoranthene (ug/kg)	Pyrene (ug/kg)			
<0.43	<0.43	<0.43			

- Concentrations in bold exceed Sandy Soil RBSL.

Groundwater Data

Depth to Groundwater: 20.79 feet

Depth to FP, if present: N/A

Free Product Thickness: N/A

Well Purging/Sampling Method: "Waterspout II" 12 Volt Pump/Bailer

Date Sampled: September 20, 2013

Equilibrated values: Temperature (°C): 22.1° / 21.52° / 20.90° / 20.50 ° / 20.36° / 20.27°/ 20.33°
pH (su): 7.4 / 5.75 / 5.28 / 4.92 / 4.89 / 4.86 / 4.81
Dissolved Oxygen (mg/L): 12.6 / 10.13 / 10.48 / 10.18 / 10.22 / 10.28 / 10.29
Specific Conductance (mS/cm): .079 / .052 / .045 / .043 / .043 / .044 / .043
Turbidity (ntu): 356 / 412 / 179 / 210 / 84 / 138 / 97
Purge Data (gallons): 3.50 / 5.00 / 7.00 / 7.50 / 8.00 / 8.50 / 9.00

Soil/Water Disposal Method: ESI (Soil Disposal) and AEO (Groundwater Disposal). Please refer to Appendix D for copies of the disposal manifests.

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SC Contractor # 0095

GROUNDWATER ANALYTICAL DATA

12430-MW-4

Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	EDB (ug/L)	Naphthalene (8260B) (ug/L)
330	510	32	230	31	<0.019	<20
Benzo (a)-anthracene (ug/L)	Benzo (b)-fluoranthene (ug/L)	Benzo (k)-fluoranthene (ug/L)	1,2 Dichlorothene (ug/L)	Dibenz (a,h) anthracene (ug/L)	Lead (mg/L)	Naphthalene (8270D) (ug/L)
<5.2	<5.2	<5.2	<20	<5.2	<0.010	<5.2
Chrysene (ug/L)	Pyrene (ug/L)	Fluoranthene (ug/L)	ETBA (ug/L)	Ethanol (ug/L)	ETBE (ug/L)	IPE (ug/L)
<5.2	<5.2	<5.2	<400	<2,000	<20	<100
TAA (ug/L)	TAME (ug/L)	TBA (ug/L)	TBF (ug/L)			
<400	<200	<400	<100			

- Concentrations in bold exceed RBSLs.

12430-MW-4 Duplicate

Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	EDB (ug/L)	Naphthalene (8260B) (ug/L)
340	550	34	240	33	<0.019	<20
Benzo (a)-anthracene (ug/L)	Benzo (b)-fluoranthene (ug/L)	Benzo (k)-fluoranthene (ug/L)	1,2 Dichlorothene (ug/L)	Dibenz (a,h) anthracene (ug/L)	Lead (mg/L)	Naphthalene (8270D) (ug/L)
<5.3	<5.3	<5.3	<20	<5.3	<0.010	<5.3
Chrysene (ug/L)	Pyrene (ug/L)	Fluoranthene (ug/L)	ETBA (ug/L)	Ethanol (ug/L)	ETBE (ug/L)	IPE (ug/L)
<5.3	<5.3	<5.3	<400	<2,000	<20	<100

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

12430-MW-4 Duplicate (Cont.)

TAA (ug/L)	TAME (ug/L)	TBA (ug/L)	TBF (ug/L)
<400	<200	<400	<100

- Concentrations in bold exceed RBSLs.

12430-Trip Blank

Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	IPE (ug/L)	Naphthalene (ug/L)
<1	<1	<1	<1	<1	<5.0	<1
TAA (ug/L)	TAME (ug/L)	TBA (ug/L)	TBF (ug/L)	ETBA (ug/L)	Ethanol (ug/L)	ETBE (ug/L)
<20	<10	<20	<5	<20	<100	<1

12430-Field Blank

Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	IPE (ug/L)	Naphthalene (ug/L)
<1	<1	<1	<1	<1	<5.0	<1
TAA (ug/L)	TAME (ug/L)	TBA (ug/L)	TBF (ug/L)	ETBA (ug/L)	Ethanol (ug/L)	ETBE (ug/L)
<20	<10	<20	<5	<20	<100	<1

Report Completed By: Kenneth Pimienta

Signature: Kenneth A Pimienta

DHEC Contractor Certification #: 0095

Date: October 2, 2013

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

If you have any questions regarding this matter, please do not hesitate to contact us at (704) 482-2111.

Respectfully Submitted:
Blue Ridge Environmental Services, Inc.

Joseph W. McMurray, P.G.
S.C. Registration No. 2111

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

Appendices

Appendix A: Well Construction Log
Appendix B: Laboratory Data
Appendix C: Maps
Appendix D: Disposal Manifests (Soil & Groundwater)
Appendix E: Contractor Checklist

APPENDICES

APPENDIX A

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: Shree Gajvakra LLC Attn: Ankur Patel (last) (first)
Address: 205 Fairway Drive
City: Laurens State: SC Zip: 29360-7700
Telephone: Work: Home:

2. LOCATION OF WELL: **COUNTY:** Greenville
Name: Westside Quick Stop
Street Address: 809 West Parker Road
City: Greenville Zip: 29611-0000
Latitude: 34 N 51' 52.934 Longitude: 82W 26' 0.8442"

3. PUBLIC SYSTEM NAME: **PUBLIC SYSTEM NUMBER:**

4. ABANDONMENT: ☐ Yes ☑ No
Give Details Below
Grouted Depth: from 0 ft. to 13 ft.

Formation Description	*Thickness of Stratum	Depth to Bottom of Stratum
Light Reddish Brown Silt	10	10
Brown Clayey Micaceous Silt	5	15
Light Brown Micaceous Silt*	10	25
Dark Reddish Brown Micaceous	5	30
Silt*		
*Indicate Water Bearing Zones (Use a 2nd sheet if needed)		

5. REMARKS:
12430-MW-4 (IGWA)

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

7. PERMIT NUMBER: UMW-25205

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

9. WELL DEPTH (completed) 30 ft. Date Started: 9/16/13 Date Completed: 9/16/13

10. CASING: ☑ Threaded ☐ Welded
Diam.: 2 Inch
Type: ☑ PVC ☐ Galvanized ☐ Steel ☐ Other
2 in. to 15 ft. depth
in. to ft. depth
Height: Above/Below ✓
Surface 0 ft.
Weight lb./ft.
Drive Shoe? ☐ Yes ☑ No

11. SCREEN:
Type: Diam.:
Slot/Gauge: Length:
Set Between: ft. and ft.
ft. and ft.
NOTE: MULTIPLE SCREENS USE SECOND SHEET
Sieve Analysis ☐ Yes (please enclose) ☐ No

12. STATIC WATER LEVEL 20.79 ft. below land surface after 24 hours

13. PUMPING LEVEL Below Land Surface.
ft. after hrs. Pumping G.P.M.
Pumping Test: ☐ Yes (please enclose) ☑ No
Yield:

14. WATER QUALITY
Chemical Analysis ☐ Yes ☑ No Bacterial Analysis ☐ Yes ☑ No
Please enclose lab results.

15. ARTIFICIAL FILTER (filter pack) ☑ Yes ☐ No
Installed from 13 ft. to 30 ft.
Effective size Uniformity Coefficient

16. WELL GROUTED? ☑ Yes ☐ No
☐ Neat Cement ☐ Bentonite ☑ Bentonite/Cement ☐ Other
Depth: From 0 ft. to 13 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: Joseph McMurray **CERT. NO.:** 734
Address: (Print) Level: A (B) C D (circle one)
2315 Kings Road Ext.
Shelby, NC
Telephone No.: (704) 482-2111 Fax No.: (704) 482-4335

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Well Driller Date: 9/17/13

If D Level Driller, provide supervising driller's name:

DHEC 1903 (03/2004)

COPY 1 MAIL TO SCDHEC, COPY 2 TO WELL OWNER, COPY 3 TO WELL DRILLER

APPENDIX B

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Blue Ridge Environmental Services
2315 Kings Road Ext.
Shelby, NC 28152
Attention: Joe McMurray

Project Name:**Westside (IGWA)**

Lot Number:**OI17054**
Date Completed:**09/24/2013**

Kelly M. Maberry
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
Blue Ridge Environmental Services
Lot Number: OI17054

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Summary

Blue Ridge Environmental Services

Lot Number: OI17054

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	12430-IGWA MW-4	Solid	09/16/2013 1410	09/17/2013
002	12430-IGWA MW-4 Duplicate	Solid	09/16/2013 1413	09/17/2013

(2 samples)

Executive Summary
Blue Ridge Environmental Services
Lot Number: OI17054

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	12430-IGWA MW-4	Solid	Benzene	8260B	23		ug/kg	5
001	12430-IGWA MW-4	Solid	Methyl tertiary butyl ether (MTBE)	8260B	510		ug/kg	5
001	12430-IGWA MW-4	Solid	Toluene	8260B	18		ug/kg	5
001	12430-IGWA MW-4	Solid	Lead	6010C	39		mg/kg	6
002	12430-IGWA MW-4 Duplicate	Solid	Benzene	8260B	36		ug/kg	7
002	12430-IGWA MW-4 Duplicate	Solid	Methyl tertiary butyl ether (MTBE)	8260B	590		ug/kg	7
002	12430-IGWA MW-4 Duplicate	Solid	Toluene	8260B	42		ug/kg	7
002	12430-IGWA MW-4 Duplicate	Solid	Xylenes (total)	8260B	8.8		ug/kg	7
002	12430-IGWA MW-4 Duplicate	Solid	Lead	6010C	340		mg/kg	8

(9 detections)

Client: **Blue Ridge Environmental Services**
Description: **12430-IGWA MW-4**
Date Sampled: **09/16/2013 1410**
Date Received: **09/17/2013**

Laboratory ID: **OI17054-001**
Matrix: **Solid**
% Solids: **75.5** **09/17/2013 2038**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	09/19/2013 0527	JJG		29692	6.07
2	5035	8260B	50	09/19/2013 1611	AAC		29743	4.72

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	**71-43-2**	**8260B**	**23**		**5.5**	**ug/kg**	**1**
Ethylbenzene	100-41-4	8260B	ND		5.5	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**510**		**350**	**ug/kg**	**2**
Naphthalene	91-20-3	8260B	ND		5.5	ug/kg	1
Toluene	**108-88-3**	**8260B**	**18**		**5.5**	**ug/kg**	**1**
Xylenes (total)	1330-20-7	8260B	ND		5.5	ug/kg	1

Surrogate	Q	Run 1 % Recovery	Run 1 Acceptance Limits	Q	Run 2 % Recovery	Run 2 Acceptance Limits
1,2-Dichloroethane-d4		107	53-142		99	53-142
Bromofluorobenzene		100	47-138		88	47-138
Toluene-d8		115	68-124		95	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	09/23/2013 1618	DRB1	09/20/2013 2337	29886

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		440	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		440	ug/kg	1
Anthracene	120-12-7	8270D	ND		440	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		440	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		440	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		440	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		440	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		440	ug/kg	1
Chrysene	218-01-9	8270D	ND		440	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		440	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		440	ug/kg	1
Fluorene	86-73-7	8270D	ND		440	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		440	ug/kg	1
Naphthalene	91-20-3	8270D	ND		440	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		440	ug/kg	1
Pyrene	129-00-0	8270D	ND		440	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-IGWA MW-4**
Date Sampled: **09/16/2013 1410**
Date Received: **09/17/2013**

Laboratory ID: **OI17054-001**
Matrix: **Solid**
% Solids: **75.5** **09/17/2013 2038**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		59	33-102
Nitrobenzene-d5		51	22-109
Terphenyl-d14		70	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	5	09/20/2013 2127	BNW	09/19/2013 1819	29643

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**39**		**3.1**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-IGWA MW-4 Duplicate**
Date Sampled: **09/16/2013 1413**
Date Received: **09/17/2013**

Laboratory ID: **OI17054-002**
Matrix: **Solid**
% Solids: **76.2** **09/17/2013 2038**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch	Sample Wt.(g)
1	5035	8260B	1	09/19/2013 0551	JJG		29692	5.50
2	5035	8260B	50	09/19/2013 1634	AAC		29743	5.01

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Benzene	**71-43-2**	**8260B**	**36**		**6.0**	**ug/kg**	**1**
Ethylbenzene	100-41-4	8260B	ND		6.0	ug/kg	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**590**		**330**	**ug/kg**	**2**
Naphthalene	91-20-3	8260B	ND		6.0	ug/kg	1
Toluene	**108-88-3**	**8260B**	**42**		**6.0**	**ug/kg**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**8.8**		**6.0**	**ug/kg**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits	Q	Run 2 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		113	53-142		113	53-142
Bromofluorobenzene		100	47-138		88	47-138
Toluene-d8		113	68-124		106	68-124

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3550C	8270D	1	09/23/2013 1643	DRB1	09/20/2013 2337	29886

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		430	ug/kg	1
Acenaphthylene	208-96-8	8270D	ND		430	ug/kg	1
Anthracene	120-12-7	8270D	ND		430	ug/kg	1
Benzo(a)anthracene	56-55-3	8270D	ND		430	ug/kg	1
Benzo(a)pyrene	50-32-8	8270D	ND		430	ug/kg	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		430	ug/kg	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		430	ug/kg	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		430	ug/kg	1
Chrysene	218-01-9	8270D	ND		430	ug/kg	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		430	ug/kg	1
Fluoranthene	206-44-0	8270D	ND		430	ug/kg	1
Fluorene	86-73-7	8270D	ND		430	ug/kg	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		430	ug/kg	1
Naphthalene	91-20-3	8270D	ND		430	ug/kg	1
Phenanthrene	85-01-8	8270D	ND		430	ug/kg	1
Pyrene	129-00-0	8270D	ND		430	ug/kg	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-IGWA MW-4 Duplicate**
Date Sampled: **09/16/2013 1413**
Date Received: **09/17/2013**

Laboratory ID: **OI17054-002**
Matrix: **Solid**
% Solids: **76.2** **09/17/2013 2038**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		54	33-102
Nitrobenzene-d5		44	22-109
Terphenyl-d14		65	41-120

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3050B	6010C	5	09/20/2013 2142	BNW	09/19/2013 1819	29643

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Lead	**7439-92-1**	**6010C**	**340**		**3.1**	**mg/kg**	**1**

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ29692-001
Batch: 29692
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Benzene	ND		1	5.0	ug/kg	09/18/2013 2351
Ethylbenzene	ND		1	5.0	ug/kg	09/18/2013 2351
Naphthalene	ND		1	5.0	ug/kg	09/18/2013 2351
Toluene	ND		1	5.0	ug/kg	09/18/2013 2351
Xylenes (total)	ND		1	5.0	ug/kg	09/18/2013 2351

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		98	47-138
1,2-Dichloroethane-d4		114	53-142
Toluene-d8		114	68-124

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ29692-002
Batch: 29692
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Benzene	50	51		1	101	69-123	09/18/2013 2217
Ethylbenzene	50	52		1	104	59-128	09/18/2013 2217
Naphthalene	50	46		1	93	54-131	09/18/2013 2217
Toluene	50	50		1	100	61-129	09/18/2013 2217
Xylenes (total)	100	110		1	107	58-128	09/18/2013 2217

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		107	47-138
1,2-Dichloroethane-d4		104	53-142
Toluene-d8		107	68-124

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ29692-003
Batch: 29692
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Benzene	50	53		1	105	4.0	69-123	20	09/18/2013 2240

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ29692-003
Batch: 29692
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Ethylbenzene	50	52		1	103	0.86	59-128	20	09/18/2013 2240
Naphthalene	50	42		1	84	9.8	54-131	20	09/18/2013 2240
Toluene	50	54		1	107	6.9	61-129	20	09/18/2013 2240
Xylenes (total)	100	110		1	106	1.1	58-128	20	09/18/2013 2240

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		106	47-138
1,2-Dichloroethane-d4		102	53-142
Toluene-d8		113	68-124

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ29743-001
Batch: 29743
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Methyl tertiary butyl ether (MTBE)	ND		50	250	ug/kg	09/19/2013 1413

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	47-138
1,2-Dichloroethane-d4		131	53-142
Toluene-d8		109	68-124

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ29743-002
Batch: 29743
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	2500	2700		50	107	70-130	09/19/2013 1437

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ29743-002
Batch: 29743
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		116	47-138
1,2-Dichloroethane-d4		120	53-142
Toluene-d8		123	68-124

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ29743-003
Batch: 29743
Analytical Method: 8260B
Matrix: Solid
Prep Method: 5035

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Methyl tertiary butyl ether (MTBE)	2500	2700		50	109	2.1	70-130	20	09/19/2013 1500

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		111	47-138
1,2-Dichloroethane-d4		114	53-142
Toluene-d8		117	68-124

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: OQ29886-001
Batch: 29886
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 09/20/2013 2337

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acenaphthene	ND		1	330	ug/kg	09/23/2013 1510
Acenaphthylene	ND		1	330	ug/kg	09/23/2013 1510
Anthracene	ND		1	330	ug/kg	09/23/2013 1510
Benzo(a)anthracene	ND		1	330	ug/kg	09/23/2013 1510
Benzo(a)pyrene	ND		1	330	ug/kg	09/23/2013 1510
Benzo(b)fluoranthene	ND		1	330	ug/kg	09/23/2013 1510
Benzo(g,h,i)perylene	ND		1	330	ug/kg	09/23/2013 1510
Benzo(k)fluoranthene	ND		1	330	ug/kg	09/23/2013 1510
Chrysene	ND		1	330	ug/kg	09/23/2013 1510
Dibenzo(a,h)anthracene	ND		1	330	ug/kg	09/23/2013 1510
Fluoranthene	ND		1	330	ug/kg	09/23/2013 1510
Fluorene	ND		1	330	ug/kg	09/23/2013 1510
Indeno(1,2,3-c,d)pyrene	ND		1	330	ug/kg	09/23/2013 1510
Naphthalene	ND		1	330	ug/kg	09/23/2013 1510
Phenanthrene	ND		1	330	ug/kg	09/23/2013 1510
Pyrene	ND		1	330	ug/kg	09/23/2013 1510

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		89	33-102
Nitrobenzene-d5		80	22-109
Terphenyl-d14		95	41-120

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ29886-002
Batch: 29886
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 09/20/2013 2337

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	3300	3200		1	96	46-114	09/23/2013 1533
Acenaphthylene	3300	3800		1	115	44-122	09/23/2013 1533
Anthracene	3300	3200		1	97	50-119	09/23/2013 1533
Benzo(a)anthracene	3300	3300		1	99	47-121	09/23/2013 1533
Benzo(a)pyrene	3300	3700		1	111	55-134	09/23/2013 1533
Benzo(b)fluoranthene	3300	3600		1	107	28-139	09/23/2013 1533
Benzo(g,h,i)perylene	3300	3200		1	97	36-125	09/23/2013 1533
Benzo(k)fluoranthene	3300	3600		1	107	47-130	09/23/2013 1533
Chrysene	3300	3100		1	94	45-126	09/23/2013 1533
Dibenzo(a,h)anthracene	3300	3300		1	100	45-122	09/23/2013 1533

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ29886-002
Batch: 29886
Analytical Method: 8270D

Matrix: Solid
Prep Method: 3550C
Prep Date: 09/20/2013 2337

Parameter	Spike Amount (ug/kg)	Result (ug/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoranthene	3300	3300		1	98	50-123	09/23/2013 1533
Fluorene	3300	3200		1	97	48-117	09/23/2013 1533
Indeno(1,2,3-c,d)pyrene	3300	3400		1	103	45-123	09/23/2013 1533
Naphthalene	3300	2900		1	86	36-110	09/23/2013 1533
Phenanthrene	3300	3200		1	96	49-117	09/23/2013 1533
Pyrene	3300	3400		1	102	47-119	09/23/2013 1533

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		97	33-102
Nitrobenzene-d5		93	22-109
Terphenyl-d14		109	41-120

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - MB

Sample ID: OQ29643-001
Batch: 29643
Analytical Method: 6010C
Matrix: Solid
Prep Method: 3050B
Prep Date: 09/19/2013 1819

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Lead	ND		1	0.50	mg/kg	09/20/2013 2011

ICP-AES - LCS

Sample ID: OQ29643-002
Batch: 29643
Analytical Method: 6010C
Matrix: Solid
Prep Method: 3050B
Prep Date: 09/19/2013 1819

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Lead	250	240		1	96	80-120	09/20/2013 2015

ICP-AES - LCSD

Sample ID: OQ29643-003
Batch: 29643
Analytical Method: 6010C
Matrix: Solid
Prep Method: 3050B
Prep Date: 09/19/2013 1819

Parameter	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Lead	250	240		1	96	0.13	80-120	20	09/20/2013 2019

ICP-AES - MS

Sample ID: OI17054-001MS
Batch: 29643
Analytical Method: 6010C
Matrix: Solid
Prep Method: 3050B
Prep Date: 09/19/2013 1819

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Lead	39	320	350		5	98	75-125	09/20/2013 2131

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - MSD

Sample ID: OI17054-001MD
Batch: 29643
Analytical Method: 6010C

Matrix: Solid
Prep Method: 3050B
Prep Date: 09/19/2013 1819

Parameter	Sample Amount (mg/kg)	Spike Amount (mg/kg)	Result (mg/kg)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Lead	39	310	340		5	98	0.32	75-125	20	09/20/2013 2134

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

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PROJECT NAME/LOCATION: westside (IGWA)

STF CODE:

P.O.#: 17820

LAB: Shealy

GROUNDWATER INCIDENT #:

SAMPLERS: Ken Pimienta

PROJECT MANAGER:

QI17054

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS	PAHs 8270	BTEX Naph MTBE 8260	Total lead				REMARKS
12930 - IGWA MW-4	9/16/13	1410	✓		Soil Sample 15'		6	X	X	X				
12430 - IGWA MW-4 Duplicate	9/16/13	1413	✓		Soil Sample 15'		6	X	X	X				

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
Ken Pimienta	9/17/13	9:56	[signature]	9/17/13	0956
[signature]	9/17/13	1631	Kelly W Pi[illegible]	9/17/13	1637

T-1 °C 5 min

SHEALY ENVIRONMENTAL SERVICES, INC.

Sample Receipt Checklist (SRC)

Client: Blue Ridge Environmental Cooler Inspected by/date: KWP 9/11/13 Lot #: 131059

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other			
Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐		2. If custody seals were present, were they intact and unbroken?
Cooler ID/temperature upon receipt 1 1.2 °C / °C / °C / °C Method: ☐ Temperature Blank ☑ Against Bottles Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None			
If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.			
Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other:_____. (For coolers received via commercial courier, PMs are to be notified immediately.
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☐	No ☐		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☐	No ☑		15. Were there any excess samples not listed on COC?
Yes ☐	No ☐	NA ☑	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number)

Sample(s)_____ were received with bubbles >6 mm in diameter.

Sample(s)_____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: KWP Date: 9/11/13

Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: _____ Date of response: _____

Comments: _____

SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Blue Ridge Environmental Services
2315 Kings Road Ext.
Shelby, NC 28152
Attention: Joe McMurray

Project Name: **Westside**

Lot Number: **OI23049**
Date Completed: **09/30/2013**

Kelly M. Maberry
Project Manager

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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
Blue Ridge Environmental Services
Lot Number: OI23049

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary
Blue Ridge Environmental Services
Lot Number: OI23049

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	12430-MW-1	Aqueous	09/20/2013 1530	09/23/2013
002	12430-MW-1 Duplicate	Aqueous	09/20/2013 1535	09/23/2013
003	12430-Trip Blank	Aqueous	09/20/2013	09/23/2013
004	12430-Field Blank	Aqueous	09/20/2013 1541	09/23/2013

(4 samples)

Executive Summary
Blue Ridge Environmental Services
Lot Number: OI23049

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	12430-MW-1	Aqueous	Benzene	8260B	330		ug/L	5
001	12430-MW-1	Aqueous	Ethylbenzene	8260B	32		ug/L	5
001	12430-MW-1	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	31		ug/L	5
001	12430-MW-1	Aqueous	Toluene	8260B	510		ug/L	5
001	12430-MW-1	Aqueous	Xylenes (total)	8260B	230		ug/L	5
002	12430-MW-1 Duplicate	Aqueous	Benzene	8260B	340		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Ethylbenzene	8260B	34		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Methyl tertiary butyl ether (MTBE)	8260B	33		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Toluene	8260B	550		ug/L	7
002	12430-MW-1 Duplicate	Aqueous	Xylenes (total)	8260B	240		ug/L	7

(10 detections)

Client: **Blue Ridge Environmental Services** Laboratory ID: **OI23049-001**

Description: **12430-MW-1** Matrix: **Aqueous**

Date Sampled: **09/20/2013 1530**

Date Received: **09/23/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	20	09/28/2013 1724	PMM2		30507

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		400	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		200	ug/L	1
Benzene	**71-43-2**	**8260B**	**330**		**20**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		20	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		100	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		400	ug/L	1
Ethanol	64-17-5	8260B	ND		2000	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**32**		**20**	**ug/L**	**1**
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		20	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**31**		**20**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		20	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		400	ug/L	1
Toluene	**108-88-3**	**8260B**	**510**		**20**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**230**		**20**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		109	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2013 1205	DRB1	09/24/2013 1530	30091

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.2	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.2	ug/L	1
Anthracene	120-12-7	8270D	ND		5.2	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.2	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.2	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.2	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.2	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.2	ug/L	1
Chrysene	218-01-9	8270D	ND		5.2	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.2	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.2	ug/L	1
Fluorene	86-73-7	8270D	ND		5.2	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.2	ug/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-MW-1**
Date Sampled: **09/20/2013 1530**
Date Received: **09/23/2013**

Laboratory ID: **OI23049-001**
Matrix: **Aqueous**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2013 1205	DRB1	09/24/2013 1530	30091

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Naphthalene	91-20-3	8270D	ND		5.2	ug/L	1
Phenanthrene	85-01-8	8270D	ND		5.2	ug/L	1
Pyrene	129-00-0	8270D	ND		5.2	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		109	37-129
Nitrobenzene-d5		87	38-127
Terphenyl-d14		93	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	09/26/2013 0121	AMY	09/24/2013 1526	30097

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		117	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	09/26/2013 1434	CDF	09/25/2013 2120	30256

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** | Laboratory ID: **OI23049-002**
Description: **12430-MW-1 Duplicate** | Matrix: **Aqueous**
Date Sampled: **09/20/2013 1535**
Date Received: **09/23/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	20	09/28/2013 1745	PMM2		30507

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		400	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		200	ug/L	1
Benzene	**71-43-2**	**8260B**	**340**		**20**	**ug/L**	**1**
tert-Butyl formate (TBF)	762-75-4	8260B	ND		100	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		20	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		100	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		400	ug/L	1
Ethanol	64-17-5	8260B	ND		2000	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**34**		**20**	**ug/L**	**1**
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		20	ug/L	1
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**33**		**20**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		20	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		400	ug/L	1
Toluene	**108-88-3**	**8260B**	**550**		**20**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**240**		**20**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		104	70-130
Toluene-d8		109	70-130

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2013 1228	DRB1	09/24/2013 1530	30091

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Acenaphthene	83-32-9	8270D	ND		5.3	ug/L	1
Acenaphthylene	208-96-8	8270D	ND		5.3	ug/L	1
Anthracene	120-12-7	8270D	ND		5.3	ug/L	1
Benzo(a)anthracene	56-55-3	8270D	ND		5.3	ug/L	1
Benzo(a)pyrene	50-32-8	8270D	ND		5.3	ug/L	1
Benzo(b)fluoranthene	205-99-2	8270D	ND		5.3	ug/L	1
Benzo(g,h,i)perylene	191-24-2	8270D	ND		5.3	ug/L	1
Benzo(k)fluoranthene	207-08-9	8270D	ND		5.3	ug/L	1
Chrysene	218-01-9	8270D	ND		5.3	ug/L	1
Dibenzo(a,h)anthracene	53-70-3	8270D	ND		5.3	ug/L	1
Fluoranthene	206-44-0	8270D	ND		5.3	ug/L	1
Fluorene	86-73-7	8270D	ND		5.3	ug/L	1
Indeno(1,2,3-c,d)pyrene	193-39-5	8270D	ND		5.3	ug/L	1

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time
ND = Not detected at or above the PQL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services**
Description: **12430-MW-1 Duplicate**
Date Sampled: **09/20/2013 1535**
Date Received: **09/23/2013**

Laboratory ID: **OI23049-002**
Matrix: **Aqueous**

Semivolatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3520C	8270D	1	09/26/2013 1228	DRB1	09/24/2013 1530	30091

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Naphthalene	91-20-3	8270D	ND		5.3	ug/L	1
Phenanthrene	85-01-8	8270D	ND		5.3	ug/L	1
Pyrene	129-00-0	8270D	ND		5.3	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
2-Fluorobiphenyl		105	37-129
Nitrobenzene-d5		82	38-127
Terphenyl-d14		91	10-148

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	09/26/2013 0131	AMY	09/24/2013 1526	30097

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		113	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	09/26/2013 1449	CDF	09/25/2013 2120	30256

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
Dissolved Lead	7439-92-1	6010C	ND		0.010	mg/L	1

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
B = Detected in the method blank
J = Estimated result < PQL and ≥ MDL
E = Quantitation of compound exceeded the calibration range
P = The RPD between two GC columns exceeds 40%
H = Out of holding time
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** Laboratory ID: **OI23049-003**

Description: **12430-Trip Blank** Matrix: **Aqueous**

Date Sampled: **09/20/2013**

Date Received: **09/23/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/28/2013 1641	PMM2		30507

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5.0	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	ug/L	1
Ethanol	64-17-5	8260B	ND		100	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		103	70-130
Toluene-d8		109	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Blue Ridge Environmental Services** Laboratory ID: **OI23049-004**

Description: **12430-Field Blank** Matrix: **Aqueous**

Date Sampled: **09/20/2013 1541**

Date Received: **09/23/2013**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	09/28/2013 1702	PMM2		30507

Parameter	CAS Number	Analytical Method	Result	Q	PQL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		5.0	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	ug/L	1
Ethanol	64-17-5	8260B	ND		100	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		105	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		109	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the PQL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

QC Summary

Volatile Organic Compounds by GC/MS - MB

Sample ID: OQ30507-001
Batch: 30507
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
tert-Amyl alcohol (TAA)	ND		1	20	ug/L	09/28/2013 1145
tert-Amyl methyl ether (TAME)	ND		1	10	ug/L	09/28/2013 1145
Benzene	ND		1	1.0	ug/L	09/28/2013 1145
tert-Butyl formate (TBF)	ND		1	5.0	ug/L	09/28/2013 1145
1,2-Dichloroethane	ND		1	1.0	ug/L	09/28/2013 1145
Diisopropyl ether (IPE)	ND		1	5.0	ug/L	09/28/2013 1145
3,3-Dimethyl-1-butanol	ND		1	20	ug/L	09/28/2013 1145
Ethanol	ND		1	100	ug/L	09/28/2013 1145
Ethylbenzene	ND		1	1.0	ug/L	09/28/2013 1145
Ethyl-tert-butyl ether (ETBE)	ND		1	1.0	ug/L	09/28/2013 1145
Methyl tertiary butyl ether (MTBE)	ND		1	1.0	ug/L	09/28/2013 1145
Naphthalene	ND		1	1.0	ug/L	09/28/2013 1145
tert-butyl alcohol (TBA)	ND		1	20	ug/L	09/28/2013 1145
Toluene	ND		1	1.0	ug/L	09/28/2013 1145
Xylenes (total)	ND		1	1.0	ug/L	09/28/2013 1145

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		103	70-130
1,2-Dichloroethane-d4		103	70-130
Toluene-d8		108	70-130

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ30507-002
Batch: 30507
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	970		1	97	70-130	09/28/2013 1042
tert-Amyl methyl ether (TAME)	50	48		1	97	70-130	09/28/2013 1042
Benzene	50	50		1	100	70-130	09/28/2013 1042
tert-Butyl formate (TBF)	250	240		1	98	70-130	09/28/2013 1042
1,2-Dichloroethane	50	47		1	94	70-130	09/28/2013 1042
Diisopropyl ether (IPE)	50	49		1	98	70-130	09/28/2013 1042
3,3-Dimethyl-1-butanol	1000	1000		1	104	70-130	09/28/2013 1042
Ethanol	5000	4400		1	88	70-130	09/28/2013 1042
Ethylbenzene	50	51		1	102	70-130	09/28/2013 1042
Ethyl-tert-butyl ether (ETBE)	50	53		1	106	70-130	09/28/2013 1042
Methyl tertiary butyl ether (MTBE)	50	49		1	99	70-130	09/28/2013 1042

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Volatile Organic Compounds by GC/MS - LCS

Sample ID: OQ30507-002
Batch: 30507
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Naphthalene	50	48		1	97	70-130	09/28/2013 1042
tert-butyl alcohol (TBA)	1000	970		1	97	70-130	09/28/2013 1042
Toluene	50	50		1	100	70-130	09/28/2013 1042
Xylenes (total)	100	100		1	101	70-130	09/28/2013 1042

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		105	70-130
1,2-Dichloroethane-d4		100	70-130
Toluene-d8		110	70-130

Volatile Organic Compounds by GC/MS - LCSD

Sample ID: OQ30507-003
Batch: 30507
Analytical Method: 8260B

Matrix: Aqueous
Prep Method: 5030B

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
tert-Amyl alcohol (TAA)	1000	990		1	99	1.7	70-130	20	09/28/2013 1103
tert-Amyl methyl ether (TAME)	50	49		1	98	2.0	70-130	20	09/28/2013 1103
Benzene	50	50		1	101	1.4	70-130	20	09/28/2013 1103
tert-Butyl formate (TBF)	250	250		1	99	0.78	70-130	20	09/28/2013 1103
1,2-Dichloroethane	50	47		1	93	1.1	70-130	20	09/28/2013 1103
Diisopropyl ether (IPE)	50	49		1	98	0.35	70-130	20	09/28/2013 1103
3,3-Dimethyl-1-butanol	1000	1100		1	106	2.4	70-130	20	09/28/2013 1103
Ethanol	5000	4600		1	92	4.0	70-130	20	09/28/2013 1103
Ethylbenzene	50	51		1	103	0.92	70-130	20	09/28/2013 1103
Ethyl-tert-butyl ether (ETBE)	50	52		1	104	1.5	70-130	20	09/28/2013 1103
Methyl tertiary butyl ether (MTBE)	50	49		1	99	0.047	70-130	20	09/28/2013 1103
Naphthalene	50	54		1	109	12	70-130	20	09/28/2013 1103
tert-butyl alcohol (TBA)	1000	1000		1	100	3.4	70-130	20	09/28/2013 1103
Toluene	50	50		1	100	0.068	70-130	20	09/28/2013 1103
Xylenes (total)	100	100		1	101	0.59	70-130	20	09/28/2013 1103

Surrogate	Q	% Rec	Acceptance Limit
Bromofluorobenzene		104	70-130
1,2-Dichloroethane-d4		99	70-130
Toluene-d8		109	70-130

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - MB

Sample ID: OQ30091-001
Batch: 30091
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/24/2013 1530

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Acenaphthene	ND		1	5.0	ug/L	09/26/2013 1119
Acenaphthylene	ND		1	5.0	ug/L	09/26/2013 1119
Anthracene	ND		1	5.0	ug/L	09/26/2013 1119
Benzo(a)anthracene	ND		1	5.0	ug/L	09/26/2013 1119
Benzo(a)pyrene	ND		1	5.0	ug/L	09/26/2013 1119
Benzo(b)fluoranthene	ND		1	5.0	ug/L	09/26/2013 1119
Benzo(g,h,i)perylene	ND		1	5.0	ug/L	09/26/2013 1119
Benzo(k)fluoranthene	ND		1	5.0	ug/L	09/26/2013 1119
Chrysene	ND		1	5.0	ug/L	09/26/2013 1119
Dibenzo(a,h)anthracene	ND		1	5.0	ug/L	09/26/2013 1119
Fluoranthene	ND		1	5.0	ug/L	09/26/2013 1119
Fluorene	ND		1	5.0	ug/L	09/26/2013 1119
Indeno(1,2,3-c,d)pyrene	ND		1	5.0	ug/L	09/26/2013 1119
Naphthalene	ND		1	5.0	ug/L	09/26/2013 1119
Phenanthrene	ND		1	5.0	ug/L	09/26/2013 1119
Pyrene	ND		1	5.0	ug/L	09/26/2013 1119

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		109	37-129
Nitrobenzene-d5		88	38-127
Terphenyl-d14		110	10-148

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ30091-002
Batch: 30091
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/24/2013 1530

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Acenaphthene	100	97		1	97	30-130	09/26/2013 1142
Acenaphthylene	100	120		1	120	30-130	09/26/2013 1142
Anthracene	100	100		1	100	30-130	09/26/2013 1142
Benzo(a)anthracene	100	110		1	107	30-130	09/26/2013 1142
Benzo(a)pyrene	100	100		1	105	30-130	09/26/2013 1142
Benzo(b)fluoranthene	100	110		1	114	30-130	09/26/2013 1142
Benzo(g,h,i)perylene	100	120		1	120	30-130	09/26/2013 1142
Benzo(k)fluoranthene	100	110		1	111	30-130	09/26/2013 1142
Chrysene	100	110		1	106	30-130	09/26/2013 1142
Dibenzo(a,h)anthracene	100	110		1	111	30-130	09/26/2013 1142

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Semivolatile Organic Compounds by GC/MS - LCS

Sample ID: OQ30091-002
Batch: 30091
Analytical Method: 8270D

Matrix: Aqueous
Prep Method: 3520C
Prep Date: 09/24/2013 1530

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Fluoranthene	100	110		1	107	30-130	09/26/2013 1142
Fluorene	100	99		1	99	30-130	09/26/2013 1142
Indeno(1,2,3-c,d)pyrene	100	110		1	109	30-130	09/26/2013 1142
Naphthalene	100	94		1	94	30-130	09/26/2013 1142
Phenanthrene	100	99		1	99	30-130	09/26/2013 1142
Pyrene	100	110		1	115	30-130	09/26/2013 1142

Surrogate	Q	% Rec	Acceptance Limit
2-Fluorobiphenyl		106	37-129
Nitrobenzene-d5		95	38-127
Terphenyl-d14		120	10-148

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

EDB & DBCP by Microextraction - MB

Sample ID: OQ30097-001
Batch: 30097
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 09/24/2013 1526

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
1,2-Dibromoethane (EDB)	ND		1	0.020	ug/L	09/25/2013 2236

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		101	57-137

EDB & DBCP by Microextraction - LCS

Sample ID: OQ30097-002
Batch: 30097
Analytical Method: 8011
Matrix: Aqueous
Prep Method: 8011
Prep Date: 09/24/2013 1526

Parameter	Spike Amount (ug/L)	Result (ug/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
1,2-Dibromoethane (EDB)	0.25	0.26		1	102	60-140	09/25/2013 2246

Surrogate	Q	% Rec	Acceptance Limit
1,1,1,2-Tetrachloroethane		97	57-137

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - MB

Sample ID: OQ30256-001
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Result	Q	Dil	PQL	Units	Analysis Date
Dissolved Lead	ND		1	0.010	mg/L	09/26/2013 1423

ICP-AES - LCS

Sample ID: OQ30256-002
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Lead	0.40	0.41		1	102	80-120	09/26/2013 1427

ICP-AES - LCSD

Sample ID: OQ30256-003
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Lead	0.40	0.41		1	102	0.010	80-120	20	09/26/2013 1430

ICP-AES - MS

Sample ID: OI23049-001MS
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Lead	ND	0.40	0.41		1	102	75-125	09/26/2013 1438

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

ICP-AES - MSD

Sample ID: OI23049-001MD
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% RPD	% Rec Limit	% RPD Limit	Analysis Date
Dissolved Lead	ND	0.40	0.41		1	103	0.71	75-125	20	09/26/2013 1442

ICP-AES - MS

Sample ID: OI23049-002MS
Batch: 30256
Analytical Method: 6010C
Matrix: Aqueous
Prep Method: 3005A
Prep Date: 09/25/2013 2120

Parameter	Sample Amount (mg/L)	Spike Amount (mg/L)	Result (mg/L)	Q	Dil	% Rec	% Rec Limit	Analysis Date
Dissolved Lead	ND	0.40	0.41		1	103	75-125	09/26/2013 1453

PQL = Practical quantitation limit
ND = Not detected at or above the PQL
P = The RPD between two GC columns exceeds 40%
J = Estimated result < PQL and ≥ MDL
N = Recovery is out of criteria
+ = RPD is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Note: Calculations are performed before rounding to avoid round-off errors in calculated results

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bresi@blueridge-esi.com

PROJECT NAME/LOCATION: West Side

GROUNDWATER INCIDENT #:

STF CODE:

P.O.#: 17823

LAB: Shealy

SAMPLERS: Joe McMurray

PROJECT MANAGER: Ken Pomeroy

OI 23049

SAMPLE ID	DATE	TIME	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS	[illegible]	[illegible]	[illegible]	[illegible]			REMARKS
12450 - Mw1	9/20/13	1530		✓	groundwater sample			X	X	X	X			
12450 - Dup Lab		1535		✓				X	X	X	X			
12450 - Trip Blank		~~1541~~ N/A						X						
12450 - Grid Blank		1541		✓				X						

T = 15°

RELINQUISHED BY: (SIGN)	DATE	TIME	RECEIVED BY: (SIGN)	DATE	TIME
[signature]	9/23/13	0918	[signature]	9/23/13	0918
[signature]	9/23/13	1435	[signature]	9/23/13	1435

Shealy Environmental Services, Inc.
Document Number: [illegible]
Revision Number: 1

Page 1 of 2
Replaces Date: 01/28/13
Effective Date: 04/08/13

Sample Receipt Checklist (SRC)

Client: [illegible] Cooler Inspected by/date: [illegible] Lot #: [illegible]

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐		2. If custody seals were present, were they intact and unbroken?

Cooler ID/temperature upon receipt [illegible] °C ____ °C ____ °C ____ °C
Method: ☐ Temperature Blank ☑ Against Bottles
Method of coolant: ☐ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

If response is No (or Yes for 14, 15, 16), an explanation/resolution must be provided.

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one); other: ____. (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a. Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed?
Yes ☑	No ☐		7. Was collection date & time listed?
Yes ☑	No ☐		8. Were tests to be performed listed on the COC?
Yes ☑	No ☐		9. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☑		10. Did all container label information (ID, date, time) agree with COC?
Yes ☑	No ☐		11. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		12. Was adequate sample volume available?
Yes ☐	No ☑		13. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		14. Were any samples containers missing?
Yes ☐	No ☐		15. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	16. Were bubbles present >"pea-size" (¼" or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all metals/O&G/TEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) ____ were received incorrectly preserved and were adjusted accordingly in sample receiving with ____ (H_2SO_4,HNO_3,HCl,NaOH) with the SR # (number)

Sample(s) ____ were received with bubbles >6 mm in diameter.

Sample(s) ____ were received with TRC >0.2 mg/L for NH3/TKN/cyanide/phenol

Sample labels verified by: [illegible] Date: [illegible]

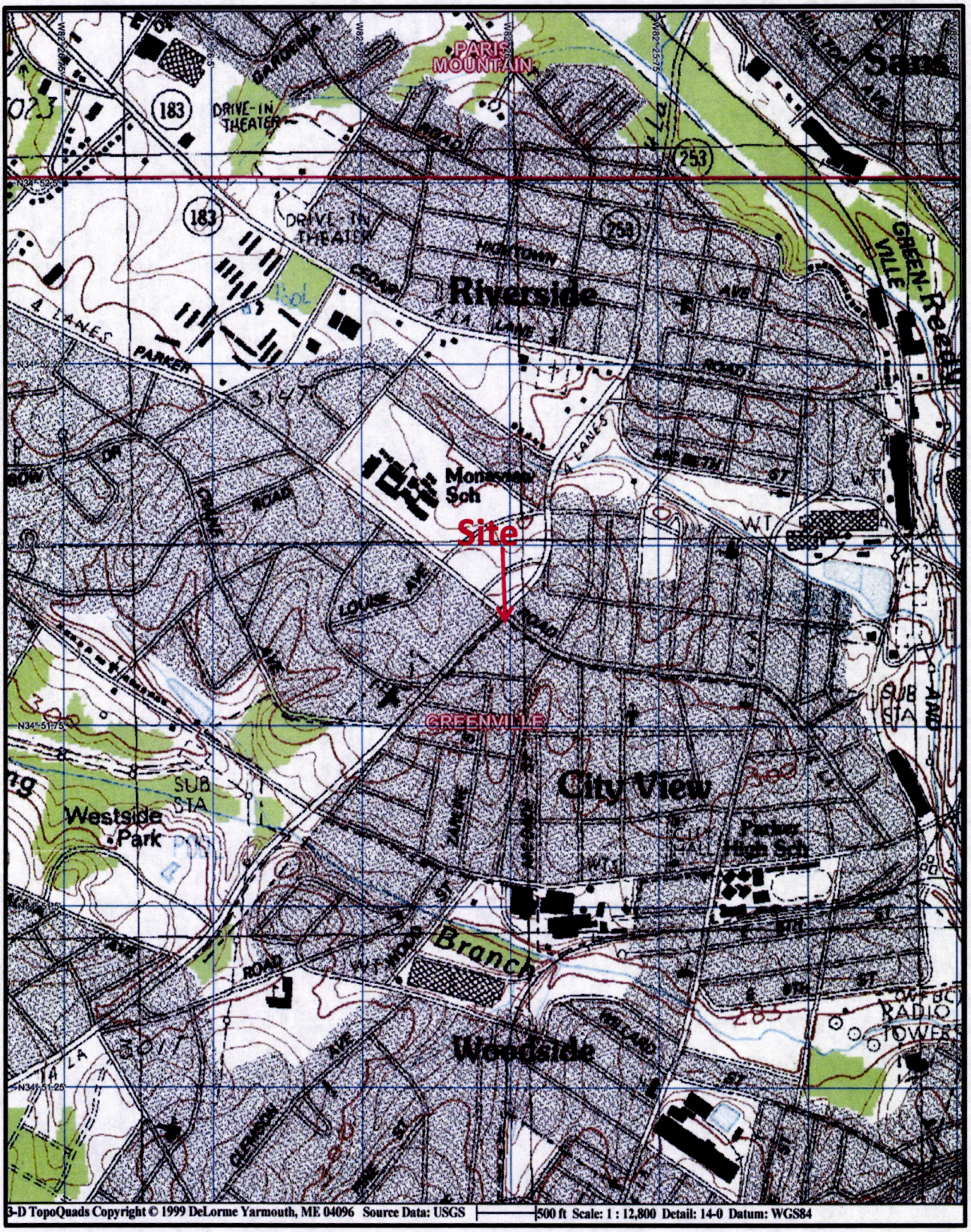
Corrective Action taken, if necessary:

Was client notified: Yes ☐ No ☐ Did client respond: Yes ☐ No ☐

SESI employee: ____ Date of response: ____

Comments: [illegible]

APPENDIX C



Topographic Map

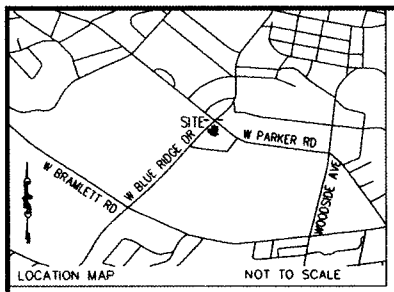
0 1,250

North

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY
2315 Kings Road Ext.
Shelby, North Carolina 28152
(704) 482-2111
Fax (704) 482-4335

Client:	Mr. Mike Wright
Project:	Westside Quick Stop
Location:	821 West Parker Road
	Greenville, SC 29611
Approximate Scale:	1" = 1,250'
Date: 9/30/13	UST Permit # 12430

Appendix C



NOTE: EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: RIGHTS-OF-WAY, EASEMENTS, OTHER THAN POSSIBLE EASEMENTS THAT WERE VISIBLE AT THE TIME OF MAKING THIS SURVEY; BUILDING SETBACK LINES; RESTRICTIVE COVENANTS; SUBDIVISION RESTRICTIONS; ZONING OR OTHER LAND USE REGULATIONS AND ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE. - ANY FLOOD PLAIN DATA SHOWN HEREON IS AN APPROXIMATE LOCATION GRAPHICALLY PLOTTED FROM THE REFERENCED FEMA MAP UNLESS OTHERWISE NOTED. - THIS SURVEY DOES NOT CONSTITUTE A TITLE RESEARCH, FLOOD STUDY, WETLAND DELINEATION OR ENVIRONMENTAL INSPECTION BY SURVEYOR. - THIS SURVEY, AND ALL COPIES THEREOF, ARE INVALID WITHOUT THE ORIGINAL SIGNATURE, DATE, AND EMBOSSED SEAL OF WILLIAM T. LAVENDER, SOUTH CAROLINA PROFESSIONAL SURVEYOR No. 28138. THE WORD "CERTIFY" OR "CERTIFICATE" IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANT OR GUARANTEE, EXPRESSED OR IMPLIED.

Soil Samples Collected on 9/16/13
Groundwater Samples Collected on 9/20/13

Please Note Only Common and Detectable Constituents Are Noted

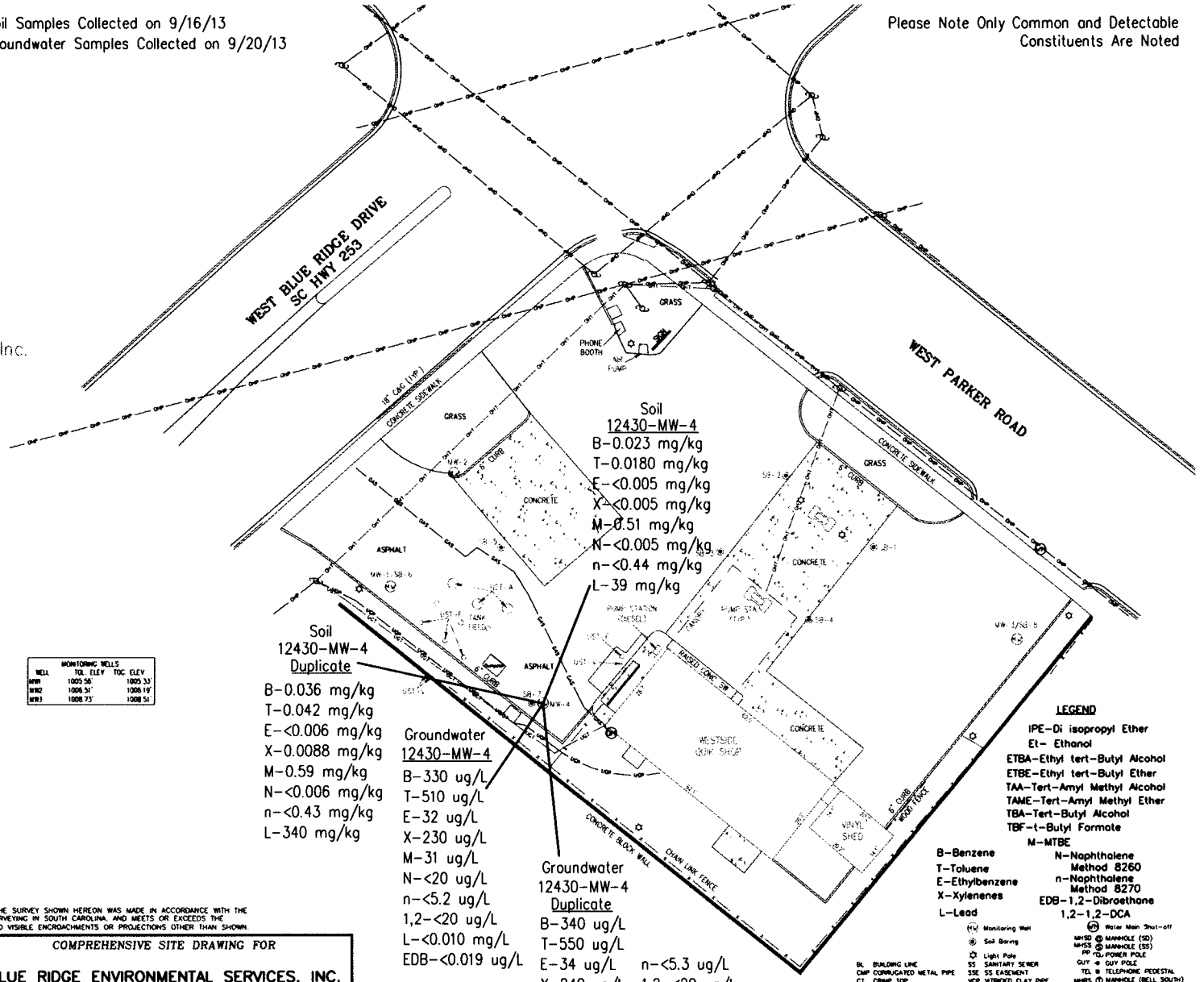
BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

Blue Ridge Environmental Services, Inc.
SC Contractor #0095

Westside Quick Stop
809 West Parker Road
Greenville, SC 29611
UST Permit # 12430

Appendix C
Chemicals of Concern



NOTES:
1) THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHTS OF WAY, ZONING ORDINANCES, AND RESTRICTIONS OF RECORD OR NOT OF RECORD, THAT A CURRENT TITLE SEARCH MAY DISCLOSE.
2) ELEVATIONS ARE TAKEN FROM S.C. STATE PLANE COORDINATE SYSTEM NAD88 DATUM (BASED ON AN OBSERVATION FROM S.C.V.R.S.)
3) THIS DRAWING IS NOT FOR THE PURPOSE OF RECORDATION FOR COUNTY RECORDS, OR FOR THE CONVEYANCE OF PROPERTY.
4) THIS IS NOT A BOUNDARY SURVEY.
5) THIS FIELD WORK WAS DONE UNDER THE DIRECT SUPERVISION OF A REGISTERED LAND SURVEYOR.
6) AST REFERS TO 'ABOVE GROUND STORAGE TANK'
UST-A REFERS TO 'UNDERGROUND STORAGE TANK - ACCESS'
UST-F REFERS TO 'UNDERGROUND STORAGE TANK - FILL'
UST-V REFERS TO 'UNDERGROUND STORAGE TANK - VENT'
SB REFERS TO SOIL BORING

MONITORING WELLS			
WELL	TOL. ELEV	TOC ELEV.	
MW1	1005.56'	1005.33'	
MW2	1006.51'	1006.19'	
MW3	1008.73'	1008.51'	

EXEMPTION FROM REVIEW PROCESS
This plat is a SURVEY of an existing lot of record with no new lots created.

X
WILLIAM T. LAVENDER, PS No.28138

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

LEGEND

IPE-Di isopropyl Ether
Et- Ethanol
ETBA-Ethyl tert-Butyl Alcohol
ETBE-Ethyl tert-Butyl Ether
TAA-Tert-Amyl Methyl Alcohol
TAME-Tert-Amyl Methyl Ether
TBA-Tert-Butyl Alcohol
TBF-t-Butyl Formate
M-MTBE
B-Benzene
T-Toluene
E-Ethylbenzene
X-Xylenenes
L-Lead
N-Naphthalene Method 8260
n-Naphthalene Method 8270
EDB-1,2-Dibroethane
1,2-1,2-DCA

(MW) Monitoring Well
Soil Boring
Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VITRIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
ELEC ELEC TRANS
ELEVATION
FIRE HYDRANT
IP IRON PIN
LP LIGHT POLE
CO CLEAN OUT
EM ELECTRIC METER
(WV) Water Main Shut-off
MHSD MANHOLE (SD)
MHSS MANHOLE (SS)
PP POWER POLE
GUY GUY POLE
TEL TELEPHONE PEDESTAL
MHBS MANHOLE (BELL SOUTH)
GM GAS METER
UGT Underground Telephone
UGP Underground Electric
GAS Natural Gas
CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
OHP OVERHEAD POWER
OHT OVERHEAD TELEPHONE
SD STORM DRAIN
SS SANITARY SEWER

BL BUILDING LINE
CMP CORRUGATED METAL PIPE
CT CRIMP TOP
DE DRAINAGE EASEMENT
EP EDGE OF PAVEMENT
IPO IRON PIN OLD
IPS IRON PIN SET
NRC NAIL & CAP
OT OPEN TOP
RB REBAR
RCP REINFORCED CONC PIPE
R/W RIGHT OF WAY
SD STORM DRAIN

WILLIAM T. LAVENDER, P.S. SC#28138

104 Abbot Drive Greer, SC 29651
PH: (864) 729-1043

213-090

GREER SURVEYING AND MAPPING, LLC
SOUTH CAROLINA
No. CO 4349
CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE DRAWING FOR

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

GREENVILLE COUNTY, SOUTH CAROLINA

SCALE	PROPERTY ADDRESS	TAX PIN
1" = 20'	809 WEST PARKER ROAD	0135000100200
DATE	20 0 20 40	FIELD CREW / DRAWN BY
10/1/13		KG/WL / WTL

APPENDIX D

NON-HAZARDOUS WASTE MANIFEST

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

NON-HAZARDOUS WASTE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.

Manifest Document No.

2. Page 1 of

3. Generator's Name and Mailing Address

4. Generator's Phone ( )

5. Transporter 1 Company Name

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone

GENERATOR

11. WASTE DESCRIPTION	Containers No.	Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a.				
b.				
c.				
d.				

G. Additional Descriptions for Materials Listed Above

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

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

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

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

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

18. Transporter 2 Acknowledgement of Receipt of Materials

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

FACILITY

19. Discrepancy Indication Space

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

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

PRINTED ON RECYCLED PAPER USING SOYBEAN INK PRINTED WITH SOY INK

Environmental Soils Inc.

PO Box 295 • Lattimore, NC 28089
Phone 704-434-0075 • Fax 704-434-9533

PO # 17829

Non-Hazardous Waste Manifest # **31221**

Date 9/30/13 Load Number 1

(numbered sequentially as trucks are dispatched)

ENVIRONMENTAL CONSULTANT: Blue Ridge Environmental

Contact: Ken Pimienta Phone: (704) 482-2111 Fax: _____

GENERATOR: Westside Quick Stop (IGWA

Address: 809 West Packer Road Greenville County: Greenville

Contact: N/A Phone: _____

WASTE ORIGINATION POINT: Complete Address: 809 West Packer Road Greenville SC

Class & Type of Contaminate in soil Petroleum Based Soil

SOURCE OF CONTAMINATION: (ex. UST or other source) UST

GENERATORS CERTIFICATION OF WASTE CONSTITUENTS: In lieu of submitting analytical data (methods 8240 and 8270) verifying that the waste in question does not contain organic constituents other than those which would normally appear in analysis of virgin petroleum product residue, I am submitting this Certificate of Waste Constituents. I certify that I am familiar with the source of contamination of the soil and further certify the source, to the best of my knowledge, contains no contaminants other than that listed above.

Generators Signature: Ken Pimienta (Blue Ridge) Date: 9/16/13

TRANSPORTER: Ken Pimienta (Blue Ridge)

Contact: Ken Pimienta Phone: (704) 482-2111

As the carrier, I certify that the materials described above being shipped under this non-hazardous materials manifest are properly classified, packaged, labeled, secured, and are in proper condition for transport in commerce under the applicable regulations governing transportation, and I hereby receive this material for delivery to the facility designate.

Carrier Signature: Ken Pimienta Date: 9/30/13 T 1140 / 1680 / 1820

TRUCK #: 1 TAG #: _____ VOLUME: _____

TRUCK DRIVER SIGNATURE: Ken Pimienta DATE: 9/30/13

DESTINATION: Environmental Soils Inc. 910 Crowder Rd, Shelby, NC 28150 Dedicated Land Application Site Permit #SR0300038

I certify that the carrier has delivered the materials described above to this facility, and I hereby accept this material for treatment and/or disposal in a manner that has been authorized by the Sate of North Carolina.

Facility Signature: Matt Rice Date: 9/30/13

Signature: Amy Ellis Date: 9/30/13

Company Name ESI Title: _____

White/Facility Canary/Invoice Pink/Carrier Goldenrod/Generator

APPENDIX E

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335
SC Contractor # 0095

UST Permit # 12430
Westside Quick Stop

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	✓		
7	Has the facility history been summarized?		✓	
8	Has the regional geology and hydrogeology been described?		✓	
9	Are the receptor survey results provided as required?	✓		
10	Has current use of the site and adjacent land been described?	✓		
11	Has the site-specific geology and hydrogeology been described?	✓		
12	Has the primary soil type been described?	✓		
13	Have field screening results been described?		✓	
14	Has a description of the soil sample collection and preservation been detailed?	✓		
15	Has the field screening methodology and procedure been detailed?		✓	
16	Has the monitoring well installation and development dates been provided?	✓		
17	Has the method of well development been detailed?	✓		
18	Has justification been provided for the locations of the monitoring wells?		✓	
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?	✓		
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?	✓		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	✓		
24	If free-product is present, has the thickness been provided?			✓
25	Does the report include a brief discussion of the assessment done and the results?		✓	
26	Does the report include a brief discussion of the aquifer evaluation and results?		✓	
27	Does the report include a brief discussion of the fate & transport models used?		✓	

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SC Contractor # 0095

UST Permit # 12430
Westside Quick Stop

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)		✓	
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)		✓	
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)		✓	
31	Have recommendations for further action been provided and explained?		✓	
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)	✓		
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)		✓	
34	Has the current and historical laboratory data been provided in tabular format?	✓		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?		✓	
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)		✓	
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	✓		
40	Has the site potentiometric map been provided? (Figure 5)		✓	
41	Have the geologic cross-sections been provided? (Figure 6)		✓	
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)		✓	
43	Has the site survey been provided and include all necessary elements? (Appendix A)	✓		
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	✓		
45	Is the laboratory performing the analyses properly certified?	✓		
46	Has the tax map been included with all necessary elements? (Appendix C)		✓	
47	Have the soil boring/field screening logs been provided? (Appendix D)	✓		
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	✓		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)		✓	
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)		✓	
52	Has all fate and transport modeling been provided? (Appendix I)		✓	
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)			✓
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

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SC Contractor # 0095

Explanation for missing and incomplete information

- Please note that the 12430-MW-4 and 12430-MW-4 Duplicate samples were mislabeled as 12430-MW-1 and 12430-MW-1 Duplicate on the corresponding laboratory chain-of-custody sheet. The groundwater samples were collected from 12430-MW-4 and not 12430-MW-1. The report has been composed to reflect the change.

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

NOV 22 2013

UST 12feet DOCKETING

MR MIKE WRIGHT
WESTSIDE QUIK SHOP INC
405 DOVE HILL CIR
EASLEY SC 29640-8907

Re: QAPP Contractor Addendum Directive for Tier II
Westside Quick Stop, 821 W. Parker Rd., Greenville, SC
UST Permit #12430
Release #1 reported June 7, 2012
Tier I Assessment Report received September 13, 2013
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Blue Ridge Environmental Services, Inc. The report indicates that groundwater concentrations of benzene, toluene, ethylbenzene, xylenes, methyl tert butyl ether, EDB, and naphthalene are above risk-based screening levels (RBSLs).

To determine what risk the referenced release may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier II Assessment as outlined in the UST Quality Assurance Program Plan (QAPP) Revision 2.0 is necessary. The Tier II Assessment must be conducted in accordance with the UST QAPP and in compliance with all applicable regulations once the site specific QAPP Contractor Addendum is approved. The QAPP Contractor Addendum must be prepared using the format as outlined in the QAPP Revision 2.0, available on-line at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm. **Your contractor must complete and submit the QAPP Contractor Addendum within thirty (30) days of the date of this letter.** A cost agreement is required that includes sampling of all water supply wells, and surface water bodies within 1,000 feet of the facility or 500 feet down gradient of the edge of the plume. **Please note that approval from the Agency must be issued before work begins.**

According to Division records, the release at the facility was reported to the Agency on June 7, 2012. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first $25,000 of site rehabilitation costs. To ensure that costs made toward the Tier II apply to the $25,000 deductible, costs need to be preapproved and a cost agreement provided once the site specific QAPP contractor addendum is approved.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST permit number 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 898-0599. I can also be reached by email at fordrj@dhec.sc.gov or by fax at (803) 898-0673.

Sincerely,

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617
Blue Ridge Environmental Services, Inc., 2315 Kings Road Ext., Shelby, NC 28152
Technical file

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Shelby, North Carolina 28152
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(F) 704.482.4335

UST DOCKETING 13tech

UST JAN 06 2014 DIVISION

QAPP Contractor Addendum - Tier II Initial

Westside Quick Stop – UST Permit # 12430
821 West Parker Road
Greenville, Greenville Co., South Carolina

Prepared By:

Blue Ridge Environmental Services, Inc.
Class 1 Site Rehabilitation Contractor # 095
2315 Kings Road Ext.
Shelby, North Carolina 28152

January 2, 2014

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Shelby, North Carolina 28152
(O) 704.482.2111
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Section A: Project Management

A1 Title and Approval Page

Tier II Initial Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Joseph W.McMurray, PG
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: January 2, 2014
Blue Ridge Environmental Services, Inc. (#095)

Approvals:

James Ford
SC DHEC Project Manager
_____ Date_____
Signature

Daniel J. Miller, PE
Contractor QA Manager
_____ Date 1-2-14
Signature

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor
_____ for___ Date 1-2-14
Signature

Daniel J. Wright
Laboratory Director
_____ Date 1-2-14
Signature

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Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

A3 Distribution and Project Organization List

Name	Title/Role from UST Master QAPP	License / Number	Organization/Address	Telephone Number	Fax Number	Email Address
James Ford	SCDHEC Technical Project Manager		SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-898-0599	803-898-0673	Fordrj@dhec.sc.gov
Joseph W. McMurray, P.G.	Contractor Project Manager	#095	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Joseph W. McMurray, P.G.	Contractor Field Manager	SC PG #2111	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Daniel J. Miller,P.E.	Contractor Project Verifier	SC PE # 29664	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Danm@blueridge-esi.com
Joseph W. McMurray, P.G.	Well Driller	SC #B734	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Daniel Wright	Laboratory Director	SCDHEC #32010	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803 791-9700	803 791-9111	Dwright@shealylab.com
Ken Pimienta	Geologist/ Field Services		Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Kenp@blueridge-esi.com
Jeff White	Technician/ Field Services		Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext.	704 482-2111	704 482-4335	Jeffw@blueridge-esi.com

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

			Shelby, NC 28152			
William Lavender	Surveyor	SC #28138	Greer Surveying and Mapping, LLC 104 Ascot Drive Greer, SC 29651	864 723-1043	NA	greersurveying@gmail.com
Keith Speece	Driller	SC #B2106	Carolina Soils Investigations, LLC 132 Gurney Road Olin, NC 28660	704 539-5279	NA	keith@carolinasoilinvestigations.com
Corey Speece	Driller	SC #B2107	Carolina Soils Investigations, LLC 132 Gurney Road Olin, NC 28660	704 539-5279	NA	keith@carolinasoilinvestigations.com

Table 1A Addendum Distribution and Project Organization List

A4 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The subject site is located at 821 West Parker Road in Greenville, Greenville County, South Carolina. Reportedly the facility was constructed in approximately 1967 and was used as a full service gasoline/ service station. Also reportedly, the USTs were upgraded in 1999, lined and a cathodic protection system installed.

A Phase I ESA, (SPECO Corporation, May 3, 2012) and a Phase II ESA (synTerra, June 5, 2012) have been previously completed for this site as part of a possible real estate transfer. The analytical results of the soil and groundwater samples collected from temporary monitoring wells during the Phase II ESA confirmed petroleum constituents above the RBSLs were present in the soil and groundwater. The release report date is June 7, 2012. Based on the results of the Phase II ESA by synTerra a Tier I Assessment was requested by SC DHEC. A report on the Tier I Assessment was submitted to SC DHEC on September 11, 2013.

During 2013 tank and line testing performed by Environmental Labs, Inc. of Greenville, SC, the premium unleaded gas UST failed a tank tightness test. SC DHEC requested an IGWA Assessment be performed relative to that possible release. An IGWA Report was submitted to SC DHEC on October 2, 2013.

The Tier I Report submitted indicates that groundwater concentrations of benzene, toluene, ethylbenzene, xylenes, MTBE, EDB and naphthalene are above risk based screening levels. To determine what risk the referenced release may pose to human health and the environment and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier II Assessment is necessary.

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

Please answer the following: Does this project fall under UST or Brownfields area?
UST

A5 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The next scope of work for this site is a Tier II Assessment pursuant to SCDHEC's Master QAPP. This will include the installation of approximately 10 field screening wells to 30' TD each, 15 shallow monitor wells to 30' TD each, 1 deep monitor well to 50' TD, soil, surface water (if necessary), groundwater sampling and other standard tasks to delineate the horizontal and vertical extent of the contamination.
   The work will begin within 6 WEEKS ***after cost approval and sampling should be complete by*** 12 WEEKS after offsite permissions are obtained.

2. ***Are there any time or resource constraints? Include those factors that may interfere with the tentative schedule.*** Yes, based on the current workload at Blue Ridge, manpower and field services do have constraints and it will be two to three months before the project can be started. Also, offsite permission needs to be obtained and that can be problematic at best.

A6 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

See Attached Appendix A1: Topographic Site Map (USGS)
Site Map with Proposed Screening and Well Locations

A7 Certification

The Following Laboratory will be used for this Project: Shealy Environmental Services, Inc.

Commercial Lab

Full Name of the Laboratory: Shealy Environmental Services, Inc.
Name of Lab Director: Daniel J. Wright
SC DHEC Certification Number: 32010
Shealys Geotechnical Subcontractor Lab: Schnabel Engineering

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2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

Name of Lab Director: Rich Wargo, PE
SC DHEC Certification Number: NA

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A8 Documents and Records

Personnel (SCDHEC) will receive the most current version of the QAPP Addendum via: (Check all that apply)

_X_ US Mail ____Courier ____Hand delivered
Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Horriba U-52	Electronic & Hard Copy	Network storage Min. 5 yrs. Raw data equipment stored in office: Min. 5 yrs.	Yes
Final Reports	Blue Ridge Environmental Services, Inc.	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Field Work	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
Chain of Custody Forms	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
QAPP Addendum	Blue Ridge	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Internal QC Record	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes
Sampling Report	Shealy Environmental Services, Inc..	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
1903 Water Well Record Form	Blue Ridge Environmental Services, Inc.	Hard Copy	Office: Min. 5 yrs.	Yes

Table 2A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Note: A = Date QAPP Addendum and Cost Agreement approved by SCDHEC.

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

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Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

Item	Start Date	End Date	Comments
Request offsite right of entry	A + 14 days		To be determined by date of receipt of approved cost agreement and offsite right of entry
Have site located	A + 35 days	N/A	-
Install field screenings	A + 42 days	"	"
Install MW's	A + 72 days	"	"
Develop & Sample MW's	A + 84 days	"	"
Survey MW's, run slug tests	A + 86 days	"	"
Write Report	A + 100 days	"	"
Final QA Review	A + 107 days	"	"
Final Submittal	A + 120 days	"	"

Table 3A Sampling Activities

B2 Sampling Methods

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

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	9
Field Screening Samples	10
Ground Water from monitoring wells	20
From Drinking/Irrigation water wells	0
From surface water features	0
Field Duplicate	1
Field Blank	2
Trip Blank	2
Total number of soil samples	9
Total number of Water samples	35

The samples will be (check as many as apply): ____Homogenized ___Split __X__ Grab

If homogenized or split are checked please indicate how will it be done and the equipment needed.

If decontamination procedures differ from Appendix H, please provide details.

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Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.

Laboratory Services: Shealy Environmental Services, Inc.
Drill Rig: Simco 2400 SK-1, Sampling equipment, drilling equipment (Blue Ridge)
Drill Rig: Simco 2800 HD (SD) Sampling and drilling equipment (CSI)
Drill Rig: Geoprobe 6610 Sampling and drilling equipment (CSI)
Hand Auger Equipment (Blue Ridge)
Field Instruments Including: Water Level Meter, Horriba U-52 Water Meter (Blue Ridge)
Flat Bed Trailer: Auger soil spoils removal (Blue Ridge)
Field Trucks and standard work tools (Blue Ridge)

NOTE: 10 Proposed Field Screenings to 30' TD each
15 Monitor Wells to 30' TD each
1 Vertical Monitor Well to 50' TD each

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Field meters not working.	Attempt to clean probes and recalibrate in the field. Change batteries. Fix the problem.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray
Wells not located.	Use metal detector, measure from known points or call DHEC Project Manager for additional information.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray

Table 4A Field Corrective Action

B3 Sample Handling and Custody

1. How will the samples get from the Site to the Lab to ensure holding requirements are met?
Following sample collection and packaging in coolers with ice, the samples are transported back to the Blue Ridge office by truck or car. The chain of custody is completed for the sample batch by Blue Ridge field staff. If samples are picked up the same day at our office by the laboratory courier, the sample coolers are maintained with appropriate ice levels to maintain temperature until pick-up. If samples will be picked up the following day by the lab courier, then the samples may be transferred to our on-site refrigerator / freezer for cold storage until pick up. At the time of pickup, the chain of custody is completed and the Shealy staff courier drives the samples to their laboratory location.

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Shealy will contact Blue Ridge if for any reason hold times have been exceeded prior to performance of the requested analyses.

2. ***If sample preservation procedures differ from the UST Programmatic QAPP, please provide details.***
   They do not differ. Shealy Environmental Services pre-preserves all laboratory containers, if necessary, (glass and plastic) for laboratory use. Samples are placed on ice after collection.

3. ***If chain of custody procedures differ from the UST Programmatic QAPP, please provide details.***
   The only difference at this time is our chain of custody does not have a program area listed.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Parameter	SOP ID*	Method Referenced	Equipment	Comments
BTEX+Naph+MTBE+Oxygenates+ 1,2 DCA + Ethanol	S-VO-002	8260B	GC/MS	
PAH's	S-SV-021	8270D	GC/MS	
Lead	S-IM-022	6010C	ICP	
EDB	S-SV-012	8011	GC	
Grain Size/Hydrometer	ASTM	D422 and D1140	Sieves, balance, hydrometer	Sub-Contracted by Shealy to Schnabel
pH, Conductivity, D.O., Temperature & Turbidity	N/A	Per manufacturers recommendation	Horiba-U52	Field Measurement

Table 5A Analytical SOPs and Referenced Methods

- **This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

2. Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here.
   Not applicable

B5 Quality Control Requirements:

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All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all field equipment needing periodic maintenance, the schedule for this, and the person responsible.

Instrument	Serial Number	Type of Maintenance	Frequency	Person responsible
Keck-Interface Probe	370	Battery Replacement Calibration Cleaning	Prior to & Following Use and between wells	Joe McMurray
Slope Indicator-Water Level Indicator	40941	Batter Replacement Cleaning	Prior to & Following Use and Between Wells	Joe McMurray
Slope Indicator-Water Level Indicator	16029	Battery Replacement Cleaning	Prior to & Following Use and Between Wells	Joe McMurray
David White-Instrument Level	17933	Cleaning and Calibration	Annual	Joe McMurray
Horiba-U52	HGS No. TOKGTPH2	Battery Replacement Calibration Cleaning	As Necessary Annual Prior to & Following Use and Between Wells	Joe McMurray
MiniRae 2000 PID	110-008198	Calibration, Service Cleaning	Annual & As Necessary	Joe McMurray

Table 6A Instrument and Equipment Maintenance

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.

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2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument & Serial Number	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA
Keck-interface Probe #370	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Calibration/Adjustment in-office by tip adjustment, or repair/calibration by service provider when in-office calibration fails. (Keck)	Joe McMurray
Slope Indicator-Water Level Indicator #16029	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary (Durham Geo)	Joe McMurray
Slope Indicator-Water Level Indicator #40941	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary (Durham Geo)	Joe McMurray
David-White Instrument Level #17933	Calibrate per manual	Annual or as necessary	+/- 0.02' at 150'	Calibration/Adjustment by service provider as necessary (Duncan Parnell)	Joe McMurray
Horiba-U52 #TOKGTPH2	Calibrate per manual	Pre-use, mid-day, Post-use	**Temp:** +/- 0.1°C (at calib. point) **pH:** +/- 0.05pH (at calib. points) **DO:** +/- 0.2 mg/L (at 0 to 20 mg/L) +/- 0.5mg/L (at 20 to 50 mg/L **Conductivity**: +/- 0.05% F.S. (against standard solution) **Turbidity:** +/- 5% of Reading or NTU	Calibration/Adjustment in-office or by service provider as necessary (Enviro Equipment)	Joe McMurray
MiniRae 2000 PID #110-008198	"0" check and 100ppm Span Gas Pump	Pre-use, Post-use	+/- 1.0 ppm using 100ppm Calibration Gas	Calibration/Adjustment in-office or by service provider as necessary (Enviro Equipment)	Joe McMurray

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Instrument & Serial Number	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA
	Check per manual				

Table 7A Instrument Calibration Criteria and Corrective Action

B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. If procedures for storage, handling or transport of supplies/consumables differ from the UST Programmatic QAPP, please provide details.
   They do not differ.

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to the project.
3. Indicate the justification criteria for use of these data sources and/or models.

Data Source	Used for	Relevance	Justification for use in this project	Comments
synTerra	Background information	Project Specific	Assessment work previously completed for this site	Phase II ESA
Blue Ridge Environmental Services, Inc.	Background Information	Project Specific	Assessment work previously completed for this site	Tier I Assessment IGWA
Google Earth	Mapping, Aerial Photographs for Project Figures	Current aerial overviews of the site conditions and surroundings	Data is compiled US Department of State Geographer.	Provides accurate site feature coordinates and current as well as historical aerial photography. No acceptance criteria necessary.
County GIS Websites	Mapping, Tax Maps, Parcel Boundaries, Parcel Owners.	Public information that is needed	Data is compiled by County GIS Departments.	Provides accurate parcel boundary and owner information. No acceptance criteria

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				necessary.
www.Maptech.com & DeLorme USA	USGS topographic maps	Project Specific Information	Both digital sources of USGS topographic maps	None

Table 8A Non-Direct Measurements

4. Identify key resources/support facilities needed.

None required

B10 Data Management

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

See Management Flow Chart on following page which describes the management of data from project initiation to final report archive storage.

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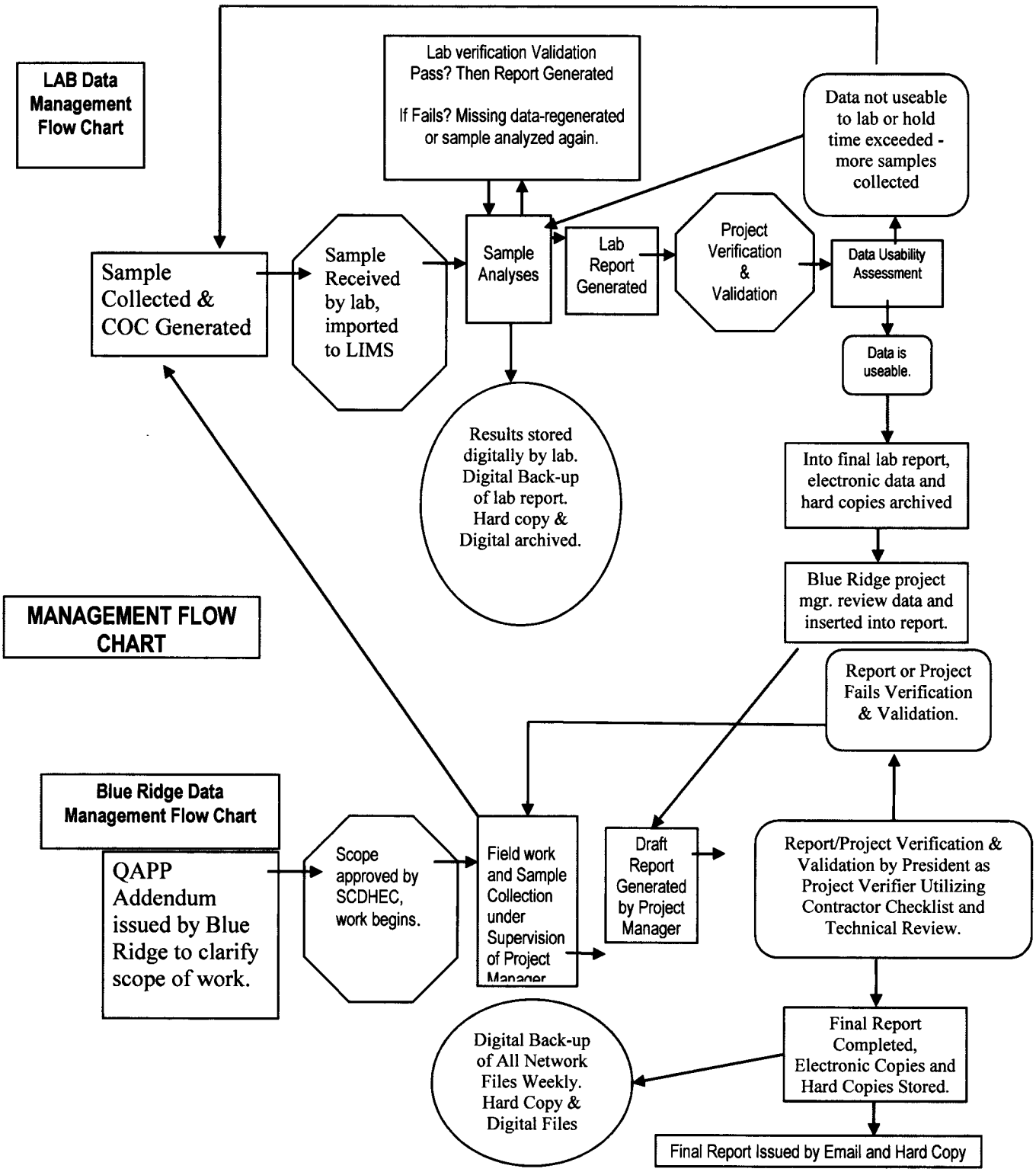

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Figure 1 Example of a Data Management Scheme

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Blue Ridge staff maintains a copy of the sample Chain of Custody (COC) to ensure no unauthorized changes are made to it. The COC is reviewed by the project manager then signed prior to turn-over of the samples to the laboratory courier. Field staff are required to use pen when taking field/project notes in their field books to prevent erasing/modification of field notes. Each field staff is responsible for the control of their field note book. All reporting is reviewed prior to issue by the QA Officer to help ensure consistent report quality. Blue Ridge accepts full responsibility for restoring corrupt or lost data, but adequately manages this risk through the use of state-of-the-art computer software and hardware. The data collected is maintained in our possession at all times and our network is password protected. Blue Ridge field notes, sampling notes, reporting, and digital record keeping practices are in accordance with generally accepted environmental industry standards in this area at this time. The Project Verifier is the party responsible for oversight of our reporting and data management quality. **All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 12 dated 4/12/13.**

3. How does the lab ensure that there are no errors in sample records including times when sample information is compiled, data calculated and/or transmitted.

All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 12 dated 4/12/13.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Data hard copies are archived by placing copies of all project data and reports in the project folder. The project folders are maintained in the office file cabinet for approximately 2-5 years, depending on the project duration; then they are moved to the archive file storage boxes in our warehouse. Archive files are maintained for a minimum of 5 years. The hard copy files can then be retrieved during business hours in person by Blue Ridge staff. Blue Ridge digital files are stored in our network which includes a 2-terrabyte server. Report and data files are digitally stored in the file format in which they were created and typically in Adobe PDF format also. Digital copies of all network files are then backed up once per week by an external drive. Because of these file storage practices, Blue Ridge can reproduce hard copies or digital files for our projects immediately or within one business day of such request.

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Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. . Please state who is responsible for doing this, what observations will be made and how those observations will be made. Will this person have the authority to stop work if severe problems are seen?*

   All field personnel have cell phones with text, email and video capabilities and are able to speak with and send pictures of any issues to the field manager. All sampling and field services are typically performed directly by Blue Ridge Environmental Services, Inc. Joe McMurray is responsible for ensuring that field personnel perform SCDHEC UST project duties in accordance with the SCDHEC UST Programmatic QAPP, Revision 2, dated July 2013. Joe McMurray or Ken Pimienta have the authority to stop work for any reason and agree that field problems, which cannot be remedied internally, will be reported to the SCDHEC Project Manager within 24-hours by telephone and/or email

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done by the Contractor on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

   Blue Ridge has reviewed a copy of Shealy Environmental Services QAMP dated April 4, 2013. Additionally for this project, Blue Ridge will use trip blanks, field blanks and duplicate samples. Trip blanks will be submitted for each sampling event. Field blanks will be collected for each sampling event or each day if the event encompasses multiple days. Field duplicates will be collected for every batch of 20 samples collected. The laboratory QA/QC information for all sample sets will be reviewed also. A DHEC certified laboratory will perform all analytical methods. Dan Miller or Joe McMurray are responsible for this and Blue Ridge has the ability to choose another laboratory certified by South Carolina if problems are severe.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

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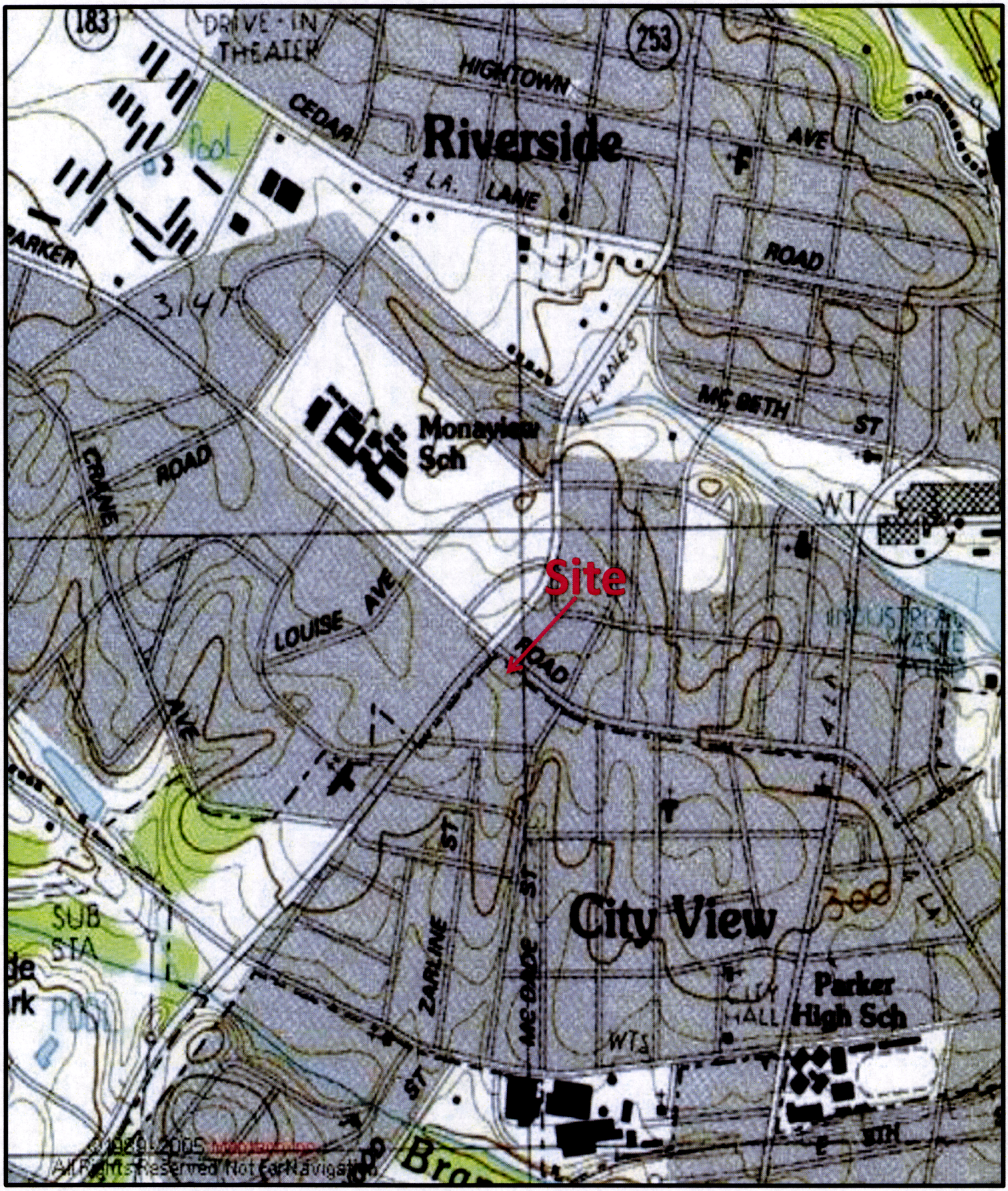
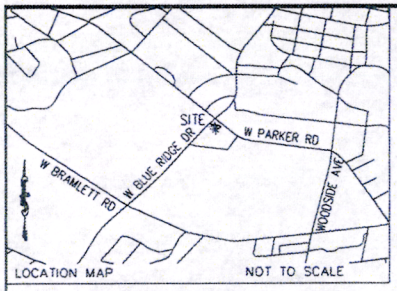
APPENDIX A1 – FIGURES



Topographic Map		North ▲	
BLUE RIDGE ENVIRONMENTAL SERVICES, INC. ENGINEERING • ENVIRONMENTAL • GEOLOGY	2315 Kings Road Ext. Shelby, North Carolina 28152 (704) 482-2111 Fax (704) 482-4335	Client:	Mr. Mike Wright
		Project:	Westside Quick Stop
		Location:	821 West Parker Road
			Greenville,SC
		Source:	MapTech
		Date: 1/17/13	UST Permit # 12430 — Figure 1



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Blue Ridge Environmental Services, Inc.
SC Contractor #0095

Westside Quick Stop
809 West Parker Road
Greenville, SC 29611
UST Permit # 12430

Groundwater Potentiometric Map
Figure 5

NOTES:
1) THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHTS OF WAY, ZONING ORDINANCES, AND RESTRICTIONS OF RECORD OR NOT OF RECORD, THAT A CURRENT TITLE SEARCH MAY DISCLOSE.
2) ELEVATIONS ARE TAKEN FROM S.C. STATE PLANE COORDINATE SYSTEM NAVD88 DATUM (BASED ON AN OBSERVATION FROM S.C.V.R.S.)
3) THIS DRAWING IS NOT FOR THE PURPOSE OF RECORDATION FOR COUNTY RECORDS, OR FOR THE CONVEYANCE OF PROPERTY
4) THIS IS NOT A BOUNDARY SURVEY.
5) THIS FIELD WORK WAS DONE UNDER THE DIRECT SUPERVISION OF A REGISTERED LAND SURVEYOR.
6) AST REFERS TO 'ABOVE GROUND STORAGE TANK'
UST-A REFERS TO 'UNDERGROUND STORAGE TANK - ACCESS'
UST-F REFERS TO 'UNDERGROUND STORAGE TANK - FILL'
UST-V REFERS TO 'UNDERGROUND STORAGE TANK - VENT'
SB REFERS TO SOIL BORING

MONITORING WELLS		
WELL	TOL. ELEV.	TOC ELEV.
MW1	1005.56'	1005.33'
MW2	1005.51'	1005.19'
MW3	1008.73'	1008.51'

⊗ FS's - 10 @ 30' ea = 300'
• MW's - 15 @ 30' ea = 450'
x DMW 1 @ 50' ea = 50'

EXEMPTION FROM REVIEW PROCESS
This plat is a SURVEY of an existing lot of record with no new lots created.

x_____
WILLIAM T. LAVENDER, PS No.28138

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.

WILLIAM T. LAVENDER, P.S. SC#28138

104 Ascot Drive Greer, SC 29651
PH: (864) 723-1043

213-090

SOUTH CAROLINA — GREER SURVEYING AND MAPPING, LLC — CERTIFICATE OF AUTHORIZATION

COMPREHENSIVE SITE DRAWING FOR

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.

GREENVILLE COUNTY, SOUTH CAROLINA

Contour Interval Equals 0.50 Feet

SCALE	PROPERTY ADDRESS	TAX PIN
1" = 20'	809 WEST PARKER ROAD	0135000100200

DATE					FIELD CREW	DRAWN BY
8/28/13	20	0	20	40	KG/WL	WTL

Groundwater Measurements Collected on August 13, 2013
Contour Interval Equals 0.50 Feet
Groundwater Elevations Shown in Feet

LEGEND

BL BUILDING LINE
CMP CORRUGATED METAL PIPE
CT CRIMP TOP
DE DRAINAGE EASEMENT
EP EDGE OF PAVEMENT
IPO IRON PIN OLD
IPS IRON PIN SET
N&C NAIL & CAP
OT OPEN TOP
RB REBAR
RCP REINFORCED CONC PIPE
R/W RIGHT OF WAY
SD STORM DRAIN

Monitoring Well
Soil Boring
Light Pole
SS SANITARY SEWER
SSE SS EASEMENT
VCP VITRIFIED CLAY PIPE
CB CATCH BASIN
DI DROP INLET
ELEC TRANS
ELEVATION
FIRE HYDRANT
IP IRON PIN
LP LIGHT POLE
CO CLEAN OUT
EM ELECTRIC METER

Water Main Shut-off
MHSD MANHOLE (SD)
MHSS MANHOLE (SS)
PP POWER POLE
GUY GUY POLE
TEL TELEPHONE PEDESTAL
MHBS MANHOLE (BELL SOUTH)
GM GAS METER
UGT Underground Telephone
UGP Underground Electric
GAS Natural Gas
CHAIN LINK FENCE
FOC FIBER OPTIC CABLE
OHP OVERHEAD POWER
OHT OVERHEAD TELEPHONE
SD STORM DRAIN
SS SANITARY SEWER

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APPENDIX A2 – SCDHEC COST AGREEMENT

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: Westside Quick Stop

UST Permit #: 12430 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan***				
B. Tax Map		x	$70.00	$0.00
C. Tier II or Comp. Plan /QAPP Appendix B	1	x	$250.00	$250.00
2. **Receptor Survey ***		x	$551.00	$0.00
3. **Survey (500 x 500 feet)**				
A. Comprehensive Survey		x	$1,040.00	$0.00
B. Subsurface Geophysical Survey				$0.00
1. < 10 meters below grade		x	$1,300.00	$0.00
2. > 10 meters below grade		x	$2,310.00	$0.00
C. Geophysical UST or Drum Survey		x	$910.00	$0.00
4. **Mob/Demob (Each)**				
A. Equipment FS, MW & DMW	3	x	$1,020.00	$3,060.00
B. Personnel	9	x	$423.00	$3,807.00
C. Adverse Terrain Vehicle to install wells		x	$500.00	$0.00
5. **Soil Borings (hand auger)* (Feet)**		feet x	$5.00	$0.00
6. **Soil Borings (drilled) & Field Screening ***				
Rate includes collection of water sample or soil sample, and lab or other analyses				
A. Standard	300	feet x	$7.40	$2,220.00
C. Fractured Rock		feet x	$20.20	$0.00
7. **Soil Leachability Model (Each)**		each x	$60.00	$0.00
8. **Abandonment* (per foot)**				
A. 2" diameter or less		feet x	$3.10	$0.00
B. Greater than 2" to 6" diameter	300	feet x	$4.50	$1,350.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$15.00	$0.00
9. **Well Installation* (per foot)**				
A. Water Table (hand augered)		feet x	$10.60	$0.00
B. Water Table (drill rig)	500	feet x	$38.00	$19,000.00
C. Telescoping/ Pit Cased		feet x	$31.80	$0.00
D. Rock Drilling		feet x	$26.80	$0.00
E. 2" Rock Coring		feet x	$30.90	$0.00
G. Rock Multi-sampling ports/screens		feet x	$33.40	$0.00
H. Recovery Well (4 inch diameter)		each x	$30.00	$0.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$15.00	$0.00
J. Rotosonic (2 inch diameter)		each x	$44.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product (Each)**				
A. Groundwater Purge	16	wells x	$60.00	$960.00
B. Air or Vapors		samples x	$12.00	$0.00
C. Water Supply		samples x	$22.00	$0.00
D. Groundwater No Purge or Duplicate	5	samples x	$28.00	$140.00
E. Gauge Well only		per well x	$7.00	$0.00
F. Sample Below Product		wells x	$12.00	$0.00
G. Pasive Diffusion Bag		each x	$26.00	$0.00
H. Field Blank	2	each x	$24.60	$49.20
11. Laboratory Analyses-Groundwater (Each Sample)				
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol	35	samples x	$122.00	$4,270.00
AA. Lead, Filtered		samples x	$13.80	$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$153.60	$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$36.40	$0.00
D. PAH's	16	samples x	$60.00	$960.00
E. Lead, Unfiltered	16	samples x	$16.00	$256.00
F. EDB by EPA 8011	16	samples x	$45.20	$723.20
FF. EDB by EPA Method 8011 Rush		samples x	$68.20	$0.00
G. 8 RCRA Metals		samples x	$63.40	$0.00
H. TPH (9070)		samples x	$41.00	$0.00

I. pH		samples x	$5.20		$0.00
J. BOD		samples x	$20.00		$0.00
P1. Ethanol		samples x	$14.80		$0.00
11. **Analyses-Soil (Each Sample)**					
Q. BTEX + Naphth.	9	samples x	$64.00		$576.00
R. PAH's		samples x	$64.04		$0.00
S. 8 RCRA Metals		samples x	$56.40		$0.00
T. Oil & Grease (9071)		samples x	$0.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$40.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$35.96		$0.00
W. Grain size/hydrometer	2	samples x	$104.00		$208.00
X. Total Organic Carbon		samples x	$30.60		$0.00
11. **Analyses-Air (Each Sample)**					
Y. BTEX + Naphthalene		samples x	$216.00		$0.00
11. **Analyses-Free Phase Product (Each Sample)**					
Z. Hydrocarbon Fuel Identification		samples x	$357.00		$0.00
12. **Aquifer Characterization***					
A. Pumping Test		hours x	$23.00		$0.00
B. Slug Test*	2	tests x	$191.00		$382.00
C. Fractured Rock		tests x	$100.00		$0.00
13. **Free Product Recovery Rate Test* (Each)**		tests x	$38.00		$0.00
14. **Fate/Transport Modeling**					
A. Mathematical Model		each x	$100.00		$0.00
B. Computer Model		each x	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		x	$300.00		$0.00
B. Tier II Risk Evaluation		x	$100.00		$0.00
16. **Subsequent Survey***	1	x	$260.00		$260.00
17. **Disposal* (gallons or tons)**					
A. Wastewater	350	gallons x	$0.56		$196.00
B1. Free Product		gallons x	$0.50		$0.00
C. Soil Treatment/Disposal	4	tons x	$60.00		$240.00
D. Drilling fluids		gallons x	$0.42		$0.00
18. **Miscellaneous (attach receipts)**					
		x			$0.00
		x			$0.00
		x			$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		x			$0.00
21. **IGWA (Use DHEC 3666 form)**		x			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		x			$0.00
23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A. 8-hour Event*		each x	$1,375.00		$0.00
B. AFVR per-hour Continuance		per hour x	$204.00		$0.00
C. Off-gas treatment per-hour Continuance		per hour x			$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A. New GAC System Installation*		each x	$1,900.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$900.00		$0.00
C. Filter replacement/removal*		each x	$350.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$275.00		$0.00
E. GAC System housing		each x	$250.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$1.50		$0.00
25. **Well Repair**					
A. Additional Copies of the Report Delivered		each x	$50.00		$0.00
B. Repair 2x2 MW pad		each x	$550.00		$0.00
C. Repair 4x4 MW pad		each x	$88.00		$0.00
D. Repair well vault		each x	$118.00		$0.00
F. Replace well cover bolts		each x	$2.60		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$134.00		$0.00
I. Convert Flush-mount to Stick-up		each x	$150.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$130.00		$0.00
K. Replace missing/illegible well ID plate		each x	$12.00		$0.00
Report Prep & Project Management	10%	x	$38,907.40		$3,890.74
TOTAL					$42,798.14

*The appropriate mobilization cost can be added to complete these tasks, as necessary

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APPENDIX A3 – SAMPLE CHAIN OF CUSTODY

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bresi@blueridge-esi.com

PROJECT NAME/LOCATION

STF CODE:

P.O.#:

LAB:

GROUNDWATER INCIDENT #:

SAMPLERS: PROJECT MANAGER:

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS							REMARKS

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:

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UST James FEB 03 2014 PROGRAM

UST 14 tech DOCKETING

QAPP Contractor Addendum - Tier II Rev 1

Westside Quick Stop – UST Permit # 12430
821 West Parker Road
Greenville, Greenville Co., South Carolina

Prepared By:

Blue Ridge Environmental Services, Inc.
Class 1 Site Rehabilitation Contractor # 095
2315 Kings Road Ext.
Shelby, North Carolina 28152

January 30, 2014

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Section A: Project Management

A1 Title and Approval Page

Tier II Rev 1 Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Joseph W.McMurray, PG
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: January 30, 2014
Blue Ridge Environmental Services, Inc. (#095)

Approvals:

James Ford
SC DHEC Project Manager
_____ Date_____
Signature

Daniel J. Miller, PE
Contractor QA Manager
_____ Date 1-30-14
Signature

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor
_____ for___ Date 1-30-14
Signature

Daniel J. Wright
Laboratory Director
_____ Date 1-30-14
Signature

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A3 Distribution and Project Organization List

Name	Title/Role from UST Master QAPP	License/ Number	Organization/Address	Telephone Number	Fax Number	Email Address
James Ford	SCDHEC Technical Project Manager		SCDHEC, UST Management Division, 2600 Bull St., Columbia, SC, 29201	803-898-0599	803-898-0673	Fordrj@dhec.sc.gov
Joseph W. McMurray, P.G.	Contractor Project Manager	#095	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Joseph W. McMurray, P.G.	Contractor Field Manager	SC PG #2111 Exp 6/30/14	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Daniel J. Miller,P.E.	Contractor Project Verifier	SC PE # 29664 Exp 6/30/14	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Danm@blueridge-esi.com
Joseph W. McMurray, P.G.	Well Driller	SC #B734 Exp 6/30/14	Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Joem@blueridge-esi.com
Daniel Wright	Laboratory Director	SCDHEC #32010 Exp 12/17/15	Shealy Environmental Services, Inc. 106 Vantage Point Dr. West Columbia, SC 29172	803 791-9700	803 791-9111	Dwright@shealylab.com
Ken Pimienta	Geologist/ Field Services		Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext. Shelby, NC 28152	704 482-2111	704 482-4335	Kenp@blueridge-esi.com
Jeff White	Technician/ Field Services		Blue Ridge Environmental Services, Inc. 2315 Kings Rd. Ext.	704 482-2111	704 482-4335	Jeffw@blueridge-esi.com

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			Shelby, NC 28152			
William Lavender	Surveyor	SC #28138 Exp 6/30/14	Greer Surveying and Mapping, LLC 104 Ascot Drive Greer, SC 29651	864 723-1043	NA	greersurveying@gmail.com
Keith Speece	Driller	SC #B2106 Exp 6/30/14	Carolina Soils Investigations, LLC 132 Gurney Road Olin, NC 28660	704 539-5279	NA	keith@carolinasoilinvestigations.com
Corey Speece	Driller	SC #B2107 Exp 6/30/14	Carolina Soils Investigations, LLC 132 Gurney Road Olin, NC 28660	704 539-5279	NA	keith@carolinasoilinvestigations.com

Table 1A Addendum Distribution and Project Organization List

A4 Problem Definition/Background

Discuss the background (as much as is known) of the site and appropriate historical information, and why this site is being assessed.

The subject site is located at 821 West Parker Road in Greenville, Greenville County, South Carolina. Reportedly the facility was constructed in approximately 1967 and was used as a full service gasoline/ service station. Also reportedly, the USTs were upgraded in 1999, lined and a cathodic protection system installed.

A Phase I ESA, (SPECO Corporation, May 3, 2012) and a Phase II ESA (synTerra, June 5, 2012) have been previously completed for this site as part of a possible real estate transfer. The analytical results of the soil and groundwater samples collected from temporary monitoring wells during the Phase II ESA confirmed petroleum constituents above the RBSLs were present in the soil and groundwater. The release report date is June 7, 2012. Based on the results of the Phase II ESA by synTerra a Tier I Assessment was requested by SC DHEC. A report on the Tier I Assessment was submitted to SC DHEC on September 11, 2013.

During 2013 tank and line testing performed by Environmental Labs, Inc. of Greenville, SC, the premium unleaded gas UST failed a tank tightness test. SC DHEC requested an IGWA Assessment be performed relative to that possible release. An IGWA Report was submitted to SC DHEC on October 2, 2013.

The Tier I Report submitted indicates that groundwater concentrations of benzene, toluene, ethylbenzene, xylenes, MTBE, EDB and naphthalene are above risk based screening levels. To determine what risk the referenced release may pose to human health and the environment and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier II Assessment is necessary.

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Please answer the following: Does this project fall under UST or Brownfields area?
UST

A5 Project/Task Description

1. ***Summarize what is known about the work to be done. This can be a short sentence indicating what the Scope of this project is (see Master QAPP Section A6).***

   The next scope of work for this site is a Tier II Assessment pursuant to SCDHEC's Master QAPP. This will include the installation of approximately 10 field screening wells to 30' TD each, 1 deep field screening to 50' TD, 15 shallow monitor wells to 30' TD each, 1 deep monitor well to 50' TD, soil (grain size), surface water (if necessary), groundwater sampling and other standard tasks to delineate the horizontal and vertical extent of the contamination.
   The work will begin within 6 WEEKS ***after cost approval and sampling should be complete by*** 12 WEEKS after offsite permissions are obtained.

2. ***Are there any time or resource constraints? Include those factors that may interfere with the tentative schedule.*** Yes, based on the current workload at Blue Ridge, manpower and field services do have constraints and it will be two to three months before the project can be started. Also, offsite permission needs to be obtained and that can be problematic at best.

A6 Data Quality Objectives (DQOs) and Data Quality Indicators (DQIs)

Detail the geographical area that is to be part of the project. Maps should be included to show not only the topography and the geographical area of the State, but also to show more detail of the site itself including property lines.

See Attached Appendix A1: Topographic Site Map (USGS)
Site Map with Proposed Screening and Well Locations

A7 Certification

The Following Laboratory will be used for this Project: Shealy Environmental Services, Inc.

Commercial Lab

Full Name of the Laboratory: Shealy Environmental Services, Inc.
Name of Lab Director: Daniel J. Wright
SC DHEC Certification Number: 32010
Shealys Geotechnical Subcontractor Lab: Schnabel Engineering

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Name of Lab Director: Rich Wargo, PE
SC DHEC Certification Number: NA

Please note: SC DHEC may require that the contractor submit some or all of the Laboratory's SOPs as part of this QAPP.

A8 Documents and Records

Personnel (SCDHEC) will receive the most current version of the QAPP Addendum via: (Check all that apply)

_X_ US Mail ____Courier ____Hand delivered
Other (please specify):_____

Record	Produced By	Hardcopy/ Electronic	Storage Location For how long?	Archival
Instrument Raw Data	Horriba U-52	Electronic & Hard Copy	Network storage Min. 5 yrs. Raw data equipment stored in office: Min. 5 yrs.	Yes
Final Reports	Blue Ridge Environmental Services, Inc.	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Field Work	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
Chain of Custody Forms	Field Staff	Hard Copy	Office: Min. 5 yrs.	Yes
QAPP Addendum	Blue Ridge	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
Internal QC Record	Blue Ridge	Hard Copy	Office: Min. 5 yrs.	Yes
Sampling Report	Shealy Environmental Services, Inc..	Electronic & Hard Copy	Office: Min. 5 yrs.	Yes
1903 Water Well Record Form	Blue Ridge Environmental Services, Inc.	Hard Copy	Office: Min. 5 yrs.	Yes

Table 2A Record Identification, Storage, and Disposal

Section B Measurement/Data Acquisition

B1 Sampling Process/Experimental Design

Note: A = Date QAPP Addendum and Cost Agreement approved by SCDHEC.

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Item	Start Date	End Date	Comments
Request offsite right of entry	A + 14 days		To be determined by date of receipt of approved cost agreement and offsite right of entry
Have site located	A + 35 days	N/A	-
Install field screenings	A + 42 days	"	"
Install MW's	A + 72 days	"	"
Develop & Sample MW's	A + 84 days	"	"
Survey MW's, run slug tests	A + 86 days	"	"
Write Report	A + 100 days	"	"
Final QA Review	A + 107 days	"	"
Final Submittal	A + 120 days	"	"

Table 3A Sampling Activities

B2 Sampling Methods

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

***Estimate* the number of samples of each matrix that are expected to be collected:**

Soil	0
Field Screening Samples	0
Ground Water from monitoring wells	20
From Drinking/Irrigation water wells	0
From surface water features	0
Field Duplicate	1
Field Blank	2
Trip Blank	2
Total number of soil samples	0
Total number of Water samples	25

The samples will be (check as many as apply): ____Homogenized ___Split __X__ Grab

If homogenized or split are checked please indicate how will it be done and the equipment needed.

If decontamination procedures differ from Appendix H, please provide details.

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Identify any equipment and support facilities needed. This may include such things as Fed-ex to ship the samples, a Geoprobe, field analysis done by another contractor (who must be certified), and electricity to run sampling equipment.

Laboratory Services: Shealy Environmental Services, Inc.
Drill Rig: Simco 2400 SK-1, Sampling equipment, drilling equipment (Blue Ridge)
Drill Rig: Simco 2800 HD (SD) Sampling and drilling equipment (CSI)
Drill Rig: Geoprobe 6610 Sampling and drilling equipment (CSI)
Hand Auger Equipment (Blue Ridge)
Field Instruments Including: Water Level Meter, Horriba U-52 Water Meter (Blue Ridge)
Flat Bed Trailer: Auger soil spoils removal (Blue Ridge)
Field Trucks and standard work tools (Blue Ridge)

NOTE: 10 Proposed Shallow Field Screenings to 30' TD each
1 Proposed Deep Field Screening to 50' TD
15 Monitor Wells to 30' TD each
1 Vertical Monitor Well to 50' TD each

Address the actions to be taken when problems occur in the field, and the person responsible for taking corrective action and how the corrective action will be documented.

Failure	Response	Documentation	Individual Responsible
Field meters not working.	Attempt to clean probes and recalibrate in the field. Change batteries. Fix the problem.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray
Wells not located.	Use metal detector, measure from known points or call DHEC Project Manager for additional information.	Record on field sheets and notify Joe McMurray.	Joseph W. McMurray

Table 4A Field Corrective Action

B3 Sample Handling and Custody

1. How will the samples get from the Site to the Lab to ensure holding requirements are met?

Following sample collection and packaging in coolers with ice, the samples are transported back to the Blue Ridge office by truck or car. The chain of custody is completed for the sample batch by Blue Ridge field staff. If samples are picked up the same day at our office by the laboratory courier, the sample coolers are maintained with appropriate ice levels to maintain temperature until pick-up. If samples will be picked up the following day by the lab courier, then the samples may be transferred to our on-site refrigerator / freezer for cold storage until pick up. At the time of pickup, the chain of

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custody is completed and the Shealy staff courier drives the samples to their laboratory location. Shealy will contact Blue Ridge if for any reason hold times have been exceeded prior to performance of the requested analyses.

2. ***If sample preservation procedures differ from the UST Programmatic QAPP, please provide details.***
   They do not differ. Shealy Environmental Services pre-preserves all laboratory containers, if necessary, (glass and plastic) for laboratory use. Samples are placed on ice after collection.

3. ***If chain of custody procedures differ from the UST Programmatic QAPP, please provide details.***
   The only difference at this time is our chain of custody does not have a program area listed.

B4 Analytical Methods

1. ***Identify the SOPs which will be used to analyze the samples, the method which the SOP references and the equipment or instrumentation that is needed:***

Parameter	SOP ID*	Method Referenced	Equipment	Comments
BTEX+Naph+MTBE+Oxygenates+ 1,2 DCA + Ethanol	S-VO-002	8260B	GC/MS	
Lead	S-IM-022	6010C	ICP	
EDB	S-SV-012	8011	GC	
Grain Size/Hydrometer	ASTM	D422 and D1140	Sieves, balance, hydrometer	Sub-Contracted by Shealy to Schnabel
pH, Conductivity, D.O., Temperature & Turbidity	N/A	Per manufacturers recommendation	Horiba-U52	Field Measurement

Table 5A Analytical SOPs and Referenced Methods

- **This can be a full name of a SOP, an abbreviation, or a number. In the latter two cases, the abbreviation or number must be associated with the full name of the SOP. See also Table 8A SOP Abbreviation Key.**

2. Provide SOPs for the Kerr Method or the Ferrous Iron Method if these are parameters for this study. This can be attached or written here.
   Not applicable

B5 Quality Control Requirements:

All QC will follow the requirements laid out in Section B5 of the UST Programmatic QAPP.

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B6 Field Instrument and Equipment Testing, Inspection and Maintenance

1. Identify all field equipment needing periodic maintenance, the schedule for this, and the person responsible.

Instrument	Serial Number	Type of Maintenance	Frequency	Person responsible
Keck-Interface Probe	370	Battery Replacement Calibration Cleaning	Prior to & Following Use and between wells	Joe McMurray
Slope Indicator-Water Level Indicator	40941	Batter Replacement Cleaning	Prior to & Following Use and Between Wells	Joe McMurray
Slope Indicator-Water Level Indicator	16029	Battery Replacement Cleaning	Prior to & Following Use and Between Wells	Joe McMurray
David White-Instrument Level	17933	Cleaning and Calibration	Annual	Joe McMurray
Horiba-U52	HGS No. TOKGTPH2	Battery Replacement Calibration Cleaning	As Necessary Annual Prior to & Following Use and Between Wells	Joe McMurray
MiniRae 2000 PID	110-008198	Calibration, Service Cleaning	Annual & As Necessary	Joe McMurray

Table 6A Instrument and Equipment Maintenance

B7 Instrument Calibration and Frequency

1. Identify equipment, tools, and instruments for field or lab work that should be calibrated and the frequency.

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2. Describe how the calibrations should be performed and documented, indicating test criteria and standards or certified equipment.
3. Identify how deficiencies should be resolved and documented. Identify the person responsible for corrective action.

Instrument & Serial Number	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA
Keck-interface Probe #370	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Calibration/Adjustment in-office by tip adjustment, or repair/calibration by service provider when in-office calibration fails. (Keck)	Joe McMurray
Slope Indicator-Water Level Indicator #16029	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary (Durham Geo)	Joe McMurray
Slope Indicator-Water Level Indicator #40941	Checked vs. Standard	Annual or as necessary	+/- 0.01' per 10' length	Repair/Calibration by service provider as necessary (Durham Geo)	Joe McMurray
David-White Instrument Level #17933	Calibrate per manual	Annual or as necessary	+/- 0.02' at 150'	Calibration/Adjustment by service provider as necessary (Duncan Parnell)	Joe McMurray
Horiba-U52 #TOKGTPH2	Calibrate per manual	Pre-use, mid-day, Post-use	**Temp:** +/- 0.1°C (at calib. point) **pH:** +/- 0.05pH (at calib. points) **DO:** +/- 0.2 mg/L (at 0 to 20 mg/L) +/- 0.5mg/L (at 20 to 50 mg/L **Conductivity**: +/- 0.05% F.S. (against standard solution) **Turbidity:** +/- 5% of Reading or NTU	Calibration/Adjustment in-office or by service provider as necessary (Enviro Equipment)	Joe McMurray
MiniRae 2000 PID #110-008198	"0" check and 100ppm Span Gas Pump	Pre-use, Post-use	+/- 1.0 ppm using 100ppm Calibration Gas	Calibration/Adjustment in-office or by service provider as necessary (Enviro Equipment)	Joe McMurray

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Instrument & Serial Number	Calibration Procedure	Frequency of Calibration	Acceptance Criteria	Corrective Action (CA)	Person Responsible for CA
	Check per manual				

Table 7A Instrument Calibration Criteria and Corrective Action

B8 Inspection/Acceptance Requirements for Supplies and Consumables

1. If procedures for storage, handling or transport of supplies/consumables differ from the UST Programmatic QAPP, please provide details.
   They do not differ.

B9 Data Acquisition Requirements (Non-Direct Measurements)

1. Identify data sources, for example, computer databases or literature files, or models that should be accessed or used.
2. Describe the intended use of this information and the rationale for their selection, i.e., its relevance to the project.
3. Indicate the justification criteria for use of these data sources and/or models.

Data Source	Used for	Relevance	Justification for use in this project	Comments
synTerra	Background information	Project Specific	Assessment work previously completed for this site	Phase II ESA
Blue Ridge Environmental Services, Inc.	Background Information	Project Specific	Assessment work previously completed for this site	Tier I Assessment IGWA
Google Earth	Mapping, Aerial Photographs for Project Figures	Current aerial overviews of the site conditions and surroundings	Data is compiled US Department of State Geographer.	Provides accurate site feature coordinates and current as well as historical aerial photography. No acceptance criteria necessary.
County GIS Websites	Mapping, Tax Maps, Parcel Boundaries, Parcel Owners.	Public information that is needed	Data is compiled by County GIS Departments.	Provides accurate parcel boundary and owner information. No acceptance criteria

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				necessary.
www.Maptech.com & DeLorme USA	USGS topographic maps	Project Specific Information	Both digital sources of USGS topographic maps	None

Table 8A Non-Direct Measurements

4. Identify key resources/support facilities needed.

None required

B10 Data Management

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

See Management Flow Chart on following page which describes the management of data from project initiation to final report archive storage.

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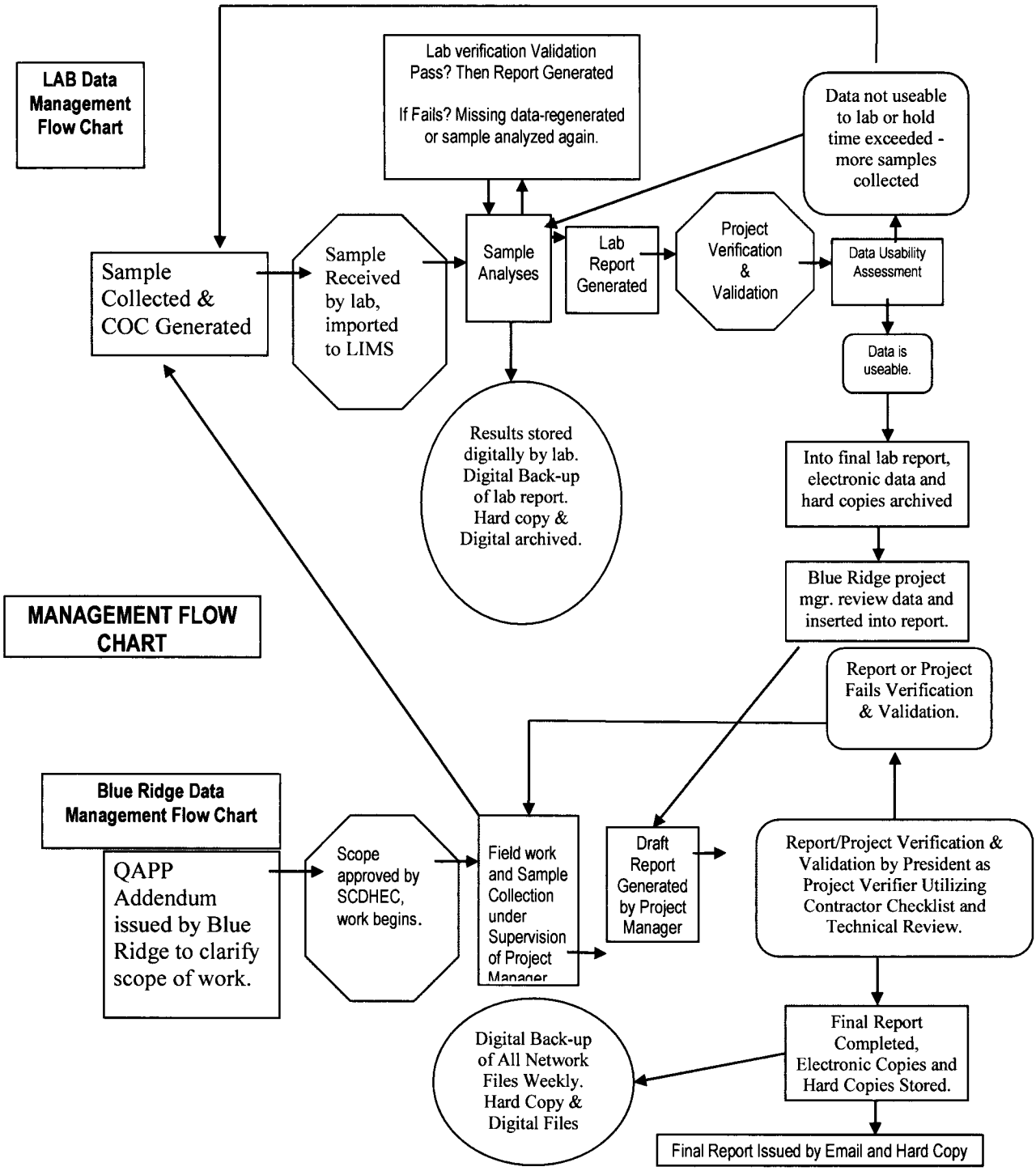

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Figure 1 Example of a Data Management Scheme

2. How does the lab and field staff ensure that no unauthorized changes are made to the chain of custody, sampling notebooks, laboratory notebooks and computer records?

Blue Ridge staff maintains a copy of the sample Chain of Custody (COC) to ensure no unauthorized changes are made to it. The COC is reviewed by the project manager then signed prior to turn-over of the samples to the laboratory courier. Field staff are required to use pen when taking field/project notes in their field books to prevent erasing/modification of field notes. Each field staff is responsible for the control of their field note book. All reporting is reviewed prior to issue by the QA Officer to help ensure consistent report quality. Blue Ridge accepts full responsibility for restoring corrupt or lost data, but adequately manages this risk through the use of state-of-the-art computer software and hardware. The data collected is maintained in our possession at all times and our network is password protected. Blue Ridge field notes, sampling notes, reporting, and digital record keeping practices are in accordance with generally accepted environmental industry standards in this area at this time. The Project Verifier is the party responsible for oversight of our reporting and data management quality. **All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 12 dated 4/12/13.**

3. How does the lab ensure that there are no errors in sample records including times when sample information is compiled, data calculated and/or transmitted.

All laboratory quality control actions are outlined in Shealy Environmental Services QAMP (Quality Assurance Management Plan), revision 12 dated 4/12/13.

4. How will the data be archived once the report is produced? How can it be retrieved? (This applies to both electronic and hard copies).

Data hard copies are archived by placing copies of all project data and reports in the project folder. The project folders are maintained in the office file cabinet for approximately 2-5 years, depending on the project duration; then they are moved to the archive file storage boxes in our warehouse. Archive files are maintained for a minimum of 5 years. The hard copy files can then be retrieved during business hours in person by Blue Ridge staff. Blue Ridge digital files are stored in our network which includes a 2-terrabyte server. Report and data files are digitally stored in the file format in which they were created and typically in Adobe PDF format also. Digital copies of all network files are then backed up once per week by an external drive. Because of these file storage practices, Blue Ridge can reproduce hard copies or digital files for our projects immediately or within one business day of such request.

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Shelby, North Carolina 28152
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Section C Assessment and Oversight

C1 Assessment and Response Actions

1. *The Contractor is supposed to observe field personnel daily during sampling activities to ensure samples are collected and handled properly and report problems to DHEC within 24 hours. . Please state who is responsible for doing this, what observations will be made and how those observations will be made. Will this person have the authority to stop work if severe problems are seen?*

   All field personnel have cell phones with text, email and video capabilities and are able to speak with and send pictures of any issues to the field manager. All sampling and field services are typically performed directly by Blue Ridge Environmental Services, Inc. Joe McMurray is responsible for ensuring that field personnel perform SCDHEC UST project duties in accordance with the SCDHEC UST Programmatic QAPP, Revision 2, dated July 2013. Joe McMurray or Ken Pimienta have the authority to stop work for any reason and agree that field problems, which cannot be remedied internally, will be reported to the SCDHEC Project Manager within 24-hours by telephone and/or email

2. *The SCDHEC UST QAPP states that the Lab will receive an Offsite Technical System Audit. For this project, what assessments will be done by the Contractor on the Commercial Lab(s) that are being used—other than their certification audit? When or how often are these done? Who will the results be given to and who has the ability to stop work if problems are severe?*

   Blue Ridge has reviewed a copy of Shealy Environmental Services QAMP dated April 4, 2013. Additionally for this project, Blue Ridge will use trip blanks, field blanks and duplicate samples. Trip blanks will be submitted for each sampling event. Field blanks will be collected for each sampling event or each day if the event encompasses multiple days. Field duplicates will be collected for every batch of 20 samples collected. The laboratory QA/QC information for all sample sets will be reviewed also. A DHEC certified laboratory will perform all analytical methods. Dan Miller or Joe McMurray are responsible for this and Blue Ridge has the ability to choose another laboratory certified by South Carolina if problems are severe.

C2 Reports to Management

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

Section D Data Validation and Usability

See the SC DHEC UST Programmatic QAPP (UST Master QAPP).

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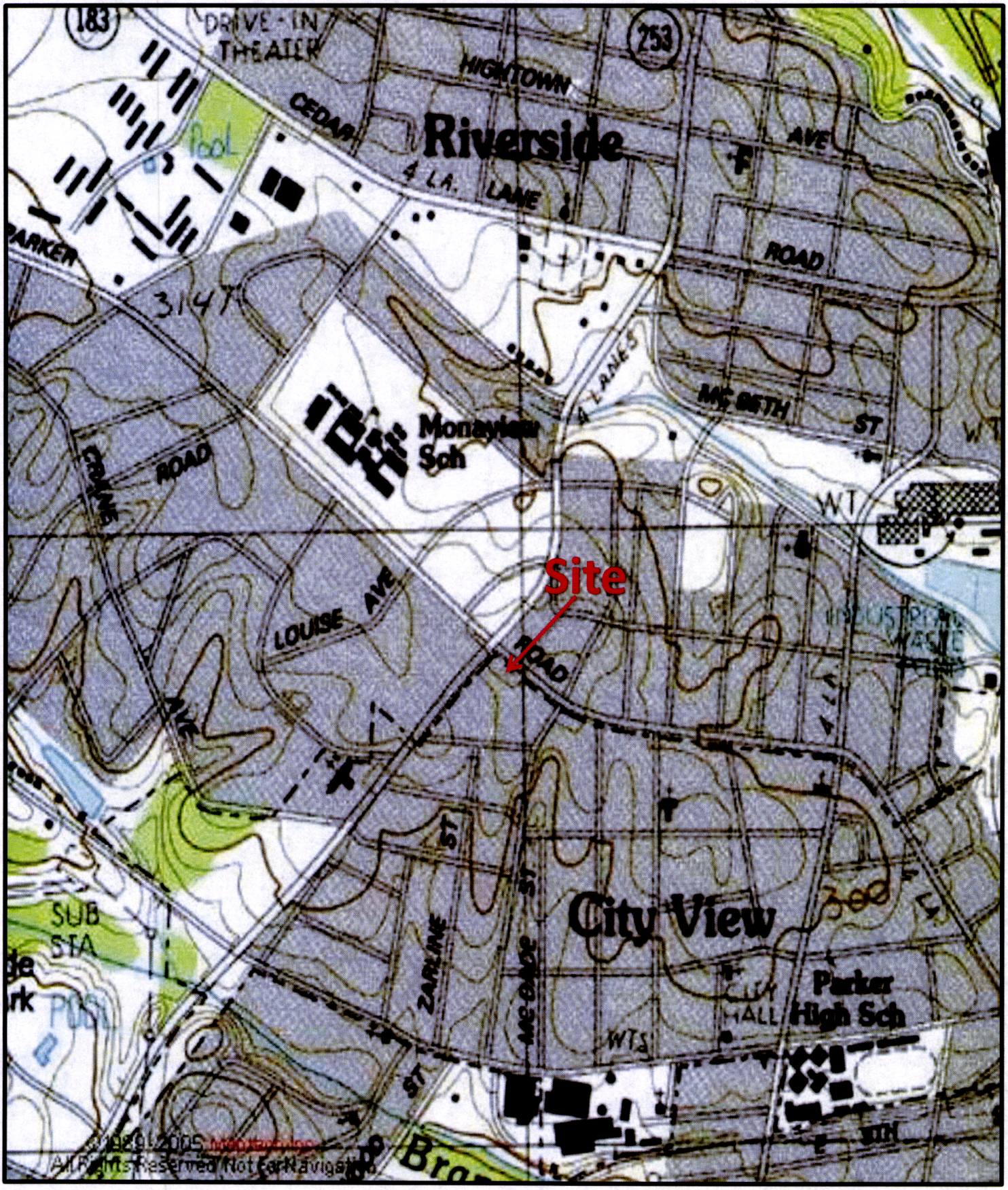
APPENDIX A1 – FIGURES



Topographic Map

North ▲

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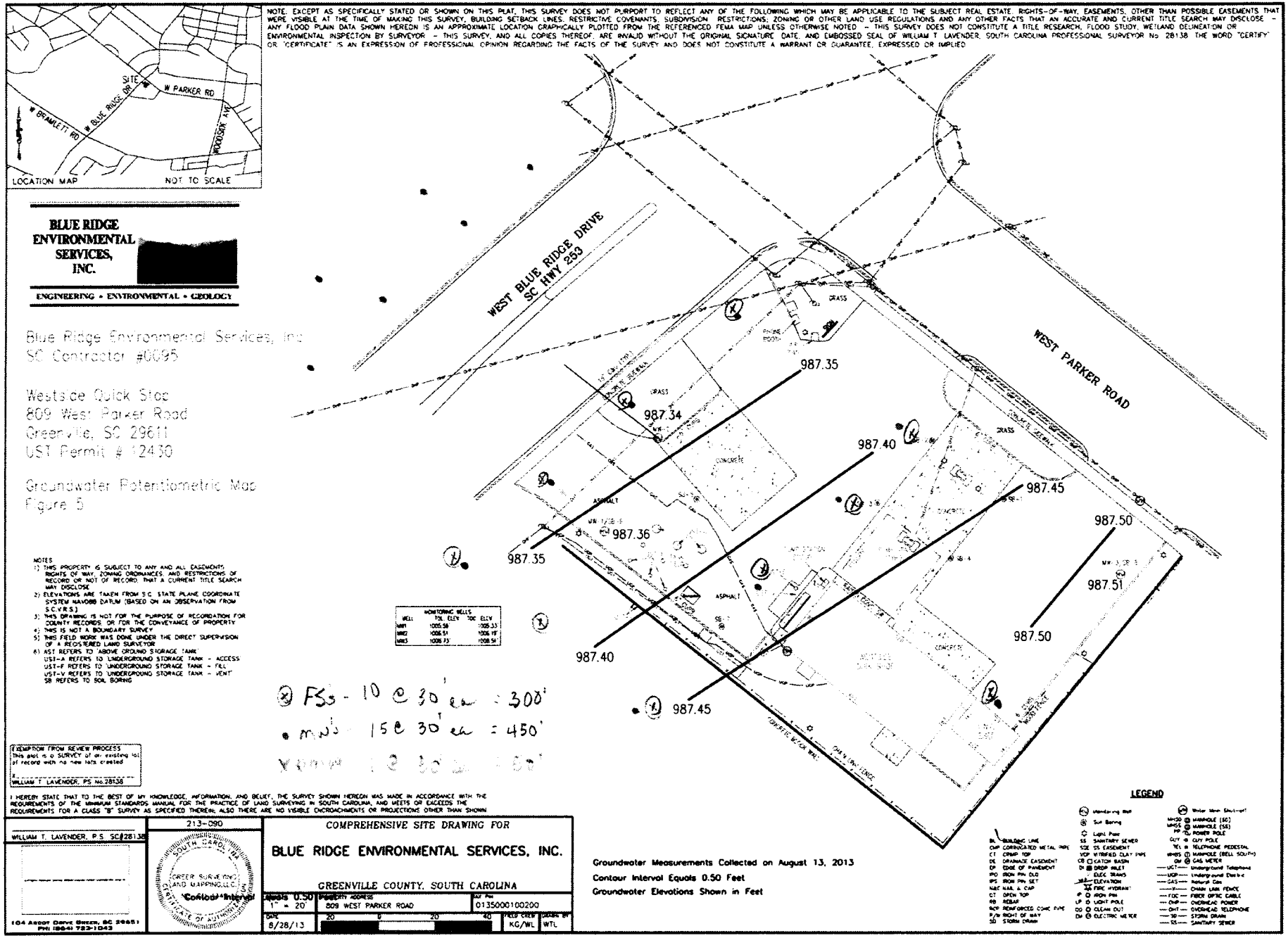
2315 Kings Road Ext.
Shelby, North Carolina 28152
(704) 482-2111
Fax (704) 482-4335

Client:	Mr. Mike Wright
Project:	Westside Quick Stop
Location:	821 West Parker Road
	Greenville,SC
Source:	MapTech
Date: 1/17/13	UST Permit # 12430

Figure 1


LOCATION MAP
NOT TO SCALE
SITE
W PARKER RD
W BRAMLETT RD
W BLUE RIDGE DR
WOODSIDE AVE
NOTE: EXCEPT AS SPECIFICALLY STATED OR SHOWN ON THIS PLAT, THIS SURVEY DOES NOT PURPORT TO REFLECT ANY OF THE FOLLOWING WHICH MAY BE APPLICABLE TO THE SUBJECT REAL ESTATE: RIGHTS-OF-WAY, EASEMENTS, OTHER THAN POSSIBLE EASEMENTS THAT WERE VISIBLE AT THE TIME OF MAKING THIS SURVEY, BUILDING SETBACK LINES, RESTRICTIVE COVENANTS, SUBDIVISION RESTRICTIONS, ZONING OR OTHER LAND USE REGULATIONS AND ANY OTHER FACTS THAT AN ACCURATE AND CURRENT TITLE SEARCH MAY DISCLOSE - ANY FLOOD PLAIN DATA SHOWN HEREON IS AN APPROXIMATE LOCATION GRAPHICALLY PLOTTED FROM THE REFERENCED FEMA MAP UNLESS OTHERWISE NOTED - THIS SURVEY DOES NOT CONSTITUTE A TITLE RESEARCH, FLOOD STUDY, WETLAND DELINEATION OR ENVIRONMENTAL INSPECTION BY SURVEYOR - THIS SURVEY, AND ALL COPIES THEREOF, ARE INVALID WITHOUT THE ORIGINAL SIGNATURE, DATE, AND EMBOSSED SEAL OF WILLIAM T LAVENDER, SOUTH CAROLINA PROFESSIONAL SURVEYOR No 28138. THE WORD "CERTIFY" OR "CERTIFICATE" IS AN EXPRESSION OF PROFESSIONAL OPINION REGARDING THE FACTS OF THE SURVEY AND DOES NOT CONSTITUTE A WARRANT OR GUARANTEE, EXPRESSED OR IMPLIED
BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
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Blue Ridge Environmental Services, Inc
SC Contractor #0095
Westside Quick Stop
809 West Parker Road
Greenville, SC 29611
UST Permit # 12430
Groundwater Potentiometric Map
Figure 5
WEST BLUE RIDGE DRIVE
SC HWY 253
WEST PARKER ROAD
987.35
987.34
987.40
987.45
987.50
987.36
987.35
987.51
987.50
987.40
987.45
GRASS
ASPHALT
CONCRETE
DOMESTIC WATER WELL
DRAIN LINE
MONITORING WELLS
WELL | TOC ELEV | TOC ELEV
MW1 | 1005.58 | 1005.33
MW2 | 1006.51 | 1006.19
MW3 | 1008.73 | 1008.54
NOTES
1) THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, RIGHTS OF WAY, ZONING ORDINANCES, AND RESTRICTIONS OF RECORD OR NOT OF RECORD. THAT A CURRENT TITLE SEARCH MAY DISCLOSE
2) ELEVATIONS ARE TAKEN FROM S.C. STATE PLANE COORDINATE SYSTEM NAD83 DATUM (BASED ON AN OBSERVATION FROM S.C.V.R.S.)
3) THIS DRAWING IS NOT FOR THE PURPOSE OF RECORDATION FOR COUNTY RECORDS OR FOR THE CONVEYANCE OF PROPERTY
4) THIS IS NOT A BOUNDARY SURVEY
5) THIS FIELD WORK WAS DONE UNDER THE DIRECT SUPERVISION OF A REGISTERED LAND SURVEYOR
6) AST REFERS TO ABOVE GROUND STORAGE TANK
UST-A REFERS TO UNDERGROUND STORAGE TANK - ACCESS
UST-F REFERS TO UNDERGROUND STORAGE TANK - FILL
UST-V REFERS TO UNDERGROUND STORAGE TANK - VENT
SB REFERS TO SOIL BORING
2) FSs - 10 @ 30' ea = 300'
MWs - 15 @ 30' ea = 450'
EXEMPTION FROM REVIEW PROCESS
This plat is a SURVEY of an existing lot of record with no new lots created
WILLIAM T LAVENDER, PS No.28138
I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "B" SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN
WILLIAM T. LAVENDER, P.S. SC#28138
104 Arbor Drive Green, SC 29681
PH: (864) 723-1043
213-090
GREER SURVEYING AND MAPPING, LLC
Certificate of Authority
COMPREHENSIVE SITE DRAWING FOR
BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
GREENVILLE COUNTY, SOUTH CAROLINA
Scale 1" = 20' | Property Address 809 WEST PARKER ROAD | Tax Plat 0135000100200
DATE 8/28/13 | FIELD CREW KG/WL | DRAWN BY WTL
Groundwater Measurements Collected on August 13, 2013
Contour Interval Equals 0.50 Feet
Groundwater Elevations Shown in Feet
LEGEND

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APPENDIX A2 – SCDHEC COST AGREEMENT

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account

Facility Name: **Westside Quick Stop**

UST Permit #: 12430 **Cost Agreement #:**

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. Plan*				
B. Tax Map		x	$70.00	$0.00
C. Tier II or Comp. Plan /QAPP Appendix B	1	x	$250.00	$250.00
2. Receptor Survey *		x	$551.00	$0.00
3. Survey (500 x 500 feet)				
A. Comprehensive Survey		x	$1,040.00	$0.00
B. Subsurface Geophysical Survey				$0.00
1. < 10 meters below grade		x	$1,300.00	$0.00
2. > 10 meters below grade		x	$2,310.00	$0.00
C. Geophysical UST or Drum Survey		x	$910.00	$0.00
4. Mob/Demob (Each)				
A. Equipment FS, MW & DMW	2	x	$1,020.00	$2,040.00
B. Personnel	5	x	$423.00	$2,115.00
C. Adverse Terrain Vehicle to install wells		x	$500.00	$0.00
5. Soil Borings (hand auger)* (Feet)		feet x	$5.00	$0.00
6. Soil Borings (drilled) & Field Screening *				
Rate includes collection of water sample or soil sample, and lab or other analyses				
A. Standard	350	feet x	$7.40	$2,590.00
C. Fractured Rock		feet x	$20.20	$0.00
7. Soil Leachability Model (Each)		each x	$60.00	$0.00
8. Abandonment* (per foot)				
A. 2" diameter or less		feet x	$3.10	$0.00
B. Greater than 2" to 6" diameter	350	feet x	$4.50	$1,575.00
C. Dug/Bored well (up to 6 foot diameter)		feet x	$15.00	$0.00
9. Well Installation* (per foot)				
A. Water Table (hand augered)		feet x	$10.60	$0.00
B. Water Table (drill rig)	500	feet x	$38.00	$19,000.00
C. Telescoping/ Pit Cased		feet x	$31.80	$0.00
D. Rock Drilling		feet x	$26.80	$0.00
E. 2" Rock Coring		feet x	$30.90	$0.00
G. Rock Multi-sampling ports/screens		feet x	$33.40	$0.00
H. Recovery Well (4 inch diameter)		each x	$30.00	$0.00
I. Pushed Pre-packed screen (1.25 diameter)		each x	$15.00	$0.00
J. Rotosonic (2 inch diameter)		each x	$44.00	$0.00
10. Groundwater Sample Collection / Gauge Depth to Water or Product (Each)				
A. Groundwater Purge	16	wells x	$60.00	$960.00
B. Air or Vapors		samples x	$12.00	$0.00
C. Water Supply		samples x	$22.00	$0.00
D. Groundwater No Purge or Duplicate	5	samples x	$28.00	$140.00
E. Gauge Well only		per well x	$7.00	$0.00
F. Sample Below Product		wells x	$12.00	$0.00
G. Pasive Diffusion Bag		each x	$26.00	$0.00
H. Field Blank	2	each x	$24.60	$49.20
11. Laboratory Analyses-Groundwater (Each Sample)				
A1. BTEX+Naphth.+ Oxyg's+ 1,2 DCA + Ethanol	25	samples x	$122.00	$3,050.00
AA. Lead, Filtered		samples x	$13.80	$0.00
B1. Rush EPA Method 8260B (All of item A.)		samples x	$153.60	$0.00
C1. Trimethal, Butyl, and Isopropyl Benzenes		samples x	$36.40	$0.00
D. PAH's		samples x	$60.00	$0.00
E. Lead, Unfiltered includes 1 dup	17	samples x	$16.00	$272.00
F. EDB by EPA 8011	23	samples x	$45.20	$1,039.60
FF. EDB by EPA Method 8011 Rush		samples x	$68.20	$0.00
G. 8 RCRA Metals		samples x	$63.40	$0.00
H. TPH (9070)		samples x	$41.00	$0.00

I. pH		samples x	$5.20		$0.00
J. BOD		samples x	$20.00		$0.00
P1. Ethanol		samples x	$14.80		$0.00
11. Analyses-Soil (Each Sample)					
Q. BTEX + Naphth.		samples x	$64.00		$0.00
R. PAH's		samples x	$64.04		$0.00
S. 8 RCRA Metals		samples x	$56.40		$0.00
T. Oil & Grease (9071)		samples x	$0.00		$0.00
U. TPH-DRO (3550B/8015B)		samples x	$40.00		$0.00
V. TPH- GRO (5030B/8015B)		samples x	$35.96		$0.00
W. Grain size/hydrometer	2	samples x	$104.00		$208.00
X. Total Organic Carbon		samples x	$30.60		$0.00
11. Analyses-Air (Each Sample)					
Y. BTEX + Naphthalene		samples x	$216.00		$0.00
11. Analyses-Free Phase Product (Each Sample)					
Z. Hydrocarbon Fuel Identification		samples x	$357.00		$0.00
12. Aquifer Characterization*					
A. Pumping Test		hours x	$23.00		$0.00
B. Slug Test*	2	tests x	$191.00		$382.00
C. Fractured Rock		tests x	$100.00		$0.00
13. Free Product Recovery Rate Test* (Each)		tests x	$38.00		$0.00
14. Fate/Transport Modeling					
A. Mathematical Model		each x	$100.00		$0.00
B. Computer Model		each x	$100.00		$0.00
15. Risk Evaluation					
A. Tier I Risk Evaluation		x	$300.00		$0.00
B. Tier II Risk Evaluation		x	$100.00		$0.00
16. Subsequent Survey*	1	x	$260.00		$260.00
17. Disposal* (gallons or tons)					
A. Wastewater	350	gallons x	$0.56		$196.00
B1. Free Product		gallons x	$0.50		$0.00
C. Soil Treatment/Disposal	4	tons x	$60.00		$240.00
D. Drilling fluids		gallons x	$0.42		$0.00
18. Miscellaneous (attach receipts)					
		x			$0.00
		x			$0.00
		x			$0.00
20. Tier I Assessment (Use DHEC 3665 form)		x			$0.00
21. IGWA (Use DHEC 3666 form)		x			$0.00
22. Corrective Action (Use DHEC 3667 form)		x			$0.00
23. Aggressive Fluid & Vapor Recovery (AFVR)					
A. 8-hour Event*		each x	$1,375.00		$0.00
B. AFVR per-hour Continuance		per hour x	$204.00		$0.00
C. Off-gas treatment per-hour Continuance		per hour x			$0.00
24. Granulated Activated Carbon (GAC) filter system installation & service:					
A. New GAC System Installation*		each x	$1,900.00		$0.00
B1. Refurbished GAC Sys. Install*		each x	$900.00		$0.00
C. Filter replacement/removal*		each x	$350.00		$0.00
D1. GAC System removal, cleaning, & refurbishment*		each x	$275.00		$0.00
E. GAC System housing		each x	$250.00		$0.00
F. In-line particulate filter		each x	$150.00		$0.00
G. Additional piping & fittings		feet x	$1.50		$0.00
25. Well Repair					
A. Additional Copies of the Report Delivered		each x	$50.00		$0.00
B. Repair 2x2 MW pad		each x	$550.00		$0.00
C. Repair 4x4 MW pad		each x	$88.00		$0.00
D. Repair well vault		each x	$118.00		$0.00
F. Replace well cover bolts		each x	$2.60		$0.00
G. Replace locking well cap & lock		each x	$15.00		$0.00
H. Replace/Repair stick-up		each x	$134.00		$0.00
I. Convert Flush-mount to Stick-up		each x	$150.00		$0.00
J. Convert Stick-up to Flush-mount		each x	$130.00		$0.00
K. Replace missing/illegible well ID plate		each x	$12.00		$0.00
Report Prep & Project Management	10%	x	$34,366.80		$3,436.68
TOTAL					$37,803.48

*The appropriate mobilization cost can be added to complete these tasks, as necessary

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APPENDIX A3 – SAMPLE CHAIN OF CUSTODY

Blue Ridge Environmental Services, Inc.

CHAIN OF CUSTODY

2315 Kings Road Extension
Shelby, North Carolina 28152
704-482-2111
FAX: 704-482-4335
E-Mail: Bresi@blueridge-esi.com

PROJECT NAME/LOCATION

GROUNDWATER INCIDENT #:

STF CODE:

P.O.#:

LAB:

SAMPLERS:

PROJECT MANAGER:

SAMPLE ID:	DATE:	TIME:	SOIL	WATER	SAMPLE DESCRIPTION	PRESERVATIVE	NUMBER OF CONTAINERS							REMARKS

RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:
RELINQUISHED BY: (SIGN.)	DATE:	TIME:	RECEIVED BY: (SIGN.)	DATE:	TIME:

D H E C
PROMOTE PROTECT PROSPER
Catherine B. Templeton, Director
Promoting and protecting the health of the public and the environment



MR MIKE WRIGHT
WESTSIDE QUIK SHOP INC
405 DOVE HILL CIR
EASLEY SC 29640-8907

FEB 2 7 2014

Re: Tier II Assessment Directive
Westside Quick Stop, 821 W. Parker Rd., Greenville, SC
UST Permit #12430; Cost Agreement #46881; MWA #UMW-25387
Release #1 reported June 7, 2012
Tier I Assessment Report received September 13, 2013
Site Specific QAPP Contractor Addendum and Associated Cost Agreement received February 3, 2014
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report and the Site Specific Quality Assurance Program Plan (QAPP) Contractor Addendum submitted by Blue Ridge Environmental Services, Inc. The Tier I Assessment Report indicated that petroleum Chemicals of Concern (CoCs) are present in the soil and groundwater at concentrations that exceed Risk-Based Screening Levels (RBSLs).

In accordance with Section 280.65 of the South Carolina Underground Storage Tank Regulations, assessment activities must be conducted as CoCs are above the RBSLs in soil and groundwater. Therefore, implementation of the scope of work as outlined in the Tier II Assessment will be necessary to characterize any possible risk to human health or the environment. The Tier II Assessment must be conducted in accordance with the UST QAPP Revision 2.0, all applicable regulations, and the submitted site specific QAPP Contractor Addendum. A copy of the UST QAPP Revision 2.0 is available at http://www.scdhec.gov/environment/lwm/usthome/Qapp.htm.

The Tier II Assessment report, contractor checklist, and invoice are due 90 days from the date of this letter. A water sample should be collected from all water supply wells and surface water bodies within 1,000 feet of the facility or 500 feet down gradient of the edge of the plume and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2-DCA, ethanol, and EDB. Existing groundwater monitoring wells with screens that bracket the water table do not need to be purged prior to collection of a groundwater sample. Groundwater samples from the monitoring well network should be collected and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2-DCA, ethanol, lead, and EDB. Analyses should be in accordance with Appendix E of the UST QAPP 2.0 to include duplicate samples, plus field and trip blanks.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement number 46881 has been approved for the amount shown on the enclosed cost agreement form for installation of up to eleven (11) temporary, fifteen (15) shallow, and one (1) deep monitoring wells plus sampling the entire monitoring well network to define the horizontal and vertical extent of dissolved CoC. Please be aware that the July 1, 2011 State Underground Petroleum Environmental Response Bank (SUPERB) Allowable Costs sheet states that "If the vertical and horizontal extent of chemicals of concern is not fully defined by the tier report, the Agency may not approve additional future mobilizations for additional screening or well installation." Any screening point that is converted to a permanent monitoring well will be reimbursed at the approved well installation rate. **Please contact the Agency prior to well installation for concurrence regarding the final well locations. All shallow wells are to be installed with screen intervals that bracket the water table.** Shallow wells should have a 10-foot screen. **The SUPERB Account cannot reimburse costs for any shallow well with a screen that does not properly bracket the water table.**

The Tier II Assessment report (a signed .pdf copy on CD is preferred) submitted at the completion of these activities should include information outlined in the UST QAPP 2.0 to include the following:

- Geological cross sections that include the shallow and deep monitoring wells. The percentage of sand, silt, and clay should be shown for the screen intervals of the newly installed shallow and deep well pair.
- Boring logs and well logs (DHEC 1903 form) signed by a well driller licensed in the state of South Carolina for each new temporary or permanent monitoring well in accordance with the South Carolina Well Standards, R.61-71. DHEC 1903 forms are required for field screening borings (whether direct push or drilled) where a sample is extracted for analysis.
- A CoC map based on current groundwater laboratory analytical data. The groundwater data should be adjacent to the relevant monitoring well location.
- The percentage of sand, silt, and clay from the screen interval of the down gradient shallow and deep well pair.
- Groundwater elevations, top of casing elevation, depth to groundwater, measurable free product thickness (where applicable), total well depth and screened interval for all monitoring wells associated with the site, unless otherwise directed by the Division, shall be presented in tabular format.
- Historical groundwater laboratory analytical data and depth to groundwater, and product if applicable, for this and all previous monitoring events for all monitoring wells shall be presented in tabular format.
- A groundwater elevation contour map of the site based on current groundwater potentiometric data.
- Manifests for contaminated soil and/or groundwater removed from the site for treatment and/or disposal.
- Signature and seal by a professional geologist or engineer registered in the State of South Carolina.
- According to R.61-98 Section IV.C.1 all plans, reports, invoices, and other documents relating to site rehabilitation activities which have been prepared or approved by a certified contractor shall be signed by the certified contractor and bear his certification number.

Cost agreement number 46881 has been approved for the amount shown on the enclosed cost agreement. Please note the following changes to the submitted cost agreement:

- For Item #25.A; Four (4) units of additional copies of the report delivered have been added to the ACCA for those landowners who allow investigation on their land.

According to Division records, the release at the facility was reported to the Agency on June 7, 2012. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Account, you are responsible for the first $25,000 of site rehabilitation costs. Please be sure to provide proof of costs that will be applied to the deductible with the invoice. Acceptable proof of payment of deductible costs includes a copy of the cancelled check (front and back) that made payment to your contractor or a signed notarized statement by your site rehabilitation contractor for the amount that was paid directly to your contractor. Blue Ridge Environmental Services, Inc., can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for preapproved costs that exceed the $25,000 deductible. An interim well drilling invoice may not be submitted for this scope of work as the deductible has not been met. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. The Division, because of unnecessary dilution, cannot make decisions if the reporting limit of individual petroleum CoC exceeds the RBSLs. The Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release. Note that the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL.

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

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

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST Permit number 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 898-0599, fax me at (803) 898-0673, or e-mail me at fordrj@dhec.sc.gov.

Sincerely,

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)
Signed Site Specific QAPP Contractor Addendum Title and Approval Page

cc: Ankur Patel, 205 Fairway Dr., Laurens, SC 29360 (without enc.)
Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617 (with enc.)
Blue Ridge Environmental Services, Inc., 2315 Kings Road Ext., Shelby, NC 28152 (with enc.)
Technical file (with enc.)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to:	Blue Ridge Environmental Services, Inc.
On Behalf of:	Westside Quik Shop, Inc.
Facility:	Westside Quick Stop, 821 W. Parker Rd., Greenville, SC
UST Permit Number:	12430
County:	Greenville

This approval is for the installation of eleven (11) temporary, fifteen (15) shallow, and one (1) deep groundwater monitoring wells. The monitoring wells are to be installed in the approved locations. The monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the 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 James Ford (tel: 803-898-0599 or e-mail: fordrj@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. 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.

Date of Issuance: February 6, 2014 **Approval #: UMW-25387**

James Ford

James Ford, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

BLUE RIDGE ENVIRONMENTAL SERVICES, INC.
ENGINEERING • ENVIRONMENTAL • GEOLOGY

2315 Kings Road Extension
Shelby, North Carolina 28152
(O) 704.482.2111
(F) 704.482.4335

Section A: Project Management

A1 Title and Approval Page

Tier II Rev 1 Quality Assurance Project Plan
Addendum to the SC DHEC UST Programmatic QAPP
For
Westside Quick Stop UST Permit # 12430

821 West Parker Road, Greenville, SC

Prepared by: Joseph W.McMurray, PG
Blue Ridge Environmental Services, Inc.
2315 Kings Road Ext.
Shelby, NC 28152
(704) 482-2111

Date: January 30, 2014
Blue Ridge Environmental Services, Inc. (#095)

Approvals:

James Ford
SC DHEC Project Manager
_____ Signature Date 2/6/14

Daniel J. Miller, PE
Contractor QA Manager
_____ Signature Date 1-30-14

Blue Ridge Environmental Services, Inc.

Site Rehabilitation Contractor
_____ for ____ Signature Date 1-30-14

Daniel J. Wright
Laboratory Director
_____ Signature Date 1-30-14

Approved Cost Agreement 46881

Facility: 12430 WESTSIDE QUICK STOP
FORDRJ
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		C1	TIER 11/COMP.PLAN/QAPP APP B	1.0000	250.00	250.00
04 MOB/DEMOB						
		A1	EQUIPMENT	2.0000	1,020.00	2,040.00
		B1	PERSONNEL	5.0000	423.00	2,115.00
06 SOIL BORINGS (DRILLED)						
		A1	SOIL BORING/FLD SCR. STANDARD	350.0000	7.40	2,590.00
08 ABANDONMENT						
		B1	GREATER THAN 2" TO 6" DIAMETER	350.0000	4.50	1,575.00
09 WELL INSTALLATION						
		B1	WATER TABLE (DRILL RIG)	500.0000	38.00	19,000.00
10 SAMPLE COLLECTION						
		A1	GROUNDWATER (PURGE)	16.0000	60.00	960.00
		D1	GROUNDWATER NO PURGE/DUPLICATE	5.0000	28.00	140.00
		H1	FIELD BLANK	2.0000	24.60	49.20
11 ANALYSES						
	GW GROUNDWATER	A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	25.0000	122.00	3,050.00
		E1	LEAD	17.0000	16.00	272.00
		F1	EDB BY 8011	23.0000	45.20	1,039.60
	SOIL SOIL	W1	GRAIN SIZE / HYDROMETER	2.0000	104.00	208.00
12 AQUIFER CHARACTERIZATION						
		B1	SLUG TEST	2.0000	191.00	382.00
16 SUBSEQUENT SURVEY						
		A1	SUBSEQUENT SURVEY	1.0000	260.00	260.00
17 DISPOSAL						
		AA	WASTEWATER	350.0000	0.56	196.00
		C1	SOIL TREATMENT DISPOSAL	4.0000	60.00	240.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PERC	REPORT PREPARATION	0.1000	34,566.80	3,456.68
25 WELL REPAIR						
		A1	ADDITIONAL COPIES OF REPORT	4.0000	50.00	200.00
				Total Amount		38,023.48

petra-tech
ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

May 23, 2014



SCDHEC - UST Management Division
Assessment Section
2600 Bull Street
Columbia, SC 29201-1708

Attention: Mr. Jamie Ford



Subject: **Site Specific Work Plan – Tier II Assessment**
Revision Number: 0
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, SC
SCDHEC UST Permit #12430
PTE Job No. J14-049-A

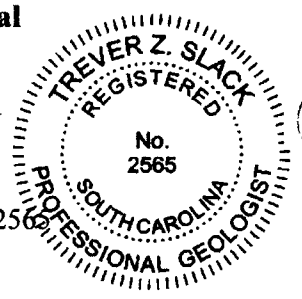
Dear Mr. Ford:

Pursuant to our conversation, Petra-Tech Environmental, LLC submits herein a revised Site Specific Work Plan and associated Tier II Assessment Plan for the subject site on behalf of Mr. Martin Hunt of Environmental Laboratories, Inc. and Westside Quick Stop, Inc. This Site Specific Work Plan and associated Tier II Assessment Plan should take the place of the previously approved Blue Ridge Environmental Services, Inc. QAPP approved on February 27, 2014. We understand that only one QAPP/Site Specific Work Plan can be paid for by the SUPERB Fund.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental



Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565

Lindsey M. Grooms
Principal Engineer

D H E C
PROMOTE PROTECT PROSPER

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

To: Jamie Ford (SCDHEC Project Manager)
From: Trever Slack (Contractor Project Manager)
Contractor: Petra-Tech Environmental, LLC UST Contractor Certification Number: UCC-436

Facility Name: Westside Quick Stop UST Permit #: 12430
Facility Address: 821 West Parker Road
Responsible Party: Mr. Mike Wright Phone: 803-382-3906
RP Address: 405 Dove Hill Road
Property Owner (if different): Westside Quick Stop, Inc.
Property Owner Address: 821 West Parker Road
Current Use of Property: Currently utilized as retail fueling station and convenience store

Scope of Work (Please check all that apply)

☐ IGWA ☑ Tier II ☐ Groundwater Sampling ☐ GAC
☐ Tier I ☐ Monitoring Well Installation ☐ Other _____

Analyses (Please check all that apply)

Groundwater/Surface Water:

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

Soil:

☐ BTEXN ☐ 8 RCRA Metals ☐ TPH-DRO (3550B/8015B) ☑ Grain Size
☐ PAH ☐ Oil & Grease (9071) ☐ TPH-GRO (5030B/8015B) ☐ TOC

Air:

☐ BTEXN

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

_____ Soil _____ Water Supply Wells _____ Air 1 Field Blank
19 Monitoring Wells _____ Surface Water 1 Duplicate 1 Trip Blank

Field Screening Methodology

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

# of shallow points proposed: 18 Estimated Footage: 24 feet per point
# of deep points proposed: 5 Estimated Footage: 49 feet per point
Field Screening Methodology: Direct Push with PID field screening and laboratory confirmation of select samples IAW SOP

Permanent Monitoring Wells

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

# of shallow wells: 13 Estimated Footage: 28 feet per point
# of deep wells: 3 Estimated Footage: 53 feet per point
# of recovery wells: _____ Estimated Footage: _____ feet per point
Monitoring Well development method (consistent with SOP): Surging and pumping IAW SOP
Comments, if warranted:
Deep wells installed outside of the source area will be installed as Type II monitoring wells if it is determined by the on-site geologist that no confining layers are present.

UST Permit #: 12430 Facility Name: Westside Quick Stop

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 06/05/2014 Field Work Completion: 07/05/2014
Report Submittal: 09/05/2014 # of Copies Provided to Property Owners: 4

Aquifer Characterization
Pump Test: ☐ Slug Test: ☒ (Check one and provide explanation below for choice)
Slug test will be completed in two shallow and one deep monitoring well. Slug tests are recommended over pump tests due to the elimination of requirements for petroleum impacted water disposal. Additionally, slug tests minimize the cone of depression associated with pump test drawdown, reducing the transport of petroleum compounds from shallow to deeper aquifer zones.

Investigation Derived Waste Disposal
Soil: 5 Tons Purge Water: 100 Gallons
Drilling Fluids: 25 Gallons Free-Phase Product: 0 Gallons

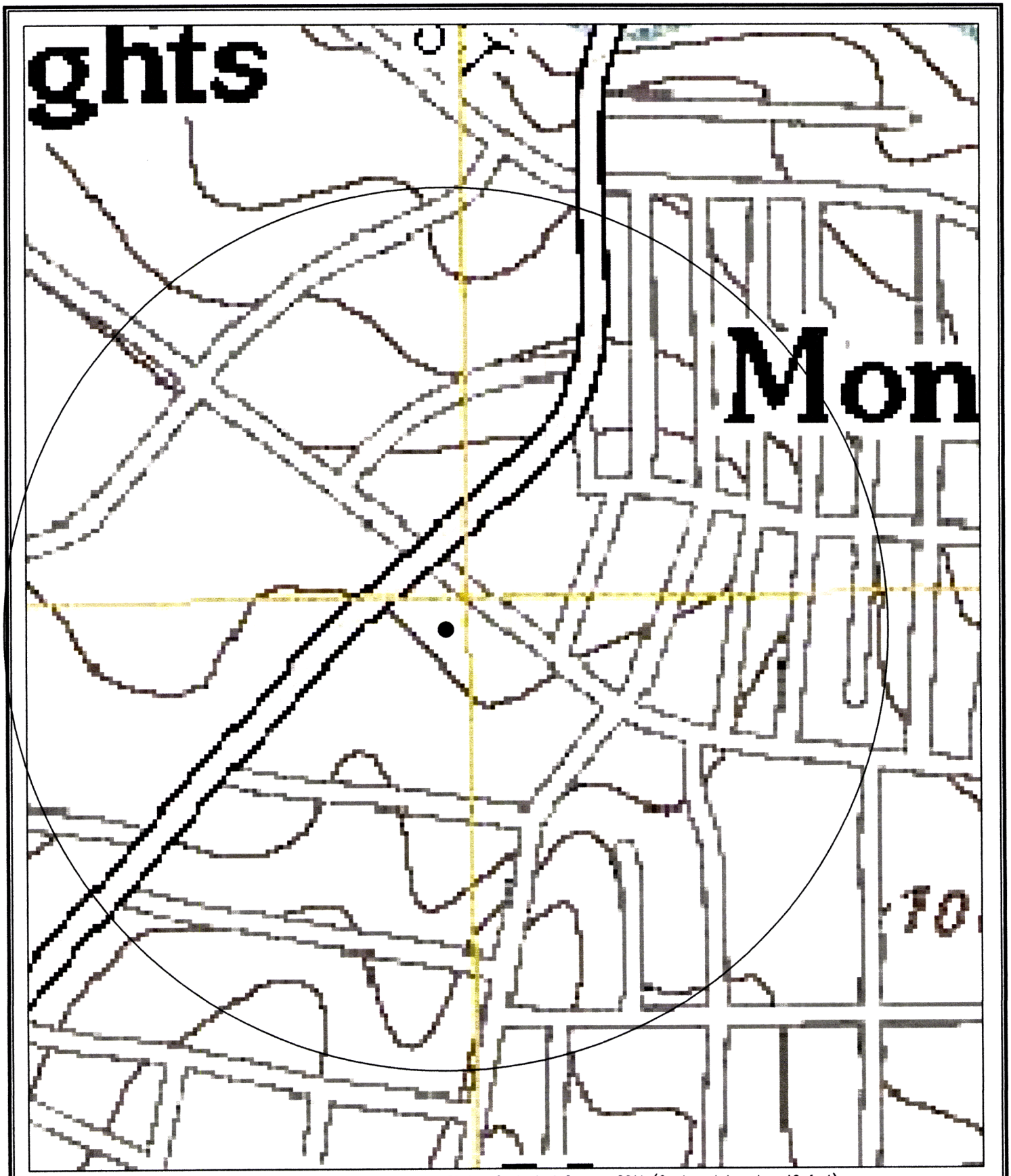
Additional Details For This Scope of Work
For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.
Three existing groundwater monitoring wells (12430-MW01 through 12430-MW03) and 16 newly installed groundwater monitoring wells will be sampled. Receptors identified within 1,000-feet of the site or within 500-feet of the groundwater contaminant plume will also be sampled during the Tier II Assessment.

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
Yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.
Name of Laboratory:
SCDHEC Certification Number:
Name of Laboratory Director:

Yes Well Driller as indicated in ACQAO? (Yes/No) If no, indicate driller information below.
Name of Well Driller:
SCLLR Certification Number:

No Other variations from ACQAP. Please describe below.

Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664



REFERENCE: Greenville Quadrangle – 7.5 Minute Series, United States Geological Survey, 2011 (Contour Interval – 10 feet)

500 250 0 500

APPROXIMATE SCALE IN FEET

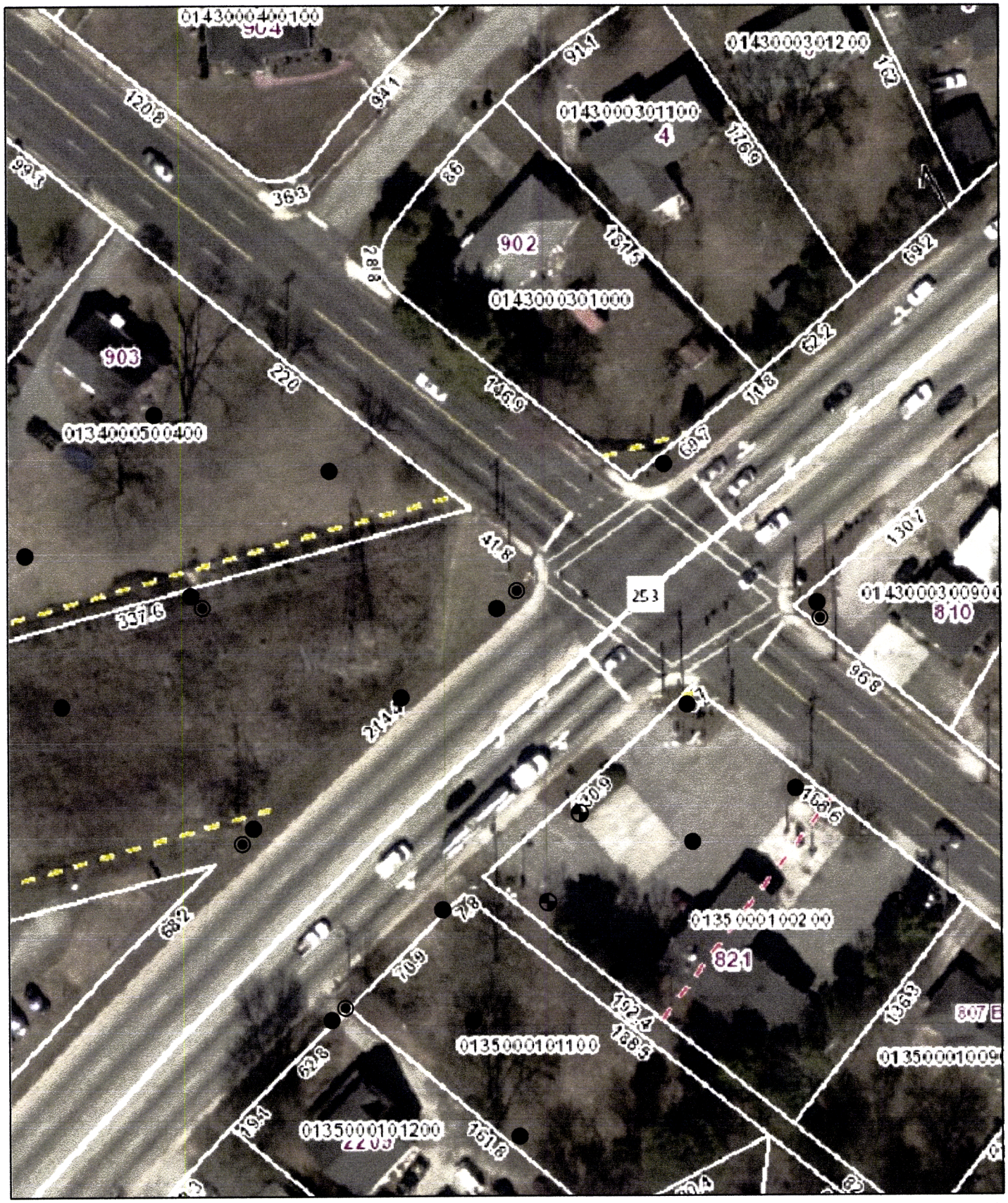
N

● Approximate Site Location

Title	Topographic Site Location Map
Project	Westside Grocery (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 1



REFERENCE: Greenville County Online GIS Mapping Database; Figure 4 Groundwater Chemicals of Concern by Blue Ridge Environmental Services, Inc. dated August 28, 2013.

100 50 0 100

APPROXIMATE SCALE IN FEET

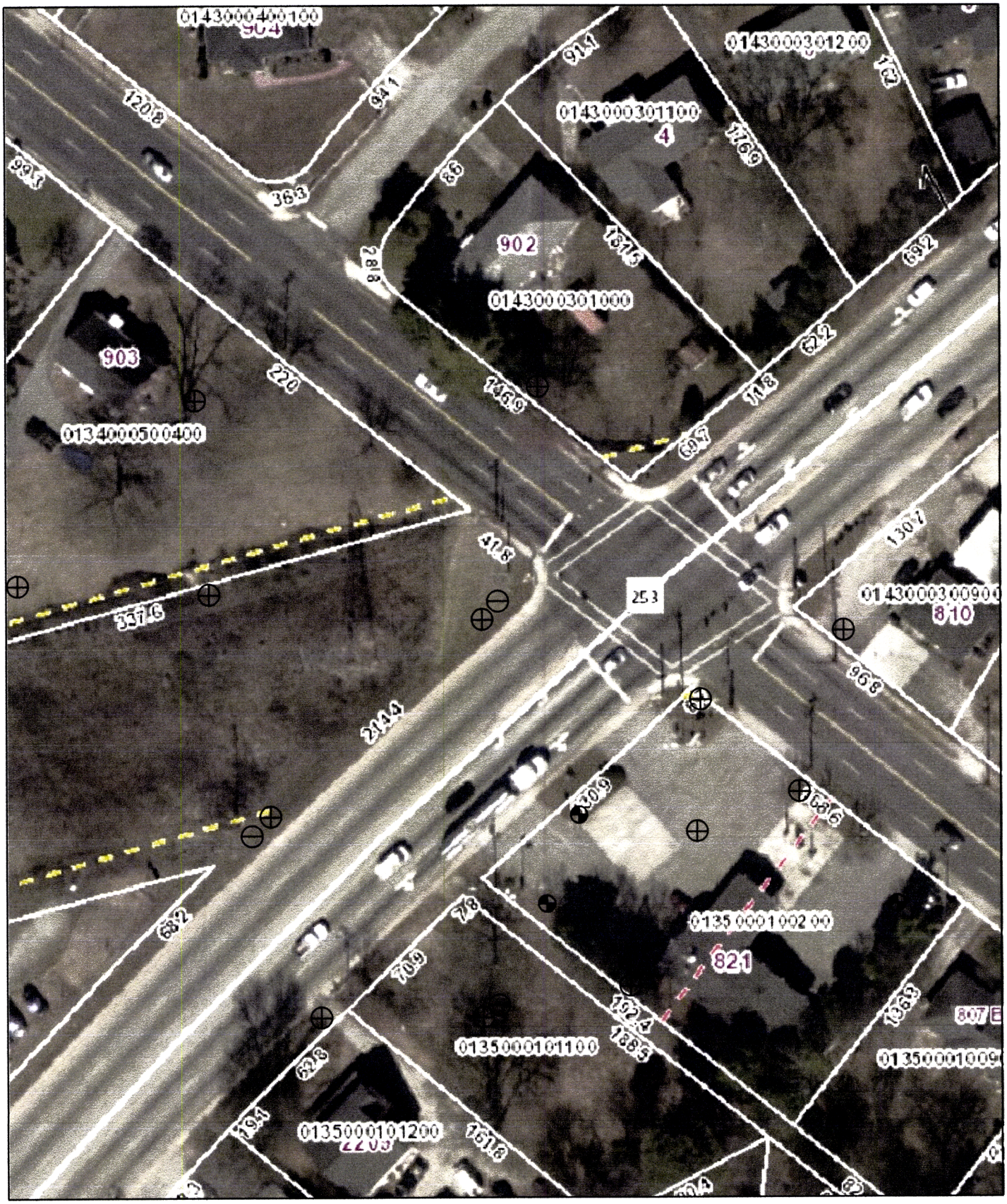
N

- Existing Groundwater Monitoring Well (3)
- Proposed Shallow Groundwater Screening Boring (18 @ 24 feet)
- Proposed Deep Groundwater Screening Boring (5 @ 49 feet)

Title	Proposed Groundwater Screening Boring Location Plan
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 2



REFERENCE: Greenville County Online GIS Mapping Database; Figure 4 Groundwater Chemicals of Concern by Blue Ridge Environmental Services, Inc. dated August 28, 2013.

100 50 0 100

APPROXIMATE SCALE IN FEET

N

- Existing Groundwater Monitoring Well (3)
- Proposed Shallow Groundwater Monitoring Well (13 @ 28 feet)
- Proposed Deep Groundwater Monitoring Well (3 @ 53 feet)

Title	Proposed Monitoring Well Location Plan
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

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Figure No. 3

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT COST AGREEMENT

SOUTH CAROLINA

Department of Health and Environmental Control

Underground Storage Tank Management Division

State Underground Petroleum Environmental Response Bank Account

November 1, 2013

Facility Name: Westside Quick Shop

UST Permit #: 12430 **Cost Agreement #:** _____

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan Preparation**				
A1. Site-specific Work Plan	1	each	$150.00	$150.00
B1. Tax Map		each	$70.00	$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00	$0.00
2. A1. **Receptor Survey ***	1	each	$551.00	$551.00
3. **Survey (500 ft x 500 ft)**				
A1. Comprehensive Survey	1	each	$1,040.00	$1,040.00
B. Subsurface Geophysical Survey				
1B. < 10 meters below grade		each	$1,300.00	$0.00
2B. > 10 meters below grade		each	$2,310.00	$0.00
C1. Geophysical UST or Drum Survey		each	$910.00	$0.00
4. **Mob/Demob**				
A1. Equipment	2	each	$1,020.00	$2,040.00
B1. Personnel	5	each	$423.00	$2,115.00
C1. Adverse Terrain Vehicle		each	$500.00	$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00	$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water ssample, soil sample, soil gas sample, etc.)***				
A1. Standard	677	per foot	$7.40	$5,009.80
C1. Fractured Rock		per foot	$20.20	$0.00
7. A1. **Soil Leachability Model**		each	$60.00	$0.00
8. **Abandonment (per foot)***				
A1. 2" diameter or less	677	per foot	$3.10	$2,098.70
B1. Greater than 2" to 6" diameter		per foot	$4.50	$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00	$0.00
9. **Well Installation (per foot)***				
A1. Water Table (hand augered)		per foot	$10.60	$0.00
B1. Water Table (drill rig)	523	per foot	$38.00	$19,874.00
C1. Telescoping		per foot	$31.80	$0.00
D1. Rock Drilling		per foot	$26.80	$0.00
E1. 2" Rock Coring		per foot	$30.90	$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40	$0.00
H1. Recovery Well (4" diameter)		per foot	$30.00	$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00	$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00	$0.00
K. Re-develop Existing Well		per foot	$11.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product ***				
A1. Groundwater Purge	19	per well/recept	$60.00	$1,140.00
B1. Air or Vapors		per recepto	$12.00	$0.00
C1. Water Supply		per well/recept	$22.00	$0.00
D1. Groundwater No Purge or Duplicate	1	per well/recept	$28.00	$28.00
E1. Gauge Well only		per well	$7.00	$0.00
F1. Sample Below Product		per well	$12.00	$0.00

G1. Passive Diffusion Bag		each	$26.00		$0.00
H1. Field Blank	1	each	$24.60		$24.60
11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	22	per sample	$122.00		$2,684.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's		per sample	$60.60		$0.00
E1. Lead	21	per sample	$16.00		$336.00
F1. EDB by EPA 8011	21	per sample	$45.20		$949.20
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer	2	per sample	$104.00		$208.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*	3	per test	$191.00		$573.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	100	gallon	$0.56		$56.00
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal	5	ton	$60.00		$300.00
D1. Drilling fluids	25	gallon	$0.42		$10.50
18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00

23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
A2. 24-hour Event*		each	$3,515.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F. Effluent Disposal		gallon	$0.30		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Deli	4	each	$50.00		$200.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
I1. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Management	10%	percent	$39,387.80		$3,938.78
TOTAL					$43,326.58

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment



MR MIKE WRIGHT
405 DOVE HILL CIRCLE
EASLEY SC 29640

OCT 2 2 2014

Re: Tier II Assessment Directive
Westside Quick Stop, Inc. 821 West Parker Road, Greenville, SC
UST Permit# 12430; Cost Agreement# 48823; MWA# UMW-25663
Release reported July 7, 2012
Site Specific Work Plan & Cost Agreement received May 30, 2014
Greenville County

Dear Mr. White:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced Site Specific Work Plan (SSWP) submitted on your behalf by Petra-Tech Environmental, LLC. The Tier I Report received on September 2013 indicated that petroleum Chemicals of Concern (CoC) are present in the soil and groundwater at concentrations that exceed Risk-Based Screening Levels (RBSLs). The Tier II Assessment should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 2.0, Petra-Tech's approved SSWP and Annual Contractor Quality Assurance Plan (ACQAP), and in compliance with all applicable regulations. A copy of the UST QAPP is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement number 48823 has been approved for the amount shown on the enclosed cost agreement form for installation of up to sixteen (16) temporary, thirteen (13) shallow, and three (3) deep monitoring wells plus sampling all monitoring wells to define the horizontal and vertical extent of dissolved CoC. Please be aware that the November 1, 2013 State Underground Petroleum Environmental Response Bank (SUPERB) Allowable Costs sheet states that "If the vertical and horizontal extent of chemicals of concern is not fully defined by the tier report, the Agency may not approve additional future mobilizations for additional screening or well installation." Any screening point that is converted to a permanent monitoring well will be reimbursed at the approved well installation rate. **Please contact the Agency prior to well installation for concurrence regarding the final well locations.** Shallow wells should have a 10-foot screen. **The SUPERB Account cannot reimburse costs for any shallow well with a screen that does not properly bracket the water table.**

A groundwater sample should be collected from all monitoring wells and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2-DCA, ethanol, lead, and EDB. The existing monitoring wells must be purged prior to sample collection since it has been more than 12 months since the wells were last sampled.

The Tier II Assessment Report, contractor checklist, and invoice are due within 90 days from the date of this letter. The report (a signed .pdf copy on CD is preferred) submitted at the completion of these activities should include information outlined in the UST QAPP.

According to Division records, the release at the facility was reported to the Agency on October 19, 2012.

In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Account, you are responsible for the first $25,000 of site rehabilitation costs. Please be sure to provide proof of costs that will be applied to the deductible with the invoice. Acceptable proof of payment of deductible costs include a copy of the cancelled check (front and back) that made payment to your contractor or a signed notarized statement by your site rehabilitation contractor for the amount that was paid directly to your contractor. Petra-Tech Environmental, LLC., can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for preapproved costs that exceed the $25,000 deductible. An interim well drilling invoice may not be submitted for this scope of work as the deductible has not been met. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. The Division, because of unnecessary dilution, cannot make decisions if the reporting limit of individual petroleum CoC exceeds RBSLs. The Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release. Note that the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL.

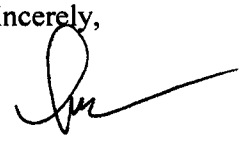
Please note that you and/or your contractor are responsible for obtaining all off-site access agreements and/or encroachment permits necessary for this scope of work.

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

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence regarding this site, please reference UST Permit number 12430. Should you have any questions regarding this correspondence, please feel free to contact me at (803) 898-0599, fax me at (803) 898-0673, or e-mail me at krutekjl@dhec.sc.gov.

Sincerely,



Joy Krutek, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement (ACA)
Monitoring Well Approval (MWA)
cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd., Greenville, SC 29617 (w/ enc)
Petra-Tech Environmental, LLC., 2435 E. North Street, Suite 1108-202, Greenville, SC (with enc.)
Technical file (with enc)

D H E C

PROMOTE PROTECT PROSPER

Catherine B. Templeton, Director

Promoting and protecting the health of the public and the environment

Monitoring Well Approval

Approval is hereby granted to: Petra-Tech Environmental, LLC
(on behalf of): Westside Quick Stop
Facility: 821 West Parker Road
Greenville, SC
UST Permit Number: 12430
County: Greenville

This approval is for the installation of 16 temporary wells, 13 shallow monitoring wells, and 3 deep pit-cased monitoring wells. The monitoring wells are to be installed in the approved locations. The monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the 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 Joy Krutek (tel: (803) 898-0599 or e-mail: krutekjl@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. 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.

Date of Issuance: **September 11, 2014** **Approval #:** **UMW-25663**

Joy Krutek, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Approved Cost Agreement 48823

Facility: 12430 WESTSIDE QUICK STOP
KRUTEKJL
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A1	SITE SPECIFIC WORK PLAN	1.0000	150.00	150.00
		B1	TAX MAP	1.0000	70.00	70.00
03 COMPREHENSIVE SURVEY						
		A1	COMPREHENSIVE SURVEY	1.0000	1,040.00	1,040.00
04 MOB/DEMOB						
		A1	EQUIPMENT	2.0000	1,020.00	2,040.00
		B1	PERSONNEL	4.0000	423.00	1,692.00
06 SOIL BORINGS (DRILLED)						
		A1	SOIL BORING/FLD SCR. STANDARD	200.0000	7.40	1,480.00
08 ABANDONMENT						
		A1	ABANDONMENT 2" DIA OR LESS	200.0000	3.10	620.00
09 WELL INSTALLATION						
		B1	WATER TABLE (DRILL RIG)	225.0000	38.00	8,550.00
		C1	TELESCOPING	120.0000	31.80	3,816.00
10 SAMPLE COLLECTION						
		A1	GROUNDWATER (PURGE)	16.0000	60.00	960.00
		D1	GROUNDWATER NO PURGE/DUPLICATE	6.0000	28.00	168.00
		H1	FIELD BLANK	1.0000	24.60	24.60
11 ANALYSES						
	GW GROUNDWATER	A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	24.0000	122.00	2,928.00
		E1	LEAD	22.0000	16.00	352.00
		F1	EDB BY 8011	23.0000	45.20	1,039.60
	SOIL SOIL	W1	GRAIN SIZE / HYDROMETER	2.0000	104.00	208.00
12 AQUIFER CHARACTERIZATION						
		B1	SLUG TEST	2.0000	191.00	382.00
17 DISPOSAL						
		AA	WASTEWATER	120.0000	0.56	67.20
		C1	SOIL TREATMENT DISPOSAL	3.0000	60.00	180.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PERC	REPORT PREPARATION	0.1000	25,867.40	2,586.74
25 WELL REPAIR						
		A1	ADDITIONAL COPIES OF REPORT	2.0000	50.00	100.00
				Total Amount		28,454.14

D H E C
PROMOTE PROTECT PROSPER
W. Marshall Taylor Jr., Acting Director
Promoting and protecting the health of the public and the environment

CERTIFIED MAIL
91 7199 9991 7035 0540 1487

MAR 0 3 2015

MR MIKE WRIGHT
405 DOVE HILL CIRCLE
EASLEY SC 29640



Re: **Notice of Alleged Violation**
Westside Quick Stop, 821 W Parker Rd, Greenville, SC
UST Permit # 12430
Release #1 Reported Date July 7, 2012
Tier II Directive dated October 22, 2014
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) directed you in October 2014 to complete a Tier II Assessment to define the extent of the plume with the report due January 22, 2015. To date the required report has not been received. In accordance with Section 280.65 of the South Carolina Underground Storage Tank Regulations, the assessment must be conducted as chemicals of concern are above the Risk-Based-Screening Levels.

Implementation of this scope of work should proceed upon receipt of this correspondence. **Please submit the report on or before April 3, 2015. Should you not submit the report on or before this date, this office will initiate further enforcement action.**

On all correspondence regarding this site, please reference UST Permit #12430. If you have any questions concerning this correspondence, please call me at (803) 898-0599, e-mail me at krutekjl@dhec.sc.gov, or fax me at (803) 898-0673.

Sincerely,

Joy Krutek, Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc:
Environmental Laboratories, Inc., 2121 Roe Ford Rd, Greenville, SC 29617
Technical File

Document Receipt Information

☒ Hard Copy ☒ CD ☐ Email

Date Received 2-8-2016

Permit Number 12430

Project Manager Vacant / Chris Doll

Name of Contractor Petra-tech

UST Certification Number

Docket Number 19 tech

Scanned

Tier II Assessment Report

TIER II ASSESSMENT REPORT

Westside Quick Stop
SCDHEC UST Permit #12430
Cost Agreement #48823
821 West Parker Road
Greenville, South Carolina
Greenville County

PTE Job No. J14-049-A

May 6, 2015

petra-tech
ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Petra-Tech Environmental
2435 East North Street
Suite 1108-202
Greenville, SC 29615

www.petratechenv.com

petra-tech
ENVIRONMENTAL, LLC

May 6, 2015

South Carolina Department of Health and Environmental Control
Division of Underground Storage Tank Management
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Attention: Ms. Joy Krutek

Subject: **Tier II Assessment Report**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
Cost Agreement #48823
PTE Job No. J14-049-A

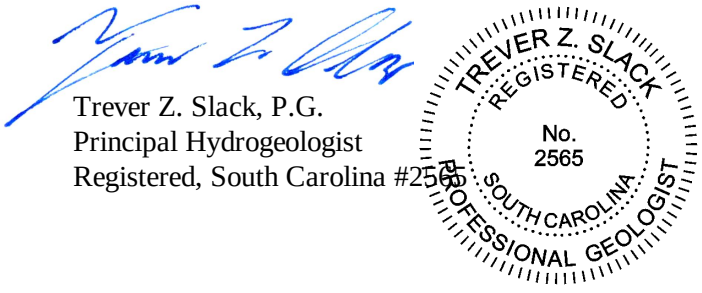
Dear Ms. Krutek,

On behalf of Mr. Mike Wright and Environmental Laboratories, Inc., Petra-Tech Environmental, LLC submits herein the completed Tier II Assessment Report for the subject site. This submittal is in response to the South Carolina Department of Health and Environmental Control's (SCDHEC) directive letter dated October 22, 2014 and was performed in accordance with Petra-Tech Environmental, LLC's Site Specific Work Plan dated May 23, 2014.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental



Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565

1.0 FACILITY IDENTIFICATION

Facility Name:	Westside Quick Stop - UST Permit #12430
Facility Address:	821 West Parker Road Greenville, Greenville County, South Carolina
Facility Phone:	864-271-9400
UST Owner:	Shree Gajvakra LLC
UST Owner Address:	205 Fairway Drive Laurens, South Carolina 29360
UST Owner Phone:	864-354-1729
Property Owner:	Mr. Mike Wright
Property Owner Address:	405 Dove Hill Circle Easley, South Carolina 29640
Property Owner Phone:	Not Available

2.0 INTRODUCTION

The subject property is located at 821 West Parker Road in Greenville, Greenville County, South Carolina (**Figure 1**) and currently operates as a retail petroleum fueling station and convenience store. The site is bordered primarily by residential properties with the exception of a commercial property to the northeast and northwest. A tax map of the areas immediately surrounding the subject site along with a table containing property owner names, addresses, and phone numbers (where available) has been included as **Appendix C**.

2.1 Site History

According to the South Carolina Department of Health and Environmental Control Online Underground Storage Tank Registry database, three underground storage tanks (one 1,000-gallon kerosene and two 6,000-gallon regular gasoline) are currently in use at the site. Additionally, a 4,000-gallon super/premium gasoline underground storage tank is located at the site and is currently classified as extended-out-of-use. A release was reported in October 2012, and three groundwater monitoring wells (12430-MW01 through 12430-MW03) have been installed during previous environmental assessments. The release is currently ranked 4AA.

A Tier II Assessment Site Specific Work Plan was submitted to the South Carolina Department of Health and Environmental Control on May 23, 2014, and the Site Specific Work Plan was accepted in a Tier II Directive letter dated October 22, 2014. The results of the Tier II Assessment are contained herein.

2.2 Regional Geology and Hydrogeology

The site is located in the Piedmont Physiographic Province, which generally consists of rolling, well-rounded hills dissected by streams and drainage features. Floodplains are relatively narrow, and ridgetops (stream divides) are typically narrow with only a few hundred feet of elevation difference between the

ridgetops and valleys. The Piedmont Physiographic Province ranges in elevation from approximately 300 feet to 1,500 feet above mean sea level (AMSL).

Geologically, the site is located within the Piedmont belt of South Carolina which consists of thrust sheets containing a variety of gneisses, schists, amphibolites, ultramafic bodies, and intrusive granitoids. The typical residual soil profile consists of clayey soils near the surface, where soil weathering is more advanced, underlain by sandy silts and silty sands. Residual soil zones which develop by the in-situ chemical weathering of bedrock (saprolite) range in thickness from a few feet to more than 100 feet, and generally consist of sand with lesser amounts of silt, clay, and large rock fragments.

A transitional zone of partially weathered rock is typically found beneath the saprolite and overlies the parent bedrock. Weathering in this zone is facilitated by fractures, joints, and the presence of less resistant rock types. Consequently, the profile of the partially weathered rock and parent bedrock is commonly irregular, even over short horizontal distances. Additionally, it is not unusual to find lenses and boulders of hard rock and zones of partially weathered rock well above the general bedrock level. According to Horton Et Al. (2001)[1], the site is underlain by Middle Paleozoic aged gneissic granite.

Groundwater in the Piedmont usually occurs under unconfined conditions in three primary zones: 1) residual soil (saprolite); 2) partially weathered rock; and 3) fractured bedrock. These zones are typically interconnected through bedrock fractures, pore spaces, and other secondary permeability features, and the configuration of the water table aquifer generally resembles the local topography. Seasonal high-water tables are typically observed during the winter and spring months when maximum infiltration capacity occurs due to low intensity, long duration precipitation events and reduced evaporation and transpiration. Seasonal low water tables are typically observed during the summer and fall months when minimum infiltration capacity occurs due to higher surface runoff caused by high intensity, short duration precipitation events and greater evaporation and transpiration.

3.0 ASSESSMENT INFORMATION

The completed scope of services was based on Petra-Tech Environmental's Site specific Work Plan dated May 23, 2014, and subsequent email and verbal correspondence with former South Carolina Department of Health and Environmental Control project manager Ms. Joy Krutek. During the Tier II Assessment, the following activities were performed: groundwater screening; installation of shallow groundwater monitoring wells; slug tests in two shallow monitoring wells; and completion of a comprehensive groundwater sampling event.

3.1 Site Specific Geology and Hydrogeology

Borings performed during the Tier II Assessment encountered soils consisting primarily of residual clayey silts and sandy silts underlain by partially weathered rock and bedrock. Soil boring records are provided in **Appendix E**. A soil sample was collected from the screened interval of monitoring

[1] Horton, Horton, J.Wright, and Dicken, Connie L., 2001, Preliminary Geologic Map of the Appalachian Piedmont and Blue Ridge, South Carolina Segment: U.S. Geological Survey, Open-File Report 01-298, CD [http://pubs.er.usgs.gov/publication/ofr01298]

well 12430-MW10 and submitted for laboratory grain size analysis. Grain size analysis results indicated a silty fine to medium sand.

Grain size distribution is summarized below:

Sample ID	Sample Depth (feet BGS)	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt	% Clay
MW10	25.0	0.0	0.0	45.0	23.7	21.6	9.7

3.2 Summary of Field Screening Activities

Groundwater field screening was completed at the site on February 4 and 5, 2015 by Mr. Joe Smith (SC Licensed Well Driller #1648-B) under the supervision of Mr. Thomas Vaughan of Petra-Tech Environmental, LLC. Quality Assurance verification for field screening activities was provided by Ms. Kaye Burch. Details of the groundwater field screening activities are included in Section 3.2.1 below.

3.2.1 Groundwater Field Screening Activities

Seventeen temporary shallow groundwater screening borings (GW01 through GW05, GW07 through GW13, GW17, GW18, GW20, GW22, and GW23) and two temporary deep groundwater screening borings (GW07D and GW09D) were performed using a Simco direct push drill. Probe refusal was encountered at depths ranging from 16 to 31 feet below ground surface across the study area, and many groundwater screening borings encountered refusal prior to encountering groundwater. As directed by the South Carolina Department of Health and Environmental Control project manager, groundwater screening borings were not advanced into bedrock. Shallow groundwater screening borings that encountered groundwater ranged in depth from 18.0 to 21.0 feet below ground surface (140 total feet), and only one deep groundwater screening boring achieved sufficient separation from the adjacent shallow groundwater screening boring to collect a groundwater sample (GW09D advanced to a depth of approximately 31.0 feet below ground surface).

Each groundwater screening boring location was established in the field from map-scaled distances, by measuring from site landmarks, and estimating right angles (**Figure 2**); and survey coordinates for the groundwater screening borings were obtained using a handheld Geographic Positioning System device. Groundwater samples collected in the field were screened using a portable MiniRAE® Lite Photo-Ionization Detector (PID). After representative samples were collected from each boring, the temporary boreholes were abandoned to the ground surface with a bentonite cement grout pursuant to South Carolina well standards[2]. Groundwater screening boring 1903 Well Records are included in **Appendix D**.

Select groundwater samples from sentinel borings were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, 1,2-dichloroethane (1,2-DCA), and methyl-tert-

[2] South Carolina Well Standards and Regulations, SCDHEC, Promulgated Pursuant to Section 44-55-40 of the 1976 South Carolina Code of Laws, R. 61-71, April 26, 2002.

butyl-ether (MTBE) by Environmental Protection Agency (EPA) Method 8260B. Of the eight groundwater screening samples submitted for laboratory analysis, petroleum compounds were detected above laboratory method detection limits in GW004, GW05, GW09, GW12, and GW13. Field screening and laboratory analytical results are summarized in **Table 1**. Groundwater screening laboratory data sheets are provided in **Appendix B**.

3.3 Summary of Well Installation Activities

Following completion of field screening activities, eight groundwater monitoring wells (12430-MW04 through 12430-MW11) were installed from March 25, 2015 through March 28, 2015 to complete the assessment of petroleum hydrocarbons in groundwater. As directed by the South Carolina Department of Health and Environmental Control project manager, the shallow groundwater monitoring wells were installed at the depth of auger refusal, and deep monitoring wells were not advanced into bedrock. The well locations were based on the groundwater field screening results and communication with former South Carolina Department of Health and Environmental Control project manager Ms. Joy Krutek. Monitoring well installations were performed by Mr. Robyn Barkley (SC Licensed Well Driller #0934-A). Field personnel providing oversight of field screening activities included Mr. Thomas Vaughan and Mr. Daniel Burch. Quality Assurance verification for monitoring well installation activities was provided by Ms. Kaye Burch.

3.3.1 Type II Wells

Shallow water table groundwater monitoring wells were installed as Type II monitoring wells using a Simco 2500 drill utilizing 4.25-inch inside diameter hollow stem auger drilling techniques. The monitoring wells consist of 2-inch ID, schedule 40 PVC casing with flush-threaded joints. The bottom 10-foot section of each shallow groundwater monitoring well is a manufactured well screen with 0.010-inch wide machined slots. Standard sand filter pack, bentonite seal, and grout were installed to the ground surface.

Total well depths for Type II wells are:

Shallow Water Table Groundwater Monitoring Wells

12430-MW04	30.49 feet BGS
12430-MW05	20.80 feet BGS
12430-MW06	21.47 feet BGS
12430-MW07	31.04 feet BGS
12430-MW08	31.10 feet BGS
12430-MW09	30.04 feet BGS
12430-MW10	30.47 feet BGS
12430-MW11	30.83 feet BGS

Monitoring well construction diagrams and 1903 Water Well Records are included in **Appendix E**. Monitoring well construction data is provided in **Table 2**.

3.3.2 General

At assigned intervals, drill cuttings were collected for soil classification and representative portions of the test samples were visually examined and classified by a geologist. Soil samples were screened at 5-foot intervals using a PID.

To help prevent cross-contamination, downhole drilling equipment was steam cleaned between borings. Approximately 2.5 tons of petroleum impacted drill cuttings generated during the installation of the monitoring wells were transported off-site for disposal. Waste transportation and disposal records are included in **Appendix G**.

Monitoring well installations were performed by a South Carolina licensed driller while being supervised by Petra-Tech Environmental, LLC field staff. Monitoring wells were developed through a combination of surging and overpumping. The monitoring well locations were surveyed by a licensed surveyor (George B. Souther RLS, SC #21232) to establish horizontal control and vertical elevations of the top of PVC casing and ground surface. The results of the comprehensive site survey are included as **Appendix A**. The site survey was used to create a site base map (**Figure 3**) for the site.

3.4 Groundwater Sampling

Eleven groundwater monitoring wells were sampled on March 30 and 31, 2015 by Mr. Thomas Vaughan, Mr. Daniel Burch, and Mr. Ryan McCormick of Petra-Tech Environmental, LLC. Quality Assurance verification was provided by Ms. Kaye Burch.

Groundwater monitoring wells were developed by purging until it was determined that groundwater flow through the well screen was not inhibited by silt or fine sand. Approximately 60 gallons of purge-water generated during the monitoring well development and sampling was transported off-site for disposal. Waste transportation and disposal records are attached in **Appendix G**. Monitoring well purging and sampling logs are included in **Appendix B**.

Sample containers were marked in the field with identifying numbers, properly preserved, placed into sample coolers, secured, and maintained at less than 4 degrees Celsius. The samples and chain-of-custody records were delivered to Shealy Environmental Services, Inc. in Columbia, South Carolina for analysis of BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B, 1,2-dibromoethane (EDB) by EPA Method 8011, and total lead by EPA Method 6010B (groundwater monitoring wells). One duplicate sample per twenty wells sampled and one field blank for each day in the field was analyzed for BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B, EDB by EPA Method 8011, and total lead by EPA Method 6010B. Additionally, one trip blank for each sample cooler was analyzed for BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B.

3.5 Tier II Assessment Results

3.5.1 Groundwater Occurrence

Site-wide stabilized groundwater elevations recorded on March 30, 2015 ranged from 982.69 (12430-MW01) to 986.27 (12430-MW07) for the shallow groundwater monitoring wells. A tabulation of the

groundwater level data is provided in **Table 2**. A water table elevation contour map showing the occurrence and direction of groundwater flow is presented as **Figure 4**. Groundwater flow from the source area is generally to the southeast.

Figures 5A through **5C** provide hydrogeologic cross-sections through the subsurface soils. The cross-sections depict the surveyed ground surface elevation, subsurface lithologies, monitoring wells and their respective screened intervals, and the static groundwater elevation.

3.5.2 Groundwater Monitoring Well and Surface Water Sampling Results

Of the eleven groundwater monitoring wells sampled for laboratory analysis during the Tier II Assessment, three wells (12430-MW01, 12430-MW02, and 12430-MW04) detected petroleum compounds above South Carolina established Risk-Based Screening Levels.

Petroleum compounds detected above Risk-Based Screening Level concentrations include:

- Benzene — 12430-MW01, 12430-MW02, and 12430-MW04
- Toluene — 12430-MW01 and 12430-MW02
- Ethylbenzene — 12430-MW02
- Xylenes — 12430-MW02
- MTBE — 12430-MW01 and 12430-MW02
- Naphthalene — 12430-MW02
- EDB — 12430-MW02
- Di-Isopropyl-Ether (DIPE) — 12430-MW02
- Tert-Amy-Alcohol (TAA) — 12430-MW01 and 12430-MW02

Petroleum compounds were also detected above laboratory method detection limits in groundwater monitoring wells 12430-MW05, 12430-MW06, 12430-MW08, and 12430-MW10; however, concentrations did not exceed South Carolina established Risk-Based Screening Levels. The results of the laboratory analyses are summarized in **Table 3** and are shown on **Figure 6**. Laboratory data sheets are provided in **Appendix B**.

3.5.3 Aquifer Evaluation

Slug tests were performed in monitoring wells 12430-MW03 and 12430-MW11 to determine the hydraulic conductivity of the formation material exposed to the well screen. A SCDHEC *Summary of Slug Test Form* is provided in **Appendix F**. The data from the tests are presented on **Table 4**.

Hydraulic Conductivity

Hydraulic conductivity is defined as the ability of the aquifer material to conduct water under a hydraulic gradient. Two slug tests were performed at the site during the current scope of work to measure the in-situ hydraulic conductivity of the aquifer and were evaluated using the Bouwer and Rice Method[3] for partially-penetrating wells in an unconfined aquifer (slug testing results are included in **Appendix F**). The hydraulic conductivity values measured at the site were 8.45 x 10^{-6} cm/sec (12430-MW03) and 8.56 x 10^{-6} cm/sec (12430-MW11). The site-wide geometric mean hydraulic conductivity value is 8.51 x 10^{-6} cm/sec (**Table 4**).

Horizontal Hydraulic Gradient

The horizontal hydraulic gradient is determined by dividing the difference in groundwater elevations at two locations by the horizontal distance between those locations along the direction of groundwater flow. The horizontal hydraulic gradient across the site for the shallow unconfined aquifer is approximately 0.018 feet/feet between groundwater monitoring wells 12430-MW08 and 12430-MW01.

Effective Porosity

Total porosity is the total volume of void spaces in a rock or sediment divided by the total volume of that rock or sediment. Effective porosity is less than total porosity, and is the ratio of those void spaces which are interconnected allowing water of other fluids to flow to the total volume of the rock or sediment. A number of scientific studies have been undertaken to identify relationships between effective porosity and the physical characteristics of rock or soil (lithology) in order to estimate the effective porosity for different lithological formations.

An effective porosity value of 0.32 was estimated for the screened intervals of the shallow groundwater monitoring wells based on grain size analysis indicating a silty, fine to medium sand. The effective porosity was estimated based on published values of effective porosity for a medium sand (McWhorter and Sunada 1977[4]) which ranged from 0.16 to 0.46 with an arithmetic mean of 0.32.

Groundwater Flow Velocity

The velocity of groundwater flow is derived from the equation:

$$V = \frac{Ki}{n_e}$$

Where

V is the flow velocity
K is the hydraulic conductivity
i is the horizontal hydraulic gradient
n_e is the effective porosity

[3] Bouwer, H., and Rice, R., A Slug Test for Determining Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, *Water Resources Research*, v. 12, o. 423-428.

[4] Mcwhorter, D. and Sunada, D., 1977, Groundwater Hydrology and Hydraulics, Water Resources Publication, 290 pp.

Based on these parameters and the data provided above, the geometric mean horizontal movement of groundwater is approximately 0.50 feet/year in the unconfined aquifer at the site. **Table 4** summarizes the groundwater flow velocity calculations.

4.0 TIER II RISK EVALUATION AND RECOMMENDATIONS

- Eight groundwater monitoring wells were installed from March 25, 2015 through March 28, 2015 to assess the horizontal extent of groundwater contamination at the subject site.

- Eleven groundwater monitoring wells were sampled for laboratory analysis during the Tier II Assessment. Petroleum compounds were detected above South Carolina established Risk-Based Screening Levels in groundwater monitoring wells 12430-MW01, 12430-MW02, and 12430-MW04. Compounds detected above South Carolina established Risk-Based Screening Level concentrations include benzene, toluene, ethylbenzene, xylenes, naphthalene, MTBE, EDB, DIPE, and TAA.

- Groundwater flow from the source area is primarily to the southeast.

- Petra-Tech Environmental recommends continued monitoring of the groundwater monitoring well network associated with the site to establish trends in groundwater contaminant concentrations and ensure that concentrations are attenuating naturally. Aggressive Fluid Vapor Recovery (AFVR) should be implemented in source area groundwater monitoring wells 12430-MW01 and 12430-MW02 to enhance aerobic degradation of the contaminant plume. Concentrations of dissolved phase petroleum compounds in these monitoring wells are approaching solubility limits.

TABLES

TABLE 1
Summary of Groundwater Screening Results
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

			Groundwater Screening Sample										
	Method	**RBSL (µg/L)**	GW01	GW02	GW03	GW04	GW05	GW07	GW07D	GW08	GW08D	GW09	GW09D
Boring Depth (ft bgs)	NA	NA	17	16	17	21	20	21	24	17	NA	20	31
Depth-to-Groundwater (ft bgs)	NA	NA	NA	NA	NA	19	19	18	NA	NA	NA	18	18
Sample Depth (ft bgs)	NA	NA	NA	NA	NA	17-21	16-20	17-21	NA	NA	NA	16-20	27-31
PID Reading (ppm)	NA	NA	NA	NA	NA	3.6	0.5	0.1	NA	NA	NA	0.2	0.0
Benzene (µg/L)	8260B	5	REFUSAL @ 17 feet BGS	REFUSAL @ 16 feet BGS	REFUSAL @ 17 feet BGS	***1.4***	***0.18J***	<0.13	REFUSAL @ 24 feet BGS	REFUSAL @ 17 feet BGS	NOT DRILLED	***0.23J***	<0.13
Toluene (µg/L)	8260B	1,000				***15***	<0.33	<0.33				<0.33	<0.33
Ethylbenzene (µg/L)	8260B	700				***4.6***	<0.33	<0.33				<0.33	<0.33
Xylenes (µg/L)	8260B	10,000				***23***	<0.33	<0.33				<0.33	<0.33
Naphthalene (µg/L)	8260B	25				***9.4***	***0.61J***	<0.40				<0.40	<0.40
1,2-DCA (µg/L)	8260B	5				<0.15	<0.15	<0.15				<0.15	<0.15
MTBE (µg/L)	8260B	40				<0.40	<0.40	<0.40				<0.40	<0.40

			Groundwater Screening Sample										
	Method	**RBSL (µg/L)**	GW10	GW10D	GW11	GW12	GW13	GW17	GW18	GW18D	GW20	GW22	GW23
Boring Depth (ft bgs)	NA	NA	17	NA	20	20	18	19	18	NA	19	19	20
Depth-to-Groundwater (ft bgs)	NA	NA	NA	NA	16	16	17	NA	NA	NA	NA	NA	NA
Sample Depth (ft bgs)	NA	NA	NA	NA	16-20	16-20	14-18	NA	NA	NA	NA	NA	NA
PID Reading (ppm)	NA	NA	NA	NA	0.2	0.6	0.4	NA	NA	NA	NA	NA	NA
Benzene (µg/L)	8260B	5	REFUSAL @ 17 feet BGS	NOT DRILLED	<0.13	<0.13	<0.13	REFUSAL @ 19 feet BGS	REFUSAL @ 18 feet BGS	NOT DRILLED	REFUSAL @ 19 feet BGS	REFUSAL @ 19 feet BGS	REFUSAL @ 20 feet BGS
Toluene (µg/L)	8260B	1,000			<0.33	***0.51J***	<0.33						
Ethylbenzene (µg/L)	8260B	700			<0.33	<0.33	<0.33						
Xylenes (µg/L)	8260B	10,000			<0.33	***0.45J***	<0.33						
Naphthalene (µg/L)	8260B	25			<0.33	***0.86J***	***0.40J***						
1,2-DCA (µg/L)	8260B	5			<0.15	<0.15	<0.15						
MTBE (µg/L)	8260B	40			<0.40	<0.40	<0.40						

NOTES:
RBSL - Risk Based Screening Level
Shaded values indicate concentrations exceeding RBSLs.
PID - MiniRae Lite Photoionization Detector
ppm - parts per million
ft bgs - feet below ground surface
NA - Not Applicable
NT - Not Tested. Sample not submitted for laboratory analysis

TABLE 2
Monitoring Well and Groundwater Surface Elevation Data
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

Monitoring Well	Ground Surface Elevation	Top-of-Casing Elevation	Date	Groundwater Depth Below Top-of-Casing	Groundwater Elevation	Well Depth BGS	Screened Interval Depth	Screened Interval Elevation
12430-MW01	1005.56	1005.32	08/13/2013	17.97	987.35	30.00	15.00 - 30.00	990.56 - 975.56
			03/31/2015	22.63	982.69			
12430-MW02	1006.50	1006.20	08/13/2013	18.85	987.35	30.00	15.00 - 30.00	991.50 - 976.50
			03/31/2015	21.69	984.51			
12430-MW03	1008.72	1008.49	08/13/2013	21.00	987.49	30.00	15.00 - 30.00	993.72 - 978.72
			03/31/2015	23.81	984.68			
12430-MW04	1008.45	1008.27	03/31/2015	23.47	984.80	30.49	20.29 - 30.29	988.16 - 978.16
12430-MW05	998.24	997.73	03/31/2015	13.01	984.72	20.80	10.60 - 20.60	987.64 - 977.64
12430-MW06	998.58	998.27	03/31/2015	13.32	984.95	21.47	11.27 - 21.27	987.31 - 977.31
12430-MW07	1006.27	1005.88	03/31/2015	19.61	986.27	31.04	20.84 - 30.84	985.43 - 975.43
12430-MW08	1007.86	1007.43	03/31/2015	22.71	984.72	31.10	20.90 - 30.90	986.96 - 976.96
12430-MW09	1009.07	1008.55	03/31/2015	23.20	985.35	30.04	19.84 - 29.84	989.23 - 979.23
12430-MW10	1008.54	1008.22	03/31/2015	22.94	985.28	30.47	20.27 - 30.27	988.27 - 978.27
12430-MW11	1008.26	1007.84	03/31/2015	22.82	985.02	30.83	20.63 - 30.63	987.63 - 977.63

NOTES:
Measurements are in feet
BGS - below ground surface
Elevations are NAVD 88

TABLE 3
Summary of Groundwater Analytical Results
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

		Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2 DCA (µg/L)	ETBE (µg/L)	ETBA (µg/L)	TAME (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	TBF (µg/L)	TBA (µg/L)	TAA (µg/L)	Lead (µg/L)
		RBSL 5	RBSL 1,000	RBSL 700	RBSL 10,000	RBSL 40	RBSL 25	RBSL 0.05	RBSL 5	RBSL 47	RBSL NE	RBSL 128	RBSL 150	RBSL 10,000	RBSL NE	RBSL 1,400	RBSL 240	RBSL 15
12430-MW01	08/13/13	***27000***	***54000***	***2700***	***13000***	***5200***	<500	***0.90***	<500	<500	<10000	<5000	***2600***	<50000	<2500	<10000	***27000***	<10
	08/13/13 dup	***27000***	***54000***	***2700***	***13000***	***5200***	<500	***0.93***	<500	<500	<10000	<5000	***2600***	<50000	<2500	<10000	***28000***	<10
	03/30/15	***3000***	***6300***	***440***	***2500***	***800***	<20	<0.049	<7.4	<10	<75	<13	***68***	<960	<33	***180 J***	***1800***	<4.7
	03/30/15 dup	***3000***	***6200***	***420***	***2500***	***820***	<20	<0.0049	<7.4	<10	<75	<13	***67***	<960	<33	***190 J***	***1900***	<4.7
12430-MW02	08/13/13	***1000***	***1000***	***200***	***570***	***23***	<20	<0.019	<20	<20	<400	<200	<100	<2000	<100	<400	***910***	<10
	03/30/15	***23000***	***51000***	***3200***	***15000***	***520***	***620***	***0.36***	<74	<100	<750	<130	***1600***	<9600	<330	<1100	***20000***	<4.7
12430-MW03	08/13/13	<1	<1	<1	<1	<1	<1	<0.020	<1	<1	<20	<10	<5	<100	<5	<20	<20	<10
	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***9 J***
12430-MW04	03/30/15	***41***	***31***	***6.7***	***63***	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	***4.4***	<19	<0.66	<2.3	***5.1 J***	***6.4 J***
12430-MW05	03/31/15	***0.22 J***	***0.70 J***	<0.33	<0.33	<0.40	<0.40	<0.019	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	<4.7
12430-MW06	03/31/15	***0.18 J***	***0.73 J***	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***14***
12430-MW07	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.019	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	4.8 J
12430-MW08	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	***26***	***14 J***	<4.7
12430-MW09	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	<4.7
12430-MW10	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.0049	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	***3.6 J***	<1.5	<4.7
12430-MW11	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***6.7 J***
FIELD BLANK	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	<4.7
FIELD BLANK 2	03/31/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.019	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	***270***	<1.5	<4.7
TRIP BLANK	03/30/15	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	NT	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	NT

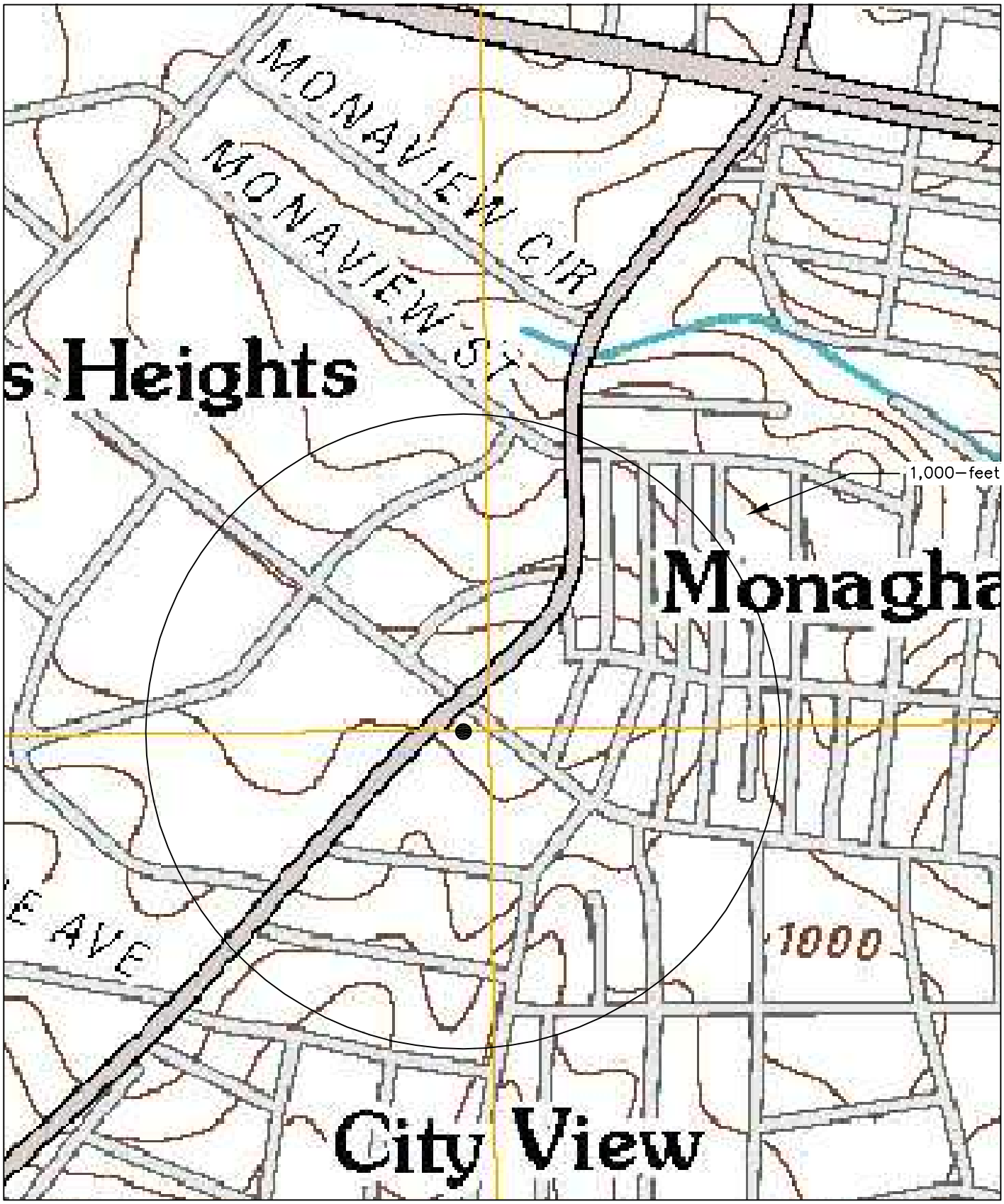
NOTES:
RBSL - Risk Based Screening Level
Bold values indicate concentrations detected above the laboratory method detection limit.
Shaded values indicate concentrations exceeding RBSLs.
NE - Not Established
NT - Not Tested

TABLE 4
Groundwater Velocity
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

VELOCITY CALCULATION	Hydraulic Conductivity (K) (centimeters/second)	Hydraulic Conductivity (K) (feet/day)	Hydraulic Conductivity (K) (feet/year)	Hydraulic Gradient (i) (unitless)	Effective Porosity (n) (unitless)	Groundwater Velocity (V) (feet/day)	Groundwater Velocity (V) (feet/year)	Groundwater Velocity (V) (meters/second)
12430-MW03	8.45E-06	0.02	8.74E+00	0.018	0.32	1.35E-03	0.49	4.75E-09
12430-MW11	8.56E-06	0.02	8.86E+00	0.018	0.32	1.36E-03	0.50	4.82E-09
Mathematical Mean	8.51E-06	0.02	8.80E+00	0.018	0.32	1.36E-03	0.50	4.78E-09

Notes:
Hydraulic conductivity values were obtained from slug tests performed by Petra-Tech Environmental, LLC on March 31, 2015.
Effective porosity values were estimated from published values of effective porosity for a medium sand (ranging from 0.16 to 0.46; arithmatic mean 0.32) (McWorter and Sunada 1977).
Hydraulic gradient for the shallow aquifer was calculated based on groundwater elevations from and distances between monitoring wells 12430-MW08 and 12430-MW01 (Figure 4).
Groundwater velocity derived from the equation V = Ki/n.

FIGURES



Reference: USGS 7.5-Minute series Greenville Quadrangle - 2011; Contour Interval = 10 feet

500 250 0 500

APPROXIMATE SCALE IN FEET

N

SITE

Title	Site Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	05/23/2014
REV.	05/05/2015
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 1



REFERENCE: Greenville County Online GIS Mapping Database; Figure 4 Groundwater Chemicals of Concern by Blue Ridge Environmental Services, Inc. dated August 28, 2013.

100 50 0 100

APPROXIMATE SCALE IN FEET

- Existing Groundwater Monitoring Well (3)
- Shallow Groundwater Screening Boring
- Deep Groundwater Screening Boring

Title	Groundwater Screening Boring Location Plan
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	05/23/2014
REV.	05/05/2015
Job No.	J14-049-A

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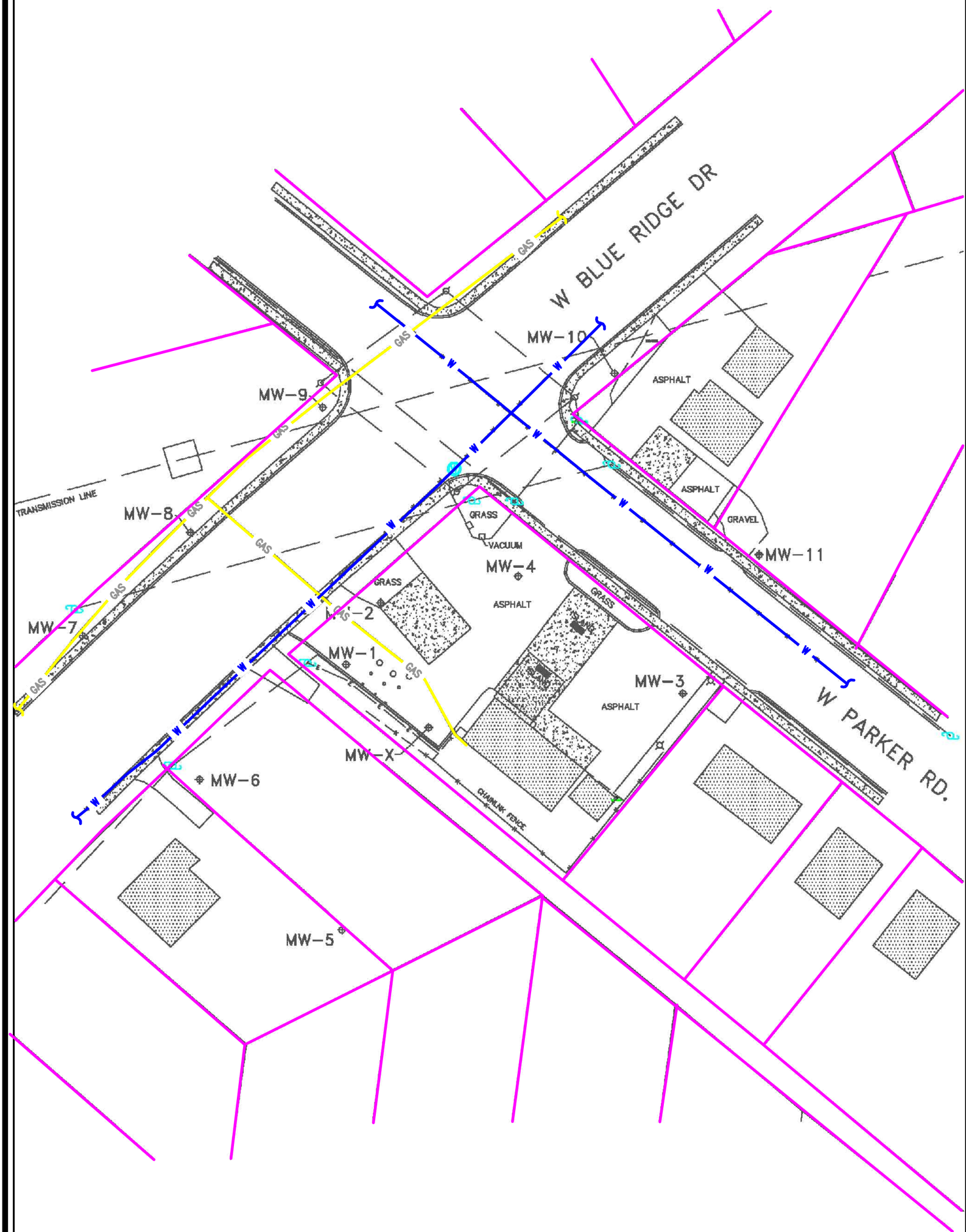
Figure No. 2



REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015

Groundwater Monitoring Well

Approximate Location of Underground Water Line

Approximate Location of Underground Gas Line

Approximate Property Boundary

60 30 0 60

APPROXIMATE SCALE IN FEET

N

Title	Site Base Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/05/2015
Job No.	J14-049-A

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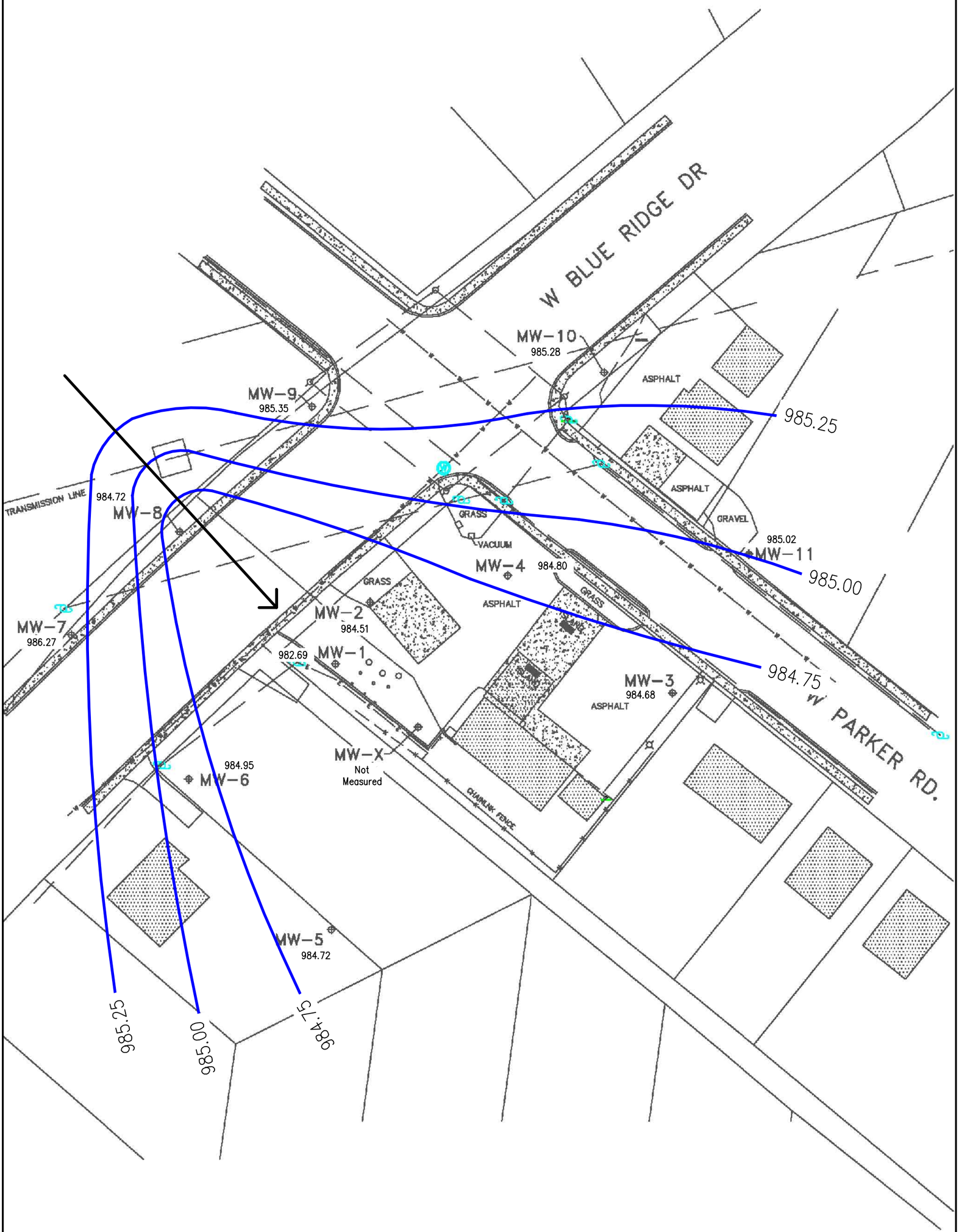
Figure No. 3



REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015

- Groundwater Monitoring Well
- Groundwater Potentiometric Contour
  Contour Interval = 0.25-foot
- 541.28 Groundwater Elevation
- (541.28) Groundwater Elevation Not Used for Contouring Purposes
- Approximate Groundwater Flow Direction

60 30 0 60
APPROXIMATE SCALE IN FEET

N

Title	Groundwater Potentiometric Map – March 2015
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/05/2015
Job No.	J14-049-A

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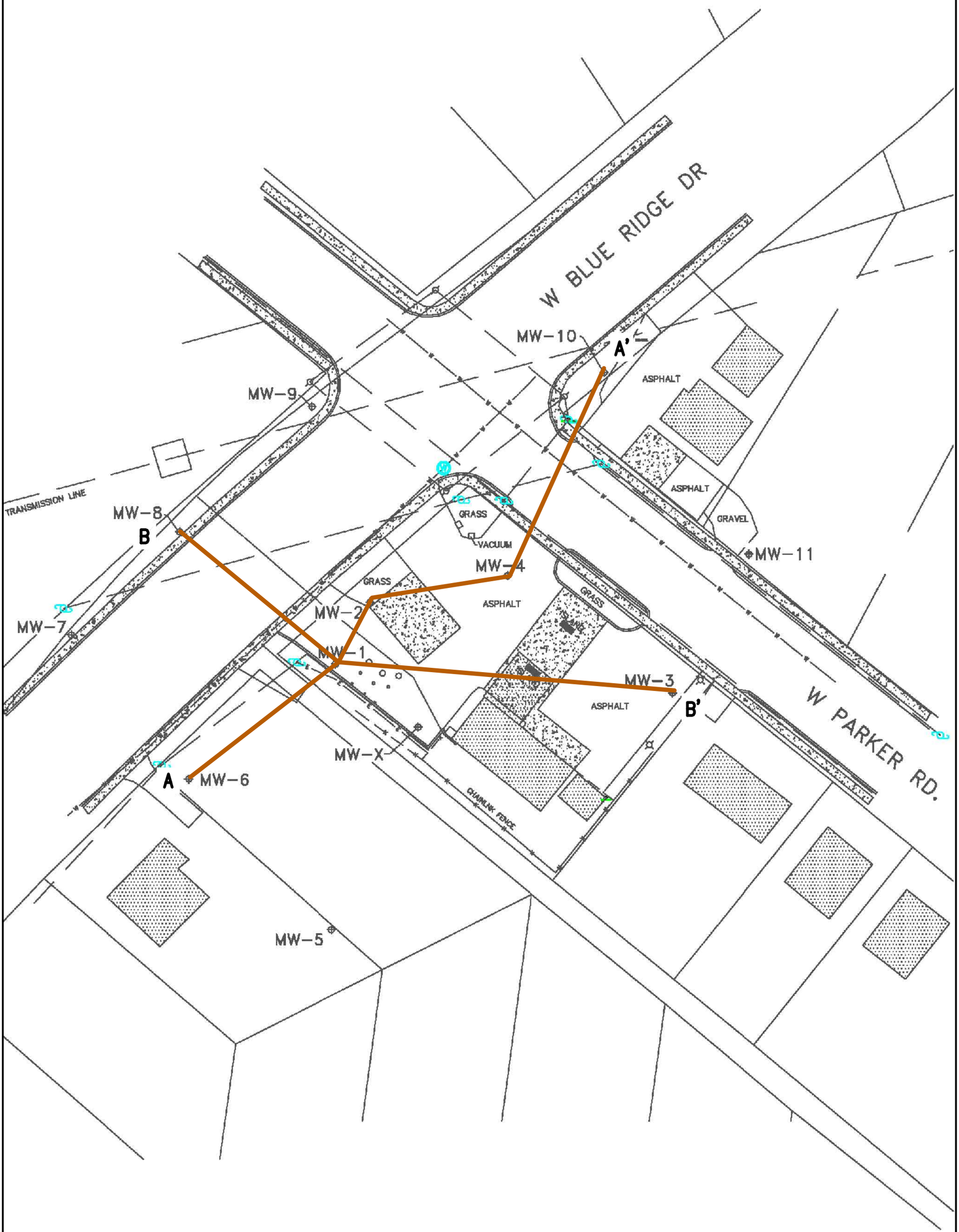
Figure No. 4



REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015

Groundwater Monitoring Well

60 30 0 60

APPROXIMATE SCALE IN FEET

N

Title	Subsurface Geologic Profile Reference Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/05/2015
Job No.	J14-049-A

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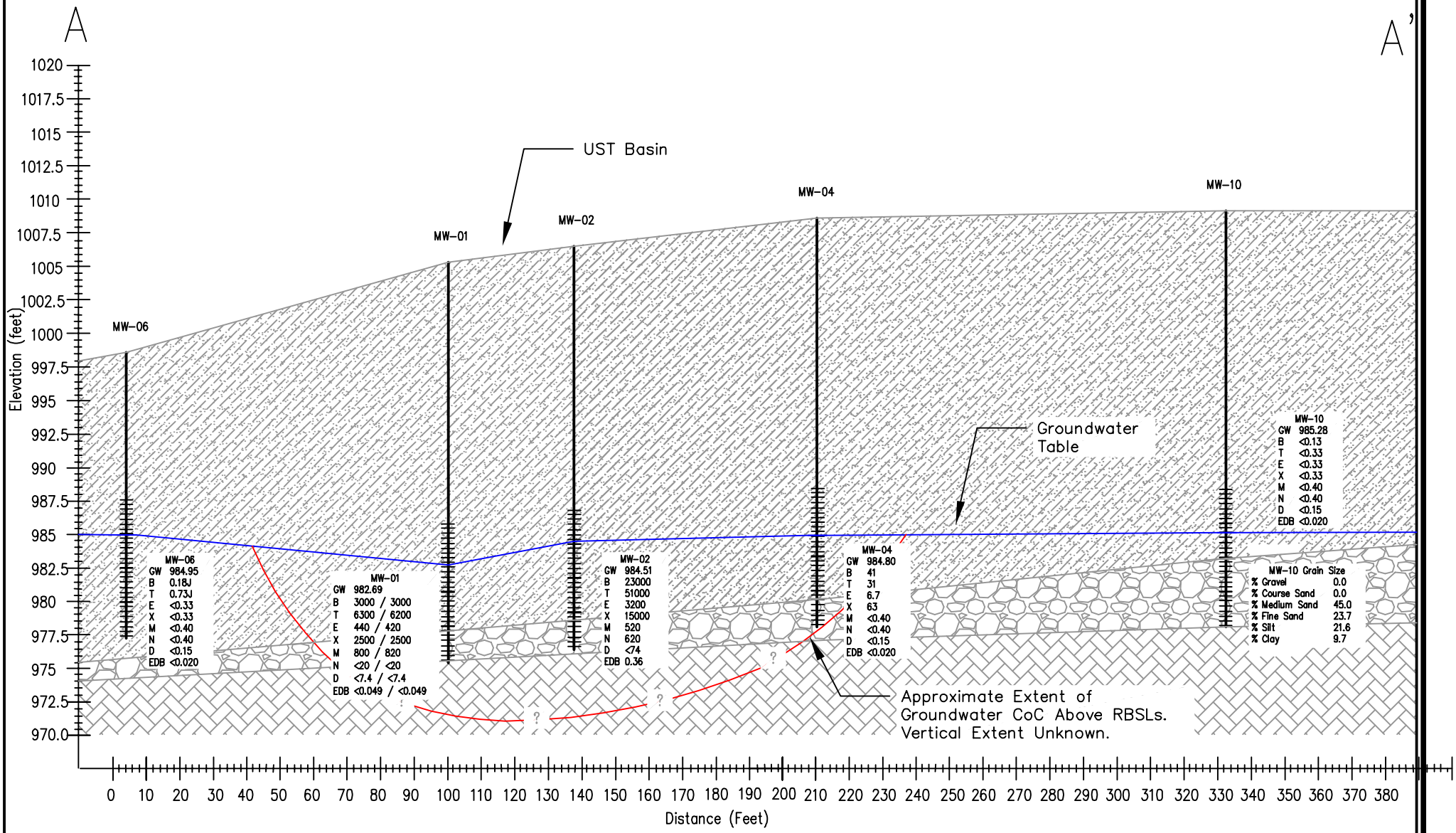
Figure No. 5a



Predominantly clayey silt and sandy silt

Partially weathered rock (sampling as micaceous silty, fine to medium sand)

Gneissic granite bedrock (assumed) – auger refusal

GW – Groundwater Elevation
B – Benzene
T – Toluene
E – Ethylbenzene
X – Xylenes
M – Methyl-Tert-Butyl Ether
N – Naphthalene
D – 1,2-Dichloroethane
EDB – Ethylene Dibromide

Note: Please refer to Figure 5a for Geologic Cross-Section Reference Map

TITLE	Geologic Cross Section A-A'
PROJECT	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
DATE	05/04/2015
JOB NO.	J14-049-A

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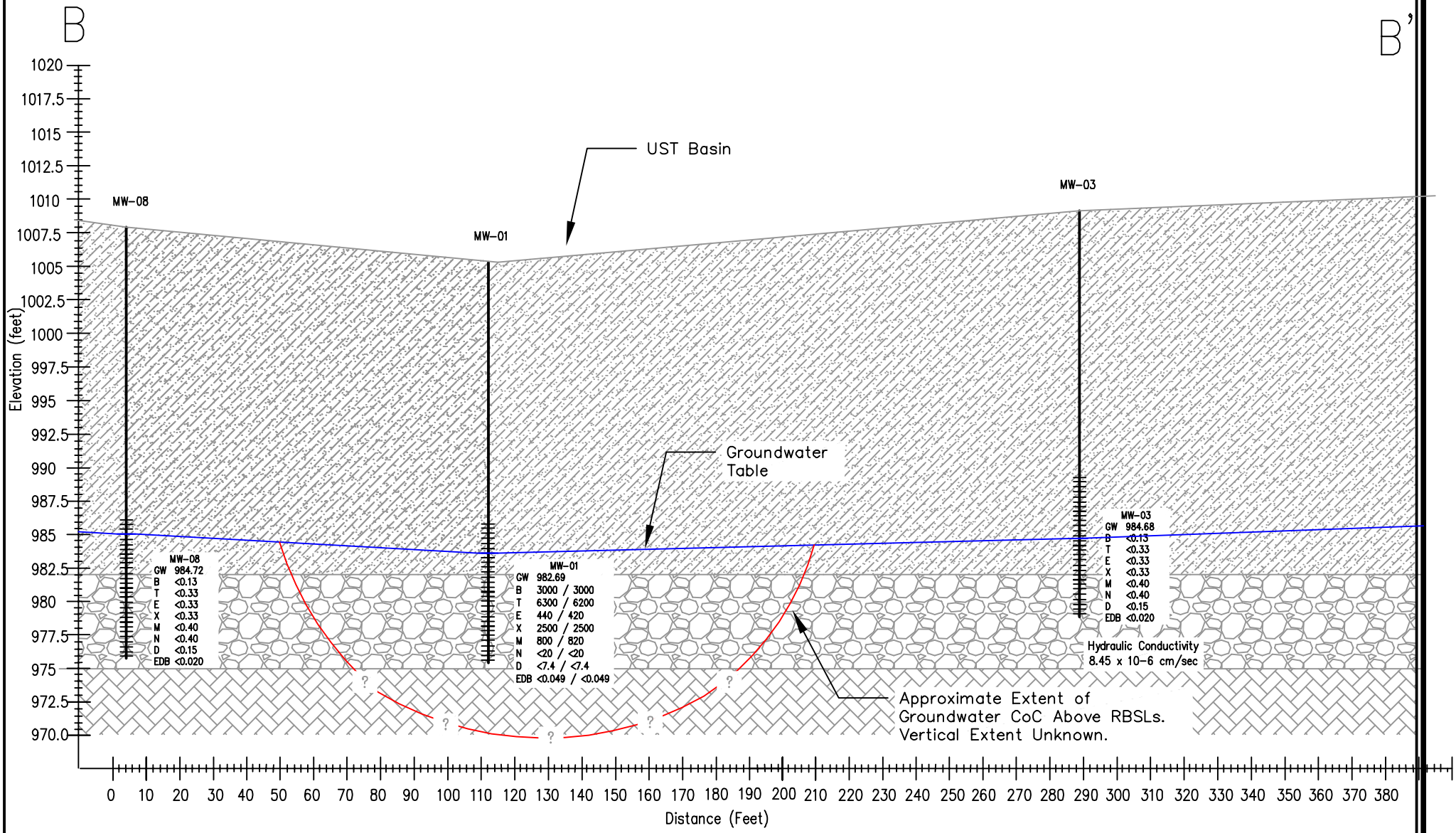
Figure No. 5b



Predominantly clayey silt and sandy silt

Partially weathered rock (sampling as micaceous silty, fine to medium sand)

Gneissic granite bedrock (assumed) – auger refusal

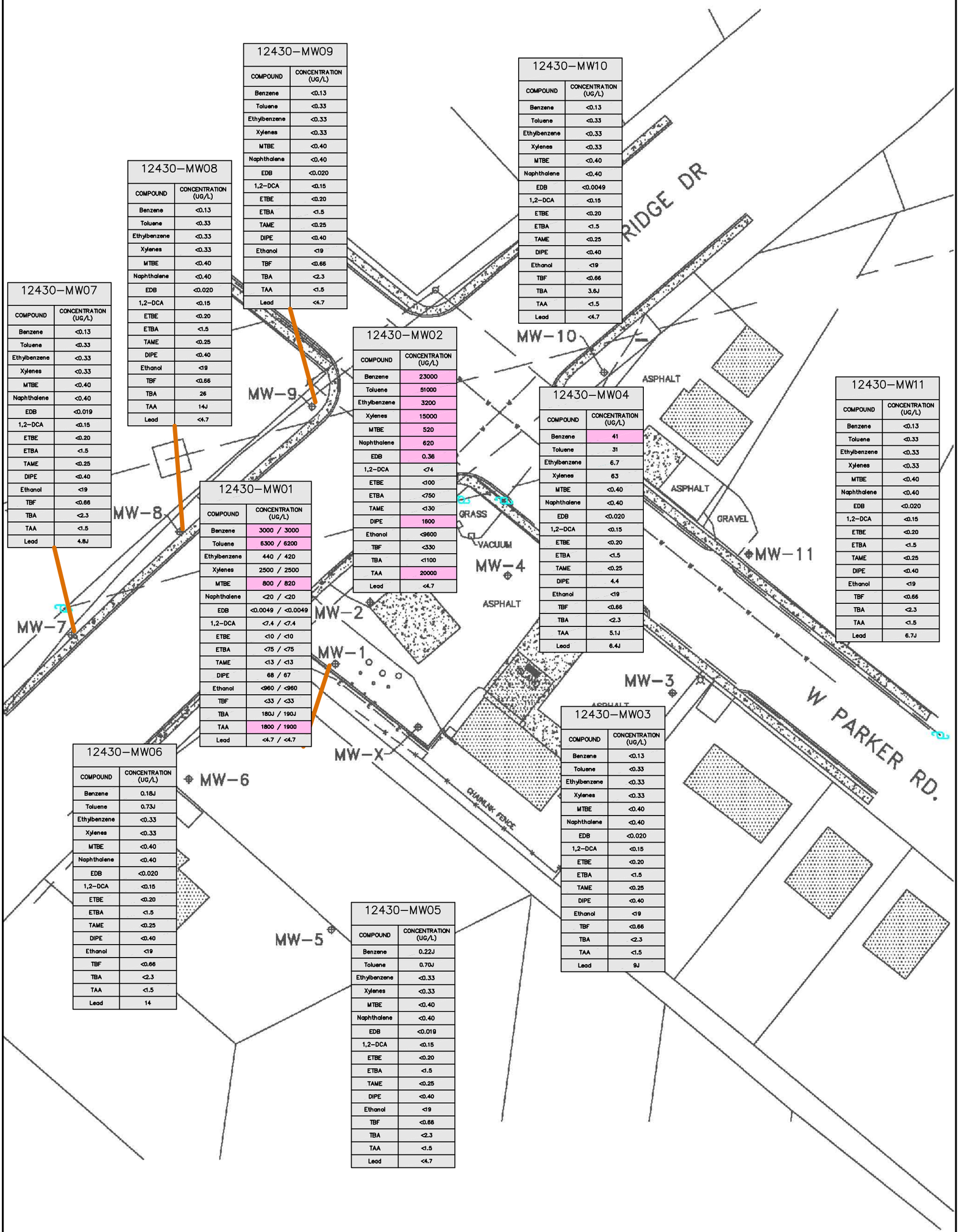
GW – Groundwater Elevation
B – Benzene
T – Toluene
E – Ethylbenzene
X – Xylenes
M – Methyl-Tert-Butyl Ether
N – Naphthalene
D – 1,2-Dichloroethane
EDB – Ethylene Dibromide

Note: Please refer to Figure 5a for Geologic Cross-Section Reference Map

TITLE	Geologic Cross Section B-B'
PROJECT	Westside Quick Stop. (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
DATE	05/05/2015
JOB NO.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 5c



12430–MW09

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	<4.7

12430–MW10

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.0049
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	3.6J
TAA	<1.5
Lead	<4.7

12430–MW08

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	26
TAA	14J
Lead	<4.7

12430–MW07

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.019
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	4.8J

12430–MW02

COMPOUND	CONCENTRATION (UG/L)
Benzene	23000
Toluene	51000
Ethylbenzene	3200
Xylenes	15000
MTBE	520
Naphthalene	620
EDB	0.36
1,2–DCA	<74
ETBE	<100
ETBA	<750
TAME	<130
DIPE	1600
Ethanol	<9600
TBF	<330
TBA	<1100
TAA	20000
Lead	<4.7

12430–MW04

COMPOUND	CONCENTRATION (UG/L)
Benzene	41
Toluene	31
Ethylbenzene	6.7
Xylenes	63
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	4.4
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	5.1J
Lead	6.4J

12430–MW11

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	6.7J

12430–MW01

COMPOUND	CONCENTRATION (UG/L)
Benzene	3000 / 3000
Toluene	5300 / 6200
Ethylbenzene	440 / 420
Xylenes	2500 / 2500
MTBE	800 / 820
Naphthalene	<20 / <20
EDB	<0.0049 / <0.0049
1,2–DCA	<7.4 / <7.4
ETBE	<10 / <10
ETBA	<75 / <75
TAME	<13 / <13
DIPE	68 / 67
Ethanol	<960 / <960
TBF	<33 / <33
TBA	180J / 190J
TAA	1800 / 1900
Lead	<4.7 / <4.7

12430–MW03

COMPOUND	CONCENTRATION (UG/L)
Benzene	<0.13
Toluene	<0.33
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	9J

12430–MW06

COMPOUND	CONCENTRATION (UG/L)
Benzene	0.18J
Toluene	0.73J
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.020
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	14

12430–MW05

COMPOUND	CONCENTRATION (UG/L)
Benzene	0.22J
Toluene	0.70J
Ethylbenzene	<0.33
Xylenes	<0.33
MTBE	<0.40
Naphthalene	<0.40
EDB	<0.019
1,2–DCA	<0.15
ETBE	<0.20
ETBA	<1.5
TAME	<0.25
DIPE	<0.40
Ethanol	<19
TBF	<0.66
TBA	<2.3
TAA	<1.5
Lead	<4.7

REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015

Groundwater Monitoring Well

60 30 0 60

APPROXIMATE SCALE IN FEET

N

Title	Groundwater CoC Map – March 2015
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/05/2015
Job No.	J14–049–A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

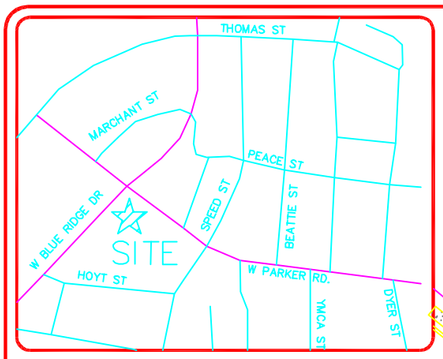
Figure No. 6

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX A

SITE SURVEY PLAT

SOUTHER
LAND SURVEYING
10253 ASHEVILLE HWY.
INMAN, SC 29349
864-473-1240



SC GRID (NAD 83)

VICINITY MAP

THIS SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY THE SURVEYOR.

ALL UNDERGROUND UTILITIES ARE NOT SHOWN AND THEIR LOCATIONS ARE UNKNOWN TO ME.

THIS PROPERTY IS SUBJECT TO ALL RIGHTS-OF-WAY, EASEMENTS AND RESTRICTIONS OF RECORD AND NOT OF RECORD.

THIS PLAT FOR LOCATION PURPOSES ONLY. NO LAND SURVEY WAS DONE AT THIS TIME.

DESCRIPTION	NORTHING	EASTING	TOP OF CASING	GROUND ELEVATION
MW-1	1105981.267	1569903.483	1005.32	1005.56
MW-2	1106014.536	1569922.038	1006.20	1006.50
MW-3	1105965.609	1570084.952	1008.49	1008.72
MW-4	1106028.887	1569996.103	1008.27	1008.45
MW-5	1105838.029	1569901.258	997.73	998.24
MW-6	1105919.246	1569824.171	998.27	998.58
MW-7	1105996.860	1569760.810	1005.88	1006.27
MW-8	1106052.610	1569819.230	1007.43	1007.86
MW-9	1106119.988	1569890.488	1008.55	1009.07
MW-10	1106138.309	1570048.269	1008.22	1008.54
MW-11	1106040.426	1570126.139	1007.84	1008.26
MW-X	1105947.218	1569947.979	1007.20	1007.47

LEGEND

- SURFACE WATER
- SITE WELL
- 1/2" REBAR FOUND
- 1/2" REBAR SET
- PK NAIL FOUND IN ROAD
- PK NAIL SET IN ROAD
- LIGHT POLE
- POWER POLE
- GUY POLE
- WATER METER
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- ATT MANHOLE
- CATCH BASIN
- GRATE
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SS — SANITARY SEWER LINE
- T — TELEPHONE LINE
- E — UNDERGROUND ELECTRIC
- UNDERGROUND GAS LINE

NOTES:

ALL PINS ARE 1/2" REBAR OR PK NAILS IN ROAD, UNLESS OTHERWISE NOTED.

SITE SURVEY FOR:

PETRA-TECH ENVIRONMENTAL, LLC

GREENVILLE COUNTY
WESTSIDE QUICK STOP
UST PERMIT #12430
821 W. PARKER ROAD
GREENVILLE, SOUTH CAROLINA
16 APRIL 2015

GRAPHIC SCALE

30 15 0 60 120

1 INCH = 60 FEET

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION NO.C02524 SOUTHER LAND SURVEYING, INC.

SOUTH CAROLINA PROFESSIONAL SEAL 21232 LAND SURVEYOR GEORGE B. SOUTHER

GEORGE B. SOUTHER P.L.S. 21232

JOB NO. 05014

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX B

WELL PURGING AND SAMPLING LOGS, CHAIN-OF-CUSTODY FORMS, LABORATORY ANALYTICAL DATA

GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~ West Side Qs Greenville		SITE LOCATION: ~~Orangeburg~~, SOUTH CAROLINA	
WELL NO: MW01	SAMPLE ID: 1230-MW01	DATE: 12/30/15	

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 22.63	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH 30 feet – STATIC DEPTH TO WATER 22.63 feet) X WELL CAPACITY .16 gallons/foot = 3.5 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURB IDITY (NTU)	Δ	COLOR	ODOR
1422	1.5	1.5	18.2	—	6.17	—	97	—	1.29	—	345	—	Cl	Strong
1429	1.5	3.0	18.1	0.1	6.16	0.1	99	1	1.35	.06	133	212	1	
1439	1.5	4.5	18.1	0	6.15	0.1	95	3	1.39	.04	21	56	1	
1445	1.5	6.0	18.0	0.1	6.15	0	97	2	1.38	.01	8.9	12.1	1	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughn	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 12/30/15	SAMPLING TIME: 1445
PUMP OR TUBING DEPTH IN WELL (feet): 28'	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: (Y) N 1450			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	—	—	8260B	RFPP	—
	3	CG	40 ml	HCL	—	—	8011		—
	1	PE	250ml	HNO3	—	—	6010		—

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~ West Side of Greenville		SITE LOCATION: ~~Orangeburg~~, SOUTH CAROLINA	
WELL NO: MW02	SAMPLE ID: 12430-MW02	DATE: 3/30/15	

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 21.69	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
= (30 feet – 21.69 feet) X .16 gallons/foot = 1.3 gallons

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURB IDITY (NTU)	Δ	COLOR	ODOR
1503	2	2	18.6	—	6.7	—	91	—	1.82	—	227	—	CL	STRNG
1509	1.5	3.5	18.6	0	6.8	0.1	43	2	1.85	.03	48	249		
1515	1.5	5.0	18.5	0.1	6.8	0	89	4	1.81	.04	12	36		
1520	1.5	6.5	18.5	0	6.8	0	92	3	1.84	.03	9.8	0.2		↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1529
PUMP OR TUBING DEPTH IN WELL (feet): 28	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011	↓	---
	1	PE	250ml	HNO3	---	---	6010	↓	---

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: Beasons Curb Market Westside Greenville		SITE LOCATION: Orangeburg, SOUTH CAROLINA	
WELL NO: MW03	SAMPLE ID: 1243D-MW03	DATE: 3/30/15	

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 23.81	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
= (30 feet − 23.81 feet) X .16 gallons/foot = 2.97 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
1226	1.5	1.5	18.7	—	6.2	—	91	—	0.87	—	117	—	CL	N
1243	1.5	3.0	18.8	0.1	6.2	0	90	1	0.75	.00	55	62		
1251	1.5	4.5	18.9	0.1	6.3	0.1	90	0	0.72	.03	23	34		
1300	1.5	6.0	18.8	0.1	6.3	0	88	2	0.74	.02	9.1	13.7		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1300
PUMP OR TUBING DEPTH IN WELL (feet): 28	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011	"	---
	1	PE	250ml	HNO3	---	---	6010	"	---

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

Westside Q.S. Groundwater

GROUNDWATER SAMPLING LOG

SITE NAME: Beasons Curb Market	SITE LOCATION: Orangeburg, SOUTH CAROLINA	
WELL NO: MW04	SAMPLE ID: 12430-MW04	DATE: 3/30/15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 23.47	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
= (30 feet – 23.47 feet) X 0.16 gallons/foot = 1.0 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
1527	1.5	1.5	20.3	—	6.1	—	78	—	2.40	—	57	—	Br	N
1546	1.5	3.0	20.6	0.3	5.7	0.4	69	9	2.44	.04	11	46	gl	|
1641	1.5	4.5	20.7	0.1	5.7	0	62	7	2.41	.03	48	23	|	|
1652	1.5	6.0	20.7	0	5.6	0.1	61	1	2.37	.04	17	31	|	|
1609	1.5	7.5	20.7	0	5.6	0	65	4	2.44	.07	9.3	7.7	|	|

Dry 04/

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughn	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1600
PUMP OR TUBING DEPTH IN WELL (feet): 29	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y / N Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011	|	---
	1	PE	250ml	HNO3	---	---	6010	|	---

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: Beasons Curb Market Westside	SITE LOCATION: Orangeburg, SOUTH CAROLINA	
WELL NO: MW 05	SAMPLE ID: 1243D-MW05	DATE: 3/31/15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 20.29	WELL SCREEN INTERVAL DEPTH: 10 feet to 20 feet	STATIC DEPTH TO WATER (feet): 13.01	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
= (20.29 feet − 13.01 feet) X 0.16 gallons/foot = 1.16 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
8:18	1.5	1.5	17.2	—	6.5	—	90	—	0.90	—	846	>	CL	N
8:29	1.5	3.0	17.3	0.1	6.3	0.2	89	1	0.90	0	109	737		
8:46	1.5	4.5	17.2	0.1	6.4	0.1	87	2	0.92	.02	13	96		
9:00	1.5	6.0	17.2	0	6.4	0	85	2	0.93	.01	8.9	4.1	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Ryan McCormack	SAMPLER(S) SIGNATURE(S): Ryan McCormack	SAMPLING DATE: 3-31-15	SAMPLING TIME: 9:00
PUMP OR TUBING DEPTH IN WELL (feet): 18	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		RFPP	
	3	CG	40 ml	HCL	—	—	8260B	↓	—
	3	CG	40 ml	HCL	—	—	8011		—
	1	PE	250ml	HNO3	—	—	6010		—

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~ Westside	SITE LOCATION: Orangeburg, SOUTH CAROLINA	
WELL NO: MW 06	SAMPLE ID: 12430-MW06	DATE: 3-31-15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 21.16	WELL SCREEN INTERVAL DEPTH: 11 feet to 21 feet	STATIC DEPTH TO WATER (feet): 13.32	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH − STATIC DEPTH TO WATER) X WELL CAPACITY
= (21.16 feet − 13.32 feet) X 0.16 gallons/foot = 1.25 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURB IDITY (NTU)	Δ	COLOR	ODOR
8:52	1	1	17.3	—	6.1	—	95	—	0.89	—	648	—	CL.	N
9:06	1	2	17.3	0	6.2	0.1	93	2	0.92	.03	59	603		
9:21	1	3	17.3	0	6.3	0.1	91	2	0.94	.02	12	27		
9:30	1.5	4.5	17.4	0.1	6.3	0	90	1	0.95	.01	8.8	3.2	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Ryan McCormack	SAMPLER(S) SIGNATURE(S): Ryan McCormack	SAMPLING DATE: 3-31-15	SAMPLING TIME: 9:30
PUMP OR TUBING DEPTH IN WELL (feet): 18	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH		RFPP	
	3	CG	40 ml	HCL	—	—	8260B	↓	—
	3	CG	40 ml	HCL	—	—	8011		—
	1	PE	250ml	HNO3	—	—	6010		—

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~ Westside Q.S.		SITE LOCATION: ~~Orangeburg~~ Greenville, SOUTH CAROLINA	
WELL NO: MW07	SAMPLE ID: 12430-MW07	DATE: 3/30/15	

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 14.61	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH (30 feet) – STATIC DEPTH TO WATER (14.61 feet)) X WELL CAPACITY (.16 gallons/foot) = 2.0 gallons

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
1639	1	1	19.7	—	6.4	—	131	—	1.71	—	471	—	Br	N
1646	1	2	19.2	0.5	6.5	0.4	120	11	1.89	.18	98	373	Cl	
1651	1	3	19.3	0.1	6.6	0.1	119	1	1.91	.02	34	59		
1656	1	4	19.3	0	6.5	0.1	132	13	1.82	.09	23	16		
1700	1	5	19.3	0	6.5	0	135	3	1.85	.03	9.1	13.9		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Jeremy Vaughn	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1709
PUMP OR TUBING DEPTH IN WELL (feet): 28	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011		---
	1	PE	250ml	HNO3	---	---	6010		---

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~ westside Q.S.		SITE LOCATION: ~~Orangeburg~~ Greenville, SOUTH CAROLINA	
WELL NO: MW08	SAMPLE ID: 12430-MW08		DATE: 3/30/15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 22.71	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
= (30 feet – 22.71 feet) X .16 gallons/foot = 3.5 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
1711	1	1	19.7	–	6.3	–	78	–	1.93	.06	999	–	<1	N
1717	1	2	19.5	0.2	6.2	0.1	71	7	1.87	.06	98	701		
1723	1	3	19.5	0	6.1	0.1	74	3	1.84	.03	41	57		
1730	1	4	19.6	0.1	6.1	0	77	3	1.85	.01	8.6	324		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S): [signature]	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1730
PUMP OR TUBING DEPTH IN WELL (feet): 28	TUBING MATERIAL CODE: E	FIELD-FILTERED: Y (N) Filtration Equipment Type: O	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011		---
	1	PE	250ml	HNO3	---	---	6010		---

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

SITE NAME: Beasons Curb Market Westside Q.S	SITE LOCATION: Greenville Orangeburg, SOUTH CAROLINA	
WELL NO: MW07	SAMPLE ID: 12430-MW09	DATE: 3/30/15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 39	WELL SCREEN INTERVAL DEPTH: 29 feet to 39 feet	STATIC DEPTH TO WATER (feet): 23.20	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: **1 WELL VOLUME** = (TOTAL WELL DEPTH – STATIC DEPTH TO WATER) X WELL CAPACITY
= (39 feet – 23.20 feet) X .16 gallons/foot = 3.3 gallons

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	COLOR	ODOR
1602	2.5	2.5	18.9	—	6.8	—	12.7	—	1.77	—	5.11	—	Br	N
1607	2.0	4.5	14.0	0.1	6.8	0	12.2	5	1.68	10	2.14	2.92	Cl	N
1615	1.5	6.0	19.2	0	6.7	0.1	12.8	6	1.71	03	9.3	1.36		
1621	1.5	7.5	18.9	0.1	6.7	0	12.1	7	1.73	02	2.1	1.52		
1630	1.5	9.0	19.0	0.1	6.7	0	12.5	4	1.70	03	9.2	11.8		

DW
DW

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1630
PUMP OR TUBING DEPTH IN WELL (feet): 29	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	—	—	8260B	RFPP	—
	3	CG	40 ml	HCL	—	—	8011		—
	1	PE	250ml	HNO3	—	—	6010		—

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

GROUNDWATER SAMPLING LOG

Westside Dr. Greenville

SITE NAME: ~~Beasons Curb Market~~	SITE LOCATION: ~~Orangeburg~~, SOUTH CAROLINA	
WELL NO: MW10	SAMPLE ID: 2430-MW10	DATE: 3/30/15

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 22.9	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGED: 1 **WELL VOLUME** = (TOTAL WELL DEPTH 30 feet – STATIC DEPTH TO WATER 22.94 feet) X WELL CAPACITY .16 gallons/foot = 3.4 gallons

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURB IDITY (NTU)	Δ	COLOR	ODOR
1352	1.5	1.5	19.9	—	6.5	—	138	—	1.28	—	313	—	CL	N
1401	1.5	3.0	19.4	0	6.5	0	134	4	1.21	.07	81	232		
1403	1.5	4.5	19.3	0.1	6.4	0.1	137	1	1.24	.03	30	51		
1415	1.5	6.0	19.5	0.2	6.4	0	133	2	1.25	.01	9.5	20.5		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1415
PUMP OR TUBING DEPTH IN WELL (feet): 23	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	---	---	8260B	RFPP	---
	3	CG	40 ml	HCL	---	---	8011	↓	---
	1	PE	250ml	HNO3	---	---	6010	↓	---
-									

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

Westside GROUNDWATER SAMPLING LOG

SITE NAME: ~~Beasons Curb Market~~	SITE LOCATION: ~~Orangeburg~~ Greenville, SOUTH CAROLINA
WELL NO: MW11	SAMPLE ID: 1243D-MW11
DATE: 3/30/15	

PURGING DATA

WELL DIAMETER (inches): 2	Total Well Depth (feet): 30	WELL SCREEN INTERVAL DEPTH: 20 feet to 30 feet	STATIC DEPTH TO WATER (feet): 22.82	PURGE PUMP TYPE OR BAILER: RFPP

WELL VOLUME PURGE: 1 WELL VOLUME = (TOTAL WELL DEPTH 30 feet – STATIC DEPTH TO WATER 22.82 feet) X WELL CAPACITY .16 gallons/foot = 3.4 gallons

TIME	VOLUME PURGED (gallons)	CUMUL VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURB IDITY (NTU)	Δ	COLOR	ODOR
1317	1	1	17.0	—	6.7	—	110	—	1.01	—	571	—	21	N
1329	1	2	19.0	2	6.8	0.1	109	2	1.10	.09	98	473	↓	↓
1334	1	3	19.0	0	6.8	0	107	1	1.03	.07	24	74	↓	↓
1345	1	4	19.1	0.1	6.7	0.1	109	1	1.05	.02	9.3	14.7	↓	↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47; **12"** = 5.88

SAMPLING DATA

SAMPLED BY (PRINT): Thomas Vaughan	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE: 3/30/15	SAMPLING TIME: 1345
PUMP OR TUBING DEPTH IN WELL (feet): 26	TUBING MATERIAL CODE: PE	FIELD-FILTERED: Y (N) Filtration Equipment Type:	FILTER SIZE:
DUPLICATE COLLECTED: Y (N)			

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION			INTENDED ANALYSIS AND/OR METHOD	SAMPLING EQUIPMENT CODE	SAMPLE PUMP FLOW RATE (ml/min)
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	TOTAL VOL ADDED IN FIELD (mL)	FINAL pH			
	3	CG	40 ml	HCL	—	—	8260B	RFPP	—
	3	CG	40 ml	HCL	—	—	8011	↓	—
	1	PE	250ml	HNO3	—	—	6010	↓	—

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other (Specify)

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

STABILIZATION CRITERIA

pH: ± 0.2 units **Temperature:** ± 0.2 °C **Specific Conductance:** ± 5% **Dissolved Oxygen:** ± 0.2 mg/L or ± 10% **Turbidity:** ≤ 10 NTU or ± 10%

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SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Petra-Tech Environmental
2435 East North Street
Suite 1108-202
Greenville, SC 29615
Attention: Trever Slack

Project Name: **Westside Quick Shop**

Project Number: **J14-049-A**

Lot Number: **QB06069**

Date Completed: **02/12/2015**

Lucas Odom
Project Manager

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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

QB06069

Case Narrative
Petra-Tech Environmental
Lot Number: QB06069

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary
Petra-Tech Environmental
Lot Number: QB06069

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	GW12	Aqueous	02/04/2015 1425	02/06/2015
002	GW09	Aqueous	02/05/2015 1015	02/06/2015
003	GW09D	Aqueous	02/05/2015 0950	02/06/2015
004	GW04	Aqueous	02/04/2015 1105	02/06/2015
005	GW13	Aqueous	02/04/2015 1540	02/06/2015
006	GW11	Aqueous	02/04/2015 1355	02/06/2015
007	GW07	Aqueous	02/04/2015 1430	02/06/2015
008	GW05	Aqueous	02/04/2015 1135	02/06/2015

(8 samples)

Executive Summary

Petra-Tech Environmental

Lot Number: QB06069

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	GW12	Aqueous	Naphthalene	8260B	0.86	BJ	ug/L	5
001	GW12	Aqueous	Toluene	8260B	0.51	J	ug/L	5
001	GW12	Aqueous	Xylenes (total)	8260B	0.45	J	ug/L	5
002	GW09	Aqueous	Benzene	8260B	0.23	J	ug/L	6
004	GW04	Aqueous	Benzene	8260B	1.4		ug/L	8
004	GW04	Aqueous	Ethylbenzene	8260B	4.6		ug/L	8
004	GW04	Aqueous	Naphthalene	8260B	9.4	B	ug/L	8
004	GW04	Aqueous	Toluene	8260B	15		ug/L	8
004	GW04	Aqueous	Xylenes (total)	8260B	23		ug/L	8
005	GW13	Aqueous	Naphthalene	8260B	0.40	BJ	ug/L	9
008	GW05	Aqueous	Benzene	8260B	0.18	J	ug/L	12
008	GW05	Aqueous	Naphthalene	8260B	0.61	BJ	ug/L	12

(12 detections)

Client: Petra-Tech Environmental
Description: GW12
Date Sampled: 02/04/2015 1425
Date Received: 02/06/2015

Laboratory ID: QB06069-001
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1217	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.86	BJ	1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	0.51	J	1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	0.45	J	1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		115	70-130
Toluene-d8		99	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW09
Date Sampled: 02/05/2015 1015
Date Received: 02/06/2015

Laboratory ID: QB06069-002
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1239	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.23	J	1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	70-130
Bromofluorobenzene		107	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW09D
Date Sampled: 02/05/2015 0950
Date Received: 02/06/2015

Laboratory ID: QB06069-003
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1300	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		112	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW04
Date Sampled: 02/04/2015 1105
Date Received: 02/06/2015

Laboratory ID: QB06069-004
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1322	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	1.4		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	4.6		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	9.4	B	1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	15		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	23		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		111	70-130
Bromofluorobenzene		109	70-130
Toluene-d8		102	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW13
Date Sampled: 02/04/2015 1540
Date Received: 02/06/2015

Laboratory ID: QB06069-005
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1343	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.40	BJ	1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		103	70-130
Bromofluorobenzene		104	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW11
Date Sampled: 02/04/2015 1355
Date Received: 02/06/2015

Laboratory ID: QB06069-006
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1405	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		110	70-130
Bromofluorobenzene		110	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW07
Date Sampled: 02/04/2015 1430
Date Received: 02/06/2015

Laboratory ID: QB06069-007
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1427	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		107	70-130
Bromofluorobenzene		103	70-130
Toluene-d8		98	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: GW05
Date Sampled: 02/04/2015 1135
Date Received: 02/06/2015

Laboratory ID: QB06069-008
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	02/10/2015 1448	EH1		67378

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	0.18	J	1.0	0.13	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	0.61	BJ	1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		109	70-130
Bromofluorobenzene		105	70-130
Toluene-d8		99	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

SHEALY **Chain of Custody Record**

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 45055

Client: Petra-tech env.
Report to Contact: Trever Slack
Telephone No. / E-mail: tslack@petratechenv.com
Quote No.:
Address: 2435 E. N St. Ste 1108-202
Sampler's Signature: x Thomas Vaughan
Analysis (Attach list if more space is needed):
Page 1 of 1
City: Greenville State: SC Zip Code: 29615
Printed Name:
Project Name: Westside Quick Shop
Project No.: J14-049-A
P.O. No.:

QB06069

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No of Containers by Preservative Type: Dipoxes	H2SO4	HNO3	HCl	NaOH	5035 KIT	8260B	B+Ex+M+N	+1,2DCA	Remarks / Cooler I.D.
GW12	2/4/15	1425	G	X						2			X			
GW09	2/5/15	1015		X						2			X			
GW09D	2/5/15	950		X						2			X			
GW04	2/4/15	1105		X						2			X			
GW13	2/4/15	1540		X						2			X			
GW11	2/4	1355		X						2			X			
GW07	2/4	1430		X						2			X			
GW05	2/4	1135		X						2			X			

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☐ Rush (Specify)
Sample Disposal ☐ Return to Client ☐ Disposal by Lab
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: Kaye Dunch	2/6/15	1PM	1. Received by: [signature]	2/6/15	1300
2. Relinquished by:			2. Received by:		
3. Relinquished by:			3. Received by:		
4. Relinquished by: [signature]	2/6/15	1552	4. Laboratory received by: [signature]	2-6-15	1552

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) Yes No Ice Pack
Receipt Temp. 3.4 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 16

Replaces Date: 07/15/14
Effective Date: 11/07/14

Sample Receipt Checklist (SRC)

Client: Petra-Tech Cooler Inspected by/date: KWP 12-6-15 Lot #: QB0600 09

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other			
Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☑	2. If custody seals were present, were they intact and unbroken?
Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt: 3.4 / 3.4 °C / / °C / / 5.6 °C / / °C Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: #4 3 IR Gun Correction Factor: 0 °C Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None			
Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other:_____. (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed on the COC?
Yes ☑	No ☐		7. Were sample IDs listed on all sample containers?
Yes ☑	No ☐		8. Was collection date & time listed on the COC?
Yes ☑	No ☐		9. Was collection date & time listed on all sample containers?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with the COC?
Yes ☑	No ☐		11. Were tests to be performed listed on the COC?
Yes ☑	No ☐		12. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐		13. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		14. Was adequate sample volume available?
Yes ☐	No ☑		15. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		16. Were any samples containers missing?
Yes ☐	No ☑		17. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	18. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	19. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	20. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	21. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	22. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	23. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
Yes ☐	No ☑		24. Was the quote number used taken from the container label?
Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)			
Sample(s)_____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4,HNO_3,HCl,NaOH) using SR #_____.			
Sample(s)_____ were received with bubbles >6 mm in diameter.			
Sample(s)_____ were received with TRC >0.2 mg/L (If #21 is No)			
SC Drinking Water Project Sample(s) pH verified to be > 2 by _____ Date: _____ Sample(s)_____ were not received at a pH of <2 and were adjusted accordingly using SR#			
Sample labels applied by: MGM Verified by: KWP Date: 12-6-15			

Comments:

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Report of Analysis

Petra-Tech Environmental
2435 East North Street
Suite 1108-202
Greenville, SC 29615
Attention: Trever Slack

Project Name: Westside Quick Stop

Project Number: J14-049-A

Lot Number: QC31023

Date Completed: 04/07/2015

Lucas Odom
Project Manager

This report shall not be reproduced, except in its entirety, without the written approval of Shealy Environmental Services, Inc.

The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

QC31023

Case Narrative
Petra-Tech Environmental
Lot Number: QC31023

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

EDB by Microextraction

Due to matrix interferences, sample -001 was analyzed at a 10X dilution. All target compounds are non-detect at this dilution.

Sample Summary

Petra-Tech Environmental

Lot Number: QC31023

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	MW01	Aqueous	03/30/2015 1445	03/31/2015
002	DUP	Aqueous	03/30/2015 1450	03/31/2015
003	MW10	Aqueous	03/30/2015 1415	03/31/2015
004	MW03	Aqueous	03/30/2015 1300	03/31/2015
005	MW09	Aqueous	03/30/2015 1630	03/31/2015
006	MW08	Aqueous	03/30/2015 1730	03/31/2015
007	MW07	Aqueous	03/30/2015 1700	03/31/2015
008	MW02	Aqueous	03/30/2015 1520	03/31/2015
009	MW04	Aqueous	03/30/2015 1600	03/31/2015
010	MW11	Aqueous	03/30/2015 1345	03/31/2015
011	FIELD BLANK	Aqueous	03/30/2015 1545	03/31/2015
012	TRIP BLANK	Aqueous	03/30/2015	03/31/2015
013	MW06	Aqueous	03/31/2015 0930	03/31/2015
014	MW05	Aqueous	03/31/2015 0900	03/31/2015
015	FIELD BLANK 2	Aqueous	03/31/2015 0915	03/31/2015

(15 samples)

Executive Summary

Petra-Tech Environmental

Lot Number: QC31023

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	MW01	Aqueous	tert-Amyl alcohol (TAA)	8260B	1800		ug/L	6
001	MW01	Aqueous	Benzene	8260B	3000		ug/L	6
001	MW01	Aqueous	Diisopropyl ether (IPE)	8260B	68		ug/L	6
001	MW01	Aqueous	Ethylbenzene	8260B	440		ug/L	6
001	MW01	Aqueous	Methyl tertiary butyl ether	8260B	800		ug/L	6
001	MW01	Aqueous	tert-butyl alcohol (TBA)	8260B	180	J	ug/L	6
001	MW01	Aqueous	Toluene	8260B	6300		ug/L	6
001	MW01	Aqueous	Xylenes (total)	8260B	2500		ug/L	6
002	DUP	Aqueous	tert-Amyl alcohol (TAA)	8260B	1900		ug/L	7
002	DUP	Aqueous	Benzene	8260B	3000		ug/L	7
002	DUP	Aqueous	Diisopropyl ether (IPE)	8260B	67		ug/L	7
002	DUP	Aqueous	Ethylbenzene	8260B	420		ug/L	7
002	DUP	Aqueous	Methyl tertiary butyl ether	8260B	820		ug/L	7
002	DUP	Aqueous	tert-butyl alcohol (TBA)	8260B	190	J	ug/L	7
002	DUP	Aqueous	Toluene	8260B	6200		ug/L	7
002	DUP	Aqueous	Xylenes (total)	8260B	2500		ug/L	7
003	MW10	Aqueous	tert-butyl alcohol (TBA)	8260B	3.6	J	ug/L	8
004	MW03	Aqueous	Lead	6010C	0.0090	J	mg/L	9
006	MW08	Aqueous	tert-Amyl alcohol (TAA)	8260B	14	J	ug/L	11
006	MW08	Aqueous	tert-butyl alcohol (TBA)	8260B	26		ug/L	11
007	MW07	Aqueous	Lead	6010C	0.0048	J	mg/L	12
008	MW02	Aqueous	tert-Amyl alcohol (TAA)	8260B	20000		ug/L	13
008	MW02	Aqueous	Benzene	8260B	23000		ug/L	13
008	MW02	Aqueous	Diisopropyl ether (IPE)	8260B	1600		ug/L	13
008	MW02	Aqueous	Ethylbenzene	8260B	3200		ug/L	13
008	MW02	Aqueous	Methyl tertiary butyl ether	8260B	520		ug/L	13
008	MW02	Aqueous	Naphthalene	8260B	620		ug/L	13
008	MW02	Aqueous	Toluene	8260B	51000		ug/L	13
008	MW02	Aqueous	Xylenes (total)	8260B	15000		ug/L	13
008	MW02	Aqueous	1,2-Dibromoethane (EDB)	8011	0.36		ug/L	13
009	MW04	Aqueous	tert-Amyl alcohol (TAA)	8260B	5.1	J	ug/L	14
009	MW04	Aqueous	Benzene	8260B	41		ug/L	14
009	MW04	Aqueous	Diisopropyl ether (IPE)	8260B	4.4		ug/L	14
009	MW04	Aqueous	Ethylbenzene	8260B	6.7		ug/L	14
009	MW04	Aqueous	Toluene	8260B	31		ug/L	14
009	MW04	Aqueous	Xylenes (total)	8260B	63		ug/L	14
009	MW04	Aqueous	Lead	6010C	0.0064	J	mg/L	14
010	MW11	Aqueous	Lead	6010C	0.0067	J	mg/L	15
013	MW06	Aqueous	Benzene	8260B	0.18	J	ug/L	18
013	MW06	Aqueous	Toluene	8260B	0.73	J	ug/L	18
013	MW06	Aqueous	Lead	6010C	0.014		mg/L	18
014	MW05	Aqueous	Benzene	8260B	0.22	J	ug/L	19
014	MW05	Aqueous	Toluene	8260B	0.70	J	ug/L	19
015	FIELD BLANK 2	Aqueous	tert-butyl alcohol (TBA)	8260B	270		ug/L	20

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page

(44 detections)

Client: Petra-Tech Environmental
Description: MW01
Date Sampled: 03/30/2015 1445
Date Received: 03/31/2015

Laboratory ID: QC31023-001
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	50	04/07/2015 0609	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	1800		1000	73	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		500	13	ug/L	1
Benzene	71-43-2	8260B	3000		50	6.6	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		250	33	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		50	7.4	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	68		50	20	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		1000	75	ug/L	1
Ethanol	64-17-5	8260B	ND		5000	960	ug/L	1
Ethylbenzene	100-41-4	8260B	440		50	17	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		50	10	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	800		50	20	ug/L	1
Naphthalene	91-20-3	8260B	ND		50	20	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	180	J	1000	110	ug/L	1
Toluene	108-88-3	8260B	6300		50	17	ug/L	1
Xylenes (total)	1330-20-7	8260B	2500		50	17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		103	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	10	04/06/2015 1722	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.20	0.049	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		73	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0209	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: DUP
Date Sampled: 03/30/2015 1450
Date Received: 03/31/2015

Laboratory ID: QC31023-002
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	50	04/07/2015 0633	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	1900		1000	73	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		500	13	ug/L	1
Benzene	71-43-2	8260B	3000		50	6.6	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		250	33	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		50	7.4	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	67		50	20	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		1000	75	ug/L	1
Ethanol	64-17-5	8260B	ND		5000	960	ug/L	1
Ethylbenzene	100-41-4	8260B	420		50	17	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		50	10	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	820		50	20	ug/L	1
Naphthalene	91-20-3	8260B	ND		50	20	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	190	J	1000	110	ug/L	1
Toluene	108-88-3	8260B	6200		50	17	ug/L	1
Xylenes (total)	1330-20-7	8260B	2500		50	17	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		104	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/06/2015 1651	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	0.0049	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		119	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0213	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW10
Date Sampled: 03/30/2015 1415
Date Received: 03/31/2015

Laboratory ID: QC31023-003
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0213	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	3.6	J	20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		102	70-130
Toluene-d8		102	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/07/2015 0943	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	0.0049	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		104	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0218	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW03
Date Sampled: 03/30/2015 1300
Date Received: 03/31/2015

Laboratory ID: QC31023-004
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0236	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		99	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/03/2015 2321	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		93	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0223	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	0.0090	J	0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW09
Date Sampled: 03/30/2015 1630
Date Received: 03/31/2015

Laboratory ID: QC31023-005
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0300	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		101	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/03/2015 2331	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		104	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0228	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW08
Date Sampled: 03/30/2015 1730
Date Received: 03/31/2015

Laboratory ID: QC31023-006
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0324	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	14	J	20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	26		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		102	70-130
Toluene-d8		102	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/03/2015 2341	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		89	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0232	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW07
Date Sampled: 03/30/2015 1700
Date Received: 03/31/2015

Laboratory ID: QC31023-007
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0347	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		94	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		102	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/03/2015 2352	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		102	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0237	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	0.0048	J	0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW02
Date Sampled: 03/30/2015 1520
Date Received: 03/31/2015

Laboratory ID: QC31023-008
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	500	04/07/2015 0656	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	20000		10000	730	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		5000	130	ug/L	1
Benzene	71-43-2	8260B	23000		500	66	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		2500	330	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		500	74	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	1600		500	200	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		10000	750	ug/L	1
Ethanol	64-17-5	8260B	ND		50000	9600	ug/L	1
Ethylbenzene	100-41-4	8260B	3200		500	170	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		500	100	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	520		500	200	ug/L	1
Naphthalene	91-20-3	8260B	620		500	200	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		10000	1100	ug/L	1
Toluene	108-88-3	8260B	51000		500	170	ug/L	1
Xylenes (total)	1330-20-7	8260B	15000		500	170	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		101	70-130
Toluene-d8		103	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0002	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	0.36		0.019	0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		95	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0251	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW04
Date Sampled: 03/30/2015 1600
Date Received: 03/31/2015

Laboratory ID: QC31023-009
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0410	PMM2		71923

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	5.1	J	20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	41		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	4.4		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	6.7		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	31		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	63		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		100	70-130
Toluene-d8		103	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0012	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		110	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0256	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	0.0064	J	0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW11
Date Sampled: 03/30/2015 1345
Date Received: 03/31/2015

Laboratory ID: QC31023-010
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0158	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		96	70-130
Toluene-d8		98	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0023	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		90	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0300	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	0.0067	J	0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: FIELD BLANK
Date Sampled: 03/30/2015 1545
Date Received: 03/31/2015

Laboratory ID: QC31023-011
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/06/2015 2321	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		102	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0033	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		88	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0305	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: TRIP BLANK
Date Sampled: 03/30/2015
Date Received: 03/31/2015

Laboratory ID: QC31023-012
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/06/2015 2343	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		93	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		100	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW06
Date Sampled: 03/31/2015 0930
Date Received: 03/31/2015

Laboratory ID: QC31023-013
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0220	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	0.18	J	1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	0.73	J	1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	70-130
Bromofluorobenzene		97	70-130
Toluene-d8		98	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0043	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.020	0.020	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		101	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0310	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	0.014		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: MW05
Date Sampled: 03/31/2015 0900
Date Received: 03/31/2015

Laboratory ID: QC31023-014
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0242	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	0.22	J	1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	ND		20	2.3	ug/L	1
Toluene	108-88-3	8260B	0.70	J	1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		100	70-130
Bromofluorobenzene		98	70-130
Toluene-d8		100	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0053	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		111	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0314	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: Petra-Tech Environmental
Description: FIELD BLANK 2
Date Sampled: 03/31/2015 0915
Date Received: 03/31/2015

Laboratory ID: QC31023-015
Matrix: Aqueous

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	04/07/2015 0006	PMM2		71924

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
tert-Amyl alcohol (TAA)	75-85-4	8260B	ND		20	1.5	ug/L	1
tert-Amyl methyl ether (TAME)	994-05-8	8260B	ND		10	0.25	ug/L	1
Benzene	71-43-2	8260B	ND		1.0	0.13	ug/L	1
tert-Butyl formate (TBF)	762-75-4	8260B	ND		5.0	0.66	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.15	ug/L	1
Diisopropyl ether (IPE)	108-20-3	8260B	ND		1.0	0.40	ug/L	1
3,3-Dimethyl-1-butanol	624-95-3	8260B	ND		20	1.5	ug/L	1
Ethanol	64-17-5	8260B	ND		100	19	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.33	ug/L	1
Ethyl-tert-butyl ether (ETBE)	637-92-3	8260B	ND		1.0	0.20	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
tert-butyl alcohol (TBA)	75-65-0	8260B	270		20	2.3	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.33	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.33	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		95	70-130
Bromofluorobenzene		97	70-130
Toluene-d8		97	70-130

EDB & DBCP by Microextraction

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	8011	8011	1	04/04/2015 0104	MEM	04/03/2015 1007	71711

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
1,2-Dibromoethane (EDB)	106-93-4	8011	ND		0.019	0.019	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,1,1,2-Tetrachloroethane		94	57-137

ICP-AES

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	3005A	6010C	1	04/01/2015 0319	CDF	03/31/2015 1858	71433

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Lead	7439-92-1	6010C	ND		0.010	0.0047	mg/L	1

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

SHEALY **Chain of Custody Record**

SHEALY ENVIRONMENTAL SERVICES, INC.
106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Number 43554

Client: Petra Tech Env.
Report to Contact: Trever Slack
Telephone No. / E-mail: tslack@petratechenv.com
Quote No.:
Address: 2435 E.N. St. Ste 1108-202
Sampler's Signature: X [signature]
Analysis (Attach list if more space is needed)
Page 1 of 2
QC31023
City: Greenville State: SC Zip Code: 29615
Printed Name: Thomas Vaughan
Project Name: Westside Quick Stop
Project No.: J14-049-A
P.O. No.:

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	Liquor	H2SO4	HNO3	HCl	NaOH	5035 KIT	8260B BTEx + M+N	+1,2 DCA + 80XY	8011 EDB	6010 LEAD	Remarks / Cooler I.D.
MW01	3/30/15	1445	G	X					1	6			X		X	X	
Dup		1450							1	6			X		X	X	
MW10		1415							1	6			X		X	X	
MW03		1300							1	6			X		X	X	
MW09		1630							1	6			X		X	X	
MW08		1730							1	6			X		X	X	
MW07		1700							1	6			X		X	X	
MW02		1520							1	6			X		X	X	
MW04		1600							1	6			X		X	X	
MW11		1345							1	6			X		X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☐ Rush (Specify)
Sample Disposal ☐ Return to Client ☐ Disposal by Lab
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown
QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by: [signature]	3/31/15	1315	1. Received by: [signature]	3/31/15	1315
2. Relinquished by			2. Received by		
3. Relinquished by			3. Received by		
4. Relinquished by: [signature]	3/31/15	1535	4. Laboratory received by: [signature]	3/31/15	1535

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on Ice (Circle) Yes No Ice Pack
Receipt Temp. 1.7 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Chain of Custody Record

Number 43555

Client Petra TechEnv.	**Report to Contact** Trever Slack	**Telephone No. / E-mail** tslack@petratechenv.com	**Quote No.**
Address 2435 E. N. St, Ste 108-202	**Sampler's Signature** x	**Analysis (Attach list if more space is needed)**	QC31023
City Greenville **State** SC **Zip Code** 29615	**Printed Name** Thomas Vaughan		
Project Name Westside Quick Stop			
Project No. J14-049-A	**P.O. No.**		

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	G=Grab C=Composite	# Containers	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	Preservative: Unpres.	Preservative: H2SO4	Preservative: HNO3	Preservative: HCl	Preservative: NaOH	Preservative: ZnAc/NaOH	8260B BTEX + MTBE + Naphthalene	1,2 DCA & EDB	8011 EDB	6010 Lead	Remarks / Cooler I.D.
Field Blank	3/30/15	1545	G	6	X					1	6			X		X	X	
Trip Blank	—	—																
MW 06	3/31/15	9:30	G	4	X					1	6			X		X	X	
MW 05	3/31/15	9:00	G	4	X					1	6			X		X	X	
Field Blank 2	3/31/15	9:15	G	4	X					1	6			X		X	X	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☐ Standard ☐ Rush (Specify)

Sample Disposal ☐ Return to Client ☐ Disposal by Lab

Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by Kayla Burch	3/31/15	1745	1. Received by	3/31/15	1745
2. Relinquished by	Date	Time	2. Received by	Date	Time
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	3/31/15	1835	4. Laboratory received by	3/31/15	1535

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY Received on ice (Circle) (Yes) No Ice Pack Receipt Temp 1.7 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Document Number: F-AD-133 Effective Date: 08-01-2014

SHEALY ENVIRONMENTAL SERVICES, INC.

Shealy Environmental Services, Inc. 106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

Level 1 Report v2.1

Shealy Environmental Services, Inc.
Document Number: F-AD-016
Revision Number: 16

Replaces Date: 07/15/14
Effective Date: 11/07/14

Sample Receipt Checklist (SRC)

Client: Peter Tuh Cooler Inspected by/date: ECC 3/31/15 Lot #: QC31023

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Airborne Exp ☐ Other

Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☐	2. If custody seals were present, were they intact and unbroken?

Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt:
1.7 / 1.7 °C / °C / °C / °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: #4 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager notified? PM notified by SRC, phone, note (circle one), other:_____. (For coolers received via commercial courier, PMs are to be notified immediately.)
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☐	No ☐	NA ☑	5a Were samples relinquished by client to commercial courier?
Yes ☑	No ☐		6. Were sample IDs listed on the COC?
Yes ☑	No ☐		7. Were sample IDs listed on all sample containers?
Yes ☑	No ☐		8. Was collection date & time listed on the COC?
Yes ☑	No ☐		9. Was collection date & time listed on all sample containers?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with the COC?
Yes ☑	No ☐		11. Were tests to be performed listed on the COC?
Yes ☑	No ☐		12. Did all samples arrive in the proper containers for each test?
Yes ☑	No ☐		13. Did all containers arrive in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		14. Was adequate sample volume available?
Yes ☑	No ☐		15. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		16. Were any samples containers missing?
Yes ☐	No ☑		17. Were there any excess samples not listed on COC?
Yes ☐	No ☑	NA ☐	18. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☑	No ☐	NA ☐	19. Were all metals/O&G/HEM/nutrient samples received at a pH of <2?
Yes ☐	No ☐	NA ☑	20. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	21. Were all applicable NH3/TKN/cyanide/phenol (<0.2mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	22. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	23. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
Yes ☐	No ☑		24. Was the quote number used taken from the container label?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s)_____ were received incorrectly preserved and were adjusted accordingly in sample receiving with (H_2SO_4,HNO_3,HCl,NaOH) using SR #_____.

Sample(s)_____ were received with bubbles >6 mm in diameter.

Sample(s)_____ were received with TRC >0.2 mg/L (If #21 is No)

SC Drinking Water Project Sample(s) pH verified to be > 2 by_____ Date:_____

Sample(s)_____ were not received at a pH of <2 and were adjusted accordingly using SR#_____

Sample labels applied by: ECC Verified by:_____ Date: 3/31/15

Comments:

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX C

TAX MAP AND TAX MAP INFORMATION TABLE



REFERENCE: Greenville County Online GIS Mapping Database

100 50 0 100

APPROXIMATE SCALE IN FEET

N

Title	Tax Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	05/23/2014
REV.	05/05/2015
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. X

TAX MAP TABLE
Westside Quicktop - UST Permit #12430
Greenville, Greenville County, South Carolina

Tax Map Property ID	Greenville County Tax Map Number	Property Address	Property Owner Name	Property Owner Phone	Property Owner Mailing Address	Notes
1	0135000100200	821 W PARKER ROAD	WESTSIDE QUIK SHOP INC MR. MIKE WRIGHT	803-382-3906	450 DOVE HILL CIRCLE EASLEY, SC 29640	UST Permit #12430
2	0135000100900	807 W PARKER ROAD	WESTSIDE QUIK SHOP INC MR. MIKE WRIGHT	803-382-3906	450 DOVE HILL CIRCLE EASLEY, SC 29640	
3	0135000100400	805 W PARKER ROAD	PATRICIA BOBEN	UNLISTED	805 W PARKER ROAD GREENVILLE, SC 29611	
4	0135000101100	10834 W BLUE RIDGE DRIVE	CYNTHIA & CRYSTAL BLANKENSHIP	UNLISTED	235 LOUISVILLE DRIVE GREENVILLE, SC 29607	
5	0135000101200	2209 W BLUE RIDGE DRIVE	DAVID ESPINOZA & LESLIE GUERRA	864-275-5130	2209 W BLUE RIDGE DRIVE GREENVILLE, SC 29611	Groundwater screening borings GW07 and GW07D; Groundwater monitoring wells 12430-MW05 and 12430-MW06
6	0135000101300	2215 W BLUE RIDGE DRIVE	HAROLD & MILLIE SMITH	864-271-1340	2215 W BLUE RIDGE DRIVE GREENVILLE, SC 29611	
7	0135000101600	12 HOYT STREET	ROBER B MCKINNEY	UNLISTED	12 HOYT STREET GREENVILLE, SC 29611	
8	0135000101700	10 HOYT STREET	PAUL MCINTYRE	UNLISTED	118 WICKLON COURT EASLEY, SC 29642	
9	0135000101800	6 HOYT STREET	PEDRO ARGUEDAS	UNLISTED	132 CHARLESTON OAK LANE GREENVILLE, SC 29615	
10	0134000600100	2216 W BLUE RIDGE DRIVE	H&M AUTO SALES	864-233-1388	2216 W BLUE RIDGE DRIVE GREENVILLE, SC 29611	
11	0134000500400	903 W PARKER ROAD	ROBERT JACKSON	864-269-9779	108 YOWN ROAD GREENVILLE, SC 29611	Groundwater screening boring GW11, GW12, GW12D, and GW13
12	0143000301000	902 W PARKER ROAD	ROXANA LIMA	864-421-2464	1000 LENHARDT DRIVE GREENVILLE, SC 29611	Groundwater screening borings GW20, GW22, and GW23
13	0143000301100	4 MARCHANT STREET	BETTY EDENS WYATT	UNLISTED	4 MARCHANT STREET GREENVILLE, SC 29617	
14	0143000300900	810 W PARKER ROAD	RTC REAL ESTATE II LLC	864-304-4289	149 LAKE FOREST CIRCLE EASLEY, SC 29642	Groundwater screening borings GW17, GW18, and GW18D; Groundwater monitoring well 12430-MW10 in DOT ROW
15	0143000300800	808 W PARKER ROAD	MICHAEL POORE	864-855-5577	149 LAKE FOREST CIRCLE EASLEY, SC 29642	Groundwater monitoring well 12430-MW11 in DOT ROW
16	0143000300700	806 W PARKER ROAD	VICKI RENEE WEBB	UNLISTED	7 LORENA DRIVE TAYLORS, SC 29687	

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX D

SOIL BORING LOGS, FIELD SCREENING LOGS, WATER WELL RECORDS
(DHEC FORM 1903)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'53.54"N 82°26'09.44"W

3. PUBLIC SYSTEM NAME: 12430- GW01

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 17 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 17' BGS		
NO GW Sample		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / **Bored** / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
17 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test: ____
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'54.08"N 82°26'00.54"W

3. PUBLIC SYSTEM NAME: 12430- GW02

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 16 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 16'		
365		
No Sample		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / **Bored** / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
16 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joel G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34° 51' 53.66"N 82° 25' 59.85"W

3. PUBLIC SYSTEM NAME: 12430- GW03

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 17 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 17' BGS		
No sample collected		

5. REMARKS:

6. TYPE: Mud Rotary; Jetted; Bored; Dug; Air Rotary; **Driven**; Cable tool; Auger; Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
17 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joel G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34° 51' 52.66"N 82° 26' 00.87"W

3. PUBLIC SYSTEM NAME: 12430- GW04

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 21 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID 3.6 ppm

6. TYPE: Mud Rotary, Dug, Cable tool, Jetted, Air Rotary, Auger, Bored, **Driven**, Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
21 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to 17 ft. depth
in. to ft. depth
Height: Below Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: 17 ft. and 21 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 19 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services Level: A (B) C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'51.96"N 82°26'01.54"W

3. PUBLIC SYSTEM NAME: 12430- GW05

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 20 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID - 0.5 ppm

6. TYPE: Mud Rotary; Jetted; Bored; Dug; Air Rotary; **Driven**; Cable tool; Auger; Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
20 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to 16 ft. depth
in. to ft. depth
Height: Below Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: 16 ft. and 20 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 19 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joel G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34° 51' 52.23" N 82° 26' 02.63" W

3. PUBLIC SYSTEM NAME: 12430- GW07

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 21 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID 0.1 ppm

6. TYPE: Mud Rotary / Jetted / **Bored** / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
21 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to 16 ft. depth
in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: 16 ft. and 20 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 19 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: Westside Quick Stop
(last) (first)
Address: 821 West Parker Road
City: Greenville State: SC Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Address: 821 West Parker Road
City: Greenville
34°51'52.49"N 82°26'02.71"W

3. PUBLIC SYSTEM NAME: 12430- GW07D

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 24 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 24' 1365		
Not Sampled		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed) 24 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded / Welded
Diameter: 1.5-inch
Type: Steel
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: Steel Diameter: 1.5-inch
Slot/Gauge: Length: 4.0-feet
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith CERT NO.: 1648
Address: Smith Drilling Services Level: A (B) C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'53.33"N 82°26'03.20"W

3. PUBLIC SYSTEM NAME: 12430- GW08

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 17 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 17'		
BGS		
Not sampled		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / **Bored** / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
17 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft.
Drive Shoe:
Weight: ____ lb./ft.

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A **(B)** C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'53.28"N 82°26'03.24"W

3. PUBLIC SYSTEM NAME: 12430- GW09

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 20 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID 0.2 ppm

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
20 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to 16 ft. depth
in. to ft. depth
Height: Below Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: 16 ft. and 20 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 18 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'53.71"N 82°26'02.62"W

3. PUBLIC SYSTEM NAME: 12430- GW09D

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 31 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34° 51' 54.56"N 82° 26' 01.58"W

3. PUBLIC SYSTEM NAME: 12430- GW10

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 17 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 17' BGS		
Not Sampled		

5. REMARKS:

6. TYPE: Mud Rotary, Jetted, **Bored**, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
17 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services Level: A **(B)** C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Westside Quick Stop
(last) (first)
Address: 821 West Parker Road
City: Greenville State: SC Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Address: 821 West Parker Road
City: Greenville
34° 51' 54.29" N 82° 26' 05.43" W

3. PUBLIC SYSTEM NAME: 12430- GWII

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 20 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID 0.2 ppm

6. TYPE: Mud Rotary, Jetted, Bored; Dug, Air Rotary, Driven; Cable tool, Auger, Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
20 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded Welded
Diameter: 1.5-inch
Type: Steel
1.5 in. to 16 ft. depth
in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: Steel Diameter: 1.5-inch
Slot/Gauge: Length: 4.0-feet
Set Between: 16 ft. and 20 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 16 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible, Jet (shallow), Turbine
Jet (deep), Reciprocating, Centrifugal

19. WELL DRILLER: Joe Smith CERT NO.: 1648
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'54.54"N 82°26'04.00"W

3. PUBLIC SYSTEM NAME: 12430- GW12

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 20 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID 0.6 ppm

6. TYPE: Mud Rotary / Jetted / Bored; Dug / Air Rotary / Driven; Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
20 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded / Welded
Diameter: 1.5-inch
Type: Steel
1.5 in. to 16 ft. depth
in. to ft. depth
Height: Below Surface: ft.
Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: Steel Diameter: 1.5-inch
Slot/Gauge: Length: 4.0-feet
Set Between: 16 ft. and 20 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 16 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joel H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'55.02"N 82°26'02.54"W

3. PUBLIC SYSTEM NAME: 12430- GW13

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 18 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS: PID 0.4 ppm

6. TYPE: Mud Rotary; Jetted; Bored; Dug; Air Rotary; **Driven**; Cable tool; Auger; Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
18 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to 14 ft. depth
in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: 14 ft. and 18 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 17 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'53.79"N 82°25'58.63"W

3. PUBLIC SYSTEM NAME: 12430- GW17

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 19 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 19' BGS		
Sample		
NO		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / **Bored** / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
19 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft.
Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: **N/A**

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'54.64"N 82°25'59.83"W

3. PUBLIC SYSTEM NAME: 12430- GW18

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 18 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 18		
BGS		
No sample		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
18 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** / Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test: ____
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) ____
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed: ____
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services Level: A (B) C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: Westside Quick Stop
(last) (first)
Address: 821 West Parker Road
City: Greenville State: SC Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Address: 821 West Parker Road
City: Greenville
34°51'55.65"N 82°26'60.41"W

3. PUBLIC SYSTEM NAME: 12430- GW20

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 19 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 19'		
BGS		
Not Sampled		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
19 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded / Welded
Diameter: 1.5-inch
Type: Steel
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: Steel Diameter: 1.5-inch
Slot/Gauge: ____ Length: 4.0-feet
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith CERT NO.: 1648
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: A (B) C D (circle one)
Telephone: 678-201-9849 Fax:

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: Joseph G Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: Westside Quick Stop
(last) (first)
Address: 821 West Parker Road
City: Greenville State: SC Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: Greenville
Name: Westside Quick Stop
Address: 821 West Parker Road
City: Greenville
34°51'56.43"N 82°26'02.25"W

3. PUBLIC SYSTEM NAME: 12430- GW22

4. ABANDONMENT: Yes
Grouted Depth: from 0.00 to 19 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 19' BGS		
Not Sampled		

5. REMARKS:

6. TYPE: Mud Rotary / Jetted / Bored; Dug / Air Rotary / Driven; Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
19 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: Threaded / Welded
Diameter: 1.5-inch
Type: Steel
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below Surface: ____ ft. Weight: ____ lb./ft.
Drive Shoe:

11. SCREEN:
Type: Steel Diameter: 1.5-inch
Slot/Gauge: ____ Length: 4.0-feet
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping ____ GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ____ ft.
Capacity: ____ gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Joe Smith CERT NO.: 1648
Address: Smith Drilling Services Level: A (B) C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
34°51'56.81"N 82°26'01.66"W

3. PUBLIC SYSTEM NAME: 12430- GW23

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 20 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum
Refusal @ 20' BGS Not Sampled		

5. REMARKS:

6. TYPE: Mud Rotary; Jetted; Bored; Dug; Air Rotary; **Driven**; Cable tool; Auger; Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
20 ft. Date Started: 2/4/15 Date Completed: 2/5/15

10. CASING: **Threaded** Welded
Diameter: **1.5-inch**
Type: **Steel**
1.5 in. to ____ ft. depth
____ in. to ____ ft. depth
Height: Below
Surface: ____ ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **Steel** Diameter: **1.5-inch**
Slot/Gauge: ____ Length: **4.0-feet**
Set Between: ____ ft. and ____ ft.
____ ft. and ____ ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
____ ft. after ____ hrs Pumping GPM
Pumping Test: ____
Yield: ____

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ____ ft. to ____ ft.
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: Type: Amount:

18. PUMP: Date installed: ____
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Joe Smith **CERT NO.: 1648**
Address: Smith Drilling Services Level: A **(B)** C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Joseph H Smith
Date: 2/5/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

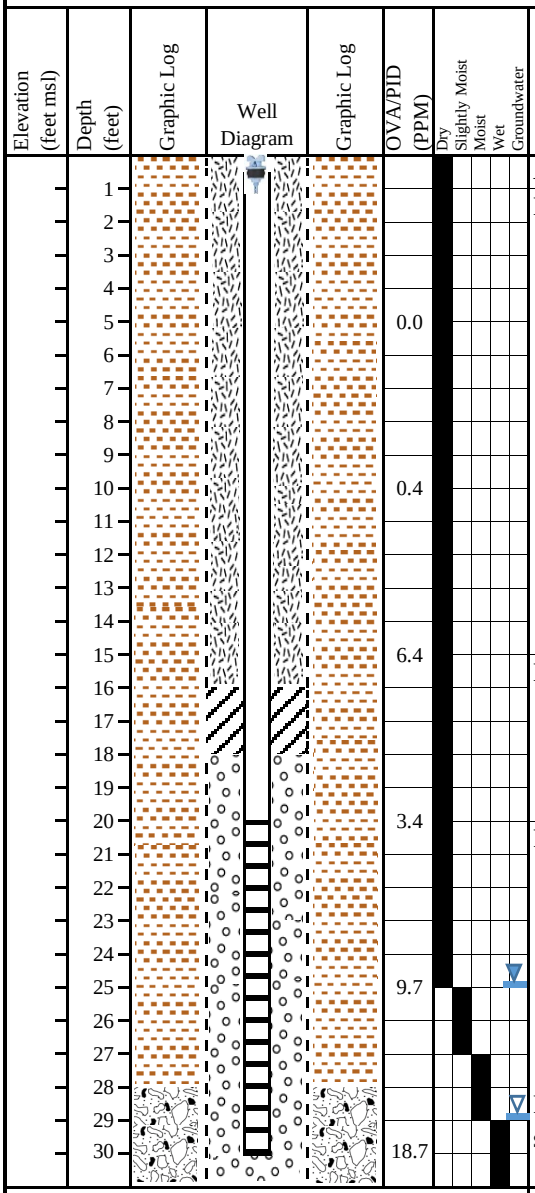
APPENDIX E

WELL LOGS, WATER WELL RECORDS (DHEC FORM 1903)

FIELD BORING LOG (12430-MW04)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	R. Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 26, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Asphalt/Concrete
Moderate reddish orange (10R 6/6), dry, fine sandy, clayey silt
Moderate yellowish brown (10YR 5/4), dry, fine sandy, clayey silt
Pale red (10R 6/2), dry to moist, fine to medium sandy, clayey silt
Partially weathered rock sampling as grayish orange (10YR 7/4), moist to wet, silty fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 29.0 feet below ground surface at time of boring and 25.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106028.887
Easting	=	1569996.103
Top of Casing Elevation	=	1008.27



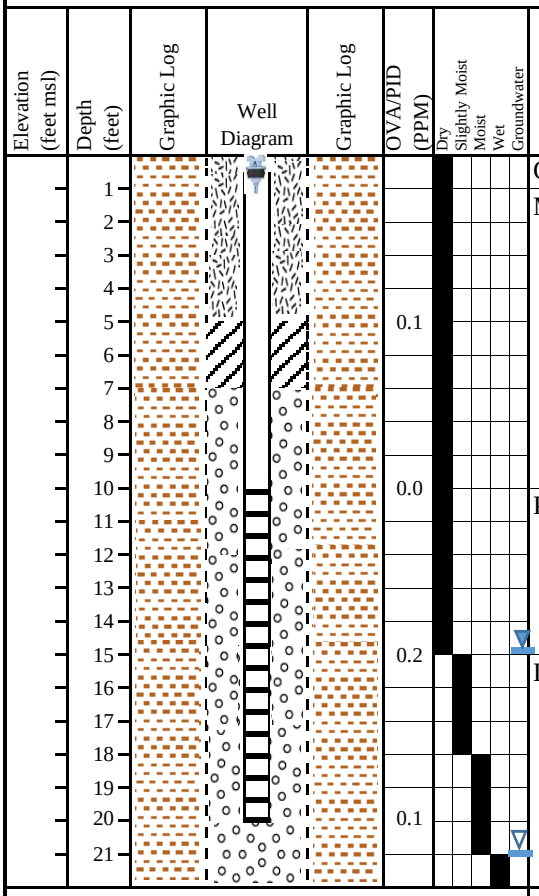
Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1008.45
Total Well Depth	=	30.49 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	20.29 - 30.29 feet BGS
6-inch Outer Casing Depth	=	

FIELD BORING LOG (12430-MW05)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 27, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish orange (10R 6/6), dry, fine sandy, clayey silt
Pale yellowish orange (10YR 8/6), dry, fine sandy, clayey silt
Dark yellowish brown (10YR 4/2), slightly moist to wet, fine sandy, clayey, silt
Boring terminated at 22.0 feet below ground surface.

Legend

- Filter Sand Pack (8.0 - 22.0 feet BGS)
- Bentonite Seal (5.0 - 8.0 feet BGS)
- Bentonite-Cement Grout (0 - 5.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary

Notes

Boring terminated at 22.0 feet below ground surface. Groundwater encountered at 21.0 feet below ground surface at time of boring and 15.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

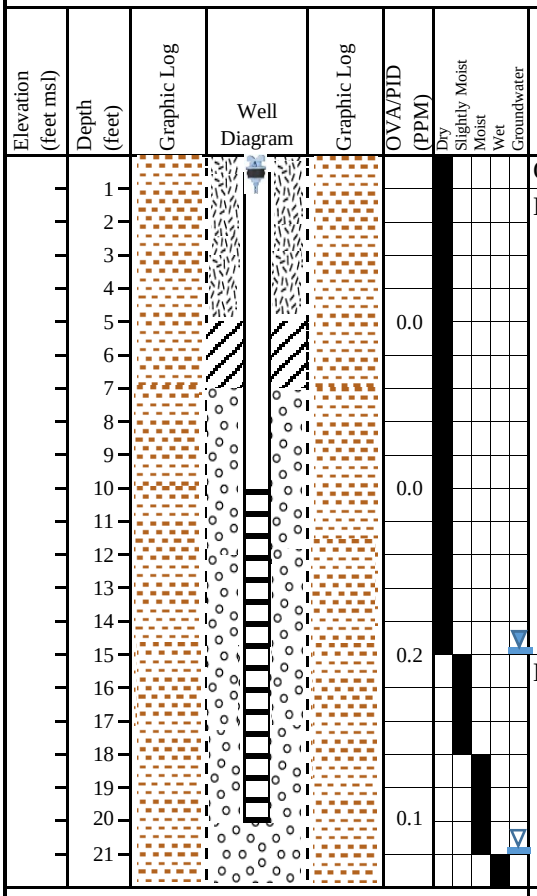
Northing	=	1105838.029
Easting	=	1569901.258
Top of Casing Elevation	=	997.73
Ground Surface Elevation	=	998.24
Total Well Depth	=	20.80 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	10.60 - 20.60 feet BGS
6-inch Outer Casing Depth	=	

Other - Other - Other -	

FIELD BORING LOG (12430-MW06)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 28, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish orange (10R 6/6), dry, clayey silt
Moderate yellowish brown (10R 6/6), slightly moist to wet, fine sandy, clayey silt
Boring terminated at 22.0 feet below ground surface.

Legend

- Filter Sand Pack (8.0 - 22.0 feet BGS)
- Bentonite Seal (5.0 - 8.0 feet BGS)
- Bentonite-Cement Grout (0 - 5.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary

Notes

Boring terminated at 22.0 feet below ground surface. Groundwater encountered at 21.0 feet below ground surface at time of boring and 15.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

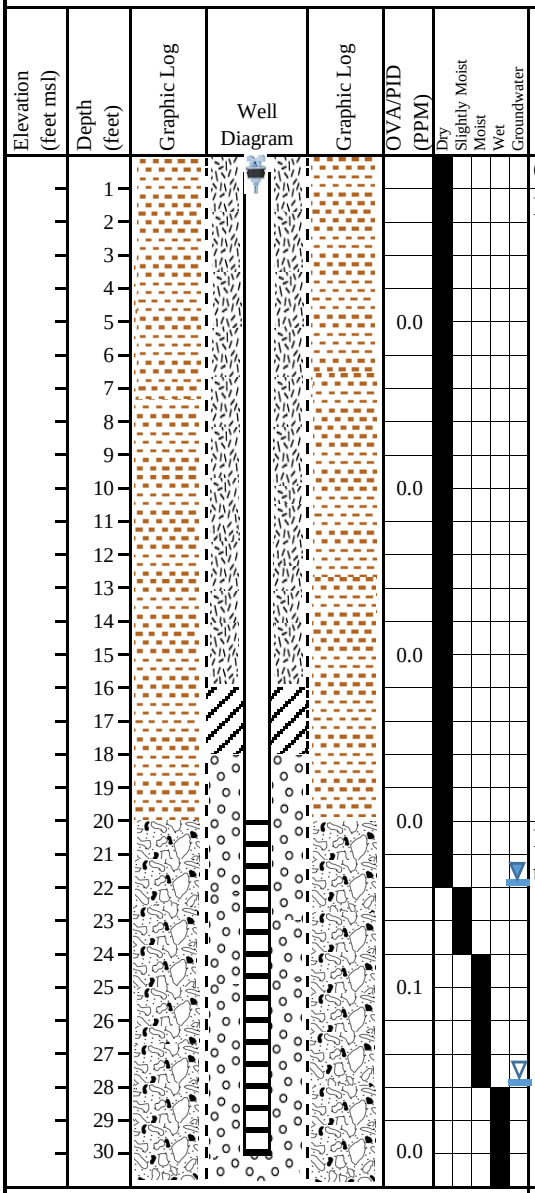
Northing	=	1105919.246
Easting	=	1569824.171
Top of Casing Elevation	=	998.27
Ground Surface Elevation	=	998.58
Total Well Depth	=	21.47 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	11.27 - 21.27 feet BGS
6-inch Outer Casing Depth	=	

Other - Other - Other -	

FIELD BORING LOG (12430-MW07)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 27, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish brown (10R 4/6), dry, fine sandy, clayey silt
Partially weathered rock sampling as moderate yellowish brown (10YR 5/4), dry to wet, silty fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 28.0 feet below ground surface at time of boring and 22.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1105996.86
Easting	=	1569760.81
Top of Casing Elevation	=	1005.88



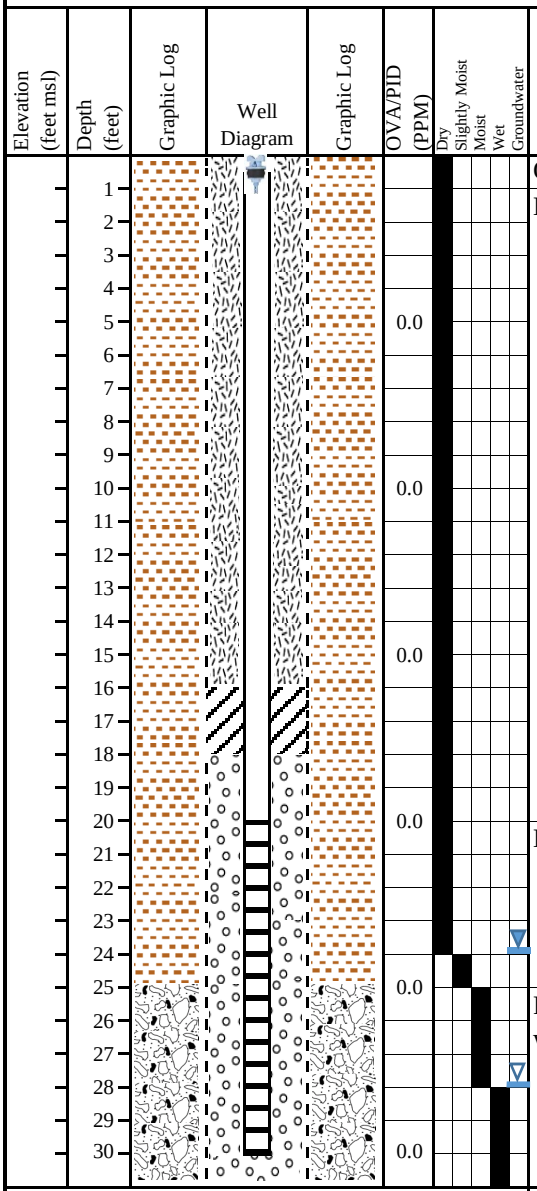
Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1006.27
Total Well Depth	=	31.04 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	20.84 - 30.84 feet BGS
6-inch Outer Casing Depth	=	

FIELD BORING LOG (12430-MW08)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 27, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish brown (10R 4/6), dry, fine sandy, clayey silt
Dark yellowish brown (10YR 4/2), dry to slightly moist, clayey silt
Partially weathered rock sampling as dark yellowish brown (10YR 4/2), moist to wet, clayey, silty, fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 28.0 feet below ground surface at time of boring and 24.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106052.61
Easting	=	1569819.23
Top of Casing Elevation	=	1007.43



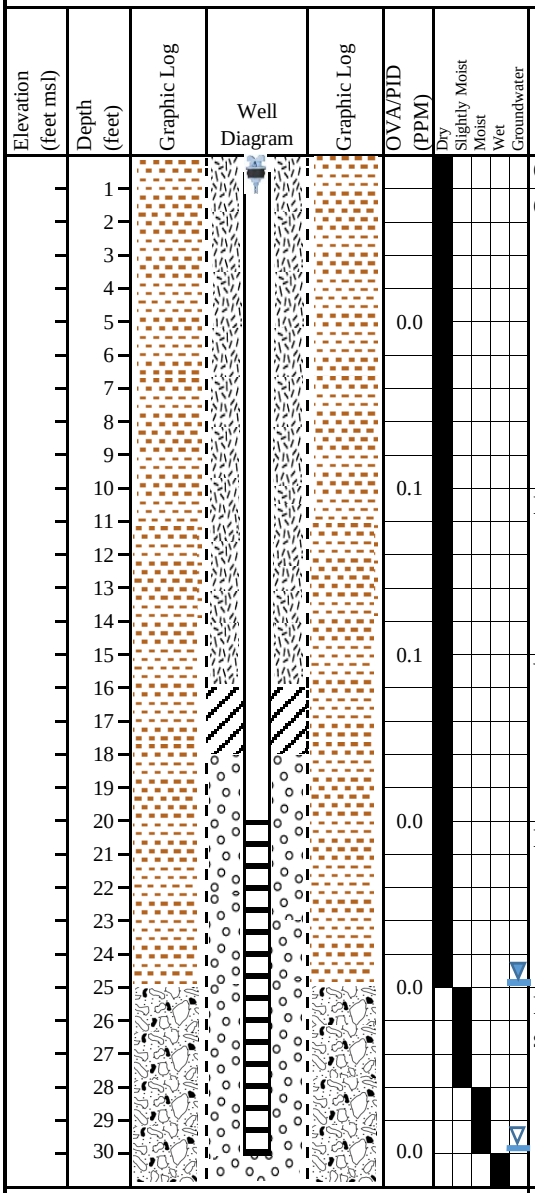
Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1007.86
Total Well Depth	=	31.10 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	20.90 - 30.90 feet BGS
6-inch Outer Casing Depth	=	

FIELD BORING LOG (12430-MW09)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 27, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Grayish brown (5YR 3/2), dry, fine sandy, clayey, silt with gravel
Moderate yellowish brown (10YR 5/4), dry, clayey silt
Very pale orange (10YR 8/2), dry, fine sandy, clayey silt
Dark yellowish orange (10YR 6/6), dry, fine sandy, clayey silt
Partially weathered rock sampling as moderate yellowish brown (10YR 5/4), slightly moist to wet, clayey, silty, fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 30.0 feet below ground surface at time of boring and 25.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106119.988
Easting	=	1569890.488
Top of Casing Elevation	=	1008.55



Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1009.07
Total Well Depth	=	30.04 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	19.84 - 29.84 feet BGS
6-inch Outer Casing Depth	=	

FIELD BORING LOG (12430-MW10)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 27, 2015	**Logged By:**	Thomas V.

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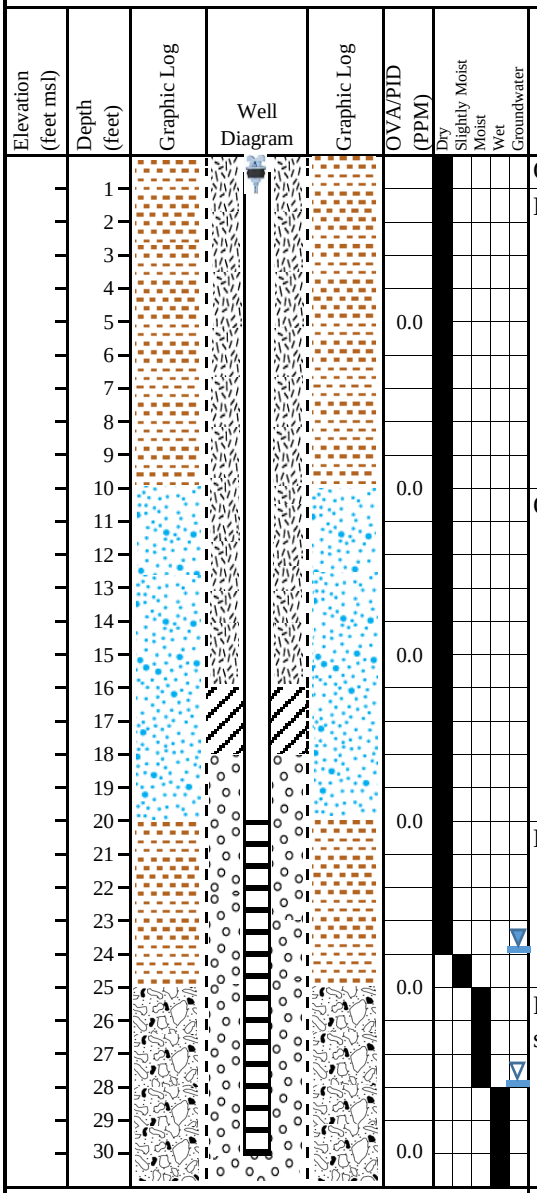
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish orange (10R 6/6), dry, fine sandy, clayey, silt
Grayish yellow (5Y 8/4), dry, fine sandy silt
Pale red (5R 6/2), dry to slightly moist, fine sandy, clayey silt
Partially weathered rock sampling as very pale orange (10YR 8/2), moist to wet, silty, fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 28.0 feet below ground surface at time of boring and 24.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106138.309
Easting	=	1570048.269
Top of Casing Elevation	=	1008.22



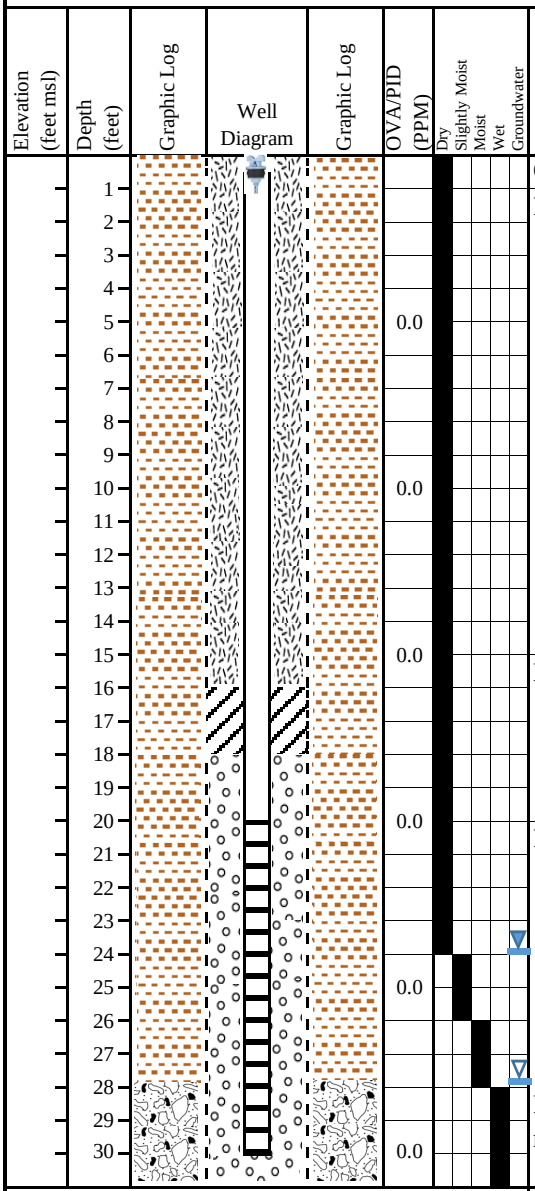
Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1008.54
Total Well Depth	=	30.47 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	20.27 - 30.27 feet BGS
6-inch Outer Casing Depth	=	

FIELD BORING LOG (12430-MW11)

Job Name:	Westside Quick Stop	**Job Number:**	J14-049-A
Site Address:	821 west Parker Road, Greenville, Greenville County, South Carolina		
Drill Method:	4.25" ID Auger	**Drill Rig:**	Simco 2500
Driller Name:	Robyn Barkley / J. Smith	**Company:**	Smith Drilling Services
Installation Date:	March 26, 2015	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Soil Description
Grass/Organic Topsoil
Moderate reddish orange (10R 6/6), dry, fine sandy, clayey silt
Moderate yellowish brown (10YR 5/4), dry, fine sandy, clayey silt
Pale red (10R 6/2), dry to moist, fine to medium sandy, clayey silt
Partially weathered rock sampling as grayish orange (10YR 7/4), wet, silty fine to medium sand
Boring terminated at 31.0 feet below ground surface.

Legend

- Filter Sand Pack (18.0 - 31.0 feet BGS)
- Bentonite Seal (15.0 - 18.0 feet BGS)
- Bentonite-Cement Grout (0 - 15.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay

Notes

Boring terminated at 31.0 feet below ground surface. Groundwater encountered at 28.0 feet below ground surface at time of boring and 24.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106040.426
Easting	=	1570126.139
Top of Casing Elevation	=	1007.84



Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -
Other -
Other -

Ground Surface Elevation	=	1008.26
Total Well Depth	=	30.83 feet BGS
Screen Length	=	10-feet
Screen Size	=	0.01-inch
Screened Interval Depth	=	20.63 - 30.63 feet BGS
6-inch Outer Casing Depth	=	

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1105028.887 1569496.103

3. PUBLIC SYSTEM NAME: 12430- MW04

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 15-18

6. TYPE: Mud Rotary / Jetted / Bored; Dug / Air Rotary / Driven; Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
30.49 ft. Date Started: 3/25/15 Date Completed: 3/26/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 1008.49
2.0 in. to 20.29 ft. depth
6.0 in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 20.29 ft. and 30.29 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 25 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 15 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1105838.029 1569901.258

3. PUBLIC SYSTEM NAME: 12430- MW05

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 5-8

6. TYPE: Mud Rotary / Jetted / Bored; Dug / Air Rotary / Driven; Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
20.80 ft.
Date Started: 3/26/15
Date Completed: 3/27/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 997.73
2.0 in. to 10.60 ft. depth
6.0 in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 10.60 ft. and 20.60 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 8 ft. to 20 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 5 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services
2443 High Meadows Court
Conyers, Georgia 30094
Level: (A) B C D (circle one)
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: **N/A**

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1105919.246 1569824.171

3. PUBLIC SYSTEM NAME: **12430-** MW06

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 5-8

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
21.47 ft. Date Started: 3/27/15 Date Completed: 3/28/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 998.27
2.0 in. to 11.27 ft. depth
6.0 in. to ft. depth
Height: Below
Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 11.27 ft. and 21.27 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 5 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 8 ft. to 20 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 5 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1105996.860 1569760.810

3. PUBLIC SYSTEM NAME: 12430- MW07

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 15-18

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
31.04 ft. Date Started: 3/26/15 Date Completed: 3/27/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 1005.88
2.0 in. to 20.84 ft. depth
6.0 in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 20.84 ft. and 30.84 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 22 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** 15 / Other
Depth: From **0.0** ft. to ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

DHEC — PROMOTE PROTECT PROSPER

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1106052.1610 1569814.230

3. PUBLIC SYSTEM NAME: 12430- MW08

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 15-18

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: MWA #UMW-25663; UST Permit #12430

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

9. WELL DEPTH (completed)
31.10 ft. Date Started: 3/26/15 Date Completed: 3/27/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
2.0 in. to 20.90 ft. depth
6.0 in. to ft. depth
TOC elev 1001.43
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 20.90 ft. and 30.90 ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) Sand
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From 0.0 ft. to 15 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine / Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley CERT NO.: 934
Address: Smith Drilling Services Level: (A) B C D (circle one)
2443 High Meadows Court
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1106114.488 1569810.488

3. PUBLIC SYSTEM NAME: **12430-** MW09

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 15-18

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
30.04 ft. Date Started: 3/26/15 Date Completed: 3/27/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 1008.55
2.0 in. to 19.84 ft. depth
6.0 in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10
Set Between: 19.84 ft. and 29.84 ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL 25 ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 15 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1106138.304 1570048.264

3. PUBLIC SYSTEM NAME: 12430- MW1D

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal 15-18

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
30.47 ft. Date Started: 3/26/15 Date Completed: 3/27/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
TOC elev 1008.22
2.0 in. to 20.27 ft. depth
6.0 in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 20.27 ft. and 30.27 ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 15 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

D H E C
PROMOTE PROTECT PROSPER

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

1. WELL OWNER INFORMATION:
Name: **Westside Quick Stop**
(last) (first)
Address: **821 West Parker Road**
City: **Greenville** State: **SC** Zip:
Phone: N/A

2. LOCATION OF WELL: COUNTY: **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville**
1106040.426 1570126.139

3. PUBLIC SYSTEM NAME: 12430- MW11

4. ABANDONMENT:
Grouted Depth: from to ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

SEE BORING LOGS

5. REMARKS:
Bentonite Seal @ 15-18

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / Driven / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #UMW-25663; UST Permit #12430**

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

9. WELL DEPTH (completed)
30.83 ft. Date Started: 3/25/15 Date Completed: 3/26/15

10. CASING: **Threaded** / Welded
Diameter: 2"
Type: PVC
2.0 in. to 20.63 ft. depth
6.0 in. to ft. depth
TOC elev 1007.84
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: PVC Diameter: 2"
Slot/Gauge: 0.010" Length: 10'
Set Between: 20.63 ft. and 30.63 ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack) **Sand**
Installed from: 18 ft. to 30 ft.
Effective Size: Uniformity Coefficient:

16. WELL GROUTED?
Neat Cement / Bentonite / **Bentonite/Cement** / Other
Depth: From **0.0** ft. to 15 ft.

17. NEAREST SOURCE OF POSSIBLE CONTAMINATION: ft. direction
Type:
Well Disinfected: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Robyn Barkley **CERT NO.: 934**
Address: Smith Drilling Services Level: (A) B C D
2443 High Meadows Court (circle one)
Conyers, Georgia 30094
Telephone: 678-201-9849 Fax:

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: Robyn Barkley
Date: 4/20/15

If D Level Driller, provide supervising driller's name.
Joe Smith 1648B

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX F

AQUIFER CHARACTERIZATION DATA

D H E C
PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

SOUTH CAROLINA
Department of Health and Evnironmental Control
Summary of Slug Test Form

Site Data

UST Permit # 12430 County: Greenville

Facility Name Westside Quick Stop

Slug Data

See Appendix F Table_____ Figure_____ for a list of all data measurements.
(water level logs, etc.) (Complete as appropriate).

Water Level Recovery Data was measured by water level meter .
(Hermit Data Logger, Manually with Water Level Indicator, etc.) (List Method).

Complete the following table for each well tested.

COMPLETE A SECOND SHEET IF MORE THAN FOUR WELLS ARE TESTED

Slug Test Conducted in well(s) number	MW03	MW11		
Initial Rise/Drawdown in well (feet)	4.20	3.00		
Radius of Well Casing (feet)	0.083	0.083		
Effective Radius of Well (feet)	0.270	0.270		
Static Saturated Aquifer Thickness (feet)	32	32		
Length of Well Screen (feet)	6.10	7.61		
Static Height of Water Column in Well (ft)	6.10	7.61		

Calculations

See Appendix ____ Table 4 Figure_____ for calculations. (Complete as appropriate).

The method for aquifer calculations was Bouwer & Rice

Calculated values by well were as follows:

Slug Test Conducted in well(s) number	MW03	MW11		
Hydraulic Conductivity	8.45E-6 cm/sec	8.56E-6 cm/sec		

Thickness of the aquifer used to calculate hydraulic conductivity was 32 feet.

The aquifer is _____ confined _____ semi-confined X water table (Check as appropriate).

The estimated seepage velocity is 0.39 feet per year based on a hydraulic conductivity of 3.34E-5 cm/sec, a hydraulic gradient of 0.004, and a porosity of 33 per cent for slightly clayey, fine sand

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Slug Test Analysis - Bouwer & Rice/Hvorslev's Methods

Client: SCDHEC

Proj. Name: Westside Quick Stop

Test by: Daniel Burch

Test Date: 03/31/15

Version: 0.96c

Revised: 2004-03-31

Well ID: MW-03

Calculation Set Number		
Calc. by	Chkd. by	Apvd. by
Date	Date	Date

User Input Data

Aquifer Thickness	32.0
Well Length (L_W)	6.10
Intake Length (L_I)	6.10
Well Radius (R_W)	0.270
Casing Radius(R_C)	0.083
Xform ratio, m [$(K_h/K_v)^{0.5}$]	1
Sandpack Porosity	0.270
Slug Volume	0.031
Static Level	0.000
Offset time	0.000

R_{equiv}	-1.000	-1.000	-1.000
Estimated Porosity & R_W		-1.000	-1.000
$\ln(R_E/R_W)$		1.877	-1.000
Shape Factor (F	*warning 2*	10.056	-1.000

Drawdown:	Max. Y_t	Regr. Y_o	Casing Y_o
	26.90	25.76	1.42

CHECK WATER BALANCE - Regressed v. Casing Yo

(undrained)

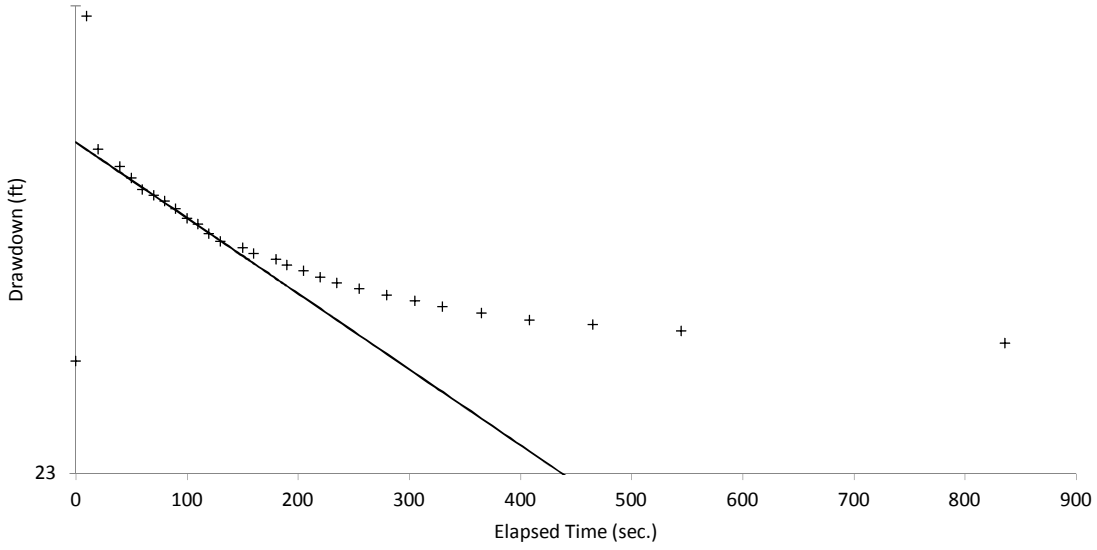
(confined)

		Drained Options			
		A	B	C	D
		Undrained	User n/R_W	Est. n	Est. R_W
Bouwer & Rice - consistent units		2.8E-07			
	cm/sec	8.45E-06			
Hvorslev - consistent units		5.6E-07			
	cm/sec	1.72E-05			

Potentially acceptable solutions:

Conversion factor for user units: cm/sec 30.48

Intercept	3.249	COMMENTS:
Slope	0.000	
No. of Observations	8	
Starting Row	64	
Ending Row	71	



Time Seconds	level Feet	Drawdown Y(t)	ln(Y)		Est. ln(Y)	Regression Range	
0.000	23.900	23.900	3.174		25.765		
10.000	26.900	26.900	3.292		25.698		
20.000	25.700	25.700	3.246		25.631		
40.000	25.550	25.550	3.241		25.499		
50.000	25.450	25.450	3.237		25.432		
60.000	25.350	25.350	3.233	3.233	25.366	<==	
70.000	25.300	25.300	3.231	3.231	25.301	<==	
80.000	25.250	25.250	3.229	3.229	25.235	<==	
90.000	25.180	25.180	3.226	3.226	25.170	<==	
100.000	25.100	25.100	3.223	3.223	25.104	<==	
110.000	25.050	25.050	3.221	3.221	25.039	<==	
120.000	24.970	24.970	3.218	3.218	24.974	<==	
130.000	24.900	24.900	3.215	3.215	24.910	<==	
150.000	24.850	24.850	3.213		24.781		
160.000	24.800	24.800	3.211		24.716		
180.000	24.750	24.750	3.209		24.588		
190.000	24.700	24.700	3.207		24.525		
205.000	24.650	24.650	3.205		24.429		
220.000	24.600	24.600	3.203		24.334		
235.000	24.550	24.550	3.201		24.240		
255.000	24.500	24.500	3.199		24.114		
280.000	24.450	24.450	3.197		23.958		
305.000	24.400	24.400	3.195		23.803		
330.000	24.350	24.350	3.193		23.649		
365.000	24.300	24.300	3.190		23.435		
408.000	24.240	24.240	3.188		23.175		
465.000	24.200	24.200	3.186		22.835		
545.000	24.150	24.150	3.184		22.366		
836.000	24.050	24.050	3.180		20.738		

Slug Test Analysis - Bouwer & Rice/Hvorslev's Methods — Version: 0.96c

Client: SCDHEC — Revised: 2004-03-31

Proj. Name: Westside Quick Stop — Well ID: MW-11

Test by: Daniel Burch

Test Date: 03/31/15

Calculation Set Number		
Calc. by	Chkd. by	Apvd. by
Date	Date	Date

User Input Data

Aquifer Thickness	32.0
Well Length (L_W)	7.61
Intake Length (L_I)	7.61
Well Radius (R_W)	0.270
Casing Radius(R_C)	0.083
Xform ratio, m [$(K_h/K_v)^{0.5}$]	1
Sandpack Porosity	0.270
Slug Volume	0.031
Static Level	0.000
Offset time	0.000

R_{equiv}	-1.000	-1.000	-1.000
Estimated Porosity & R_W		-1.000	-1.000
$\ln(R_E/R_W)$		2.063	-1.000
Shape Factor (F		11.858	-1.000

Drawdown:	Max. Y_t	Regr. Y_o	Casing Y_o
	27.00	25.19	1.42

CHECK WATER BALANCE - Regressed v. Casing Yo

(undrained)

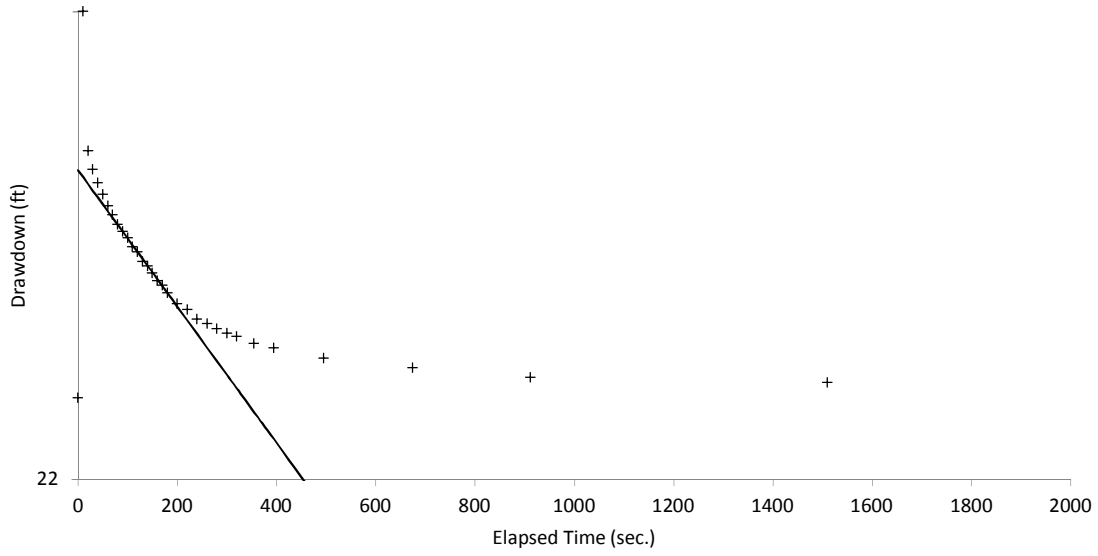
(confined)

		Drained Options			
		A	B	C	D
		Undrained	User n/R_W	Est. n	Est. R_W
Bouwer & Rice - consistent units		2.8E-07			
	cm/sec	8.56E-06			
Hvorslev - consistent units		5.5E-07			
	cm/sec	1.67E-05			

Potentially acceptable solutions:

Conversion factor for user units: cm/sec 30.48

Intercept	3.226	COMMENTS:
Slope	0.000	
No. of Observations	13	
Starting Row	66	
Ending Row	78	



Time Seconds	level Feet	Drawdown Y(t)	ln(Y)		Est. ln(Y)	Regression Range
0.000	22.800	22.800	3.127		25.189	
10.000	27.000	27.000	3.296		25.114	
20.000	25.400	25.400	3.235		25.039	
30.000	25.200	25.200	3.227		24.964	
40.000	25.050	25.050	3.221		24.890	
50.000	24.920	24.920	3.216		24.816	
60.000	24.800	24.800	3.211		24.742	
70.000	24.700	24.700	3.207	3.207	24.668	
80.000	24.600	24.600	3.203	3.203	24.594	
90.000	24.520	24.520	3.199	3.199	24.521	
100.000	24.450	24.450	3.197	3.197	24.448	
110.000	24.360	24.360	3.193	3.193	24.375	
120.000	24.300	24.300	3.190	3.190	24.303	
130.000	24.200	24.200	3.186	3.186	24.230	
140.000	24.150	24.150	3.184	3.184	24.158	
150.000	24.080	24.080	3.181	3.181	24.086	
160.000	24.000	24.000	3.178	3.178	24.014	
170.000	23.950	23.950	3.176	3.176	23.942	
180.000	23.870	23.870	3.173	3.173	23.871	
200.000	23.760	23.760	3.168	3.168	23.729	
220.000	23.700	23.700	3.165		23.588	
240.000	23.600	23.600	3.161		23.447	
260.000	23.550	23.550	3.159		23.308	
280.000	23.500	23.500	3.157		23.169	
300.000	23.450	23.450	3.155		23.031	
320.000	23.420	23.420	3.154		22.894	
355.000	23.350	23.350	3.151		22.656	
395.000	23.300	23.300	3.148		22.387	
495.000	23.200	23.200	3.144		21.729	
675.000	23.100	23.100	3.140		20.592	
912.000	23.000	23.000	3.135		19.185	
1510.000	22.950	22.950	3.133		16.049	
2255.000	22.900	22.900	3.131		12.848	

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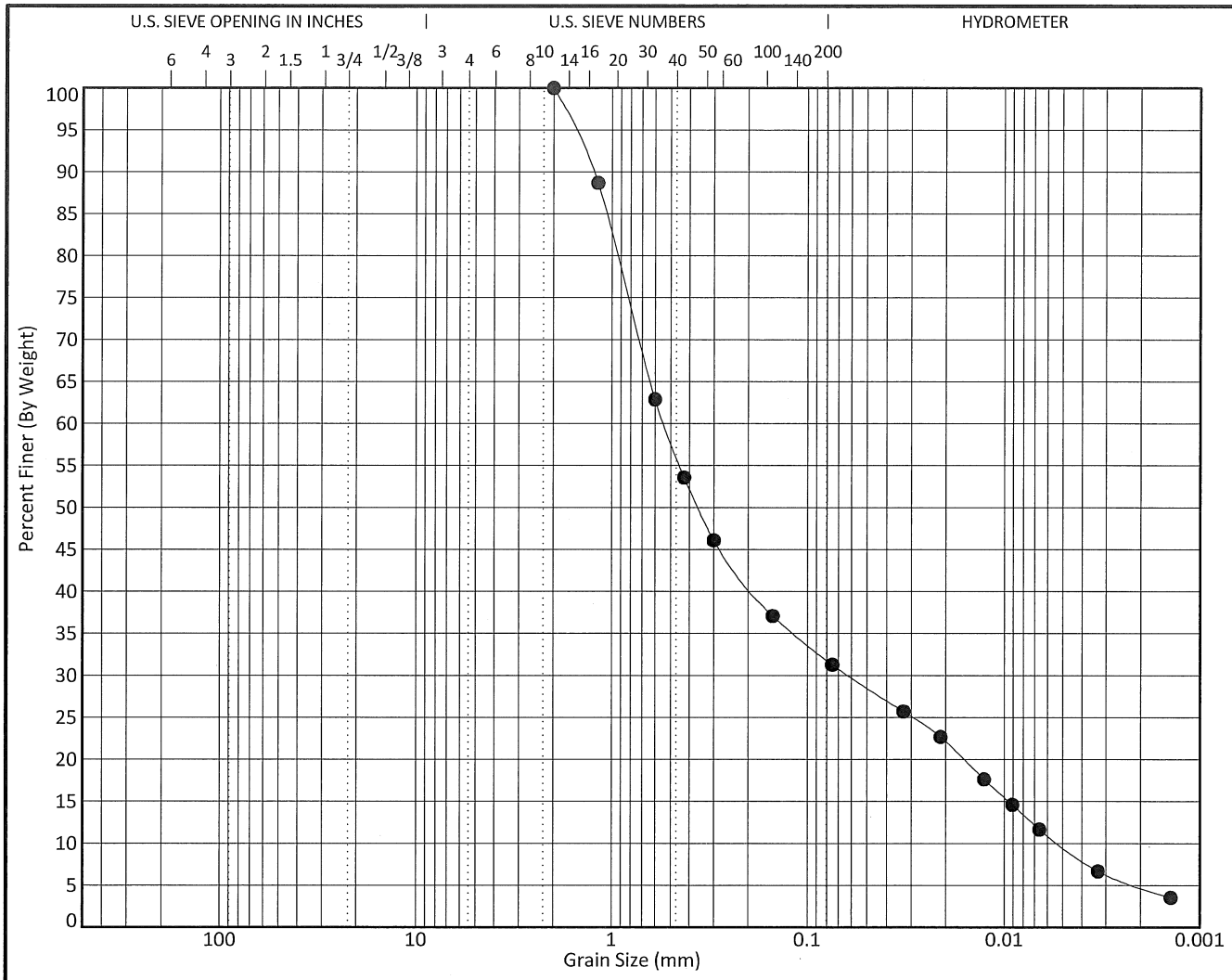
SINCE 1881

FROEHLING & ROBERTSON, INC.

GRAIN SIZE DISTRIBUTION

Project No:
Client: Shealy Enviromental
Project: 65R-3212
City/State: West Columbia, SC



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Boring No.		Depth	Classification	LL	PL	PI	Cc	Cu
●	MW 10	at	25.0	()				1.36	103.05
		at							
		at							
		at							
		at							

	Boring No.		Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	MW 10	at	25.0	2	0.539	0.062	0.005	0.0	68.7	21.6	9.7
		at									
		at									
		at									
		at									

US_GRAIN_SIZE 65R-3212.GPJ F&R.GDT 4/21/15

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX G

DISPOSAL MANIFESTS AND WEIGHT TICKETS

WASTE MANAGEMENT

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

Original
Ticket# 1375612

Customer Name PETRATECHENVIRO PETRA-TECH EN
Ticket Date 04/20/2015
Payment Type Credit Account
Manual Ticket#
Hauling Ticket#
Route
State Waste Code
Manifest 0
Destination
PO
Profile 605496SC (DRILL CUTTINGS)
Generator 126-PETRATECHENVIRO PETRA-TECH ENVIRONMENTAL, LLC

Carrier petra tech Eniviro Petra Tech
Vehicle# 02
Container
Driver
Check#
Billing # 0001043
Gen EPA ID NR
Volume

	Time	Scale	ScaleMaster
In	04/20/2015 09:42:17	Inbound #1	Dwayne
Out	04/20/2015 10:35:52	Outbound	yhoke

Gross	19500 lb
Tare	12500 lb
Net	7000 lb
Tons	3.50

Comments

	Product	LD%	Qty	UOM	Rate	Fee	Amount	Origin
1	Cont Soil Sp. W.-T	100	3.50	Tons				36-NEWBERR
2	RCR-P-Regulatory C	100		%				36-NEWBERR
3	FUEL-Fuel Surcharg	100		%				36-NEWBERR
4	EVF-P-Standard Env	100		%				36-NEWBERR

UST # 12430
~2.5 tons

Total Fees
Total Ticket

SIGNATURE Robert Brown JR

403WM

SPECIAL WASTE MANIFEST

WASTE ID NUMBER **605496SC**	
EXPIRATION DATE **October 24, 2016**	*Richland Landfill* 1047 Highway Church Road Elgin, SC 29045 Special Waste Phone: 803-744-3345 Fax: 866-904-7194

Prepared by: Sandra Reeves

GENERATOR OF WASTE: PETRA-TECH ENVIRONMENTAL, LLC

CUSTOMER: PETRA-TECH ENVIRONMENTAL, LLC ACCOUNT NUMBER: 820-

LOCATION OF WASTE: 26042 Highway 76

CITY: Newberry COUNTY: Newberry

PHONE NUMBER: 803-606-2944 CONTACT: LINDSEY GROOMS

FAX NUMBER: 888-838-9034

GENERATOR'S SIGNATURE T Slack DATE: 4/20/15

TRANSPORTER OF WASTE: Robert Branham

DATE: 04/20/15 TRUCK NUMBER: 02

DRIVER'S SIGNATURE Robert L Branham Jr.

**** TO BE COMPLETED BY RICHLAND LANDFILL******

DISPOSAL SITE: RICHLAND LANDFILL ELGIN, SC

Waste Class: DRILL CUTTINGS

DESCRIPTION OF WASTE: DRILL CUTTINGS

TICKET NUMBER: 1375612 TONNAGE: 3.50

RECEIVED BY: DCM

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number: -
2. Page 1 of
3. Emergency Response Phone
4. Waste Tracking Number: DB 4-27-15

GENERATOR

5. Generator's Name and Mailing Address: SCPHEC, 2600 Bull St, Columbia, SC
Generator's Phone: 864 436 6322

Generator's Site Address (if different than mailing address): PetraTech Environmental, 2435 C North St Suite 108-202, Greenville, SC 29615

6. Transporter 1 Company Name: PetraTech Environmental LLC
U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC, 305 S. Main St, Moulding, SC
U.S. EPA ID Number: SCR 000762468
Facility's Phone: 864 762 9953

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON HAZ / NON Reg Well Water 6374-Profile	1	PUC Tank	250	gal
2.					
3.	UST #12430			60	gall
4.					

13. Special Handling Instructions and Additional Information

14. **GENERATOR'S/OFFEROR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Daniel Burch
Signature
Month: 4 Day: 27 Year: 15

INT'L

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Daniel Burch
Signature
Month: 9 Day: 27 Year: 15

Transporter 2 Printed/Typed Name
Signature
Month: Day: Year:

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

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

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

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

Printed/Typed Name: Bryan Tripp, IT
Signature
Month: 9 Day: 27 Year: 15

GC Labels • Printed in the USA
1-800-997-6966

DESIGNATED FACILITY TO GENERATOR

Reorder Part# MANIFEST-C6NHWC
913-897-6966

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX H

ZONING REGULATIONS

Not Applicable to Current Scope of Work

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX I

LEACHABILITY AND FATE AND TRANSPORT MODELS

Not Applicable to Current Scope of Work

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX J

RIGHT-OF-ENTRY FORMS, LETTERS PROVIDING ABBREVIATED COPIES TO EACH PROPERTY OWNER

May 6, 2015

MR. MIKE WRIGHT
450 DOVE HILL CIRCLE
EASLEY, SC 29640

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
PTE Job No. J14-049-A

Dear property owner:

Please find enclosed a copy of the Tier II Assessment Report for your records. The report describes activities performed on behalf of UST Permit #12430 located at 821 West Parker Road in Greenville, Greenville County, South Carolina. The Tier II Assessment activities were performed in response to the South Carolina Department of Health and Environmental Control's Tier II directive letter dated October 22, 2014. The Tier II Assessment Report is distributed to owners of properties where assessment activities may have been performed and to those who expressed interest in the assessment findings.

If you have any questions regarding the above mentioned assessment report, please do not hesitate to contact us or the South Carolina Department of Health and Environmental Control (SCDHEC) at:

SCDHEC – Ms. Joy Krutek, Project Manager
Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

May 6, 2015

DAVID ESPINOZA & LESLIE GUERRA
2209 W BLUE RIDGE DRIVE
GREENVILLE, SC 29611

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
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Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

May 6, 2015

ROBERT JACKSON
108 YOWN ROAD
GREENVILLE, SC 29611

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
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Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

May 6, 2015

ROXANA LIMA
1000 LENHARDT DRIVE
GREENVILLE, SC 29611

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
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Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

May 6, 2015

RTC REAL ESTATE II LLC
149 LAKE FOREST CIRCLE
EASLEY, SC 29642

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
PTE Job No. J14-049-A

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SCDHEC – Ms. Joy Krutek, Project Manager
Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

May 6, 2015

MICHAEL POORE
149 LAKE FOREST CIRCLE
EASLEY, SC 29642

Subject: **Tier II Assessment Report – Abbreviated Copy**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
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SCDHEC – Ms. Joy Krutek, Project Manager
Phone: 803.898.0599
Email: krutekjl@dhec.sc.gov

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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Application for Encroachment Permit

Application Number: 200017212 **Permit Number: 23-14-177219**

S.C. Department of Transportation
Form 637 (Rev 08/2014)

Contact Information

Applicant:	Petra-Tech Environmental		
Street:	2435 East North Street		
	STE 1108-202		
City:	Greenville		
State:	SC	**Zip Code:**	29615
Phone:	(864)678-0904	**Fax:**	(888)838-9034
Email:	kburch@petratechenv.com		
Contact:	Kaye Burch		

Project Location

Primary County: Greenville

Greenville W Blue Ridge Dr **SC 253**

Greenville W Parker Rd **S-23-104**

1. Type of Encroachment: ENVIRONMENTAL

Installation of Monitoring Wells (as approved by SCDHEC)

2. Description of Location:

Site is Westside Quick Stop at 821 W. Parker Road in Greenville, SC. Monitoring wells to be installed on W. Blue Ridge Drive and W. Parker Road. Wells to be ~4 feet off the edge of the pavement. See attached map for well locations.

(Attach sketch indicating roadway features such as: pavement width, shoulder width, sidewalk and curb and gutter location, significant drainage structure, north arrow, right of way width, and location of the proposed encroachment with respect to the roadway centerline and the nearest intersecting road on the State system.)

JIH-049
Westside

3. The undersigned applicant hereby requests the SCDOT to permit encroachment on the SCDOT right of way as described herein. It is expressly understood that the encroachment, if and when constructed, shall be installed in accordance with the sketch attached hereto and made a part hereof. The applicant agrees to comply with and be bound by the SCDOT's "A Policy for Accommodating Utilities on Highways Rights of way", "Standard Specifications for Highway Construction", the "General Provisions" and "Special Provisions", attached hereto or made a part hereof by reference, during the installation, operation and maintenance of said encroachment within the SCDOT's Right of Way. DISCHARGES OF STORM WATER AND NON-STORM WATER: Work within State Highway right-of-way shall be conducted in compliance with all applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit(s) issued to the Department of Transportation (Department), to govern the discharge of storm water and non-storm water from its properties. Work shall also be in compliance with all other applicable Federal, State and Local laws and regulations, and with the Department's Encroachment Permits Manual and encroachment permit. The encroachment permit will not be issued until the applicant has received an NPDES construction permit from SC Department of Health and Environmental Control.

   The applicant agrees to comply with all current SCDOT Standards Specifications for Highway Construction including all Supplemental Technical Specifications. The applicant hereby further agrees, and binds his/her/its heirs, personal representatives, successors, assigns, to assume any and all liability for accidents or injuries to persons, or damage to property, including the highway, that may be caused by the construction, maintenance, use, moving or removing of the physical appurtenances contemplated herein, and the applicant agrees to indemnify and hold SCDOT harmless from and against any and all claims for personal injury and/or property damage which may be sustained by reason of the construction, maintenance or existence of said encroachment on the SCDOT's right of way.

Applicant's Name: Kaye Burch (Please print or type) Date: 12/18/2014

Applicant's Sig: Kaye Burch Title: Office Manager

For Office Use Only

In accordance with your request and subject to all the provisions, terms, conditions, and restrictions stated in the application and the general and special provisions attached hereto, the SCDOT hereby approves your application for an encroachment permit. This permit shall become null and void unless the work contemplated herein shall have been completed prior to: **1/21/2016.**

X See Attached Special Provision and/or Permit Requirements

NPDES Permit Nbr:

(Date received by res. Maint. Engr.) (SCDOT Approval) C. Mill. ARME (Date) 1/21/2015

Application for Encroachment Permit
General Provisions

1. **DEFINITIONS: The word "Permittee" used herein shall mean the name of the person, firm, or corporation to whom this permit is addressed, his, her, its, heirs, personal representatives, successors and assigns. The word "DEPARTMENT" shall mean the South Carolina Department of Transportation.**
2. **NOTICE PRIOR TO STARTING WORK: Before starting the work contemplated herein within the limits of the highway right of way, the Department's Resident Maintenance Engineer in the county in which the proposed work is located shall be notified 24 hours in advance so that he may be present while the work is under way.**
3. **PERMIT SUBJECT TO INSPECTION: This permit shall be kept at the site of the work at all times while said work is under way and must be shown to any representative of the Department or law enforcement officer on demand.**
4. **PROTECTION OF HIGHWAY TRAFFIC: The applicant shall be responsible for the protection of the highway traffic at all times during the construction, maintenance, removing or moving of the encroachment permitted herein. Detours, barricades, warning signs and flagmen, as necessary, shall be provided by and at the expense of the Permittee and shall be in accordance with the "Manual on Uniform Traffic Control Devices" (MUTCD). The work shall be planned and carried out so that there will be the least possible inconvenience to the motoring public. The Permittee agrees to observe all rules and regulations of the Department while carrying on the work contemplated herein and take all other precautions that circumstances warrant.**
5. **STANDARDS OF CONSTRUCTION: All work shall conform to the Department's standards of construction and shall be performed in a workman-like manner. The applicant shall make adequate provisions for maintaining the proper drainage of the highway as it may be affected by the encroachment permitted herein. All work shall be subject to the supervision and satisfaction of the Department.**
6. **FUTURE MOVING OF PHYSICAL APPURTENANCES: If, in the opinion of the State Highway Engineer, it should ever become necessary to move or remove the physical appurtenances, or any part thereof contemplated herein, on account of change in location of the highway, widening of the highway, or for any other sufficient reason, such moving shall be done on demand of the Department at the expense of the Permittee.**
7. **RESTORATION OF HIGHWAY FACILITIES UPON MOVING OR REMOVING OF PHYSICAL APPURTENANCES: If, and when, the physical appurtenances contemplated herein shall be moved or removed, either on the demand of the Department or at the option of the Permittee, the highway and facilities shall immediately be restored to their original condition at the expense of the Permittee.**
8. **COSTS: All work in connection with the construction, maintenance, moving or removing of the physical appurtenances contemplated herein shall be done by and at the expense of the Permittee.**
9. **ADDITIONAL PERMISSIONS: (a) It is distinctly understood that this permit does not in any way grant or release any rights lawfully possessed by the abutting property owners. The Permittee shall secure any such rights, as necessary, from said abutting property owners. (b) The Permittee shall be responsible for obtaining all other approvals or permits necessary for installation of the encroachment from other government entities. (c) There shall be no excavation of soil nearer than two feet to any public utility line or appurtenant facility except with the consent of the owner thereof, or except upon special permission of this Department after an opportunity to be heard is given the owner of such line or appurtenant facility.**
10. **ADDITIONAL WORK PERFORMANCE: (a) All crossings over the highway shall be constructed in accordance with "Specifications for Overhead Crossings of Light and Power Transmission Lines and Telegraph Lines over each other and over Highway Rights of Way in South Carolina," as approved by the Public Service Commission of South Carolina and**

effective as of date of this permit.

(b) All tunneling, boring, or jacking shall be done in such a way as not to disturb the highway surfacing. (c) No pavement shall be cut unless specifically authorized herein. (d) No excavation shall be nearer than three feet to the edge of pavement unless specifically authorized herein.

(e) Underground facilities will be located at minimum depths as defined in the "Utility Accommodations Manual" for the transmittant, generally as follows: 4 feet minimum for hazardous or dangerous transmittant, 3 feet minimum for other lines. The Department may approve shallower depths if adequate protection is provided. Such approval must be obtained in writing. (f) Service and other small diameter pipes shall be jacked, driven, or otherwise forced underneath the pavements on any surfaced road without disturbing the pavement. The section under the highway pavement and within a distance of three (3) feet on either side shall be continuous without joints.

11. ACCESS:

(a) Permittee is responsible for maintaining reasonable access to private driveways during construction. (b) It is expressly provided that, with respect to any limited access highway, the Permittee shall not have or gain access from the main traveled way of the highway, or the on or off ramps to such facility, except upon approval by the Department.

12. DRIVEWAYS:

(a) The existing crown of the highway shall be continued to the outside shoulder line of the highway. (b) If the driveway or approach is concrete pavement, the pavement shall be constructed at least 6 inches thick and with a minimum of class 2500 concrete. There shall be a bituminous expansion joint, not less than 3/4 inches in thickness, placed between the highway paving and the paving of the approach for the full width of the approach.

13. BEAUTIFICATION:

(a) All trees, plants, flowers, etc. shall be placed in accordance with the provisions specifically stipulated herein.

(b) All trees, plants, flowers, etc. shall be maintained by, and at the expense of, the Permittee and the provisions of this permit shall become null and void, if and when said Permittee ceases to maintain aid trees, plants, flowers, etc.

14. AS-BUILT PLANS:

(a) The applicant shall provide the Department with survey-quality as-built plans in accordance with the requirements set forth in the Department's "A Policy for Accommodating Utilities on Highway Rights of Way".

Subject: SC811 1412302237 Normal Ticket
From: tickets@sc1pups.org
Date: Tue, Dec 30, 2014 5:00 pm
To: <info@petratechenv.com>

SC811 LOCATE NOTICE REQUEST # 1412302237

Old Ticket#:
Taken Date: 12/30/14
Update: 01/22/15
Source: Web

Created By: AGR
Work Date: 01/05/15 23:59
Good Through: 01/27/15

Caller Information

PETRA-TECH ENVIRONMENTAL
2435 E. North St., STE 1108-202
Greenville, SC 29615
Fax:

Caller: Kaye Burch
Phone: (864) 678-0904
Email: info@petratechenv.com
Type: Other

Site Contact

Name: Kaye Burch
Phone: (864) 678-0904

Email: kburch@petratechenv.com
CallBack: 8646312490

Excavation Information

SC County: GREENVILLE
Street: W Blue Ridge Dr
Intersection: W Parker Road
Subdivision:

Place: GREENVILLE
Adds In Instr: N

Instructions: Mark grassy area/median between W Parker Road and W Blue Ridge Drive, beginning with intersection of W Blue Ridge Drive and W Parker Road for ~ 100 feet into grassy area

Directions: Grassy area between W Parker Road and W Blue Ridge Drive, across the street from 821 W Parker Road

Remarks:

Lat/Long: 34.864921,-82.434246
Second: 34.865215,-82.433676
Explosives: N PreMark: N Drilling/Boring: Y Near RailRoad: N
Work Type: MONITORING WELLS, INSTALLATION
Done By: Petra-Tech Environmental
Done For:
Duration: ~1.5 months

Member Utilities Notified:

Code	Name	Field Contact:	Damage Contact:
BSZT29	AT&T/D - BSZT29	Jason McNaughton USIC (260) 802-1105	ATT/D Damage (877) 737-2478
DPCZ02	Duke Energy - DPCZ02	USIC Duke (800) 778-9140	Duke Power-On (800) 769-3766
GVW60	Greenville Water	Not Provided	Not Provided
PSF46	Parker Sewer & Fire Subdistrict	TREMEIR JOHNSON (864) 304-6123	Ashley Malone (864) 304-6055
PNGZ81	Piedmont Natural Gas-Greenville	Not Provided	Not Provided

Color Code marking used by SC811 facility members are:
Red - Electric Yellow - Gas Orange - Communication, Telephone, Cable TV Blue - Water Green - Sewer

Per the 2012 state law 'Tolerance zone' means:
(a) if the diameter of the facility is known, the distance of one-half of the known diameter plus twenty-four inches on either side of the designated center line;
(b) if the diameter of the facility is not marked, twenty-four inches on either side of the outside-edge of the mark indicating a facility; or
(c) for subaqueous facilities, a clearance of fifteen feet on either side of the indicated facility.

Any utilities that are not stated must be notified directly. SC811 utility members mark only the underground facility lines they maintain.

When the excavation site cannot be clearly and adequately identified within the area described in the notice, the excavator must designate the route, specific area to be excavated, or both, by pre-marking before the operator performs a locate. Pre-marking must be made with white paint, flags or stakes.

Subject: SC811 1412302231 Normal Ticket
From: tickets@sc1pups.org
Date: Tue, Dec 30, 2014 4:55 pm
To: <info@petratechenv.com>

SC811 LOCATE NOTICE REQUEST # 1412302231

Old Ticket#:
Taken Date: 12/30/14
Update: 01/22/15
Source: Web

Created By: JJR
Work Date: 01/05/15 23:59
Good Through: 01/27/15

Caller Information

PETRA-TECH ENVIRONMENTAL
2435 E. North St., STE 1108-202
Greenville, SC 29615
Fax:

Caller: Kaye Burch
Phone: (864) 678-0904
Email: info@petratechenv.com
Type: Other

Site Contact

Name: Kaye Burch
Phone: (864) 678-0904

Email: kburch@petratechenv.com
CallBack: 8646312490

Excavation Information

SC County: GREENVILLE
Street: W Parker Rd
Intersection: W Blue Ridge Drive
Subdivision:

Place: GREENVILLE
Adds In Instr: N

Instructions: Mark DOT right of way, all sides, at 4 way intersection of W Parker Road and W Blue Ridge Drive for ~ 25 feet in all directions

Directions: 4 way intersection of W Parker Rd and W Blue Ridge Drive

Remarks:

Lat/Long: 34.865104,-82.433641
Second: 34.865266,-82.433425
Explosives: N PreMark: N Drilling/Boring: Y Near RailRoad: N
Work Type: MONITORING WELLS, INSTALLATION
Done By: Petra-Tech Environmental
Done For:
Duration: ~1.5 months

Member Utilities Notified:

Code	Name	Field Contact:	Damage Contact:
BSZT29	AT&T/D - BSZT29	Jason McNaughton USIC (260) 802-1105	ATT/D Damage (877) 737-2478
DPCZ02	Duke Energy - DPCZ02	USIC Duke (800) 778-9140	Duke Power-On (800) 769-3766
GVW60	Greenville Water	Not Provided	Not Provided
PSF46	Parker Sewer & Fire Subdistrict	TREMEIR JOHNSON (864) 304-6123	Ashley Malone (864) 304-6055
PNGZ81	Piedmont Natural Gas-Greenville	Not Provided	Not Provided

Color Code marking used by SC811 facility members are:
Red - Electric Yellow - Gas Orange - Communication, Telephone, Cable TV Blue - Water Green - Sewer

Per the 2012 state law 'Tolerance zone' means:
(a) if the diameter of the facility is known, the distance of one-half of the known diameter plus twenty-four inches on either side of the designated center line;
(b) if the diameter of the facility is not marked, twenty-four inches on either side of the outside-edge of the mark indicating a facility; or
(c) for subaqueous facilities, a clearance of fifteen feet on either side of the indicated facility.

Any utilities that are not stated must be notified directly. SC811 utility members mark only the underground facility lines they maintain.

When the excavation site cannot be clearly and adequately identified within the area described in the notice, the excavator must designate the route, specific area to be excavated, or both, by pre-marking before the operator performs a locate. Pre-marking must be made with white paint, flags or stakes.

Subject: SC811 1412302224 Normal Ticket
From: tickets@sc1pups.org
Date: Tue, Dec 30, 2014 4:51 pm
To: <info@petratechenv.com>

SC811 LOCATE NOTICE REQUEST # 1412302224

Old Ticket#:
Taken Date: 12/30/14
Update: 01/22/15
Source: Web

Created By: JJR
Work Date: 01/05/15 23:59
Good Through: 01/27/15

Caller Information

PETRA-TECH ENVIRONMENTAL
2435 E. North St., STE 1108-202
Greenville, SC 29615
Fax:

Caller: Kaye Burch
Phone: (864) 678-0904
Email: info@petratechenv.com
Type: Other

Site Contact

Name: Kaye Burch
Phone: (864) 678-0904

Email: kburch@petratechenv.com
CallBack: 8646312490

Excavation Information

SC County: GREENVILLE
Street: 821 W Parker Rd
Intersection: W Blue Ridge Drive
Subdivision:

Place: GREENVILLE
Adds In Instr: N

Instructions: Mark entire property at 821 W. Parker Road

Directions: Site is a Westside Quick Stop

Remarks:

Lat/Long: 34.864694,-82.433423
Second: 34.864694,-82.433423
Explosives: N PreMark: N Drilling/Boring: Y Near RailRoad: N
Work Type: MONITORING WELLS, INSTALLATION
Done By: Petra-Tech Environmental
Done For:
Duration: ~1.5 months

Member Utilities Notified:

Code	Name	Field Contact:	Damage Contact:
BSZT29	AT&T/D - BSZT29	Jason McNaughton USIC (260) 802-1105	ATT/D Damage (877) 737-2478
DPCZ02	Duke Energy - DPCZ02	USIC Duke (800) 778-9140	Duke Power-On (800) 769-3766
GVW60	Greenville Water	Not Provided	Not Provided
PSF46	Parker Sewer & Fire Subdistrict	TREMEIR JOHNSON (864) 304-6123	Ashley Malone (864) 304-6055
PNGZ81	Piedmont Natural Gas-Greenville	Not Provided	Not Provided

Color Code marking used by SC811 facility members are:
Red - Electric Yellow - Gas Orange - Communication, Telephone, Cable TV Blue - Water Green - Sewer

Per the 2012 state law 'Tolerance zone' means:
(a) if the diameter of the facility is known, the distance of one-half of the known diameter plus twenty-four inches on either side of the designated center line;
(b) if the diameter of the facility is not marked, twenty-four inches on either side of the outside-edge of the mark indicating a facility; or
(c) for subaqueous facilities, a clearance of fifteen feet on either side of the indicated facility.

Any utilities that are not stated must be notified directly. SC811 utility members mark only the underground facility lines they maintain.

When the excavation site cannot be clearly and adequately identified within the area described in the notice, the excavator must designate the route, specific area to be excavated, or both, by pre-marking before the operator performs a locate. Pre-marking must be made with white paint, flags or stakes.

If any damage result from excavation or demolition where the damage results in the escape of any flammable, toxic, or

Subject: SC811 1412302223 Normal Ticket
From: tickets@sc1pups.org
Date: Tue, Dec 30, 2014 4:51 pm
To: <info@petratechenv.com>

SC811 LOCATE NOTICE REQUEST # 1412302223

Old Ticket#:
Taken Date: 12/30/14
Update: 01/22/15
Source: Web

Created By: JJR
Work Date: 01/05/15 23:59
Good Through: 01/27/15

Caller Information

PETRA-TECH ENVIRONMENTAL
2435 E. North St., STE 1108-202
Greenville, SC 29615
Fax:

Caller: Kaye Burch
Phone: (864) 678-0904
Email: info@petratechenv.com
Type: Other

Site Contact

Name: Kaye Burch
Phone: (864) 678-0904

Email: kburch@petratechenv.com
CallBack: 8646312490

Excavation Information

SC County: GREENVILLE
Street: W Parker Rd
Intersection: W Blue Ridge Drive
Subdivision:

Place: GREENVILLE
Adds In Instr: N

Instructions: Mark DOT right of way, both sides, on W Parker Road beginning with intersection of W Parker Road and W Blue Ridge Drive toward Speed Street for ~ 300 feet

Directions: Near Westside Quick Stop

Remarks:

Lat/Long: 34.864686,-82.433559
Second: 34.865214,-82.432791
Explosives: N PreMark: N Drilling/Boring: Y Near RailRoad: N
Work Type: MONITORING WELLS, INSTALLATION
Done By: Petra-Tech Environmental
Done For:
Duration: ~1.5 months

Member Utilities Notified:

Code	Name	Field Contact:	Damage Contact:
BSZT29	AT&T/D - BSZT29	Jason McNaughton USIC (260) 802-1105	ATT/D Damage (877) 737-2478
DPCZ02	Duke Energy - DPCZ02	USIC Duke (800) 778-9140	Duke Power-On (800) 769-3766
GVW60	Greenville Water	Not Provided	Not Provided
PSF46	Parker Sewer & Fire Subdistrict	TREMEIR JOHNSON (864) 304-6123	Ashley Malone (864) 304-6055
PNGZ81	Piedmont Natural Gas-Greenville	Not Provided	Not Provided

Color Code marking used by SC811 facility members are:
Red - Electric Yellow - Gas Orange - Communication, Telephone, Cable TV Blue - Water Green - Sewer

Per the 2012 state law 'Tolerance zone' means:
(a) if the diameter of the facility is known, the distance of one-half of the known diameter plus twenty-four inches on either side of the designated center line;
(b) if the diameter of the facility is not marked, twenty-four inches on either side of the outside-edge of the mark indicating a facility; or
(c) for subaqueous facilities, a clearance of fifteen feet on either side of the indicated facility.

Any utilities that are not stated must be notified directly. SC811 utility members mark only the underground facility lines they maintain.

When the excavation site cannot be clearly and adequately identified within the area described in the notice, the excavator must designate the route, specific area to be excavated, or both, by pre-marking before the operator performs a locate. Pre-marking must be made with white paint, flags or stakes.

Subject: SC811 1412302219 Normal Ticket
From: tickets@sc1pups.org
Date: Tue, Dec 30, 2014 4:48 pm
To: <info@petratechenv.com>

SC811 LOCATE NOTICE REQUEST # 1412302219

Old Ticket#:
Taken Date: 12/30/14
Update: 01/22/15
Source: Web

Created By: JJR
Work Date: 01/05/15 23:59
Good Through: 01/27/15

Caller Information

PETRA-TECH ENVIRONMENTAL
2435 E. North St., STE 1108-202
Greenville, SC 29615
Fax:

Caller: Kaye Burch
Phone: (864) 678-0904
Email: info@petratechenv.com
Type: Other

Site Contact

Name: Kaye Burch
Phone: (864) 678-0904

Email: kburch@petratechenv.com
CallBack: 8646312490

Excavation Information

SC County: GREENVILLE
Street: W Blue Ridge Dr
Intersection: W Parker Road
Subdivision:

Place: GREENVILLE
Adds In Instr: N

Instructions: Mark DOT right of way, both sides, on W Blue Ridge Drive beginning with intersection of W Blue Ridge Drive and W Parker Road, South down W. Blue Ridge Drive, ~ 370 feet (towards Hoyt Street)

Directions: near Westside Quick Stop

Remarks:

Lat/Long: 34.864483,-82.434396
Second: 34.865191,-82.433532
Explosives: N PreMark: N Drilling/Boring: Y Near RailRoad: N
Work Type: MONITORING WELLS, INSTALLATION
Done By: Petra-Tech Environmental
Done For:
Duration: ~1.5 months

Member Utilities Notified:

Code	Name	Field Contact:	Damage Contact:
BSZT29	AT&T/D - BSZT29	Jason McNaughton USIC (260) 802-1105	ATT/D Damage (877) 737-2478
DPCZ02	Duke Energy - DPCZ02	USIC Duke (800) 778-9140	Duke Power-On (800) 769-3766
GVW60	Greenville Water	Not Provided	Not Provided
PSF46	Parker Sewer & Fire Subdistrict	TREMEIR JOHNSON (864) 304-6123	Ashley Malone (864) 304-6055
PNGZ81	Piedmont Natural Gas-Greenville	Not Provided	Not Provided

Color Code marking used by SC811 facility members are:
Red - Electric Yellow - Gas Orange - Communication, Telephone, Cable TV Blue - Water Green - Sewer

Per the 2012 state law 'Tolerance zone' means:
(a) if the diameter of the facility is known, the distance of one-half of the known diameter plus twenty-four inches on either side of the designated center line;
(b) if the diameter of the facility is not marked, twenty-four inches on either side of the outside-edge of the mark indicating a facility; or
(c) for subaqueous facilities, a clearance of fifteen feet on either side of the indicated facility.

Any utilities that are not stated must be notified directly. SC811 utility members mark only the underground facility lines they maintain.

When the excavation site cannot be clearly and adequately identified within the area described in the notice, the excavator must designate the route, specific area to be excavated, or both, by pre-marking before the operator performs a locate. Pre-marking must be made with white paint, flags or stakes.

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ENVIRONMENTAL, LLC

SITE ACCESS AGREEMENT

This **SITE ACCESS AGREEMENT** ("Agreement") is entered into by 1-9-2015 "**Owner**," and **UST #12430**.

WHEREAS, **Owner** owns the property (the "Property") described as follows:
Tax Map ID 0143000301000 located at 902 Parker, Greenville, Greenville County, SC

WHEREAS, **UST #12430** owned the nearby lot located at 821 W. Parker Road, Greenville, South Carolina proximal to the Property (the "Proximal Property");

WHEREAS, the **South Carolina Department of Health and Environmental Control, (SCDHEC)** is requiring **UST #12430** to conduct certain assessment activities relating to groundwater contamination present on the Proximal Property; and

WHEREAS, for **UST #12430** to conduct the testing relating to these assessment activities, **UST #12430** needs the permission of **owner** to enter onto the Proximal Property in order to conduct the assessment activities specified herein.

NOW, THEREFORE, **UST #12430** and **Owner** agree as follows:

1. Owner hereby grants **UST #12430** and its employees, agents servants, contractors, and subcontractors (collectively "**UST #12430**" for this Agreement) permission to enter upon Owner's Proximal Property, as necessary, to conduct Geoprobe screening borings and install a groundwater monitoring well(s), for sampling of the groundwater as required by the SCDHEC.

2. The boring(s) will not limit or obstruct use of the property. Any waste materials generated by the installation activities will be properly handled and disposed of by **UST #12430**.

3. **UST #12430** will restore the Property to similar surficial condition and stability as existed prior to the performance of the borings with the exception of a two foot by two foot concrete pad installed flush with the ground in a manner consistent with State requirements. **UST #12430** will take reasonable measures to prevent soil erosion as a result of assessment activities and will repair the site disturbances resulting from assessment activities.

4. This Agreement shall become effective on the date of execution by the last executing Party.

5. **Owner** hereby agrees that all parties with an interest in the Property are signing this document as **Owner**.

OWNER NAME: Roxana Lima

OWNER SIGNATURE: Roxana Lima

DATE: 1-9-2015 PHONE: 864 421-2464

PTE Job No. J14-049-A

EMAIL: roxy6304@yahoo.com

Print | Close Window

Subject: Petra-Tech Environmental Screening Update
From: kburch@petratechenv.com
Date: Tue, Feb 03, 2015 10:28 am
To: roxy6304@yahoo.com
Attach: sigimg0

Ms. Lima,

I attempted to call you at 864.421.2464 but was unable to get through.

I wanted to inform you that Petra-Tech Environmental will be on site this week to perform screening on your property listed as 902 W. Parker Road.

This is in accordance with a Site Access agreement signed by you on January 9, 2015.

Please feel free to contact me with any questions or concerns.

Thanks,

Kaye Burch
Office Manager
kburch@petratechenv.com

petra-tech
ENVIRONMENTAL, LLC

2435 East North Street, Suite 1108-202
Greenville, South Carolina 29615

(864) 678-0904 (phone)
(888) 838-9034 (fax)

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SITE ACCESS AGREEMENT

This **SITE ACCESS AGREEMENT** ("Agreement") is entered into by ROBERT L. JACKSON "**Owner**," and **UST #12430**.

WHEREAS, **Owner** owns the property (the "Property") described as follows:
Tax Map ID 0134000500400 located at 903 Parker, Greenville, Greenville County, SC

WHEREAS, **UST #12430** owned the nearby lot located at 821 W. Parker Road, Greenville, South Carolina proximal to the Property (the "Proximal Property");

WHEREAS, the **South Carolina Department of Health and Environmental Control, (SCDHEC)** is requiring **UST #12430** to conduct certain assessment activities relating to groundwater contamination present on the Proximal Property; and

WHEREAS, for **UST #12430** to conduct the testing relating to these assessment activities, **UST #12430** needs the permission of **owner** to enter onto the Proximal Property in order to conduct the assessment activities specified herein.

NOW, THEREFORE, **UST #12430** and **Owner** agree as follows:

1. Owner hereby grants **UST #12430** and its employees, agents servants, contractors, and subcontractors (collectively "**UST #12430**" for this Agreement) permission to enter upon Owner's Proximal Property, as necessary, to conduct Geoprobe screening borings and install a groundwater monitoring well(s), for sampling of the groundwater as required by the SCDHEC.

2. The boring(s) will not limit or obstruct use of the property. Any waste materials generated by the installation activities will be properly handled and disposed of by **UST #12430**.

3. **UST #12430** will restore the Property to similar surficial condition and stability as existed prior to the performance of the borings with the exception of a two foot by two foot concrete pad installed flush with the ground in a manner consistent with State requirements. **UST #12430** will take reasonable measures to prevent soil erosion as a result of assessment activities and will repair the site disturbances resulting from assessment activities.

4. This Agreement shall become effective on the date of execution by the last executing Party, AND ENDS BY JUNE 30, 2015 RJJ

5. **Owner** hereby agrees that all parties with an interest in the Property are signing this document as **Owner**.

OWNER NAME: ROBERT L JACKSON

OWNER SIGNATURE: Robert L Jackson

DATE: JAN 20, 2015 PHONE: 864-269-9779

PTE Job No. J14-049-A

EMAIL: JACKSONBFV@YAHOO.COM

Print | Close Window

Subject: Petra-Tech Environmental Screening Update
From: kburch@petratechenv.com
Date: Tue, Feb 03, 2015 10:31 am
To: jacksonbvg@yahoo.com
Attach: sigimg0

Mr. Jackson,

I attempted to call you at 864.269.9779 but was unable to get through.

I wanted to inform you that Petra-Tech Environmental will be on site this week to perform screening on your property listed as 903 W Parker Road.

This is in accordance with a Site Access agreement signed by you on January 20, 2015.

Please feel free to contact me with any questions or concerns.

Thanks,

Kaye Burch
Office Manager
kburch@petratechenv.com
petra-tech
ENVIRONMENTAL, LLC

2435 East North Street, Suite 1108-202
Greenville, South Carolina 29615

(864) 678-0904 (phone)
(888) 838-9034 (fax)

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SITE ACCESS AGREEMENT

This **SITE ACCESS AGREEMENT** ("Agreement") is entered into by Richard T Cobb "**Owner**," and **UST #12430**.

WHEREAS, **Owner** owns the property (the "Property") described as follows:
Tax Map ID 0143000300900 located at 810 Parker, Greenville, Greenville County, SC

WHEREAS, **UST #12430** owned the nearby lot located at 821 W. Parker Road, Greenville, South Carolina proximal to the Property (the "Proximal Property");

WHEREAS, the **South Carolina Department of Health and Environmental Control, (SCDHEC)** is requiring **UST #12430** to conduct certain assessment activities relating to groundwater contamination present on the Proximal Property; and

WHEREAS, for **UST #12430** to conduct the testing relating to these assessment activities, **UST #12430** needs the permission of **owner** to enter onto the Proximal Property in order to conduct the assessment activities specified herein.

NOW, THEREFORE, **UST #12430** and **Owner** agree as follows:

1. Owner hereby grants **UST #12430** and its employees, agents servants, contractors, and subcontractors (collectively "**UST #12430**" for this Agreement) permission to enter upon Owner's Proximal Property, as necessary, to conduct Geoprobe screening borings and install a groundwater monitoring well(s), for sampling of the groundwater as required by the SCDHEC.

2. The boring(s) will not limit or obstruct use of the property. Any waste materials generated by the installation activities will be properly handled and disposed of by **UST #12430**.

3. **UST #12430** will restore the Property to similar surficial condition and stability as existed prior to the performance of the borings with the exception of a two foot by two foot concrete pad installed flush with the ground in a manner consistent with State requirements. **UST #12430** will take reasonable measures to prevent soil erosion as a result of assessment activities and will repair the site disturbances resulting from assessment activities.

4. This Agreement shall become effective on the date of execution by the last executing Party.

5. **Owner** hereby agrees that all parties with an interest in the Property are signing this document as **Owner**.

OWNER NAME: Richard T. Cobb / RTC Real Estate

OWNER SIGNATURE: [signature]

DATE: 1/14/15 PHONE: 864-304 4289

PTE Job No. J14-049-A EMAIL: tcobb@piedmontparkfire.org

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ENVIRONMENTAL, LLC

SITE ACCESS AGREEMENT

This **SITE ACCESS AGREEMENT** ("Agreement") is entered into by Michael L Poore "**Owner,**" and **UST #12430**.

WHEREAS, **Owner** owns the property (the "Property") described as follows:
Tax Map ID 0143000300800 located at 808 Parker , Greenville, Greenville County, SC

WHEREAS, **UST #12430** owned the nearby lot located at 821 W. Parker Road, Greenville, South Carolina proximal to the Property (the "Proximal Property");

WHEREAS, the **South Carolina Department of Health and Environmental Control, (SCDHEC)** is requiring **UST #12430** to conduct certain assessment activities relating to groundwater contamination present on the Proximal Property; and

WHEREAS, for **UST #12430** to conduct the testing relating to these assessment activities, **UST #12430** needs the permission of **owner** to enter onto the Proximal Property in order to conduct the assessment activities specified herein.

NOW, THEREFORE, **UST #12430** and **Owner** agree as follows:

1. Owner hereby grants **UST #12430** and its employees, agents servants, contractors, and subcontractors (collectively "**UST #12430**" for this Agreement) permission to enter upon Owner's Proximal Property, as necessary, to conduct Geoprobe screening borings and install a groundwater monitoring well(s), for sampling of the groundwater as required by the SCDHEC.

2. The boring(s) will not limit or obstruct use of the property. Any waste materials generated by the installation activities will be properly handled and disposed of by **UST #12430**.

3. **UST #12430** will restore the Property to similar surficial condition and stability as existed prior to the performance of the borings with the exception of a two foot by two foot concrete pad installed flush with the ground in a manner consistent with State requirements. **UST #12430** will take reasonable measures to prevent soil erosion as a result of assessment activities and will repair the site disturbances resulting from assessment activities.

4. This Agreement shall become effective on the date of execution by the last executing Party.

5. **Owner** hereby agrees that all parties with an interest in the Property are signing this document as **Owner**.

OWNER NAME: Michael L. Poore

OWNER SIGNATURE: Michael L. Poore by Jean P. Cobb, Legal Custodian

DATE: _____ PHONE: 864-855-5577

PTE Job No. J14-049-A

EMAIL: jeancobb@charter.net

petra-tech
ENVIRONMENTAL, LLC

SITE ACCESS AGREEMENT

This **SITE ACCESS AGREEMENT** ("Agreement") is entered into by _____ **"Owner,"** and **UST #12430**.

WHEREAS, **Owner** owns the property (the "Property") described as follows:
Tax Map ID 0135000101200 located at 2209 Blue Ridge, Greenville, Greenville County, SC

WHEREAS, **UST #12430** owned the nearby lot located at 821 W. Parker Road, Greenville, South Carolina proximal to the Property (the "Proximal Property");

WHEREAS, the **South Carolina Department of Health and Environmental Control, (SCDHEC)** is requiring **UST #12430** to conduct certain assessment activities relating to groundwater contamination present on the Proximal Property; and

WHEREAS, for **UST #12430** to conduct the testing relating to these assessment activities, **UST #12430** needs the permission of **owner** to enter onto the Proximal Property in order to conduct the assessment activities specified herein.

NOW, THEREFORE, **UST #12430** and **Owner** agree as follows:

1. Owner hereby grants **UST #12430** and its employees, agents servants, contractors, and subcontractors (collectively **"UST #12430"** for this Agreement) permission to enter upon Owner's Proximal Property, as necessary, to conduct Geoprobe screening borings and install a groundwater monitoring well(s), for sampling of the groundwater as required by the SCDHEC.

2. The boring(s) will not limit or obstruct use of the property. Any waste materials generated by the installation activities will be properly handled and disposed of by **UST #12430.**

3. **UST #12430** will restore the Property to similar surficial condition and stability as existed prior to the performance of the borings with the exception of a two foot by two foot concrete pad installed flush with the ground in a manner consistent with State requirements. **UST #12430** will take reasonable measures to prevent soil erosion as a result of assessment activities and will repair the site disturbances resulting from assessment activities.

4. This Agreement shall become effective on the date of execution by the last executing Party.

5. **Owner** hereby agrees that all parties with an interest in the Property are signing this document as **Owner**.

OWNER NAME: Leslie Guerra

OWNER SIGNATURE: _____

DATE: 1/26/14

PHONE: 864-275-5130

EMAIL: lesliegguerra@att.net

PTE Job No. J14-049-A

2435 E. North Street, Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.petratechenv.com

Robert Jackson

Print | Close Window

Subject: Petra-Tech Environmental Map
From: kburch@petratechenv.com
Date: Tue, Jan 06, 2015 4:51 pm
To: jacksonbgv@yahoo.com
Attach: sigimg0
Westside Grocery Well Locations .pdf

Mr. Jackson,

I appreciate you taking the time to call me today concerning Site Access for PTE Job No. J14-049-A.

Please see the attached document for monitoring well locations for this site. I have circled the well locations concerning your property in black.

If needed, the well locations can be changed to the boundary of your property, and we can write a different Site Access Agreement that states that you only agree to well installation on your property boundary.

If you have any remaining issues about the Site Access Agreement, please contact me at 864.678.0904 / 864.631.2490 or you may speak with our project hydrogeologist, Trever Slack, at 864.436.6322.

I thank you in advance for your help!

Thanks,

Kaye Burch
Office Manager
kburch@petratechenv.com
petra-tech
ENVIRONMENTAL, LLC

2435 East North Street, Suite 1108-202
Greenville, South Carolina 29615

(864) 678-0904 (phone)
(888) 838-9034 (fax)

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called 1/6/2015 4:40pm 4 concerns
ab Site Access 864-498-1873

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petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Return to Sender

Quick Flora N
906 W Parker Rd
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 906 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000400200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Eighmey Alfonso J
10 Fortner St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 10 FORTNER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000301500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___ Mail to: _____

___ Email to: _____

OWNER: Alfonso Eighmey DATE: 12-19-14

PHONE: 8645593209 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Swafford H L
10 Marchant St
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 10 MARCHANT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000301400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Horace L Swafford DATE: 12-22-14

PHONE: 8642463819 EMAIL: —

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

H & L Properties LLC
101 Sugar Mill Rd
Greer, SC 29650

Subject: Water Supply Well Survey and Request to Sample
Properties located at 802 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000300601
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓No UNKNOWN
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Hal Dill DATE: 12/22/14

PHONE: 864-380-5400 EMAIL: HLDILL25@AOL.COM

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Smith Rita
10 Beattie St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 10 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000101100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

City View Baptist Church
100 Crestone Dr
Greenville, SC 29611

Return to Sender

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2300 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000700300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Hughes Tina Renner Melissa & etal
1 Hoyt St
Greenville, SC 29611

Return to Sender

Subject: Water Supply Well Survey and Request to Sample
Properties located at 1 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Owen Thomas M
22 N YMCA St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 22 YMCA in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000200800
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Solomon Anthony G & Angela D
21 Blue Ridge Dr
Travelers Rest, SC 29690

Subject: Water Supply Well Survey and Request to Sample
Properties located at 8 SPEED in Greenville, Greenville County, SC
Tax Map ID / Parcel # 142002200800
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
/ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Ravan William G & Jane S
219 Lily St
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2011 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000200700
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: William G - James Ravan DATE: 1-3-14

PHONE: 864-246-5985 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Kateman Dawn L
124 Oak St
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 207 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001001000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
_√_ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Smith Harold D Smith Millie J
2215 W Blue Ridge Dr
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2215 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000101300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

✓ Mail to: 2215 W. Blue Ridge Dr. Gville, SC,

___ Email to: _____

OWNER: Millie J. Smith DATE: 1/3/15

PHONE: 271-1340 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Roy Subroto K Revoc Trust
102 Bexhill Ct
Greenville, SC 29609

Subject: Water Supply Well Survey and Request to Sample
Properties located at 6 MONAGHAN in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000600700
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Entrust Carolinas LLC
16 Scarlett St
Greenville, SC 29607

Subject: Water Supply Well Survey and Request to Sample
Properties located at 314 MONTANA in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001002500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Dwayne Welborn DATE: 1-5-15

PHONE: 864 346 7988 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Rowley Brenda G (L-est)
3 Hoyt St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 3 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000200900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
√ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes √ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Brenda Rowley DATE: 1/4/15

PHONE: 864-233-8201 EMAIL: N/A

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

White Cyndia R
167 Sugar Dr
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 707 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001000101
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

White Cyndia R
167 Sugar Dr
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 707 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001000100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Williams Thomas
1 Speed St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 1 SPEED in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000300400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Rojas Celsa Rojas Jose Carmen Noyola
2 Cobb St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation N/A ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses: N/A

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: [signature] DATE: 1-3-15

PHONE: 864-787-1722 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

[signature]
Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Yonce Carolyn P
15 Hoyt St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 15 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000200300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___ Mail to: _____

___ Email to: _____

OWNER: _____ DATE: _____

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

McKinney Roger B
12 Hoyt St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 12 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000101600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Norris Kathy Ann Norris Barry Lamar
11 Hoyt St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 11 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000200500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Barry F. Norris DATE: 1/3/15

PHONE: 864-313-8195 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

McIntyre H Paul
118 Wicklon Ct
Easley, SC 29642

Subject: Water Supply Well Survey and Request to Sample
Properties located at 10 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000101700
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
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3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

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5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

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___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Campbell Ira Stanley & Barbar
2222 W Blue Ridge Dr
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 4 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000600200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
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2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

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How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

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___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Blackstock Clara Dale
156 Millbrook Cir
Taylors, SC 29687

Subject: Water Supply Well Survey and Request to Sample
Properties located at 215 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001000600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

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___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Morgan Clifford E (Jtwros) Morgan Dianna D (Jtwros)
195 Sandalwood Dr
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2230 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000600400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Edward Morgan DATE: 1-5-2015

PHONE: 864-246-8585 EMAIL: Edward@Edslighting.net

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Palmetto Investors LLC
821 S Main St
Greenville, SC 29601

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2009 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000200600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Palmetto Investors, LLC DATE: Feb 16, 2015

PHONE: 864-449-0188 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Palmetto Investors LLC
821 S Main St
Greenville, SC 29601

Subject: Water Supply Well Survey and Request to Sample
Properties located at 0 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000200400
PTE Job No. J14-049-A

unimproved lot

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Palmetto Investors, LLC DATE: Feb 17, 2015

PHONE: 864-449-8188 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Palmetto Investors LLC
821 S Main St
Greenville, SC 29601

Subject: Water Supply Well Survey and Request to Sample
Properties located at BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000200500
PTE Job No. J14-049-A

unimproved lot

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Palmetto Investors LLC DATE: Feb 17, 2015

PHONE: 864 449-0188 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Vandewalker Wanda
12 Louise Ave
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 12 LOUISE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000401000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Wanda Vandewalker DATE: 1-5-15

PHONE: 864-444-6181 EMAIL: wvandewalker67620charter.net

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Meyer Ronald James & Susan M
17 Louise Ave
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 17 LOUISE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000500900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: _____ DATE: _____

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Conner Janice K
208 Georgewood Way
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2000 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000401100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Kilby Michael C Kilby Richard E
277 Mauldin Rd
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 6 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Moody R Michael
2002 W Blue Ridge Dr
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2002 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000401200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
_√_Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes _√_No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: R Michael Moody DATE: 1-6-15

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Jackson Robert
108 Yown Rd
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 903 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000500400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Robert L Jackson DATE: Jan 6 2015

PHONE: 864-269-9779 EMAIL: Jacksonbbr@yahoo.com

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Cannon Charles
20 Tolar Rd
Travelers Rest, SC 29690

Subject: Water Supply Well Survey and Request to Sample
Properties located at 209 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001000900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___ Mail to: _____

___ Email to: _____

OWNER: Charles Cannon DATE: 1/6/15

PHONE: 864-834-8000 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Kimbell Jim S
126 Hill Dr
Six Mile, SC 29682

Subject: Water Supply Well Survey and Request to Sample
Properties located at 315 YMCA in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000900200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Kimbell Jim S
126 Hill Dr
Six Mile, SC 29682

Subject: Water Supply Well Survey and Request to Sample
Properties located at PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000900101
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Thornton Clarence Jr
17 Beattie St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 17 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 142002100200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property? *Please test our city water
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No (not that we know) (OF, house is 80yrs old)
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: Clarence Thornton, Jr 17 Beattie St Greenville, SC 29611

___Email to: _____

OWNER: X Clarence Thornton DATE: X Jan 7, 2014

PHONE: 864-271-8047 EMAIL: SonnyTdrums@gmail.com

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Chappell Christopher Chappell Douglas & etal
203 Henderson St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 203 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001001100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

King Timmy M & Shirley A
109 Laboone Rd
Easley, SC 29642

Subject: Water Supply Well Survey and Request to Sample
Properties located at 8 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Timmy & Shirley King DATE: 1-8-15

PHONE: (864) 391-5497 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

King Timmy M & Shirley A
109 Laboone Rd
Easley, SC 29642

Subject: Water Supply Well Survey and Request to Sample
Properties located at 12 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201401
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Timmy & Shirley King DATE: 1-8-15

PHONE: (864) 391-5497 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Childress Martha S Childress Thomas A
260 Tanglewood Rd
Union, MO 63084

Subject: Water Supply Well Survey and Request to Sample
Properties located at 4 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000100800
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Montieth John T & Jewell S
214 Henderson St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 214 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000901500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Chavez Yolanda Vazquez Patricia A
205 Fletcher St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 205 FLETCHER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000301000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: _____ DATE: 01/04/2015

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Epps Maria H (L-est)
93a Center Rd
Travelers Rest, SC 29690

Subject: Water Supply Well Survey and Request to Sample
Properties located at 6 FORTNER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000301300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ✓ Not in Use

4) How many residences are connected to the well? ✓ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Roy Dean Ellard DATE: 1/14/15

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Hall Judy E
905 W Parker Rd
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 905 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000500300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

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ENVIRONMENTAL, LLC

December 17, 2014

Ellison Larry M
105 N Gaston St
Kings Mountain, NC 28086

Subject: Water Supply Well Survey and Request to Sample
Properties located at 4 LOUISE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000400900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
√ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes √ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Larry M Ellison DATE: 1-2-15

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Powdersville Holding LLC
Po Box 6562
Greenville, SC 29606

Subject: Water Supply Well Survey and Request to Sample
Properties located at 7 HOLLIS in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001001600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____
X Email to: SNOWBUCKET@AOL.COM

OWNER: Rich Dixon DATE: 1-13-2015
PHONE: 861-295-2011 EMAIL: SNOWBUCKET@AOL.COM

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Butler James L
204 Henderson St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 204 HENDERSON in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000901000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: _____ DATE: _____

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Nimmons Jack H Jr
Po Box 2588
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135001000500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Jack Nimmons JR DATE: 1-14-2015

PHONE: 864-561-3585 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Nimmons Jack H Jr
Po Box 2588
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 106 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135001000200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Jack Nimmons JR DATE: 1-14-2015

PHONE: 864-561-3585 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Nimmons Jack H Jr
Po Box 2588
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 10442 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135001000300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___ Mail to: _____

___ Email to: _____

OWNER: Jack Nimmons JK DATE: 1-14-2015

PHONE: 864-561-3585 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Holcombe Thomas F & Deborah K
238 Courtney Dr
Easley, SC 29640

Subject: Water Supply Well Survey and Request to Sample
Properties located at 115 THOMAS in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000400400
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: _____ DATE: _____

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Grogan Harold C
Po Box 1772
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 907 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000500200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Harold C. Grogan DATE: 1-12-15

PHONE: 864-246-0381 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

438.18

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Foister Bobby Yarbrough Boyd
2170 Chestnut Dr
Westlake, OH 44145

Subject: Water Supply Well Survey and Request to Sample
Properties located at 12 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 142002200900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

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✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Boyd Yarbrough DATE: 1/9/15

PHONE: (864) 313-1988 EMAIL: boyd.yarbrough@gmail.com

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

White Cyndia R
Po Box 1942
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 16 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 142002201100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

White Cyndia R
Po Box 1942
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 20 BEATTIE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 142002201300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

White Roanld J
Po Box 1942
Greenville, SC 29602

Subject: Water Supply Well Survey and Request to Sample
Properties located at 308 FLETCHER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136001002000
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

McCraw Frances J
8 Marchant St
Greenville, SC 29617

Subject: Water Supply Well Survey and Request to Sample
Properties located at 8 MARCHANT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000301300
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Joco Prop A S C Gen Partn
15 Bachman Ct
Greenville, SC 29605

Subject: Water Supply Well Survey and Request to Sample
Properties located at 6 MARCHANT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 143000301200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No Not to owner's knowledge
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Joco Properties, LLC [illegible] DATE: 1/10/2015

PHONE: 864-271-8471 Ext 202 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Cartee Jim H & Linda N
17 Hoyt St
Greenville, SC 29611

Return to Sender

Subject: Water Supply Well Survey and Request to Sample
Properties located at 17 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000200200
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: _____ DATE: _____

PHONE: _____ EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

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www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Craigo William Jody & Adam Troy
18 Southfield Dr
Greenville, SC 29607

Subject: Water Supply Well Survey and Request to Sample
Properties located at 909 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000500100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___ Water Supply Well ___ Stream ___ Other - _____

2) Is there a water supply well on the subject property? ___ Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___ Drinking ___ Irrigation ___ Livestock ___ Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___ Mail to: _____

___ Email to: _____

OWNER: William J Craigo DATE: 1-12-2015

PHONE: 864-553-3978 EMAIL: craigow@bellsouth.net

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Jimenez Edi M Ortiz
2 Star Dr
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 203 FLETCHER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000301100
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
√ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes √ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER:_____ DATE: _____

PHONE:_____ EMAIL:_____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Hendley Patricia A
12 Forest View Dr
Greenville, SC 29605

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2 MONAGHAN in Greenville, Greenville County, SC
Tax Map ID / Parcel # 134000600500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
X Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes X No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Pat Hendley DATE: 1/17/2015

PHONE: 864-915-3094 EMAIL: pathendley@charter.net

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Mauldin Charles E
9 Hoyt St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 9 HOYT in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000200600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Charles E Mauldin DATE: 1-22-2015

PHONE: (864) 235-5216 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.PetraTechEnv.com

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Duncan Gary Ryland Duncan Martha S (Survivorship)
700 W Parker Rd
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 700 PARKER in Greenville, Greenville County, SC
Tax Map ID / Parcel # 136000100600
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Gary Duncan DATE: 1/27/15

PHONE: 864-233-7833 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

Rojas Celsa Rojas Jose (Survivorship)
18 Cobb St
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 18 COBB in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000201900
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
✓ Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ✓ No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? N/A ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

N/A

5) Please provide well construction details (as much is known):
How deep is the well? N/A When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: Jose ROJAS DATE: 1-6-15

PHONE: 864-787-1722 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

December 17, 2014

M & J of Greenville Inc
2219 W Blue Ridge Dr
Greenville, SC 29611

Subject: Water Supply Well Survey and Request to Sample
Properties located at 2219 BLUE RIDGE in Greenville, Greenville County, SC
Tax Map ID / Parcel # 135000101500
PTE Job No. J14-049-A

To Whom It May Concern:

Petra-Tech Environmental, LLC is currently conducting work on behalf of the South Carolina Department of Health and Environmental Control (SCDHEC) to assess the extent of a historical gasoline release from Underground Storage Tank UST Permit #09114, located at 821 W. Parker Road, Greenville, Greenville County, South Carolina. As part of the assessment, Petra-Tech Environmental, LLC is conducting a water supply well survey of properties located within a 1,000-foot radius of the UST system.

Please complete information below to the best of your knowledge and return in the enclosed stamped envelope.

1) What is the source of drinking water for the subject property?
___Public Water ___Water Supply Well ___Stream ___Other - _____

2) Is there a water supply well on the subject property? ___Yes ___No
If "No", please disregard the remaining questions and return survey.

3) What is the well typically used for? ___Drinking ___Irrigation ___Livestock ___Not in Use

4) How many residences are connected to the well? ___ Please list addresses:

_____

5) Please provide well construction details (as much is known):
How deep is the well? _____ When was the well installed? _____
What is the casing depth/screened interval of the well? _____

6) As part of the assessment, Petra-Tech Environmental, LLC can sample your water supply well free-of-charge for the presence of petroleum compounds. Please indicate how you would like to receive the results:

___Mail to: _____

___Email to: _____

OWNER: H.J. Patel DATE: 1/9/15

PHONE: 864-232-8220 EMAIL: _____

Thank you in advance for your help. Please do not hesitate to contact us at 864.678.0904 if you have any questions.
Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist

2435 E. North Str., Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
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WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX K

QAPP CHECKLIST

Contractor Checklist

For each report submitted to the UST Management Division, the contractor will be required to verify that all data elements for the required scope of work have been provided. For items not required for the scope of work, the N/A box should be checked. For items required and not completed or provided, the No box should be checked and a thorough description of the reason must be provided.

Item #	Item	Yes	No	N/A
1	Is Facility Name, Permit #, and address provided?	✓		
2	Is UST Owner/Operator name, address, & phone number provided?	✓		
3	Is name, address, & phone number of current property owner provided?	✓		
4	Is the DHEC Certified UST Site Rehabilitation Contractor's Name, Address, telephone number, and certification number provided?	✓		
5	Is the name, address, telephone number, and certification number of the well driller that installed borings/monitoring wells provided?	✓		
6	Is the name, address, telephone number, and certification number of the certified laboratory(ies) performing analytical analyses provided?	✓		
7	Has the facility history been summarized?	✓		
8	Has the regional geology and hydrogeology been described?	✓		
9	Are the receptor survey results provided as required?	✓		
10	Has current use of the site and adjacent land been described?	✓		
11	Has the site-specific geology and hydrogeology been described?	✓		
12	Has the primary soil type been described?	✓		
13	Have field screening results been described?	✓		
14	Has a description of the soil sample collection and preservation been detailed?	✓		
15	Has the field screening methodology and procedure been detailed?	✓		
16	Has the monitoring well installation and development dates been provided?	✓		
17	Has the method of well development been detailed?	✓		
18	Has justification been provided for the locations of the monitoring wells?	✓		
19	Have the monitoring wells been labeled in accordance with the UST QAPP guidelines?	✓		
20	Has the groundwater sampling methodology been detailed?	✓		
21	Have the groundwater sampling dates and groundwater measurements been provided?	✓		
22	Has the purging methodology been detailed?	✓		
23	Has the volume of water purged from each well been provided along with measurements to verify that purging is complete?	✓		
24	If free-product is present, has the thickness been provided?			✓
25	Does the report include a brief discussion of the assessment done and the results?	✓		
26	Does the report include a brief discussion of the aquifer evaluation and results?	✓		
27	Does the report include a brief discussion of the fate & transport models used?			✓

Item #	Item	Yes	No	N/A
28	Are the site-conceptual model tables included? (Tier 1 Risk Evaluation)			✓
29	Have the exposure pathways been analyzed? (Tier 2 Risk Evaluation)			✓
30	Have the SSTLs for each compound and pathway been calculated? (Tier 2 Risk Evaluation)			✓
31	Have recommendations for further action been provided and explained?	✓		
32	Has the soil analytical data for the site been provided in tabular format? (Table 1)			✓
33	Has the potentiometric data for the site been provided in tabular format? (Table 2)	✓		
34	Has the current and historical laboratory data been provided in tabular format?	✓		
35	Have the aquifer characteristics been provided and summarized on the appropriate form?	✓		
36	Have the Site conceptual model tables been included? (Tier 1 Risk Evaluation)			✓
37	Has the topographic map been provided with all required elements? (Figure 1)	✓		
38	Has the site base map been provided with all required elements? (Figure 2)	✓		
39	Have the CoC site maps been provided? (Figure 3 & Figure 4)	✓		
40	Has the site potentiometric map been provided? (Figure 5)	✓		
41	Have the geologic cross-sections been provided? (Figure 6)	✓		
42	Have maps showing the predicted migration of the CoCs through time been provided? (Tier 2 Risk Evaluation)			✓
43	Has the site survey been provided and include all necessary elements? (Appendix A)	✓		
44	Have the sampling logs, chain of custody forms, and the analytical data package been included with all required elements? (Appendix B)	✓		
45	Is the laboratory performing the analyses properly certified?	✓		
46	Has the tax map been included with all necessary elements? (Appendix C)	✓		
47	Have the soil boring/field screening logs been provided? (Appendix D)	✓		
48	Have the well completion logs and SCDHEC Form 1903 been provided? (Appendix E)	✓		
49	Have the aquifer evaluation forms, data, graphs, equations, etc. been provided? (Appendix F)	✓		
50	Have the disposal manifests been provided? (Appendix G)	✓		
51	Has a copy of the local zoning regulations been provided? (Appendix H)			✓
52	Has all fate and transport modeling been provided? (Appendix I)			✓
53	Have copies of all access agreements obtained by the contractor been provided? (Appendix J)	✓		
54	Has a copy of this form been attached to the final report and are explanations for any missing or incomplete data been provided?	✓		

Explanation for missing and incomplete information?

Project Verifier (signature) Mary Katherine Burch

(print name) Kaye Burch

Date 05/06/15

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX L

QAPP CONTRACTOR ADDENDUM

petra-tech
ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

May 23, 2014

SCDHEC - UST Management Division
Assessment Section
2600 Bull Street
Columbia, SC 29201-1708

Attention: Mr. Jamie Ford

Subject: **Site Specific Work Plan – Tier II Assessment**
Revision Number: 0
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, SC
SCDHEC UST Permit #12430
PTE Job No. J14-049-A

Dear Mr. Ford:

Pursuant to our conversation, Petra-Tech Environmental, LLC submits herein a revised Site Specific Work Plan and associated Tier II Assessment Plan for the subject site on behalf of Mr. Martin Hunt of Environmental Laboratories, Inc. and Westside Quick Stop, Inc. This Site Specific Work Plan and associated Tier II Assessment Plan should take the place of the previously approved Blue Ridge Environmental Services, Inc. QAPP approved on February 27, 2014. We understand that only one QAPP/Site Specific Work Plan can be paid for by the SUPERB Fund.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565

TREVER Z. SLACK REGISTERED No. 2565 SOUTH CAROLINA PROFESSIONAL GEOLOGIST

Lindsey M. Grooms
Principal Engineer

2435 E. North Street, Suite 1108-202, Greenville, SC 29615 | Phone (864) 631-2490 | Fax (888) 838-9034
www.petratechenv.com

D H E C
PROMOTE PROTECT PROSPER

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

To: Jamie Ford (SCDHEC Project Manager)
From: Trever Slack (Contractor Project Manager)
Contractor: Petra-Tech Environmental, LLC UST Contractor Certification Number: UCC-436

Facility Name: Westside Quick Stop UST Permit #: 12430
Facility Address: 821 West Parker Road
Responsible Party: Mr. Mike Wright Phone: 803-382-3906
RP Address: 405 Dove Hill Road
Property Owner (if different): Westside Quick Stop, Inc.
Property Owner Address: 821 West Parker Road
Current Use of Property: Currently utilized as retail fueling station and convenience store

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☑ Tier II
- ☐ Groundwater Sampling
- ☐ GAC
- ☐ Tier I
- ☐ Monitoring Well Installation
- ☐ Other

Analyses (Please check all that apply)

Groundwater/Surface Water:

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

Soil:

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

Air:

- ☐ BTEXN

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

____	Soil	____	Water Supply Wells	____	Air	1	Field Blank
19	Monitoring Wells	____	Surface Water	1	Duplicate	1	Trip Blank

Field Screening Methodology

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

# of shallow points proposed: 18 Estimated Footage: 24 feet per point
# of deep points proposed: 5 Estimated Footage: 49 feet per point
Field Screening Methodology: Direct Push with PID field screening and laboratory confirmation of select samples IAW SOP

Permanent Monitoring Wells

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

# of shallow wells: 13 Estimated Footage: 28 feet per point
# of deep wells: 3 Estimated Footage: 53 feet per point
# of recovery wells: ____ Estimated Footage: ____ feet per point
Monitoring Well development method (consistent with SOP): Surging and pumping IAW SOP

Comments, if warranted:
Deep wells installed outside of the source area will be installed as Type II monitoring wells if it is determined by the on-site geologist that no confining layers are present.

UST Permit #: 12430 Facility Name: Westside Quick Stop

Implementation Schedule (Number of calendar days from approval)
Field Work Start-Up: 06/05/2014 Field Work Completion: 07/05/2014
Report Submittal: 09/05/2014 # of Copies Provided to Property Owners: 4

Aquifer Characterization
Pump Test: ☐ Slug Test: ☒ (Check one and provide explanation below for choice)
Slug test will be completed in two shallow and one deep monitoring well. Slug tests are recommended over pump tests due to the elimination of requirements for petroleum impacted water disposal. Additionally, slug tests minimize the cone of depression associated with pump test drawdown, reducing the transport of petroleum compounds from shallow to deeper aquifer zones.

Investigation Derived Waste Disposal
Soil: 5 Tons Purge Water: 100 Gallons
Drilling Fluids: 25 Gallons Free-Phase Product: 0 Gallons

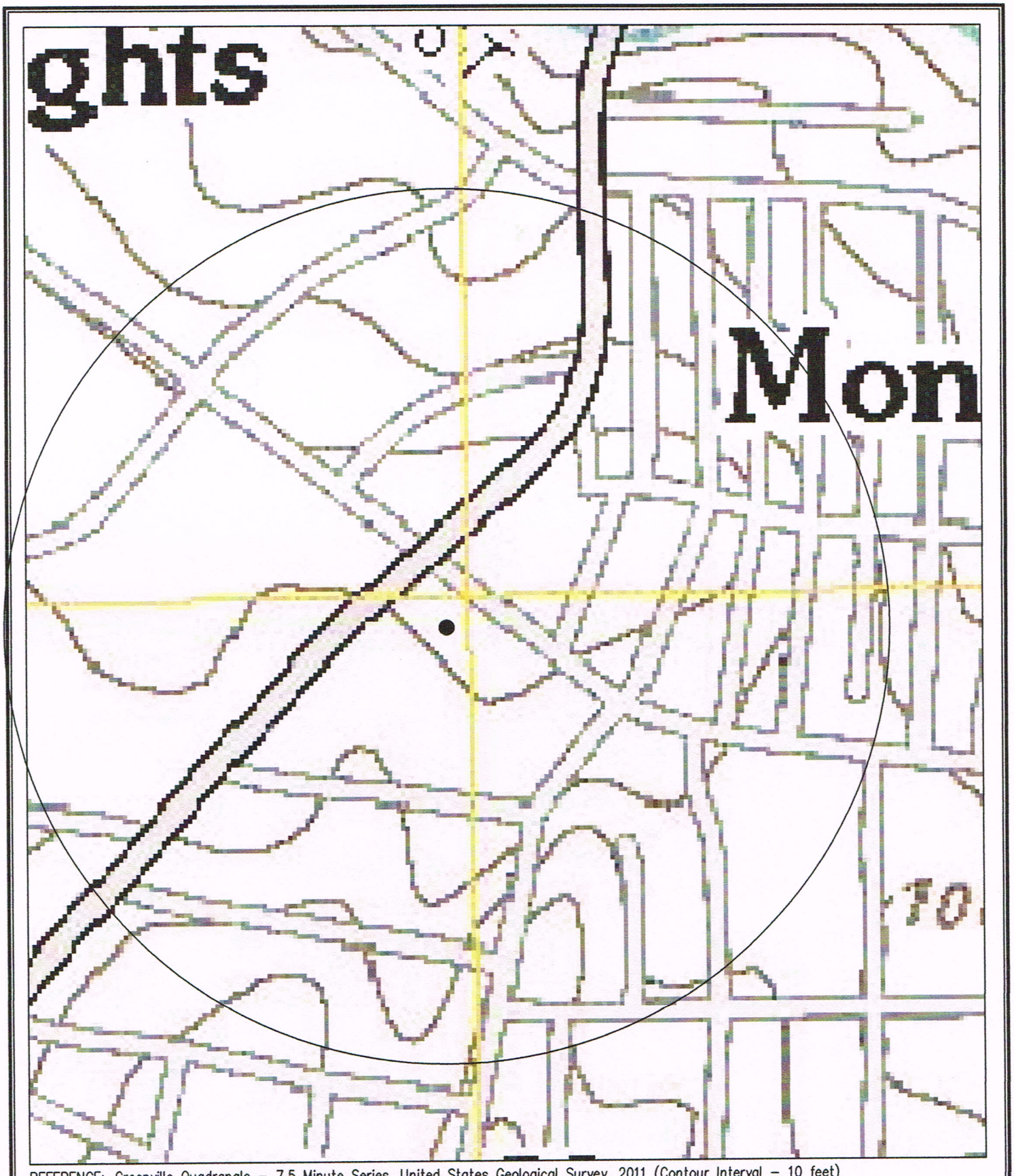
Additional Details For This Scope of Work
For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.
Three existing groundwater monitoring wells (12430-MW01 through 12430-MW03) and 16 newly installed groundwater monitoring wells will be sampled. Receptors identified within 1,000-feet of the site or within 500-feet of the groundwater contaminant plume will also be sampled during the Tier II Assessment.

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)
Yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.
Name of Laboratory:
SCDHEC Certification Number:
Name of Laboratory Director:

Yes Well Driller as indicated in ACQAO? (Yes/No) If no, indicate driller information below.
Name of Well Driller:
SCLLR Certification Number:

No Other variations from ACQAP. Please describe below.

Attachments
1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664



REFERENCE: Greenville Quadrangle – 7.5 Minute Series, United States Geological Survey, 2011 (Contour Interval – 10 feet)

500 250 0 500

APPROXIMATE SCALE IN FEET

N

● Approximate Site Location

Title	Topographic Site Location Map
Project	Westside Grocery (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Figure No. 1



REFERENCE: Greenville County Online GIS Mapping Database; Figure 4 Groundwater Chemicals of Concern by Blue Ridge Environmental Services, Inc. dated August 28, 2013.

100 50 0 100

APPROXIMATE SCALE IN FEET

N

- Existing Groundwater Monitoring Well (3)
- Proposed Shallow Groundwater Screening Boring (18 @ 24 feet)
- Proposed Deep Groundwater Screening Boring (5 @ 49 feet)

Title	Proposed Groundwater Screening Boring Location Plan
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 2



REFERENCE: Greenville County Online GIS Mapping Database; Figure 4 Groundwater Chemicals of Concern by Blue Ridge Environmental Services, Inc. dated August 28, 2013.

100 50 0 100

APPROXIMATE SCALE IN FEET

N

- Existing Groundwater Monitoring Well (3)
- Proposed Shallow Groundwater Monitoring Well (13 @ 28 feet)
- Proposed Deep Groundwater Monitoring Well (3 @ 53 feet)

Title	Proposed Monitoring Well Location Plan
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	5/23/2014
Job No.	J14-049-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 3

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT COST AGREEMENT
SOUTH CAROLINA
Department of Health and Environmental Control
Underground Storage Tank Management Division
State Underground Petroleum Environmental Response Bank Account
November 1, 2013

Facility Name: Westside Quick Shop

UST Permit #: 12430 **Cost Agreement #:** _____

ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan Preparation**				
A1. Site-specific Work Plan	1	each	$150.00	$150.00
B1. Tax Map		each	$70.00	$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00	$0.00
2. A1. **Receptor Survey ***	1	each	$551.00	$551.00
3. **Survey (500 ft x 500 ft)**				
A1. Comprehensive Survey	1	each	$1,040.00	$1,040.00
B. Subsurface Geophysical Survey				
1B. < 10 meters below grade		each	$1,300.00	$0.00
2B. > 10 meters below grade		each	$2,310.00	$0.00
C1. Geophysical UST or Drum Survey		each	$910.00	$0.00
4. **Mob/Demob**				
A1. Equipment	2	each	$1,020.00	$2,040.00
B1. Personnel	5	each	$423.00	$2,115.00
C1. Adverse Terrain Vehicle		each	$500.00	$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00	$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water ssample, soil sample, soil gas sample, etc.)***				
A1. Standard	677	per foot	$7.40	$5,009.80
C1. Fractured Rock		per foot	$20.20	$0.00
7. A1. **Soil Leachability Model**		each	$60.00	$0.00
8. **Abandonment (per foot)***				
A1. 2" diameter or less	677	per foot	$3.10	$2,098.70
B1. Greater than 2" to 6" diameter		per foot	$4.50	$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00	$0.00
9. **Well Installation (per foot)***				
A1. Water Table (hand augered)		per foot	$10.60	$0.00
B1. Water Table (drill rig)	523	per foot	$38.00	$19,874.00
C1. Telescoping		per foot	$31.80	$0.00
D1. Rock Drilling		per foot	$26.80	$0.00
E1. 2" Rock Coring		per foot	$30.90	$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40	$0.00
H1. Recovery Well (4" diameter)		per foot	$30.00	$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00	$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00	$0.00
K. Re-develop Existing Well		per foot	$11.00	$0.00
10. **Groundwater Sample Collection / Gauge Depth to Water or Product ***				
A1. Groundwater Purge	19	per well/recept	$60.00	$1,140.00
B1. Air or Vapors		per recepto	$12.00	$0.00
C1. Water Supply		per well/recept	$22.00	$0.00
D1. Groundwater No Purge or Duplicate	1	per well/recept	$28.00	$28.00
E1. Gauge Well only		per well	$7.00	$0.00
F1. Sample Below Product		per well	$12.00	$0.00

G1. Passive Diffusion Bag		each	$26.00		$0.00
H1. Field Blank	1	each	$24.60		$24.60
11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	22	per sample	$122.00		$2,684.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's		per sample	$60.60		$0.00
E1. Lead	21	per sample	$16.00		$336.00
F1. EDB by EPA 8011	21	per sample	$45.20		$949.20
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer	2	per sample	$104.00		$208.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*	3	per test	$191.00		$573.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	100	gallon	$0.56		$56.00
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal	5	ton	$60.00		$300.00
D1. Drilling fluids	25	gallon	$0.42		$10.50
18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00

23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
A2. 24-hour Event*		each	$3,515.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F. Effluent Disposal		gallon	$0.30		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Deli	4	each	$50.00		$200.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
II. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Management	10%	percent	$39,387.80		$3,938.78
TOTAL					$43,326.58

*The appropriate mobilization cost can be added to complete these tasks, as necessary

D H E C

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

20 days DOCKETING

Site Information

Date: 5/19/16	Site ID #: 12430	Site Name: Westside Quick Stop
County: Greenville	Project Manager: Tom Knight	Field Personnel: Kevin B, John B

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW-1			19.95	20.94	0.99					
MW-2			n/a	22.44	n/a					
MW-X			n/a	22.13	n/a					

Notes: _____

Signature: _____

D H E C

PROMOTE PROTECT PROSPER

Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

UST 21 Clear DOCKETING

SHREE GAJVAKRA LLC
ATTN: ANKUR PATEL
205 FAIRWAY DRIVE
LAURENS SOUTH CAROLINA 29360-7700

JUN 0 6 2016

Re: **Site Specific Work Plan (SSWP) Request for Tier II Assessment**
Westside Quick Stop, 821 West Parker Road, Greenville, SC
UST Permit # 12430
Release #2 Reported October 23, 2012
IGWA Report received October 9, 2013
Information from Release 1 Tier II Assessment Report received February 8, 2015
Greenville County

Dear Mr. Patel:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced report submitted by Petra-tech Environmental, Llc. The report indicates that groundwater concentrations of petroleum chemicals are above Risk-Based Screening Levels (RBSLs).

On May 19, 2016, Department personnel visited the referenced site to gauge water levels in Monitoring wells X (i.e. IGWA well MW-4), MW-1 and MW-2. Free product (.99 feet apparent product thickness) was present in MW-1.

Per Petra-tech's February 6, 2015 Tier II Assessment for Release One, the revision of the groundwater flow direction information to the Southeast from the Northwest is noted. Due to this new information, additional assessment is needed to complete the delineation of impacts at the site. Please note that due to the different responsible parties for the two releases at the site and the apparent proximity of releases, it is requested that data from all onsite wells be evaluated in future reports (e.g. water levels and/or chemical data from well X be considered in evaluating Release One and for Release One wells in evaluating Release Two).

To determine what risk the referenced release may pose to human health and the environment, and in accordance with Section 280.65 of the South Carolina Underground Storage Tank Control Regulations, implementation of a Tier II Assessment as outlined in the UST Quality Assurance Program Plan (QAPP) Revision 3.0 is necessary. The Tier II Assessment must be conducted in accordance with the UST QAPP and in compliance with all applicable regulations. A copy of the Agency QAPP Revision 3.0 for the UST Management Division is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Please have your contractor complete and submit the Site-Specific Work Plan (SSWP) and Cost Proposal within thirty (30) days of the date of this letter. Some site specific recommendations include sample all new and existing wells, install recovery wells in the vicinity of MW-1, install deep wells possibly into rock in the vicinity of wells MW-8, MW-4 and MW-4(IGWA) and determine the extent of the plume horizontally and vertically.

One site conceptual concern after review of the existing data given the low permeability of the shallow saprolite is what role does the transition zone and bedrock play in plume migration (e.g. does permeability increase?). Every component may not be necessary to complete the above scope of work. The State Underground Petroleum Environmental Response Bank (SUPERB) Account allowable cost for each component is included on the Assessment Component Cost Agreement Form. **Please note that technical and financial preapproval from the Agency must be issued before work begins**.

According to Division records, the release at the facility was reported to the Agency on October 23, 2012. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Act, you are responsible for the first $25,000 of site rehabilitation costs. To ensure that costs made toward the Tier II apply to the $25,000 deductible, costs need to be preapproved and a cost agreement number will be provided once the SSWP is approved.

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence concerning this site, please reference UST Permit #12430. If you have any questions concerning this project, please contact me at (803) 898-0601 or by email at knightbt@dhec.sc.gov.

Sincerely,

Tom Knight, P.G., Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

cc: Petra-Tech Environmental, 2435 E. North Street, Suite 1108-202 Greenville, SC 29615
Environmental Laboratories, Inc., 2121 Roe Ford Rd., Greenville, SC 29617
Technical File

D H E C

PROMOTE PROTECT PROSPER

Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment



MR MIKE WRIGHT
405 DOVE HILL CIRCLE
EASLEY SC 29640

JUN 0 9 2016

Re: **Aggressive Fluid and Vapor Recovery Directive**
Westside Quick Stop, 821 West Parker Road, Greenville, SC
UST Permit # 12430, CA# 52639
Release #1 Reported June 7, 2012
Tier II Assessment Report received February 8, 2015
Greenville County

Dear Mr. Wright:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) recognizes your commitment to continue work at this site using Environmental Laboratories, Inc.

On May 19, 2016, Department personnel visited the referenced site to gauge water levels in Monitoring wells X, MW-1 and MW-2. Free product (.99 feet apparent product thickness) was present in MW-1.

Per the Tier II Assessment, the revision of the groundwater flow direction information to the Southeast from the Northwest is noted. Due to this new information, additional assessment is needed to complete the delineation of impacts at the site; therefore, a request for a SSWP will be forthcoming for Release Two. Please note that due to the different responsible parties for the two releases at the site and the apparent proximity of releases, it is requested that data from all onsite wells be evaluated in future reports (e.g. water levels and/or chemical data from well X be considered in evaluating Release One and for Release One wells in evaluating Release Two).

In accordance with Section 280.64 of the South Carolina Underground Storage Tank Control Regulations, an Aggressive Fluid and Vapor Recovery (AFVR) event may proceed immediately upon receipt of this letter as outlined in this directive and the UST Quality Assurance Program Plan (QAPP) Revision 3.0. **Please be aware that the AFVR Procedures have been updated.** One 96-hour event utilizing monitoring well MW-1 and two four inch recovery wells to be installed in the vicinity of well MW-1 as part of a Tier IIAssessment for Release Two should be performed. The stingers shall be lowered at six inch intervals starting at the water table interface to a target depth of 26 feet in the wells. Please advance to the target depth within the first eight (8) hours of the event. Thereafter, the stinger should be adjusted as needed to the appropriate interval to achieve the highest vapor recovery while maintaining dewatering of the smear zone. Off-gas treatment will be necessary. A copy of Agency QAPP Revision 3.0 for the Underground Storage Tank Division is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

As soon as the beginning date of the AFVR event has been scheduled, please contact Tom Knight at knightbt@dhec.sc.gov.

The AFVR Report should be submitted within 120 days from the date of this correspondence. Please note that all applicable South Carolina certification requirements apply to the services and report preparation. All site rehabilitation activities must be performed and submitted by a South Carolina Certified Underground Storage Tank Site Rehabilitation Contractor.

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

The Agency grants pre-approval for transportation of virgin petroleum impacted soil and groundwater from the referenced site to a permitted treatment facility. The transport and disposal must be conducted in accordance with the QAPP. If the CoC concentrations based on laboratory analysis are below RBSLs, please contact the project manager for approval to dispose of soil and/or groundwater on site. The SUPERB Account will not reimburse for transportation or treatment of soil and/or groundwater with concentrations below RBSLs.

On all correspondence concerning this site, please reference UST Permit #12430. If there are any questions concerning this project, please contact me at (803) 898-0601 or by email at knightbt@dhec.sc.gov.

Sincerely,

Tom Knight, P.G., Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Approved Cost Agreement

cc: Petra-Tech Environmental, 2435 E. North Street, Suite 1108-202 Greenville, SC 29615 (w/enc.)
Environmental Laboratories, Inc., 2121 Roe Ford Rd., Greenville, SC 29617 (w/ enc)
Technical file (w/enc.)

Approved Cost Agreement 52639

Facility 12430 WESTSIDE QUICK STOP
KNIGHTBT
PO Number

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0 1200	$18,342.250	2,201 07
23 EFR						
		A4	96 HOUR EVENT	1 0000	$12,567 500	12,567 50
		C4	OFF GAS TREATMENT 96 HOUR	1 0000	$780 000	780 00
		D	SITE RECONNAISSANCE	1.0000	$203.250	203 25
		F1	EFFLUENT DISPOSAL	10,000.0000	$0.440	4,400 00
		G	AFVR EQUIPMENT MOB	1.0000	$391.500	391.50
				Total Amount		20,543 32

petra-tech
ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS





July 9, 2016

SCDHEC - UST Management Division
Corrective Action Section
2600 Bull Street
Columbia, SC 29201-1708

Attention: Mr. Tom Knight, P.G.

Subject: **Site Specific Work Plan – Tier II Assessment**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
PTE Job No. J16-232-A

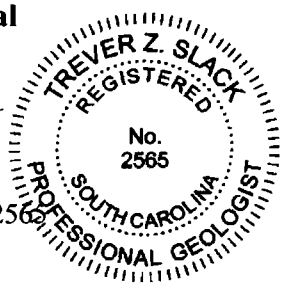
Dear Mr. Knight:

On behalf of Westside Quick Stop and Environmental Laboratories, Inc., Petra-Tech Environmental, LLC submits herein the completed Site Specific Work Plan for the subject site. This submittal is in response to the South Carolina Department of Health and Environmental Control's (SCDHEC) Site Specific Work Plan Directive dated June 6, 2016.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental



Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565

D H E C
PROMOTE PROTECT PROSPER

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

To: Tom Knight, P.G. (SCDHEC Project Manager)
From: Trever Slack (Contractor Project Manager)
Contractor: Petra-Tech Environmental, LLC UST Contractor Certification Number: UCC-436

Facility Name: Westside Quick Stop UST Permit #: 12430
Facility Address: 821 West Parker Road, Greenville, Greenville County, South Carolina
Responsible Party: Shree Gajvakra LLC Attn: Ankur Patel Phone: 864.271.9400
RP Address: 205 Fairway Drive, Laurens, South Carolina 29360-7700
Property Owner (if different): Westside Quick Stop Inc / Mr. Mike Wright
Property Owner Address: 450 Dove Hill Circle, Easley, South Carolina 29640
Current Use of Property: Currently utilized as retail fueling station

Scope of Work (Please check all that apply)

- ☐ IGWA
- ☐ Tier I
- ☑ Tier II
- ☐ Monitoring Well Installation
- ☐ Groundwater Sampling
- ☐ Other
- ☐ GAC

Analyses (Please check all that apply)

Groundwater/Surface Water:

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

Soil:

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

Air:

- ☐ BTEXN

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

____ Soil	____ Water Supply Wells	____ Air	2 Field Blank
24 Monitoring Wells	____ Surface Water	2 Duplicate	4 Trip Blank

Field Screening Methodology

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

# of shallow points proposed: 9 Estimated Footage: 28 feet per point
# of deep points proposed: ____ Estimated Footage: ____ feet per point
Field Screening Methodology: Direct push and field screening with PID & laboratory confirmation analysis IAW Annual QAPP

Permanent Monitoring Wells

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

# of shallow wells: 8 Estimated Footage: 30 feet per point
# of deep wells: 5 Estimated Footage: 55 feet per point
# of recovery wells: ____ Estimated Footage: ____ feet per point
Monitoring Well development method (consistent with SOP): Surging with check valve, overpumping, and bailing IAW Annual QAPP
Comments, if warranted:
Deep wells will be installed as Type III, telescoping monitoring wells. 6-inch outer casing will be installed approximately five feet into the top of competent bedrock, grouted, and allowed to cure for a minimum of 24-hours. The wells will then be advanced into bedrock to the termination depth of the boring.

UST Permit #: 12430 Facility Name: Westside Quick Stop Inc

Implementation Schedule (Number of calendar days from approval)

Field Work Start-Up: 15 Field Work Completion: 60

Report Submittal: 90 # of Copies Provided to Property Owners: 5

Aquifer Characterization

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

Slug tests will be performed in two shallow and two deep monitoring wells to provide additional data on the hydrological characteristics of the transition zone (partially weathered rock) and their potential influence on plume migration.

Investigation Derived Waste Disposal

Soil: 5 Tons Purge Water: 220 Gallons

Drilling Fluids: _____ Gallons Free-Phase Product: _____ Gallons

Additional Details For This Scope of Work

For example, list wells to be sampled, wells to be abandoned/repaired, well pads/bolts/caps to replace, details of AFVR event, etc.

Compliance With Annual Contractor Quality Assurance Plan (ACQAP)

yes Laboratory as indicated in ACQAP? (Yes/No) If no, indicate laboratory information below.

Name of Laboratory: _____

SCDHEC Certification Number: _____

Name of Laboratory Director: _____

yes Well Driller as indicated in ACQAP? (Yes/No) If no, indicate driller information below.

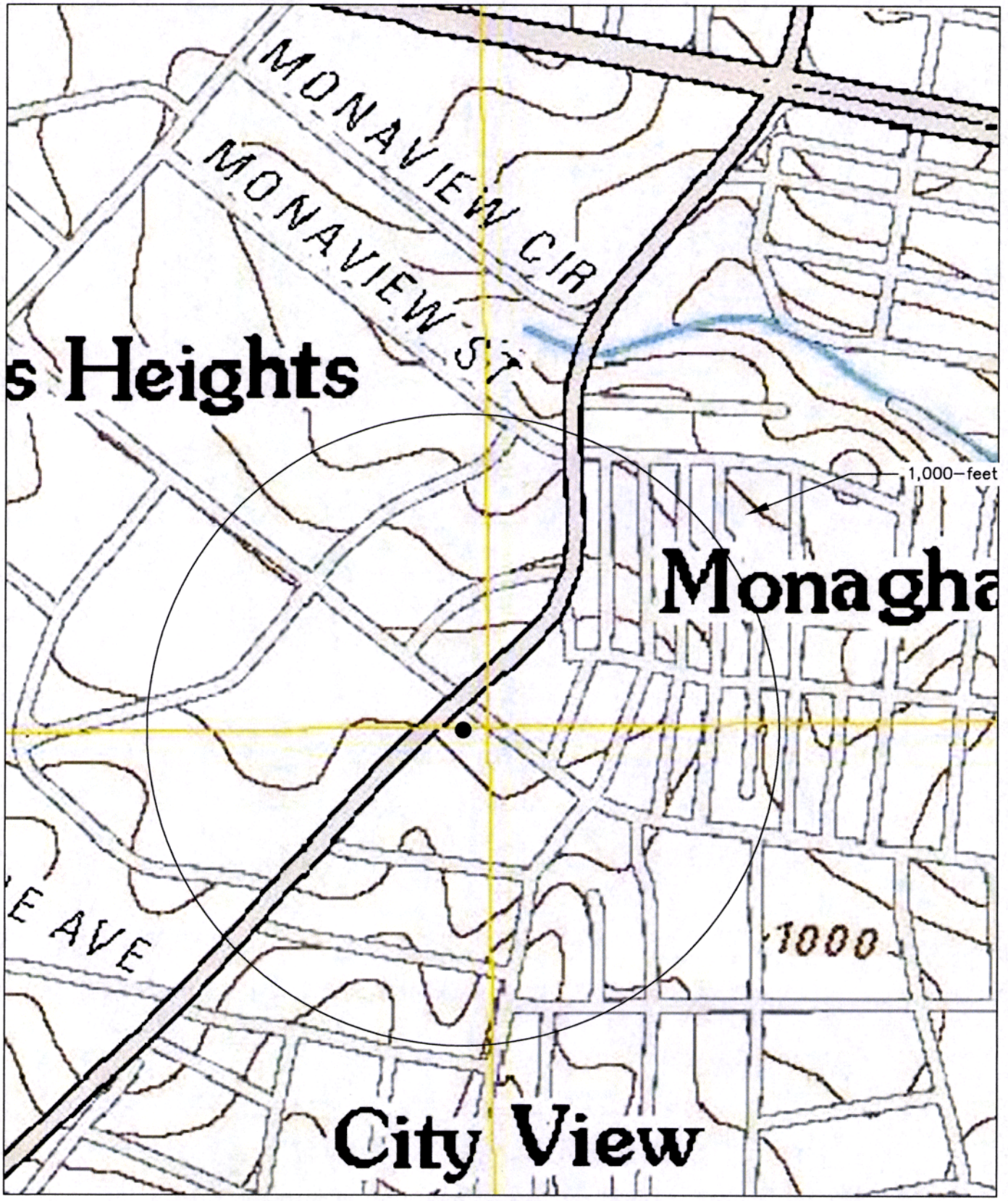
Name of Well Driller: _____

SCLLR Certification Number: _____

no Other variations from ACQAP. Please describe below.

Attachments

1. Attach a copy of the relevant portion of the USGS topographic map showing the site location.
2. Prepare a site base map. This map must be accurately scaled, but does not need to be surveyed. The map must include the following:
   - North Arrow
   - Location of property lines
   - Location of buildings
   - Previous soil sampling locations
   - Previous monitoring well locations
   - Proposed soil boring locations
   - Proposed monitoring well locations
   - Legend with facility name and address, UST permit number, and bar scale
   - Streets or highways (indicate names and numbers)
   - Location of all present and former ASTs and USTs
   - Location of all potential receptors
3. Assessment Component Cost Agreement, SCDHEC Form D-3664



Reference: USGS 7.5-Minute series Greenville Quadrangle – 2011; Contour Interval = 10 feet

500 250 0 500

APPROXIMATE SCALE IN FEET

N

● SITE

Title	Site Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	07/01/2016
Job No.	J16-232-A

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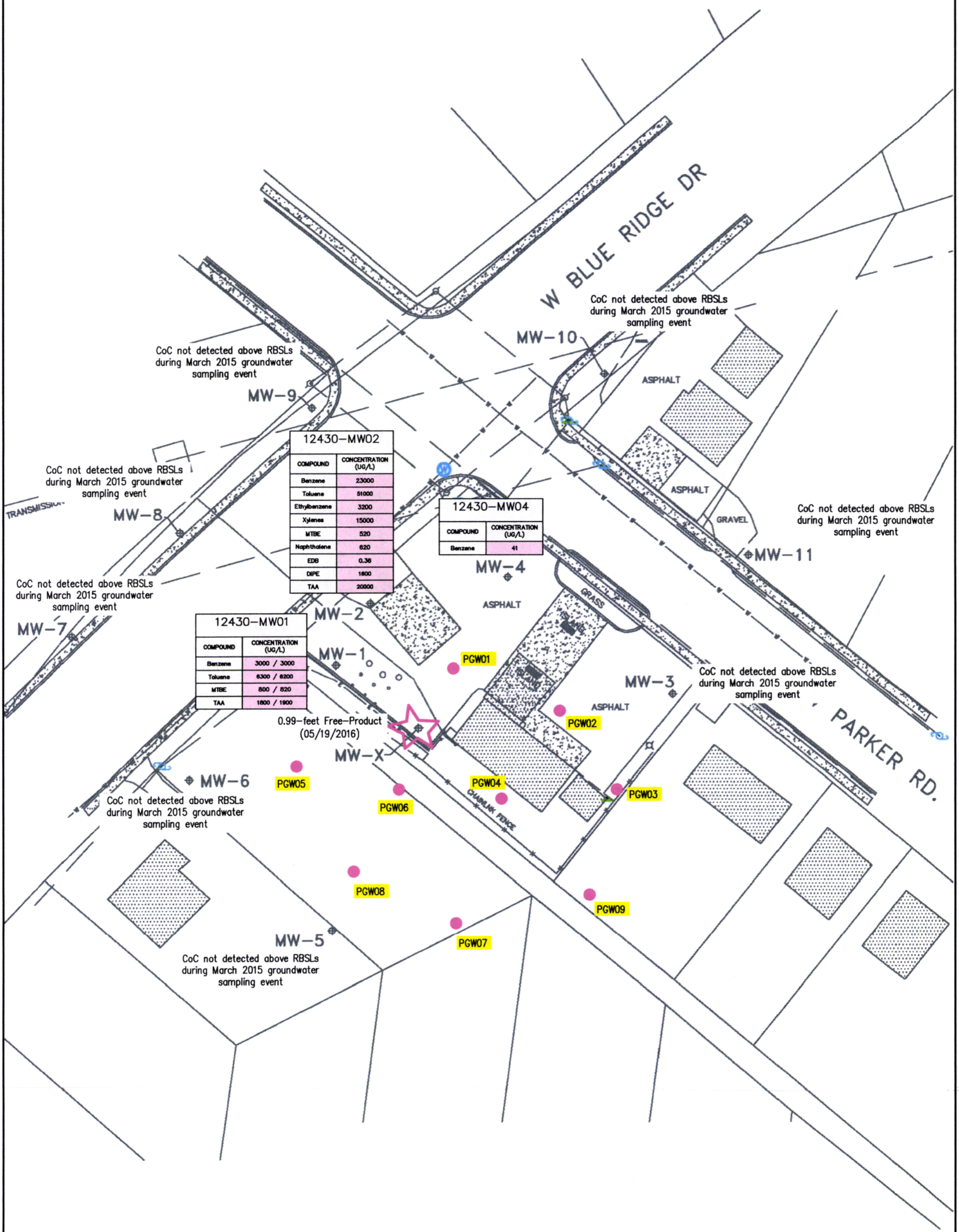
Figure No. 1



Title	Proposed Groundwater Screening Boring Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	07/04/2016
Job No.	J15-213-A

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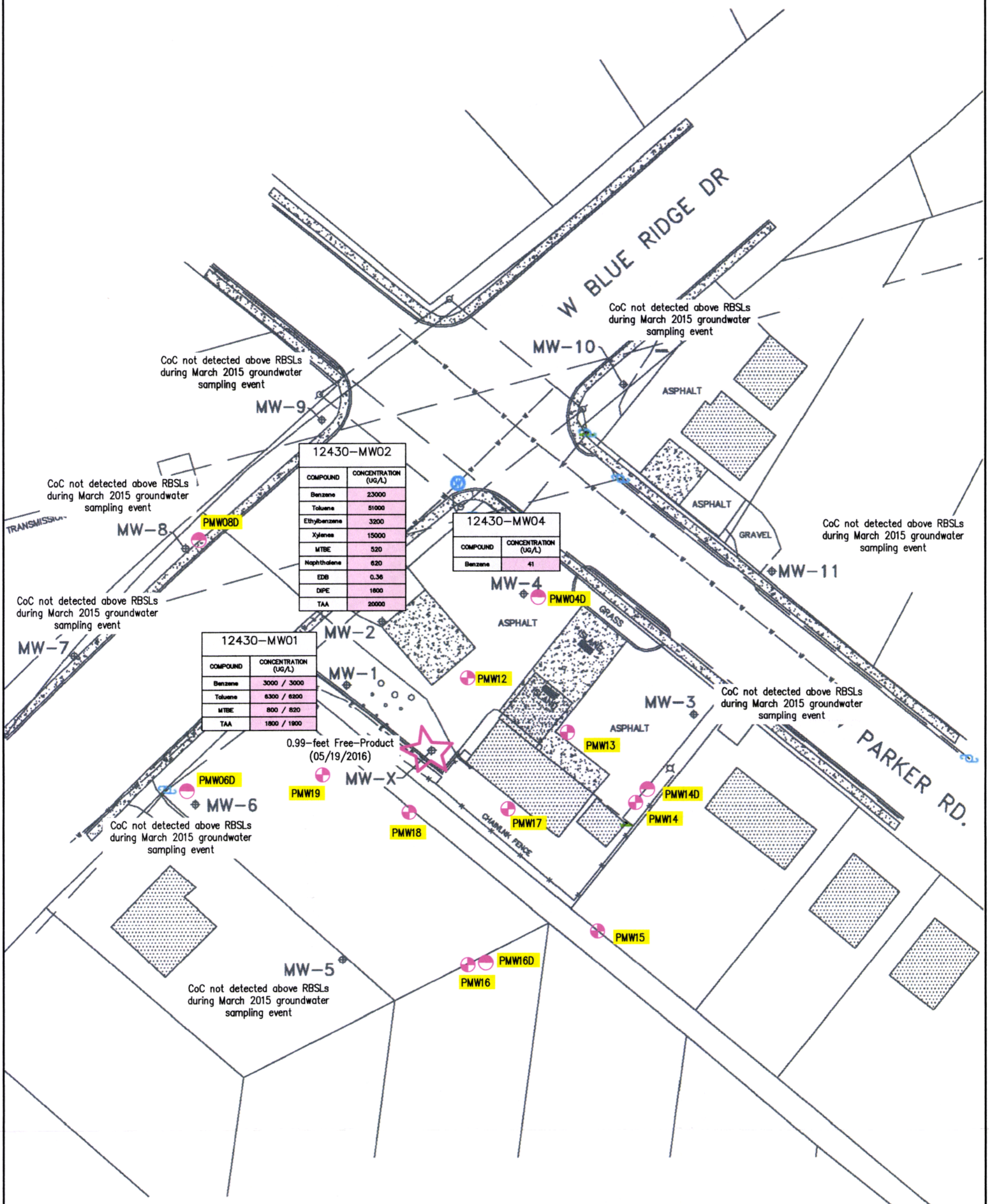
Figure No. 2



REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015

Groundwater Monitoring Well

Proposed Shallow Groundwater Monitoring Well

Proposed Deep Groundwater Monitoring Well

Title	Proposed Monitoring Well Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	07/04/2016
Job No.	J15-213-A

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Figure No. 3

D H E C

PROMOTE PROTECT PROSPER

South Carolina Department of Health and Environmental Control

ASSESSMENT COMPONENT INVOICE

SOUTH CAROLINA

Department of Health and Environmental Control

Underground Storage Tank Management Division

State Underground Petroleum Environmental Response Bank Account

May 15, 2014

Facility Name: Westside Quick Stop

UST Permit #: 12430 **Cost Agreement #:**

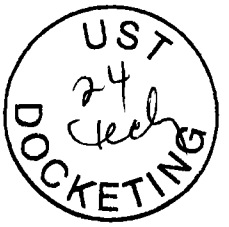
ITEM	QUANTITY	UNIT	UNIT PRICE	TOTAL
1. **Plan Preparation**				
A1. Site-specific Work Plan	1	each	$150.00	$150.00
B1. Tax Map		each	$70.00	$0.00
C1. Tier II or Comp. Plan /QAPP Appendix B		each	$250.00	$0.00
2. A1. **Receptor Survey ***		each	$551.00	$0.00
3. **Survey (500 ft x 500 ft)**				
A1. Comprehensive Survey		each	$1,040.00	$0.00
B. Subsurface Geophysical Survey				
1B. < 10 meters below grade		each	$1,300.00	$0.00
2B. > 10 meters below grade		each	$2,310.00	$0.00
C1. Geophysical UST or Drum Survey		each	$910.00	$0.00
4. **Mob/Demob**				
A1. Equipment	2	each	$1,020.00	$2,040.00
B1. Personnel	5	each	$423.00	$2,115.00
C1. Adverse Terrain Vehicle		each	$500.00	$0.00
5. A1. **Soil Borings (hand auger)***		foot	$5.00	$0.00
6. **Soil Borings (requiring equipment, push technology, etc)* or Field Screening (including water sample, soil sample, soil gas sample, etc.)***				
AA. Standard	252	per foot	$15.00	$3,780.00
C1. Fractured Rock		per foot	$20.20	$0.00
7. A1. **Soil Leachability Model**		each	$60.00	$0.00
8. **Abandonment (per foot)***				
A1. 2" diameter or less	252	per foot	$3.10	$781.20
B1. Greater than 2" to 6" diameter		per foot	$4.50	$0.00
C1. Dug/Bored well (up to 6 feet diameter)		per foot	$15.00	$0.00
9. **Well Installation (per foot)***				
A1. Water Table (hand augered)		per foot	$10.60	$0.00
B1. Water Table (drill rig)	240	per foot	$38.00	$9,120.00
CC. Telescoping		per foot	$50.00	$0.00
DD. Rock Drilling	275	per foot	$58.00	$15,950.00
E1. 2" Rock Coring		per foot	$30.90	$0.00
G1. Rock Multi-sampling ports/screens		per foot	$33.40	$0.00
HH. Recovery Well (4" diameter)		per foot	$45.00	$0.00
II. Pushed Pre-packed screen (1.25" dia)		per foot	$15.00	$0.00
J1. Rotosonic (2" diameter)		per foot	$44.00	$0.00
K. Re-develop Existing Well		per foot	$11.00	$0.00

10. **Groundwater Sample Collection / Gauge Depth to Water or Product ***					
A1. Groundwater Purge	24	per well/receptor	$60.00		$1,440.00
B1. Air or Vapors		per receptor	$12.00		$0.00
C1. Water Supply		per well/receptor	$22.00		$0.00
D1. Groundwater (No Purge or Duplicat	2	per well/receptor	$28.00		$56.00
E1. Gauge Well only	1	per well	$7.00		$7.00
F1. Sample Below Product		per well	$12.00		$0.00
G1. Passive Diffusion Bag		each	$26.00		$0.00
H1. Field Blank	2	each	$24.60		$49.20
11. Laboratory Analyses-Groundwater					
A2. BTEXNM+Oxyg's+1,2 DCA+Eth(82	32	per sample	$122.00		$3,904.00
AA1. Lead, Filtered		per sample	$13.80		$0.00
B2. Rush EPA Method 8260B (All of item A.)		per sample	$153.60		$0.00
C2. Trimethal, Butyl, and Isopropyl Benzenes		per sample	$36.40		$0.00
D1. PAH's	26	per sample	$60.60		$1,575.60
E1. Lead	26	per sample	$16.00		$416.00
F1. EDB by EPA 8011	28	per sample	$45.20		$1,265.60
FF1. EDB by EPA Method 8011 Rush		per sample	$68.20		$0.00
G1. 8 RCRA Metals		per sample	$63.40		$0.00
H1. TPH (9070)		per sample	$41.00		$0.00
II. pH		per sample	$5.20		$0.00
J1. BOD		per sample	$20.00		$0.00
PP. Ethanol		per sample	$14.80		$0.00
11. **Analyses-Soil**					
Q1. BTEX + Naphth.		per sample	$64.00		$0.00
R1. PAH's		per sample	$64.04		$0.00
S1. 8 RCRA Metals		per sample	$56.40		$0.00
U1. TPH-DRO (3550C/8015C)		per sample	$40.00		$0.00
V1. TPH- GRO (5030B/8015C)		per sample	$35.96		$0.00
W1. Grain size/hydrometer		per sample	$104.00		$0.00
X1. Total Organic Carbon		per sample	$30.60		$0.00
11. **Analyses-Air**					
Y1. BTEX + Naphthalene		per sample	$216.00		$0.00
11. **Analyses-Free Phase Product**					
Z1. Hydrocarbon Fuel Identification		per sample	$357.00		$0.00
12. **Aquifer Characterization**					
A1. Pumping Test*		per hour	$23.00		$0.00
B1. Slug Test*	4	per test	$191.00		$764.00
C1. Fractured Rock		per test	$100.00		$0.00
13. A1. **Free Product Recovery Rate Test***		each	$38.00		$0.00
14. **Fate/Transport Modeling**					
A1. Mathematical Model		each	$100.00		$0.00
B1. Computer Model		each	$100.00		$0.00
15. **Risk Evaluation**					
A. Tier I Risk Evaluation		each	$300.00		$0.00
B1. Tier II Risk Evaluation		each	$100.00		$0.00
16. A1. **Subsequent Survey***		each	$260.00		$0.00
17. **Disposal (gallons or tons)***					
AA. Wastewater	220	gallon	$0.56		$123.20
BB. Free Product		gallon	$0.50		$0.00
C1. Soil Treatment/Disposal	5	ton	$60.00		$300.00
D1. Drilling fluids		gallon	$0.42		$0.00

18. **Miscellaneous (attach receipts)**					
		each	$0.00		$0.00
		each	$0.00		$0.00
		each	$0.00		$0.00
20. **Tier I Assessment (Use DHEC 3665 form)**		standard			$0.00
21. **IGWA (Use DHEC 3666 form)**		standard			$0.00
22. **Corrective Action (Use DHEC 3667 form)**		PFP Bid			$0.00
23. **Aggressive Fluid & Vapor Recovery (AFVR)**					
A1. 8-hour Event*		each	$1,375.00		$0.00
AA. 24-hour Event*		each	$3,825.00		$0.00
A3. 48-hour Event*		each	$6,265.00		$0.00
A4. 96-hour Event*		each	$12,567.50		$0.00
C1. Off-gas Treatment 8 hour		per event	$122.50		$0.00
C2. Off-gas Treatment 24 hour		per event	$241.50		$0.00
C3. Off-gas Treatment 48 hour		per event	$327.00		$0.00
C4. Off-gas Treatment 96 hour		per event	$780.00		$0.00
D. Site Reconnaissance		each	$203.25		$0.00
E1. Additional Hook-ups		each	$25.75		$0.00
F1. Effluent Disposal		gallon	$0.44		$0.00
G. AFVR Mobilization/Demobilization		each	$391.50		$0.00
24. **Granulated Activated Carbon (GAC) filter system installation & service:**					
A1. New GAC System Installation*		each	$1,900.00		$0.00
BB. Refurbished GAC Sys. Install*		each	$900.00		$0.00
C1. Filter replacement/removal*		each	$350.00		$0.00
DD. GAC System removal, cleaning, & refurbishment*		each	$275.00		$0.00
E1. GAC System housing*		each	$250.00		$0.00
F. In-line particulate filter		each	$150.00		$0.00
G1. Additional piping & fittings		foot	$1.50		$0.00
25. **Well Repair**					
A1. Additional Copies of the Report Deli	5	each	$50.00		$250.00
B1. Repair 2x2 MW pad*		each	$50.00		$0.00
C1. Repair 4x4 MW pad*		each	$88.00		$0.00
D1. Repair well vault*		each	$118.00		$0.00
F1. Replace well cover bolts		each	$2.60		$0.00
G. Replace locking well cap & lock		each	$15.00		$0.00
H1. Replace/Repair stick-up*		each	$134.00		$0.00
II. Convert Flush-mount to Stick-up*		each	$150.00		$0.00
J1. Convert Stick-up to Flush-mount*		each	$130.00		$0.00
K1. Replace missing/illegible well ID plate		each	$12.00		$0.00
Report Prep & Project Coordination	12%	percent	$44,086.80		$5,290.42
TOTAL					$49,377.22

*The appropriate mobilization cost can be added to complete these tasks, as necessary. DHEC

dhec
Healthy People. Healthy Communities



OCT 10 2016

SHREE GAJVAKRA LLC
ATTN: ANKUR PATEL
205 FAIRWAY DRIVE
LAURENS SOUTH CAROLINA 29360-7700

Re: Tier II Assessment Directive
Westside Quick Stop, 821 West Parker Road, Greenville, SC
UST Permit # 12430, CA#52649, UMW#26386
Release #2 Reported October 23, 2012
SSWP received July 15, 2016.
Greenville County

Dear Mr. Patel:

The Underground Storage Tank (UST) Management Division of the South Carolina Department of Health and Environmental Control (Agency) has reviewed the referenced Site Specific Work Plan (SSWP) submitted on your behalf by Environmental Laboratories Inc. The Tier I Report received on September 2013 indicated that petroleum Chemicals of Concern (CoC) are present in the soil and groundwater at concentrations that exceed Risk-Based Screening Levels (RBSLs). The Tier II Assessment should be conducted in accordance with the UST Quality Assurance Program Plan (QAPP) Revision 3.0, Environmental Laboratories approved SSWP and Annual Contractor Quality Assurance Plan (ACQAP), and in compliance with all applicable regulations. A copy of the UST QAPP is available at http://www.scdhec.gov/Environment/LW/UST/ReleaseAssessmentClean-up/QualityAssurance/.

Assessment activities at the site should begin immediately upon receipt of this letter. Cost agreement number 52649 has been approved for the amount shown on the enclosed cost agreement form for monitoring well installation and groundwater sampling activities to define the horizontal and vertical extent of dissolved CoC. The necessary monitoring well approval is enclosed. Please be aware that the May 15, 2014 State Underground Petroleum Environmental Response Bank (SUPERB) Allowable Costs sheet states that "If the vertical and horizontal extent of chemicals of concern is not fully defined by the tier report, the Agency may not approve additional future mobilizations for additional screening or well installation." Any screening point that is converted to a permanent monitoring well will be reimbursed at the approved well installation rate. **Please contact the Agency prior to well installation for concurrence regarding the final well locations**. Shallow wells should have a 10-foot screen that brackets the water table. **The SUPERB Account cannot reimburse costs for any shallow well with a screen that does not properly bracket the water table.**

A groundwater sample should be collected from all monitoring wells and analyzed for BTEX, naphthalene, 8 oxygenates, 1,2-DCA, ethanol, lead, and EDB. All monitoring wells must be purged prior to sample collection.

The Tier II Assessment Report, contractor checklist, and invoice are due within 90 days from the date of this letter. The report (a signed .pdf copy on CD is preferred) submitted at the completion of these activities should include information outlined in the UST QAPP.

Cost agreement number 52649 has been approved for the amount shown on the enclosed cost agreement. Please note the following changes to the submitted cost agreement per a September 7, 2016 telephone conversation (Knight/Slack):

- Line 6AA: Up to 315 additional feet has been added for field screening in the source area to determine the area of residual saturation and to screen the transition zone as needed away from the source area.
- Line 8A1: Up to 315 additional feet of well abandonment has been added.
- Line 9HH: Footage for up to 3 four inch recovery wells has been added to be installed in the source area.
- Lines 10A.1, 11.A2, 11D1, and 11E1: The cost of sampling and analyses of up to 3 additional wells for the parameters noted above has been added.
- Line 16A1: The cost of a subsequent survey has been added.
- Line 17AA and C1. Additional wastewater and soil tonnage has been added due to the recovery wells.

According to Division records, the release at the facility was reported to the Agency on October 23, 2012. In accordance with Section 44-2-40(D) of the State Underground Petroleum Environmental Response Bank (SUPERB) Account, you are responsible for the first $25,000 of site rehabilitation costs. Please be sure to provide proof of costs that will be applied to the deductible with the invoice. Acceptable proof of payment of deductible costs include a copy of the cancelled check (front and back) that made payment to your contractor or a signed notarized statement by your site rehabilitation contractor for the amount that was paid directly to your contractor. Environmental Laboratories Inc., can submit an invoice for direct payment from the State Underground Petroleum Environmental Response Bank (SUPERB) Account for preapproved costs that exceed the $25,000 deductible. An interim well drilling invoice may not be submitted for this scope of work as the deductible has not been met. By law, the SUPERB Account cannot compensate any costs that are not pre-approved. Please note that applicable South Carolina certification requirements regarding laboratory services, well installation, and report preparation must be satisfied. If the invoice is not submitted within 120 days from the date of this letter, monies allocated to pay this invoice will be uncommitted. This means that the invoice will not be processed for payment until all other committed funds are paid or monies become available. The Division, because of unnecessary dilution, cannot make decisions if the reporting limit of individual petroleum CoC exceeds RBSLs. The Division encourages the use of 'J' values as necessary so the appropriate action can be determined for a release. Note that the Division may deny payment for any non-detect analysis where the reporting limit exceeds the RBSL.

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

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

Please note that in accordance with R.61-92, Subpart H, Section 280.114, you are required to notify the Division by certified mail within ten (10) days of commencing a voluntary or involuntary proceeding in bankruptcy. State law also requires that an owner/operator or guarantor that files for bankruptcy protection must immediately submit appropriate forms documenting that entity's ability to demonstrate financial responsibility.

On all correspondence concerning this site, please reference UST Permit #12430. If you have any questions concerning this project, please contact me at (803) 898-0601 or by email at knightbt@dhec.sc.gov.

Sincerely,

Tom Knight, P.G., Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

enc: Monitoring Well Approval
Approved Cost Agreement

cc: Environmental Laboratories, Inc., 2121 Roe Ford Rd., Greenville, SC 29617 (w/ enc.)
Petra-Tech Environmental Llc, 2435 E. North Street, Ste 1108-202, Greenville, SC 29615 (w/ enc.)
Technical File (w/ enc.)

Healthy People Healthy Communities

Monitoring Well Approval Form

Approval is hereby granted to: Environmental Laboratories Inc.
(on behalf of): Shree Gajvakra LLC
Facility: Westside Quick Stop, 821 West Parker Rd, Greenville, SC
UST Permit Number: 12430
County: Greenville

This approval is for the installation of 12 shallow temporary wells, five (5) intermediate temporary wells, eight (8) shallow monitoring wells, five (5) type III bedrock telescoping wells, three (3) four inch recovery wells and additional wells as needed and pre-approved by the Department to complete the scope of the Tier II investigation. The monitoring wells are to be installed in the approved locations. The monitoring wells are to be installed following the South Carolina Well Standards, R.61-71, and the applicable guidance documents.

Please note that R.61-71 requires the following:

1. All wells shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.
2. All monitoring wells shall be labeled as required by R.61-71.H.2.c.
3. A Water Well Record Form or other form provided or approved by the 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 Tom Knight (tel: (803) 898-0601 or e-mail: knightbt@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. 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.

Date of Issuance: **September 8, 2016** **Approval #: UMW-26386**

Tom Knight

Tom Knight, P.G., Hydrogeologist
Assessment Section
Underground Storage Tank Management Division
Bureau of Land and Waste Management

Approved Cost Agreement 52649

Facility: 12430 WESTSIDE QUICK STOP
KNIGHTBT
PO Number:

Task / Description	Categories	Item	Description	Qty / Pct	Unit Price	Amount
01 PLAN						
		A1	SITE SPECIFIC WORK PLAN	1.0000	$150.000	150.00
04 MOB/DEMOB						
		A1	EQUIPMENT	2.0000	$1,020.000	2,040.00
		B1	PERSONNEL	5.0000	$423.000	2,115.00
06 SOIL BORINGS (DRILLED)						
		AA	SOIL BORING/FLD SCR. STANDARD	567.0000	$15.000	8,505.00
08 ABANDONMENT						
		A1	ABANDONMENT 2" DIA OR LESS	567.0000	$3.100	1,757.70
09 WELL INSTALLATION						
		B1	WATER TABLE (DRILL RIG)	240.0000	$38.000	9,120.00
		DD	ROCK DRILLING	275.0000	$58.000	15,950.00
		HH	RECOVERY WELL (4 INCH DIA)	105.0000	$45.000	4,725.00
10 SAMPLE COLLECTION						
		A1	GROUNDWATER (PURGE)	27.0000	$60.000	1,620.00
		D1	GROUNDWATER NO PURGE/DUPLICATE	2.0000	$28.000	56.00
		E1	GAUGE WELL ONLY	1.0000	$7.000	7.00
		H1	FIELD BLANK	2.0000	$24.600	49.20
11 ANALYSES						
	GW GROUNDWATER	A2	BTEXNM+OXYGS+1,2-DCA+ETH-8260B	35.0000	$122.000	4,270.00
		D1	PAH'S	29.0000	$60.600	1,757.40
		E1	LEAD	29.0000	$16.000	464.00
		F1	EDB BY 8011	29.0000	$45.200	1,310.80
	SOIL SOIL	W1	GRAIN SIZE / HYDROMETER	2.0000	$104.000	208.00
12 AQUIFER CHARACTERIZATION						
		B1	SLUG TEST	4.0000	$191.000	764.00
16 SUBSEQUENT SURVEY						
		A1	SUBSEQUENT SURVEY	1.0000	$260.000	260.00
17 DISPOSAL						
		AA	WASTEWATER	320.0000	$0.560	179.20
		C1	SOIL TREATMENT DISPOSAL	7.0000	$60.000	420.00
19 RPT/PROJECT MNGT & COORDINATIO						
		PRT	REPORT PREPARATION	0.1200	$55,978.300	6,717.40
25 WELL REPAIR						
		A1	ADDITIONAL COPIES OF REPORT	5.0000	$50.000	250.00
				Total Amount		62,695.70

Reply | Delete Junk | ••• ×

Re: Westside Quick Stop - UST Permit #12430 - Screening Update and Proposed Monitoring Well Locations

Knight, B. Tom
Today, 11:52 AM
Trever Slack, P.G <tslack@petratechenv.com>

Reply |



Sent Items

Trevor...per our telephone conversation,

First I agree with and approve the proposed locations albeit I am recommending additional locations in addition to the proposal. Please submit a cost addendum agreement as the proposed work appears to exceed the cost agreement.

Please consider the addition of a third recovery well in the vicinity of MW-2. Gauging of well MW-2 maybe helpful in this consideration (concentrations exceeded effective solubility limits last time sampled but with the water table drop ??).

Transition zone monitoring wells are strongly recommended with shallow wells PMW-14, 15, 12 and 22.

Please replace well X with a well that brackets the water table.

It is recommended that soil be screened to total depth drilled in well PRW-02 to determine extent of residual saturation at this location.

An additional shallow monitoring well is recommended between PWR-1 and PRW-2 for long term monitoring near the south corner end of tank pit?). Access pending, a shallow monitoring well on the southwest corner of the building may also be helpful for long term monitoring of product and evaluating presence/thickness residual saturation.

I agree with the thought of 20' length well screens for the recovery wells.

Groundwater flow direction pending, a well pair between MW-4 and PMW-22 maybe helpful.

Let me know your thoughts,

Tom

Tom Knight, P.G.
Hydrogeologist
UST Assessment Section
S.C. Dept. of Health & Environmental Control
Office: (803) 898-0601
Fax: (803) 898-0673
Connect: www.scdhec.gov Facebook Twitter

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anec
Healthy People Healthy Communities

From: Trever Slack, P.G <tslack@petratechenv.com>
Sent: Tuesday, January 31, 2017 9:40 PM
To: Knight, B. Tom
Cc: tslack@petratechenv.com; Martin@elabsinc.net
Subject: Westside Quick Stop - UST Permit #12430 - Screening Update and Proposed Monitoring Well Locations

Good evening Tom,

attached are the following documents associated with the Westside Quick Stop (UST Permit #12430) for your review

- Groundwater screening data table
- Soil boring logs for SB01 through SB03
- Site map with groundwater/soil screening borings and proposed permanent monitoring well locations for your review/approval
- topographic site map

A few items/observations that may be helpful

1. One inch temporary wells were installed in each groundwater boring so that the well screens bracketed the water table and were allowed to equilibrate for approximately 24 hours prior to gauging for the presence of free-phase petroleum product and collecting the groundwater sample.
2. 0.71-feet of free-phase petroleum product was gauged in groundwater screening boring GW01 (paired with soil screening boring SB01). Free-product was not detected in any of the other borings. Monitoring well MW-X which previously contained 0.99-feet of free-phase petroleum product during the May 2016 gauging event is currently dry.
3. Each of the three soil screening borings (SB01, SB02, SB03) were drilled to refusal.
4. It should be noted that there is an approximate 5-foot elevation difference between the site itself and the right-of-way directly to the south/southwest of the site. This is not apparent on the site map.
5. The release at this site from the current UST basin is relatively recent, and based on the limited horizontal extent of the dissolved phase plume and lack of free-phase petroleum product, it appears that the contamination is currently limited in extent. I suspect this is likely the result of the relatively low k associated with the site, shallow hydraulic gradient, and relatively young age of the plume.
6. Looking at the topographic map, the site is positioned on a topographic ridge, favoring the southern portion of the topographic high point. This would suggest that the southeast flow direction from the previous assessment is plausible/likely. Additionally, the soil borings performed on the southern portion of the site during the current assessment were able to be advanced significantly deeper before encountering refusal than deep borings performed to the north/northwest during the previous assessment.

Recommendations

1. shallow monitoring wells PMW17, PMW18, PMW19, and PMW23 are proposed as perimeter wells to provide plume extent definition
2. shallow monitoring wells PMW20, PMW16, PMW15, PMW14, and PMW21 are proposed to provide data for the interior of the plume. The areas proximal to these wells currently have limited to moderate CoC concentrations, but will be important as the plume migrates with time.
3. recovery wells PRW01 and PRW02 are proposed to the north of the UST basin/MW-X to provide AFVR extraction points. Installing recovery wells to the south of the UST basin may increase free-product recovery volumes, but may also unfavorably increase plume migration.
4. shallow monitoring wells PMW12 and PMW22 are proposed along the northwest boundary of the site to provide additional plume definition in this area. There is a large distance between monitoring wells MW-1/MW-2 and the MW-7/MW-8 located on the opposite side of the highway.

Reply | Delete Junk | ••• ✕

based on these results.

Thank you,
Trever

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

2435 East North Street, Suite 1108-202
Greenville, South Carolina 29615

tslack@petratechenv.com
www.petratechenv.com
(864) 436-6322 (phone)
(888) 838-9034 (fax)

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TABLE 1
Summary of Groundwater Screening Results
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

			Groundwater Screening Sample									
	Method	RBSL (µg/L)	GW01	GW02	GW03	GW04	GW05	GW06	GW07	GW09	GW10	GW11
Boring Depth (ft bgs)	NA	NA	35	35	35	30	35	30	30	30	30	30
Depth-to-Groundwater (ft bgs)	NA	NA	29.6	29.1	29.5	24.9	30.6	24.1	25.0	26.1	24.2	24.0
Sample Depth (ft bgs)	NA	NA	25-35	25-35	25-35	20-30	25-35	20-30	20-30	20-30	20-30	20-30
PID Reading (ppm)	NA	NA	+5000	658	0.9	0.4	76.2	0.0	0.2	0.1	167	0.0
Benzene (µg/L)	8260B	5	***21000***	***190***	***0.94 J***	<0.40	***54***	<0.40	<0.40	<0.40	***230***	<0.40
Toluene (µg/L)	8260B	1,000	***47000***	***25***	***0.81 J***	<0.40	***20***	<0.40	<0.40	<0.40	***200***	<0.40
Ethylbenzene (µg/L)	8260B	700	***3500***	***2.4***	<0.40	<0.40	***3.0 J***	<0.40	<0.40	<0.40	***47***	<0.40
Xylenes (µg/L)	8260B	10,000	***17000***	***27***	<0.40	<0.40	***20***	<0.40	<0.40	<0.40	***170***	<0.40
Naphthalene (µg/L)	8260B	25	***480 J***	***0.70 J***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<2.0	<0.40
1,2-DCA (µg/L)	8260B	5	<200	***6.5***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<2.0	<0.40
MTBE (µg/L)	8260B	40	***75000***	***3.2***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	***9.5***	<0.40

NOTES:
RBSL - Risk Based Screening Level
Shaded values indicate concentrations exceeding South Carolina established RBSLs
PID - MiniRae Lite Photoionization Detector
ppm - parts per million
ft bgs - feet below ground surface
NA - Not Applicable
NT - Not Tested. Sample not submitted for laboratory analysis

FIELD BORING LOG (12430-SB01)

Job Name: Westside Quick Stop | **Job Number:** J16-232-A

Site Address: 821 West Parker Road, Greenville, South Carolina

Drill Method: Direct Push Soil Core | **Drill Rig:** AMS 9500 VTR

Driller Name: M. Carey/R. Barkley | **Company:** ERGS, Inc.

Installation Date: January 20, 2017 | **Logged By:** Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1				0.1		Asphalt / Concrete
	2				0.0		Approximately one foot of gravel fill underlain by moderate brown (5YR 3/4), dry, silty clay
	3				0.0		
	4				0.0		
	5				0.0		Moderate brown (5YR 3/4), dry, slightly micaceous, clayey silt
	6				0.0		Moderate brown (5YR 3/4), slightly moist, slightly micaceous, clayey silt
	7				0.0		Moderate reddish brown (10R 4/6), slightly moist, slightly micaceous, clayey silt with gravel
	8				0.0		
	9				0.0		
	10				0.0		
	11				0.0		
	12				0.0		
	13				104		Moderate reddish brown (10R 4/6), moist, slightly micaceous, silty clay. Approximate 6-inch thick highly weathered partially weathered rock strata encountered at 12.5 and 15.5 feet.
	14				265		
	15				953		
	16				236		
	17				608		Moderate reddish orange (10R 6/6), moist, moderately micaceous, clayey, fine sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric
	18				1054		
	19				1074		Dark yellowish orange (10YR 6/6), moist, moderately micaceous, clayey, silty, fine sand with greenish black (5GY 2/1) gneissic saprolitic fabric. Highly weathered partially weathered rock strata encountered at 20.5 feet.
	20				401		
	21				495		
	22				500		
	23				566		Dark yelowish orange (10YR 6/6), moist, moderately micaceous, clayey, medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric. Approximate 12-inch highly weathered partially weathered rock strata encountered at 24.5 feet.
	24				701		
	25				1129		
	26				1497		Pale reddish brown (10R 5/4) and moderate orange pink (5Y 8/4), moist, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	27				1233		
	28				1497		
	29				997		Moderate yellowish brown (10YR 5/4), moist, slightly micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	30				1479		
	31				1971		
	32				2241		Moderate yellowish brown (10YR 5/4), wet, slightly micaceous, slightly clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	33				2003		
	34				2001		
	35				1911		
	36				1107		
	37				991		
	38				957		
	39				992		
	40				1005		
	41				1100		
	42				1097		
	43				871		Moderately weathered partially weathered rock sampling as moderate reddish brown (10R 4/6), wet, moderately micaceous, clayey, silty, fine to course sand
	44				900		
	45				661		Moderate reddish brown (10R 4/6), wet, moderately micaceous, clayey, medium to course
	46				436		



sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric.

Partially weathered rock sampling as moderate reddish brown (10R 4/6), wet, highly micaceous, silty medium to course sand. Drill refusal encountered at 49 feet.

Boring terminated at 49.0 feet below ground surface.

Legend

- Filter Sand Pack (_____ - _____ feet BGS)
- Bentonite Seal (_____ - _____ feet BGS)
- Bentonite-Cement Grout (__ - __ feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

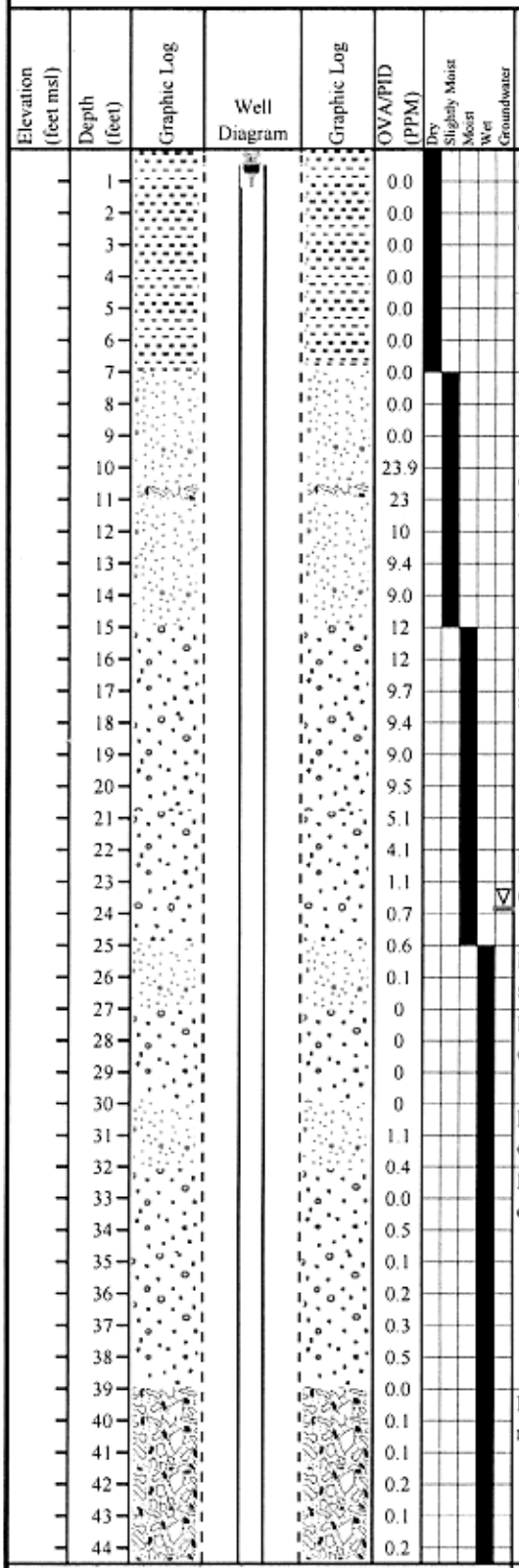
Boring terminated at 49.0 feet below ground surface. Groundwater encountered at 29.0 feet below ground surface at time of boring.

Northing	=
Easting	=
Top of Casing Elevation	=
Ground Surface Elevation	=
Total Well Depth	=
Screen Length	=
Screen Size	=
Screened Interval Depth	=
6-inch Outer Casing Depth	=

FIELD BORING LOG (12430-SB02)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	Direct Push Soil Core	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	January 20, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS



Depth (feet)	OVA/PID (PPM)	Soil Description
1	0.0	Grass / Organic Soil
2	0.0	Moderate reddish orange (10R 6/6), dry, clayey silt. Approximate 6-inch quartz layer encountered at 4.5 feet.
3	0.0	
4	0.0	
5	0.0	Moderate reddish orange (10R 6/6), dry, clayey silt with gravel.
6	0.0	
7	0.0	Moderate yellowish brown (10R 6/6), slightly moist, clayey, fine sandy silt.
8	0.0	
9	0.0	
10	23.9	Dusky yellowish brown (10YR 2/2) and moderate reddish brown (10R 4/6), slightly moist, clayey, fine to medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric. Approximate 6-inch thick highly weathered partially weathered rock strata encountered at 10.5 feet.
11	23	
12	10	
13	9.4	
14	9.0	
15	12	Dusky yellowish brown (10YR 2/2) and moderate reddish brown (10R 4/6), moist, slightly micaceous, clayey, silty, fine to medium sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
16	12	
17	9.7	
18	9.4	
19	9.0	
20	9.5	
21	5.1	
22	4.1	
23	1.1	Moderate yellowish brown (10YR 5/4), moist, slightly micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
24	0.7	
25	0.6	Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, medium sandy silt
26	0.1	
27	0	Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
28	0	
29	0	
30	0	Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, medium to course sandy silt
31	1.1	
32	0.4	Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
33	0.0	
34	0.5	
35	0.1	
36	0.2	
37	0.3	
38	0.5	
39	0.0	Partially weathered rock sampling as moderate yellowish brown (10YR 5/4), wet, highly micaceous, silty medium to course sand. Drill refusal encountered at 44 feet.
40	0.1	
41	0.1	
42	0.2	
43	0.1	
44	0.2	
		Boring terminated at 44.0 feet below ground surface.

Legend

- Filter Sand Pack (_____ - _____ feet BGS)
- Bentonite Seal (_____ - _____ feet BGS)
- Bentonite-Cement Grout (__ - __ feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 44.0 feet below ground surface. Groundwater encountered at 24.0 feet below ground surface at time of boring.

Northing	=
Easting	=
Top of Casing Elevation	=
Ground Surface Elevation	=
Total Well Depth	=
Screen Length	=
Screen Size	=
Screened Interval Depth	=
6-inch Outer Casing Depth	=

FIELD BORING LOG (12430-SB03)

Job Name: Westside Quick Stop | **Job Number:** J16-232-A

Site Address: 821 West Parker Road, Greenville, South Carolina

Drill Method: Direct Push Soil Core | **Drill Rig:** AMS 9500 VTR

Driller Name: M. Carey/R. Barkley | **Company:** ERGS, Inc.

Installation Date: January 20, 2017 | **Logged By:** Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1				0.0		Broken Asphalt
	2				0.0		Dark yellowish orange (10YR 6/6), dry, clayey silt with gravel.
	3				0.0		
	4				0.0		Dark yellowish orange (10YR 6/6), dry, clayey silt.
	5				0.0		
	6				0.0		
	7				0.0		
	8				0.0		
	9				0.0		Moderate yellowish brown (10YR 5/4), dry, clayey, fine to medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric.
	10				0.0		
	11				0.0		Moderate yellowish brown (10YR 5/4), slightly moist, clayey, silty, fine to course sand with gravel
	12				0.0		
	13				0.0		Moderate yellowish brown (10YR 5/4), slightly moist, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	14				0.0		
	15				0.0		
	16				0.0		
	17				0.0		
	18				0.0		
	19				0.0		
	20				0.0		
	21				0.4		
	22				0.3		
	23				0.2		
	24				0.6		
	25				0.9		Moderate yellowish brown (10YR 5/4), moist, clayey, fine to medium sandy, silt
	26				0.0		
	27				0.9		
	28				1.0		Moderate yellowish brown (10YR 5/4), wet, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	29				0.3		
	30				0.0		
	31				0.0		Moderate reddish brown (10R 4/6), wet, clayey, fine to medium sandy, silt
	32				0.0		
	33				0.0		Moderate yellowish brown (10YR 5/4), wet, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	34				0.2		
	35				0.4		Slight to moderately weathered partially weathered rock sampling as moderate yellowish brown (10YR 5/4) and very pale orange (10YR 8/2), wet, slightly clayey, silty, fine to course sand.
	36				0.0		
	37				0.0		
	38				0.0		
	39				0.0		
	40				0.0		
	41				0.0		
	42				0.0		
	43				0.0		
	44				0.0		
	45				0.0		Slightly weathered partially weathered rock sampling as very pale orange (10YR 8/2), wet,
	46				0.0		

47	0.0	silty, medium to course sand. Drill refusal encountered at 47 feet.
		Boring terminated at 47.0 feet below ground surface.

Legend

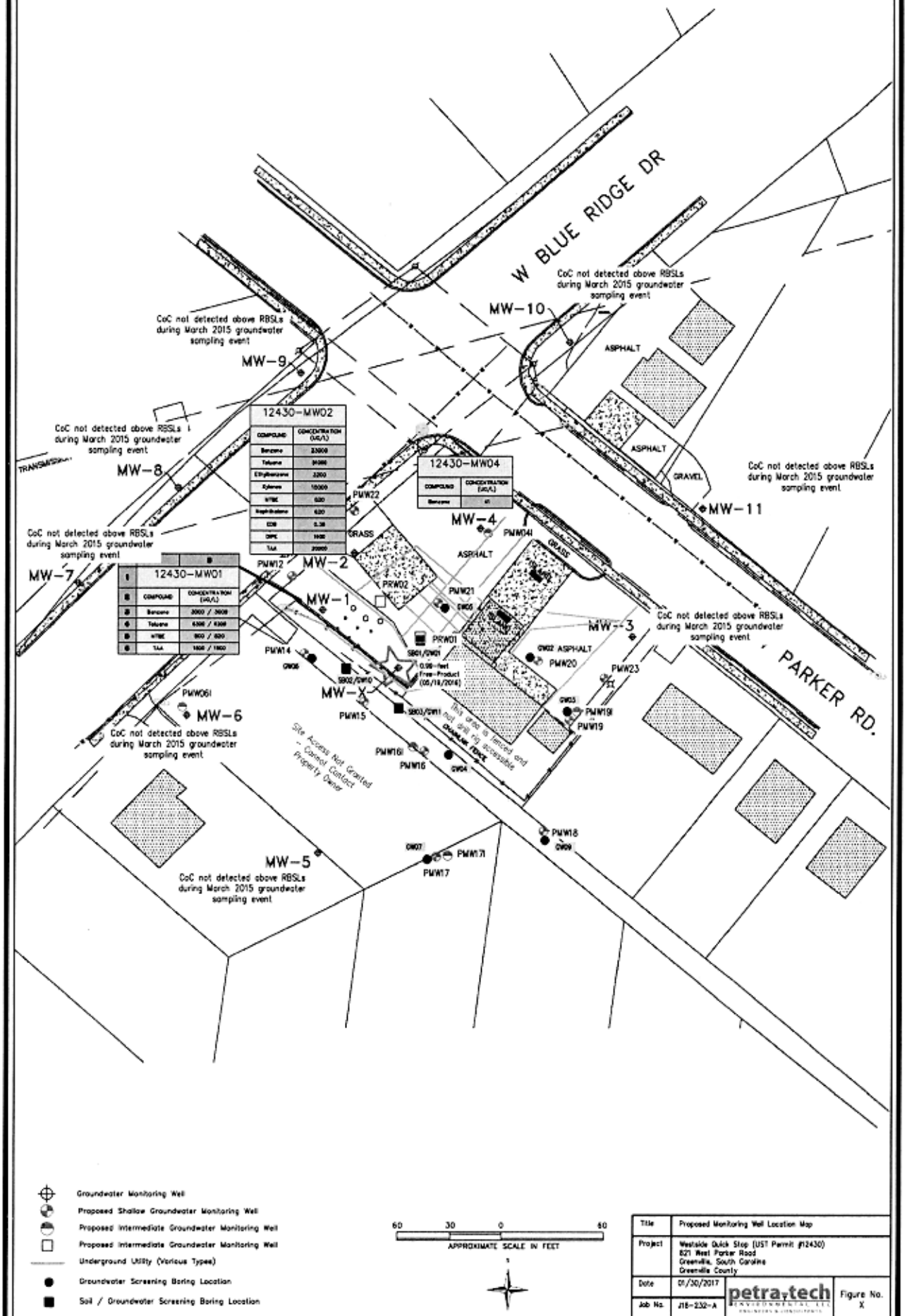
- Filter Sand Pack (_____ - _____ feet BGS)
- Bentonite Seal (_____ - _____ feet BGS)
- Bentonite-Cement Grout (__ - __ feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 47.0 feet below ground surface. Groundwater encountered at 24.0 feet below ground surface at time of boring.

Northing	=
Easting	=
Top of Casing Elevation	=
Ground Surface Elevation	=
Total Well Depth	=
Screen Length	=
Screen Size	=
Screened Interval Depth	=
6-inch Outer Casing Depth	=

REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015



Title	Proposed Monitoring Well Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	01/30/2017
Job No.	318-232-A

petra tech ENVIRONMENTAL, LLC

Figure No. X



Reference: USGS 7.5-Minute series Greenville Quadrangle - 2011; Contour Interval = 10 feet

500 250 0 500

APPROXIMATE SCALE IN FEET

N

● SITE

Title	Site Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	07/01/2016
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 1

Reply | Delete Junk | ••• ✕

Re: Westside Quick Stop - UST Permit #12430 - Revised Proposed Monitoring Well Locations Map & Cost Agreement Addendum Request

Knight, B. Tom
Today, 3:37 PM
Trever Slack, P.G <tslack@petratechenv.com>

Reply |

Sent Items

Trever,

The proposed work is acceptable. I have put in the cost agreement addendum for approval.

Tom

Tom Knight, P.G.
Hydrogeologist
UST Assessment Section
S.C. Dept. of Health & Environmental Control
Office: (803) 898-0601
Fax: (803) 898-0673
Connect: www.scdhec.gov Facebook Twitter

dhec
Healthy People. Healthy Communities.



From: Trever Slack, P.G <tslack@petratechenv.com>
Sent: Sunday, February 5, 2017 9:41 AM
To: Knight, B. Tom
Cc: tslack@petratechenv.com; Martin@elabsinc.net
Subject: RE: Westside Quick Stop - UST Permit #12430 - Revised Proposed Monitoring Well Locations Map & Cost Agreement Addendum Request

Good morning Tom,

please find attached a proposed well location site map for the Westside Quick Stop - UST 12430 site in Greenville. The proposed well locations have been modified based on our conversation/emails last week. Please let me know if there is anything I missed.

Below are requested items for the Cost Agreement #52649 Addendum request.

04. Mob/Demob (A personnel/direct push rig will be mobilized to the site to perform a continuous soil core to the top of rock at the proposed PRW02 location. Free-product will also be gauged in existing monitoring well MW02 at this time)

Reply | Delete Junk | ••• ×

9. Well Installation
   B1. Water Table +450 @ $38.00/foot
   CC. Telescoping +385 @ $50.00/foot (For intermediate wells near the source areas)
   HH. Recovery Well +15 @ $45.00/foot
   * - We will not need the previously approved Rock Drilling Footage - 275 feet @ $58.00/foot

10. Sample Collection
   A1. Groundwater Purge +11 @ $60.00/each
   E1. Gauge Well Only +1 @ $7.00/each
   H1. Field Blank +1 @ $24.60/each

11. Analyses
   A2. BTEX..... +13 @ $122.00/each
   D1. PAHs +12 @ $60.60/each
   E1. Lead +12 @ $16.00/each
   F1. EDB +15 @ $45.20/each

17. Disposal
   AA. Wastewater +230 @ $0.56/gallons
   C1. Soil + 5 tons @ $60.00/ton

Thank you,
Trever

Trever Z. Slack, P.G.
Principal Hydrogeologist

petra-tech
ENVIRONMENTAL, LLC

2435 East North Street, Suite 1108-202
Greenville, South Carolina 29615

tslack@petratechenv.com
www.petratechenv.com
(864) 436-6322 (phone)
(888) 838-9034 (fax)

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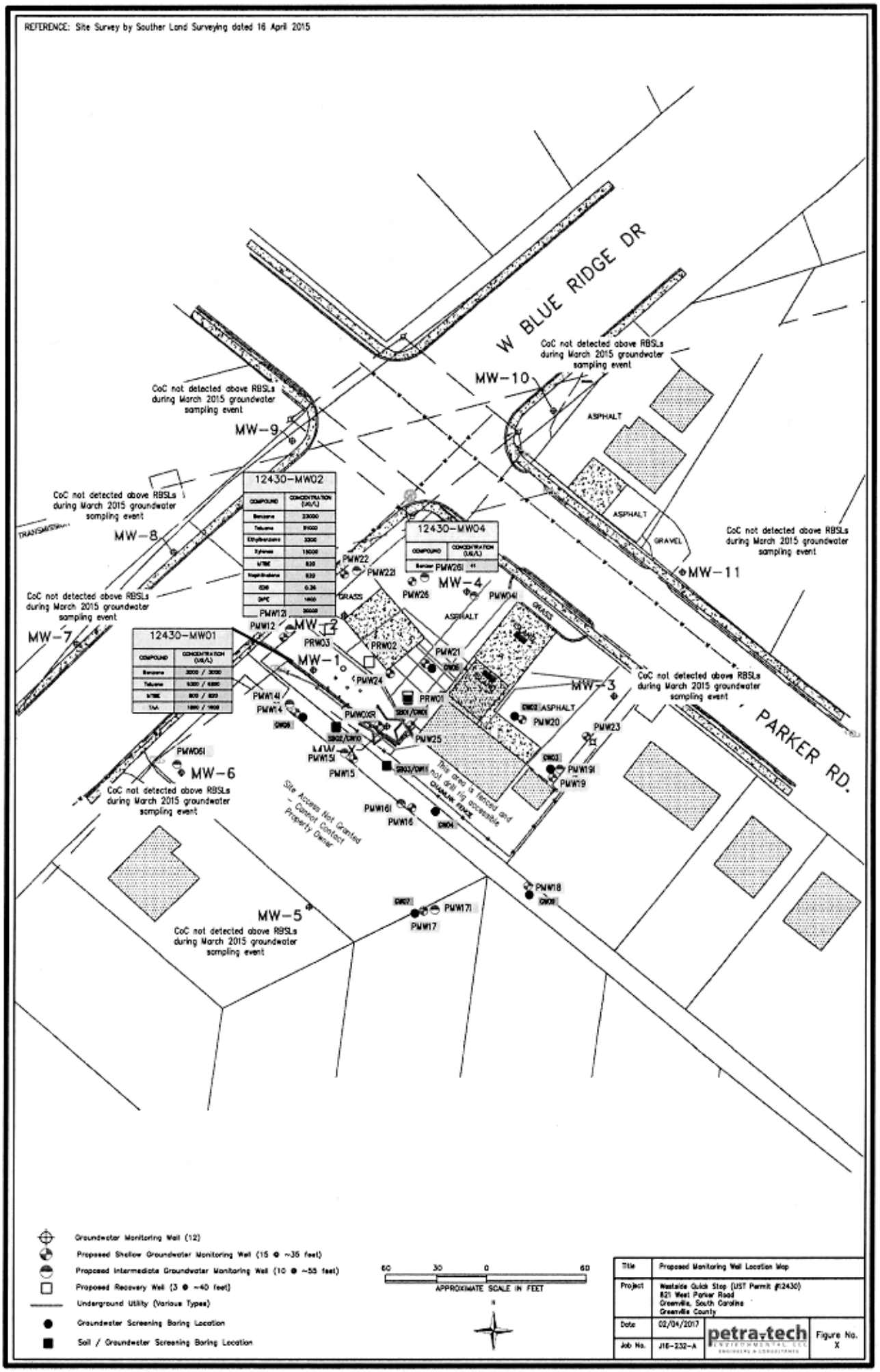
> -------- Original Message --------
> Subject: Re: Westside Quick Stop - UST Permit #12430 - Screening Update and Proposed Monitoring Well Locations
> From: "Knight, B. Tom" <knightbt@dhec.sc.gov>
> Date: Wed, February 01, 2017 11:52 am


REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015
W BLUE RIDGE DR
PARKER RD.
CoC not detected above RBSLs during March 2015 groundwater sampling event
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
MW-8
MW-9
MW-10
MW-11
12430-MW01
12430-MW02
12430-MW04
ASPHALT
GRASS
GRAVEL
TRANSMISSION
Site Access Not Granted Contact Property Owner
This area is fenced and not drilling accessible
CHAINLINK FENCE
Groundwater Monitoring Well (12)
Proposed Shallow Groundwater Monitoring Well (15 @ ~35 feet)
Proposed Intermediate Groundwater Monitoring Well (10 @ ~55 feet)
Proposed Recovery Well (3 @ ~40 feet)
Underground Utility (Various Types)
Groundwater Screening Boring Location
Soil / Groundwater Screening Boring Location
60 30 0 60
APPROXIMATE SCALE IN FEET
N
Title: Proposed Monitoring Well Location Map
Project: Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date: 02/04/2017
Job No.: 316-232-A
petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS
Figure No. X

Document Receipt Information

☒ **Hard Copy** ☒ **CD** ☐ **Email**

Date Received 5-11-17

Permit Number 12430

Project Manager Tom Knight

Name of Contractor Petra-Tech

UST Certification Number _____

Docket Number 2744

Scanned _____

AFVR/MMPE EVENTS

REPORT OF LONG-TERM AFVR/MMPE EVENTS

Westside Quick Stop
SCDHEC UST Permit #12430
821 West Parker Road
Greenville, South Carolina
Greenville County

Cost Agreement #52639

PTE Job No. J16-367-A

May 8, 2017

petra-tech
ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

SCDHEC Certified UST Contractor No. 436

Petra-Tech Environmental
2435 East North Street
Suite 1108-202
Greenville, SC 29615

www.petratechenv.com

petra-tech
ENVIRONMENTAL, LLC

May 8, 2017

South Carolina Department of Health and Environmental Control
Bureau of Underground Storage Tank Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Attention: Mr. Tom Knight, P.G.
Hydrogeologist

Subject: **Report of Long-Term AFVR/MMPE Events**
Westside Quick stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430; CA#52639
PTE Job No. J16-367-A

Dear Mr. Knight:

Pursuant to the South Carolina Department of Health and Environmental Control's directive letter dated June 9, 2016 (cost agreement #52639), Petra-Tech Environmental, LLC submits herein the results of two 96-hour long-term AFVR/MMPE events performed at the Westside Quick Stop site. This report is being submitted on behalf of Mr. Mike Wright and Environmental Laboratories, Inc.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565



1.0 PROJECT INFORMATION

The subject property is located at 821 West Parker Road in Greenville, Greenville County, South Carolina (**Figure 1**) and currently operates as a retail petroleum fueling station and convenience store. According to the South Carolina Department of Health and Environmental Control Online Underground Storage Tank Registry database, three underground storage tanks (one 1,000-gallon kerosene and two 6,000-gallon regular gasoline) are currently in use at the site. Additionally, a 4,000-gallon super/premium gasoline underground storage tank is located at the site and is currently classified as extended-out-of-use. Two separate releases have been reported at the site. An Initial Groundwater Assessment, Tier I Assessment, and Tier II Assessment have been completed in response to these releases.

During a site gauging event conducted by South Carolina Department of Health and Environmental Control on May 19, 2016, 0.99-feet of free-phase petroleum product was gauged in groundwater monitoring well 12430-MW01. The South Carolina Department of Health and Environmental Control subsequently issued an Additional Assessment / Tier II Assessment Site Specific Work Plan directive letter on June 6, 2016 followed by an Aggressive Fluid Vapor Recovery directive letter on June 9, 2017. Following the installation of twenty-four groundwater monitoring wells and three groundwater recovery wells during the additional assessment, two 96-hour long term AFVR/MMPE events were conducted at the site utilizing groundwater monitoring wells 12430-MW01, 12430-MW24, 12430-MWX, and 12430-MWXR; and recovery wells 12430-RW01 and 12430-RW02. The results of the long-term AFVR/MMPE event are included herein.

2.0 LONG-TERM AFVR / MMPE EVENT SUMMARY – 12430-RW01, 12430-MW0X, & 12430-MW0XR

A 96-hour long-term AFVR / MMPE event was completed at the subject site between Monday, April 17, 2017 and Friday, April 21, 2017. The 96-hour event was conducted on monitoring wells 12430-MW0X and 12430-MW0XR, and on recovery well 12430-RW01 (**Figure 2**). A geologist was on-site for initial event setup, and periodic observation and monitoring of the event throughout the week, and a field technician remained on-site throughout the event for monitoring and data collection. The long-term AFVR/MMPE event was performed using a Vermeer Ring-O-Matic 850 Super Deep Vacuum Unit equipped with a 28 horsepower diesel engine and Masport HXL15V vacuum pump with 27-inches of mercury and 350 cubic feet per minute vacuum capabilities.

Prior to initiating the event, Petra-Tech Environmental staff gauged the wells using a Solinst® Interface Meter. Greater than 1.70-feet of free-phase petroleum product was detected in groundwater monitoring well 12430-MW0X, 0.02-feet of free-phase petroleum product was detected in groundwater monitoring well 12430-MW0XR, and 3.20-feet of free-phase petroleum product was detected in groundwater recovery well 12430-RW01 prior to the AFVR event. The long-term AFVR/MMPE event was initiated at 1300 on Monday, April 17, 2017 and concluded at 1300 on Friday, April 21, 2017. The general weather conditions observed during this period of time were variable; with daily high temperatures ranging from 66º to 87º Fahrenheit and low temperatures ranging from 57º to 63º Fahrenheit. Average daily wind speeds throughout the course of the event ranged from 3 to 8 miles per hour. 0.43-inches of rainfall was recorded on April 17, 2017; 0.02-inches of rainfall was recorded on April 18, 2017; and 0.47-inches of rainfall was recorded on April 19, 2017.

Throughout the duration of the event, a continuous vacuum ranging from 20.0 to 27.0 inches of mercury was applied to monitoring wells 12430-MWX and 12430-MWXR, and on recovery well 12430-RW01. The

extraction stinger was lowered at 6-inch intervals in the wells from the free-phase product / water table interface to a target depth of 36 feet below ground surface (or approximately 6-inches above the bottom of each well for those wells less than 36 feet deep) within the first 8-hours of the event. Stinger depths were varied thereafter to maximize free-phase petroleum product and vapor recovery based on conditions observed in the field. Vacuum and field measurements recorded throughout the event are summarized in **Attachment A**. The vacuum in addition to depth-to-water was also measured in adjacent monitoring wells 12430-MW15 and 12430-MW25 using magnahelic gauges and an interface probe to evaluate the vacuum's radius of influence. Radius of influence gauging data observed during the event is summarized in **Attachment A**.

Due to the close proximity of the site to places of public business, volatile air emissions were treated on-site utilizing a granulated activated carbon (GAC) unit. Influent and effluent vapor concentrations were measured throughout the event using a MiniRAE® Lite 3000 Photo Ionization Detector (PID). Air emissions pre-treatment and post-treatment concentrations are summarized in **Attachment A**.

3.0 LONG-TERM AFVR/MMPE EVENT SUMMARY – 12430-MW01, 12430-MW24, & 12430-RW02

A 96-hour long-term AFVR/MMPE event was completed at the subject site between Monday, April 24, 2017 and Friday, April 28, 2017. The 96-hour event was conducted on monitoring wells 12430-MW01 and 12430-MW24, and on recovery well 12430-RW02 (**Figure 2**). A geologist was on-site for initial event setup, and periodic observation and monitoring of the event throughout the week, and a field technician remained on-site throughout the event for monitoring and data collection. The long-term AFVR/MMPE event was performed using a Vermeer Ring-O-Matic 850 Super Deep Vacuum Unit equipped with a 28 horsepower diesel engine and Masport HXL15V vacuum pump with 27-inches of mercury and 350 cubic feet per minute vacuum capabilities.

Prior to initiating the event, Petra-Tech Environmental staff gauged the wells using a Solinst® Interface Meter. 4.46-feet of free-phase petroleum product was detected in groundwater monitoring well 12430-MW01, 4.75-feet of free-phase petroleum product was detected in groundwater monitoring well 12430-MW24, and 3.05-feet of free-phase petroleum product was detected in groundwater recovery well 12430-RW02 prior to the AFVR event. The long-term AFVR/MMPE event was initiated at 1000 on Monday, April 24, 2017 and concluded at 1000 on Friday, April 28, 2017. The general weather conditions observed during this period of time were variable; with daily high temperatures ranging from 57º to 82º Fahrenheit and low temperatures ranging from 50º to 63º Fahrenheit. Average daily wind speeds throughout the course of the event ranged from 1 to 17 miles per hour. 1.35-inches of rainfall was recorded on April 24, 2017 and 0.07-inches of rainfall was recorded on April 27, 2017.

Throughout the duration of the event, a continuous vacuum ranging from 21.0 to 27.0 inches of mercury was applied to monitoring wells 12430-MW01 and 12430-MW24, and recovery well 12430-RW02. The extraction stinger was lowered at 6-inch intervals in the wells from the free-phase product / water table interface to a target depth of 36 feet below ground surface (or approximately 6-inches above the bottom of each well for those wells less than 36 feet deep) within the first 8-hours of the event. Stinger depths were varied thereafter to maximize free-phase petroleum product and vapor recovery based on conditions observed in the field. Vacuum and field measurements recorded throughout the event are summarized in **Attachment B**. The vacuum along with depth-to-water was also measured in adjacent monitoring wells 12430-MW25 and 12430-MW15 using magnahelic gauges and an interface probe to evaluate the radius of influence. Radius of influence gauging data observed during the event is summarized in **Attachment B**.

Due to the close proximity of the site to places of public business, volatile air emissions were treated on-site utilizing a granulated activated carbon (GAC) unit. Influent and effluent vapor concentrations were measured throughout the event using a MiniRAE® Lite 3000 Photo Ionization Detector (PID). Air emissions pre-treatment and post-treatment concentrations are summarized in **Attachment B**.

4.0 RESULTS & RECOMMENDATIONS

A total volume of approximately 1,715 gallons of petroleum impacted liquid was recovered from the site during the 96-hour event conducted on groundwater monitoring wells 12430-MWX and 12430-MWXR, and on recovery well 12430-RW01. Of this amount, approximately 36 gallons was gauged as separated phase petroleum product. A total volume of approximately 1,204 gallons of petroleum impacted liquid was recovered from the site during the 96-hour event conducted on groundwater monitoring wells monitoring wells 12430-MW01 and 12430-MW24, and on recovery well 12430-RW02. Of this amount, approximately 20 gallons was gauged as separated phase petroleum product. Waste transportation and disposal records for the petroleum impacted groundwater recovered during the events are provided in **Attachment C**. Total recovered volumes were measured using a Fill-Rite Series 900 Totalizer Meter.

A total of approximately 126.03 pounds of gasoline vapor which is equivalent to approximately 20.16 gallons of gasoline were calculated to have been recovered during the 96-hour long term AFVR/MMPE event on monitoring wells 12430-MWX and 12430-MWXR, and on recovery well 12430-RW01; and a total of approximately 145.21 pounds of gasoline vapor which is equivalent to approximately 23.23 gallons of gasoline were calculated to have been recovered during the 96-hour long term AFVR/MMPE event on groundwater monitoring wells 12430-MW01 and 12430-MW24, and on recovery well 12430-RW02. The emissions calculations for the event are provided as **Attachments A and B**.

An Additional Assessment/Tier II Assessment was conducted in conjunction with the current scope of work and details of the assessment will be submitted under separate cover. Based on the results of the current scope of work, the 96-Hour Aggressive Fluid Vapor Recovery events were effective in removing petroleum product as both free-phase and vapor phase, and served as a critical interim remedial measure to begin product removal. However, based on vacuum measurements and drawdown recorded in proximal wells, the radius of influence created by the AFVR vacuum events is limited. Petra-Tech Environmental recommends a series of four additional 96-hour AFVR events at the site to continue free-phase petroleum product removal.

FIGURES



Reference: USGS 7.5-Minute series Greenville Quadrangle - 2011; Contour Interval = 10 feet

500 250 0 500

APPROXIMATE SCALE IN FEET

N

● SITE

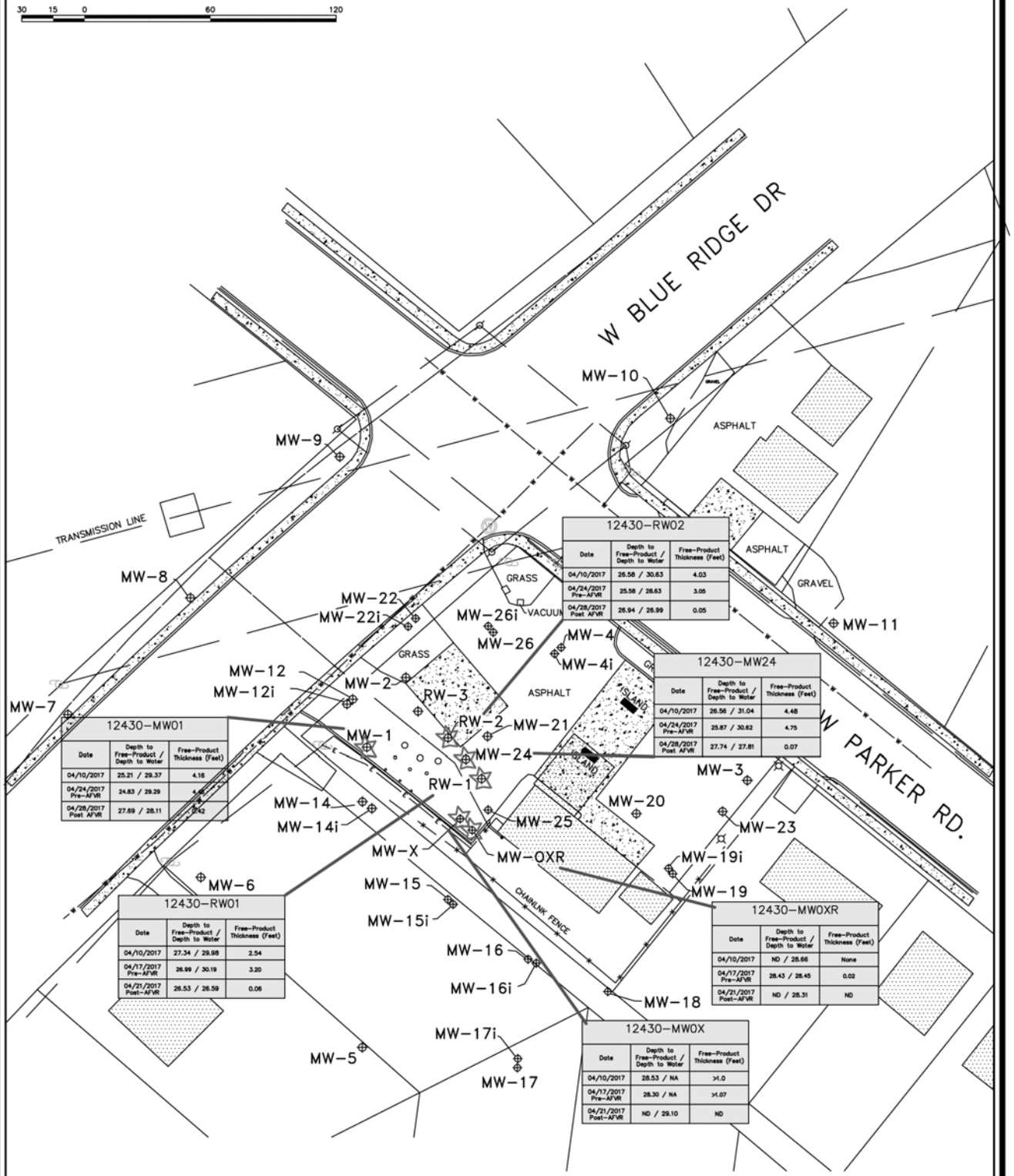
Title	Site Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	07/01/2016
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 1

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



12430-RW02

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	26.58 / 30.63	4.03
04/24/2017 Pre-AFVR	25.58 / 28.63	3.05
04/28/2017 Post AFVR	26.94 / 26.99	0.05

12430-MW24

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	26.56 / 31.04	4.48
04/24/2017 Pre-AFVR	25.87 / 30.62	4.75
04/28/2017 Post AFVR	27.74 / 27.81	0.07

12430-MW01

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	25.21 / 29.37	4.16
04/24/2017 Pre-AFVR	24.83 / 29.29	4.46
04/28/2017 Post AFVR	27.89 / 28.11	0.22

12430-RW01

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	27.34 / 29.98	2.54
04/17/2017 Pre-AFVR	26.99 / 30.19	3.20
04/21/2017 Post-AFVR	26.53 / 26.59	0.06

12430-MW0XR

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	ND / 28.66	None
04/17/2017 Pre-AFVR	28.43 / 28.45	0.02
04/21/2017 Post-AFVR	ND / 28.31	ND

12430-MW0X

Date	Depth to Free-Product / Depth to Water	Free-Product Thickness (Feet)
04/10/2017	28.53 / NA	>1.0
04/17/2017 Pre-AFVR	28.30 / NA	>1.07
04/21/2017 Post-AFVR	ND / 29.10	ND

⊕ Groundwater Monitoring Well

☆ Free-Phase Petroleum Product Present

Title	Monitoring Well Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	02/04/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 2

WESTSIDE QUICK STOP – UST PERMIT #12430
LONG-TERM AFVR/MMPE EVENT

ATTACHMENT A

AFVR / MMPE Field Measurements & Emissions Calculations

Westside Quickstop - UST Permit #12430

12430-RW01, 12430-MW0XR & 12430-MW0X

		Extraction Wells						Radius of Influence Monitoring				Emissions Field Measurements								Emission Calculations								
		12430-RW01		12430-MW0X		12430-MW0XR		12430-MW25		12430-MW15																		
Date	Time	Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Vacuum (in. H2O)	DTW (ft BTOC)	Vacuum (in. H2O)	DTW (ft BTOC)	System Vacuum (in. HG)	Effluent Velocity (ft/min)	Pipe Diameter (in)	Effluent Temp. (F)	Relative Humidity (%)	Vapor Conc. Pre-Treatment (ppm)	Vapor Conc. Post Treatment (ppm)	Elapsed Time (hours)	Q_{std} (DSCFM)	PPM_d	PPM_c	K	C_{con} (mg/dsm3)	C_c (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR_g (gal/hr)
4/17/2017	1300	30.5	22.0	28.5	23.0	29.5	23.0	0.0	28.46	0.0	20.90	25.0	3,168	2	109.58	56.0	263.8	2.4	0.0	59.40	284.56	1,138.22	4	567.93	3.55E-05	0.1264	0.1462	0.0234
	1330	30.5	23.0	28.5	24.0	29.5	23.0	0.0	28.46	0.0	20.90	27.0	3,019	2	119.48	31.3	270.1	3.1	0.5	55.64	291.35	1,165.41	4	581.49	3.63E-05	0.1212	0.1402	0.0224
	1400	31.0	22.0	29.0	24.0	30.0	24.0	0.0	28.58	0.0	20.91	27.0	3,118	2	128.30	23.6	316.4	4.5	1.0	56.60	341.29	1,365.18	4	681.17	4.25E-05	0.1444	0.1671	0.0267
	1430	31.0	22.0	29.0	24.0	30.5	24.0	0.0	28.73	0.0	20.91	27.0	2,973	2	135.36	23.3	330.6	5.0	1.5	53.33	356.61	1,426.45	4	711.74	4.44E-05	0.1422	0.1645	0.0263
	1500	31.5	24.0	29.0	24.0	31.0	24.0	0.0	28.86	0.0	20.91	27.0	3,802	2	138.20	22.9	299.3	4.8	2.0	67.87	322.85	1,291.40	4	644.36	4.02E-05	0.1638	0.1896	0.0303
	1530	32.0	24.0	29.0	24.0	31.0	25.0	0.0	29.01	0.0	20.91	27.0	3,447	2	138.74	22.7	305.1	4.7	2.5	61.48	329.11	1,316.42	4	656.84	4.10E-05	0.1513	0.1751	0.0280
	1600	32.0	23.0	29.0	19.0	31.5	25.0	0.0	29.30	0.0	20.94	27.0	2,814	2	148.64	22.9	593.1	2.0	3.0	49.37	639.77	2,559.06	4	1,276.87	7.97E-05	0.2361	0.2733	0.0437
	1630	32.5	23.0	29.0	21.0	32.0	25.0	0.0	29.10	0.0	20.93	27.0	3,232	2	142.88	31.2	2,206.0	5.9	3.5	57.25	2,379.57	9,518.28	4	4,749.26	2.96E-04	1.0184	1.1787	0.1886
	1700	32.5	22.0	29.5	22.0	32.5	24.0	0.0	29.00	0.0	20.93	27.0	2,999	2	145.94	33.6	3,066.0	4.4	4.0	52.85	3,307.24	13,228.95	4	6,600.73	4.12E-04	1.3068	1.5124	0.2420
	1730	33.0	24.0	29.5	21.0	33.0	24.0	0.0	30.90	0.0	20.81	27.0	3,211	2	145.58	37.2	3,771.2	3.1	4.5	56.62	4,067.92	16,271.69	4	8,118.95	5.07E-04	1.7220	1.9929	0.3189
	1800	33.0	23.0	29.5	21.0	33.5	22.0	0.0	30.60	0.0	20.75	27.0	2,991	2	143.60	35.4	4,699.2	3.4	5.0	52.92	5,068.94	20,275.76	4	10,116.82	6.32E-04	2.0053	2.3208	0.3713
	1830	33.5	22.0	29.5	21.0	34.0	22.0	0.0	30.60	0.0	20.70	27.0	3,804	2	141.08	36.6	3,998.1	2.1	5.5	67.58	4,312.68	17,250.70	4	8,607.44	5.37E-04	2.1790	2.5217	0.4035
	1900	34.0	23.0	29.5	23.0	34.0	22.0	0.0	30.60	0.0	20.60	27.0	2,666	2	139.82	31.2	4,421.6	2.6	6.0	47.46	4,769.50	19,077.99	4	9,519.18	5.94E-04	1.6924	1.9587	0.3134
	1930	34.5	23.0	29.5	21.0	34.5	23.0	0.0	30.50	0.0	20.60	27.0	2,794	2	139.28	29.8	3,939.9	2.2	6.5	49.79	4,249.90	16,999.59	4	8,482.14	5.30E-04	1.5819	1.8307	0.2929
	2000	35.0	22.0	29.5	21.0	35.0	24.0	0.0	30.50	0.0	20.60	27.0	3,102	2	136.76	29.5	4,101.2	3.1	7.0	55.51	4,423.89	17,695.55	4	8,829.40	5.51E-04	1.8359	2.1247	0.3399
	2030	35.5	24.0	29.5	22.0	35.5	24.0	0.0	30.50	0.0	20.60	27.0	3,266	2	132.08	28.6	2,206.0	2.1	7.5	58.91	2,379.57	9,518.28	4	4,749.26	2.96E-04	1.0479	1.2128	0.1940
	2100	36.0	24.0	30.0	23.0	36.0	25.0	0.0	30.60	0.0	20.60	27.0	3,507	2	130.28	30.3	2,961.0	3.9	8.0	63.45	3,193.98	12,775.90	4	6,374.68	3.98E-04	1.5150	1.7533	0.2805
	2130	36.0	24.0	30.0	23.0	36.0	24.0	0.0	30.60	0.0	20.40	27.0	2,111	2	129.92	30.6	3,014.0	2.7	8.5	38.21	3,251.15	13,004.58	4	6,488.78	4.05E-04	0.9288	1.0749	0.1720
	2200	36.0	23.0	30.0	22.0	36.0	23.0	0.0	30.60	0.0	20.40	27.0	3,069	2	126.86	29.5	4,517.2	2.6	9.0	55.85	4,872.62	19,490.48	4	9,725.00	6.07E-04	2.0343	2.3544	0.3767
	2230	36.0	22.0	30.0	22.0	36.0	24.0	0.0	30.60	0.0	20.20	27.0	2,975	2	140.18	31.6	3,621.7	3.1	9.5	52.93	3,906.66	15,626.64	4	7,797.09	4.87E-04	1.5460	1.7892	0.2863
	2300	36.0	22.0	30.0	23.0	36.0	24.0	0.0	30.60	0.0	20.20	27.0	3,009	2	138.92	29.6	4,121.6	4.4	10.0	53.65	4,445.89	17,783.57	4	8,873.32	5.54E-04	1.7832	2.0638	0.3302
	2330	36.0	23.0	30.0	23.0	36.0	23.0	0.0	30.60	0.0	20.20	27.0	3,107	2	134.96	32.2	3,724.2	5.2	10.5	55.77	4,017.23	16,068.90	4	8,017.76	5.01E-04	1.6749	1.9383	0.3101
	2400	36.0	24.0	30.0	23.0	36.0	24.0	0.0	30.60	0.0	20.20	27.0	3,278	2	133.88	29.9	3,776.4	4.4	11.0	58.94	4,073.53	16,294.13	4	8,130.14	5.08E-04	1.7951	2.0774	0.3324
No readings recorded between 2400 and 0800																												
4/18/2017	0800	33.0	23.0	29.5	22.0	33.0	24.0	1.5	28.85	2.0	20.92	27.0	2,276	2	136.58	39.8	4,381.0	26.8	19.0	40.74	4,725.70	18,902.81	4	9,431.77	5.89E-04	1.4394	1.6658	0.2665
	0900	33.0	20.0	29.5	19.0	33.0	22.0	0.0	28.85	0.0	20.92	22.0	2,502	2	140.54	37.0	3,744.0	21.9	20.0	44.49	4,038.58	16,154.33	4	8,060.39	5.03E-04	1.3433	1.5546	0.2487
	1000	33.5	19.0	29.5	20.0	33.5	21.0	0.0	28.87	0.0	20.92	24.0	1,799	2	144.86	37.5	3,557.0	25.3	21.0	31.76	3,836.87	15,347.48	4	7,657.80	4.78E-04	0.9111	1.0544	0.1687
	1100	33.5	19.0	29.5	17.0	33.5	22.0	0.0	28.87	0.0	20.92	24.0	2,366	2	141.08	34.9	3,159.0	31.0	22.0	42.03	3,407.55	13,630.22	4	6,800.95	4.25E-04	1.0708	1.2393	0.1983
	1200	34.0	20.0	29.5	17.0	34.0	22.0	0.0	28.88	0.0	20.92	24.0	2,318	2	136.76	33.6	3,370.0	34.6	23.0	41.48	3,635.16	14,540.63	4	7,255.21	4.53E-04	1.1273	1.3046	0.2087
	1300	34.0	19.0	29.5	18.0	34.0	21.0	0.0	28.88	0.0	20.92	22.0	2,792	2	146.66	31.0	2,893.0	22.2	24.0	49.15	3,120.63	12,482.50	4	6,228.29	3.89E-04	1.1466	1.3270	0.2123
	1400	34.5	18.0	29.5	17.0	34.5	21.0	0.0	28.96	0.0	20.92	22.0	2,168	2	140.00	36.8	2,310.0	14.7	25.0	38.59	2,491.75	9,967.02	4	4,973.16	3.10E-04	0.7188	0.8319	0.1331
	1500	34.5	17.0	29.5	17.0	34.5	21.0	0.0	29.04	0.0	20.92	22.0	2,204	2	144.32	36.1	1,958.0	12.9	26.0	38.95	2,112.06	8,448.23	4	4,215.34	2.63E-04	0.6150	0.7117	0.1139
	1600	35.0	17.0	29.5	17.0	35.0	20.0	0.0	29.10	0.0	20.92	23.0	2,650	2	142.88	36.7	1,317.0	11.0	27.0	46.94	1,420.62	5,682.49	4	2,835.34	1.77E-04	0.4985	0.5770	0.0923
	1700	35.0	18.0	29.5	17.0	35.0	21.0	0.0	28.98	0.0	20.92	20.0	3,022	2	143.42	35.9	1,492.0	26.9	28.0	53.48	1,609.39	6,437.57	4	3,212.10	2.01E-04	0.6435	0.7447	0.1192
	1800	35.5	17.0	29.5	18.0	35.5	21.0	0.0	29.02	0.0	20.92	22.0	2,994	2	143.60	35.4	2,103.0	30.2	29.0	52.97	2,268.47	9,073.87	4	4,527.51	2.83E-04	0.8983	1.0396	0.1663
	1900	35.5	17.0	29.5	19.0	35.5	20.0	0.0	29.07	0.0	20.92	21.0	3,102	2	142.88	35.7	2,406.0	28.1	30.0	54.95	2,595.31	10,381.23	4	5,179.83	3.23E-04	1.0661	1.2338	0.1974
	2000	36.0	18.0	29.5	19.0	36.0	20.0	0.0	29.09	0.0	20.92	21.0	3,061	2	140.36	33.9	2,198.0	29.2	31.0	54.45	2,370.94	9,483.77	4	4,732.03	2.95E-04	0.9651	1.1169	0.1787
	2100	36.0	17.0	29.5	18.5	36.0	20.0	0.0	29.10	0.0	20.92	21.0	3,146	2	139.82	34.7	2,646.0	30.6	32.0	56.01	2,854.19	11,416.76	4	5,696.52	3.56E-04	1.1951	1.3831	0.2213
	2200	36.0	17.0	29.5	17.0	36.0	19.0	0.0	29.10	0.0	20.92	22.0	2,941	2	136.58	33.1	2,467.0	32.7	33.0	52.64	2,661.11	10,644.43	4	5,311.16	3.32E-04	1.0473	1.2121	0.1939
	2300	36.0	17.0	29.5	17.0	36.0	19.0	0.0	29.10	0.0	20.92	22.0	2,592	2	136.94	34.2	2,398.0	33.9	34.0	46.37	2,586.68	10,346.71	4	5,162.61	3.22E-04	0.8967	1.0378	0.1660
	2400	36.0	17.0	29.5	17.0	36.0	19.0	0.0	29.10	0.0	20.92	22.0	2,637	2	136.40	33.0	2,742.0	29.0	35.0	47.22	2,957.74	11,830.98	4	5,903.20	3.69E-04	1.0441	1.2083	0.1933
No readings recorded between 2400 and 0800																												

Date	Time	12430-RW01		12430-MW0X		12430-MW0XR		12430-MW25		12430-MW15		System Vacuum	Effluent Velocity	Pipe Diameter	Effluent Temp.	Relative Humidity	Vapor Conc. Pre-Treatment	Vapor Conc. Post Treatment	Elapsed Time	Q_{std}	PPM_d	PPM_v	K	C_{cm}	C_c	PMR_c	PMR_g	PMR_g
		Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Vacuum (in. H2O)	DTW (ft BTOC)	Vacuum (in. H2O)	DTW (ft BTOC)	(in. HG)	(ft/min)	(in)	(F)	(%)	(ppm)	(ppm)	(hours)	(DSCFM)				(mg/dsm3)	(lb/dscf)	(lb/hr)	(lb/hr)	(gal/hr)
4/19/2017	0800	33.0	18.0	29.5	17.0	33.0	19.0	0.0	28.52	0.0	20.90	22.0	2,291	2	133.16	41.8	2,538.0	27.6	43.0	41.25	2,737.69	10,950.77	4	5,464.01	3.41E-04	0.8442	0.9770	0.1563
	1000	33.5	18.0	29.5	18.0	33.5	20.0	0.0	28.56	0.0	20.90	22.0	2,403	2	136.04	40.2	2,614.0	25.0	45.0	43.05	2,819.67	11,278.69	4	5,627.63	3.51E-04	0.9076	1.0503	0.1681
	1200	34.0	18.0	29.5	18.0	34.0	19.0	0.0	28.77	0.0	20.91	23.0	2,788	2	142.16	34.5	2,296.0	23.3	47.0	49.44	2,476.65	9,906.61	4	4,943.02	3.09E-04	0.9155	1.0595	0.1695
	1400	34.5	17.0	29.5	17.0	34.5	18.0	0.0	28.91	0.0	20.91	23.0	3,190	2	143.24	32.9	3,488.0	42.7	49.0	56.47	3,762.44	15,049.76	4	7,509.25	4.69E-04	1.5884	1.8383	0.2941
	1600	35.0	18.0	29.5	17.0	35.0	17.0	0.0	29.01	0.0	20.91	23.0	2,777	2	142.88	39.6	2,976.0	21.2	51.0	49.19	3,210.16	12,840.62	4	6,406.98	4.00E-04	1.1805	1.3662	0.2186
	1800	35.5	17.0	29.5	17.0	35.5	17.0	0.0	29.02	0.0	20.92	23.0	3,100	2	143.42	39.7	3,012.0	19.6	53.0	54.86	3,248.99	12,995.95	4	6,484.48	4.05E-04	1.3326	1.5422	0.2467
	2000	36.0	18.0	29.5	18.0	36.0	18.0	0.0	29.02	0.0	20.92	23.0	3,309	2	143.42	39.5	3,311.0	30.3	55.0	58.56	3,571.51	14,286.06	4	7,128.19	4.45E-04	1.5636	1.8096	0.2895
	2200	36.0	18.0	29.5	17.0	36.0	19.0	0.0	29.20	0.0	20.92	22.0	2,637	2	139.28	34.3	2,855.0	36.6	57.0	46.99	3,079.64	12,318.54	4	6,146.48	3.84E-04	1.0819	1.2521	0.2003
	2400	36.0	18.0	29.5	17.0	36.0	18.0	0.0	29.30	0.0	20.93	23.0	3,416	2	139.10	36.6	3,202.0	31.9	59.0	60.89	3,453.94	13,815.75	4	6,893.53	4.30E-04	1.5723	1.8196	0.2911
No readings recorded between 2400 and 0800																												
4/20/2017	0800	34.5	18.0	29.5	18.0	34.5	19.0	1.0	28.93	0.0	20.91	22.0	3,066	2	128.66	37.1	2,516.0	28.0	67.0	55.62	2,713.96	10,855.85	4	5,416.65	3.38E-04	1.1285	1.3060	0.2090
	1000	34.5	17.0	29.5	17.0	34.5	18.0	0.0	29.06	0.0	20.91	20.0	3,254	2	136.58	34.1	2,970.0	32.6	69.0	58.25	3,203.68	12,814.74	4	6,394.06	3.99E-04	1.3951	1.6145	0.2583
	1200	35.0	19.0	29.5	18.0	35.0	20.0	0.0	29.09	0.0	20.91	24.0	2,880	2	142.70	33.2	3,174.0	40.8	71.0	51.03	3,423.73	13,694.94	4	6,833.25	4.27E-04	1.3061	1.5116	0.2419
	1400	35.0	19.0	29.5	18.0	35.0	19.0	0.0	29.14	0.0	20.92	24.0	3,339	2	144.14	36.1	3,259.0	44.6	73.0	59.02	3,515.42	14,061.69	4	7,016.24	4.38E-04	1.5512	1.7952	0.2872
	1600	35.5	18.0	29.5	17.0	35.5	19.0	0.0	29.14	0.0	20.93	24.0	3,107	2	134.42	39.1	2,775.6	30.2	75.0	55.82	2,993.99	11,975.95	4	5,975.54	3.73E-04	1.2494	1.4459	0.2313
	1800	35.5	18.0	29.5	17.5	35.5	20.0	0.0	29.20	0.0	20.93	21.0	2,761	2	142.16	40.2	3,012.3	19.4	77.0	48.96	3,249.31	12,997.25	4	6,485.12	4.05E-04	1.1894	1.3766	0.2202
	2000	36.0	19.0	29.5	18.0	36.0	20.0	0.0	29.30	0.0	20.92	22.0	3,444	2	135.86	40.6	3,394.2	21.1	79.0	61.72	3,661.26	14,645.04	4	7,307.31	4.56E-04	1.6895	1.9552	0.3128
	2200	36.0	18.0	29.5	18.0	36.0	19.0	0.0	29.30	0.0	20.92	23.0	2,785	2	137.66	41.0	2,976.1	19.6	81.0	49.76	3,210.26	12,841.06	4	6,407.19	4.00E-04	1.1943	1.3822	0.2211
	2400	36.0	18.0	29.5	18.0	36.0	19.0	0.0	29.30	0.0	20.92	23.0	2,201	2	142.16	41.2	2,380.1	19.8	83.0	39.03	2,567.37	10,269.48	4	5,124.07	3.20E-04	0.7492	0.8670	0.1387
No readings recorded between 2400 and 0800																												
4/21/2017	0800	36.0	19.0	29.5	18.0	36.0	20.0	2.0	29.05	0.0	20.91	21.0	2,944	2	129.38	43.5	2,274.0	36.6	91.0	53.34	2,452.92	9,811.69	4	4,895.65	3.06E-04	0.9782	1.1321	0.1811
	1000	36.0	19.0	29.5	18.0	36.0	19.0	0.0	29.05	0.0	20.91	22.0	2,660	2	122.36	39.1	2,986.0	39.0	93.0	48.78	3,220.94	12,883.77	4	6,428.50	4.01E-04	1.1746	1.3593	0.2175
	1200	36.0	19.0	29.5	18.0	36.0	19.0	0.0	29.05	0.0	20.91	24.0	2,439	2	143.24	39.1	2,402.0	37.4	95.0	43.18	2,590.99	10,363.97	4	5,171.22	3.23E-04	0.8363	0.9679	0.1549
	1300	36.0	18.0	29.5	19.0	36.0	19.0	0.0	29.05	0.0	20.91	23.0	2,497	2	139.50	37.6	2,736.0	36.8	96.0	44.48	2,951.27	11,805.09	4	5,890.28	3.68E-04	0.9814	1.1358	0.1817
								Average Values					2,892	2	137.99	34.7	2722.8	19.1	--	51.67	2,937.01	11,748.02	4.00	5861.81	0.000366	1.1344	1.3129	0.2101
													B_{ws}	0.073	B_{wm}	0.044													

Total Pounds of Carbon (emissions) 108.9064

Total Pounds of Gasoline (as emissions) 126.0377

Total Gallons of Gasoline (as emissions) 20.1660

NOTES:

inches of Hg - inches of mercury

ppm - parts per million

Q_{std} - flow at DSCFM

DSCFM - Dry Standard Cubic Feet per Minute

PPM_d - "dry" concentration

PPM_v - volumetric concentration of VOC emissions as carbon, dry basis, at STP

K - number of carbons in calibration gas

C_{cm} - mass concentration of VOC emissions as carbon

PMR_c - pollutant mass removal of VOCs as carbon

PMR_g - pollutant mass removal of VOCs as gasoline

lb_{wm} - lb of water per lb of dry air

B_{ws} - water vapor % by volume

Extraction Well Information					
Extraction Well ID	Time	Depth to Free-Product (feet BTOC)	Depth to Water (feet BTOC)	Total Well Depth (feet BTOC)	Target Stinger Depth (feet BTOC)
12430-MW0X	Initial	28.30	NA	30	30
	Post	--	29.10		
12430-MW0XR	Initial	28.43	28.45	38	36
	Post	--	28.31		
12430-RW01	Initial	26.99	30.19	40	36
	Post	26.53	26.59		

Radius of Influence Monitoring Well Information				
Monitoring Well ID	Time	Depth to Free-Product (feet BTOC)	Depth to Water (feet BTOC)	Total Well Depth (feet BTOC)
12430-MW1S	Initial	--	20.90	26
	24-Hour	--	20.92	
	48-Hour	--	20.91	
	72-Hour	--	20.92	
	96-Hour	--	20.91	
12430-MW2S	Initial	--	28.46	38
	24-Hour	--	28.88	
	48-Hour	--	28.91	
	72-Hour	--	29.14	
	96-Hour	--	29.05	

AFVR / MMPE Field Measurements & Emissions Calculations

Westside Quickstop - UST Permit #12430

12430-MW24, 12430-RW02 & 12430-RW01

		Extraction Wells						Radius of Influence Monitoring				Emissions Field Measurements								Emission Calculations							
		12430-MW24		12430-RW02		12430-MW01		12430-MW25		12430-MW15																	
Date	Time	Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Stinger Depth (feet)	Vacuum (in. HG)	Vacuum (in. H2O)	DTW (ft BTOC)	Vacuum (in. H2O)	DTW (ft BTOC)	System Vacuum (in. HG)	Effluent Velocity (ft/min)	Pipe Diameter (in)	Effluent Temp. (F)	Relative Humidity (%)	Vapor Conc. Pre-Treatment (ppm)	Vapor Conc. Post Treatment (ppm)	Elapsed Time (hours)	Q_{std} (DSCFM)	PPM_d	PPM_c	K	C_{con} (mg/dsm3)	C_r (lb/dscf)	PMR_c (lb/hr)	PMR_g (lb/hr)	PMR_g (gal/hr)
4/24/2017	1000	30.5	15.0	29.0	14.0	29.5	13.0	0.0	28.21	0.0	20.33	22.0	2,144	2	123.08	63.0	3,986.0	99.3	0.0	38.42	4,393.91	17,575.64	4	8,769.57	5.47E-04	1.2622	1.4607	0.2337
	1030	30.5	17.0	29.0	18.0	29.5	15.0	0.0	28.22	0.0	20.33	21.0	2,336	2	126.14	61.4	3,870.0	96.0	0.5	41.65	4,266.04	17,064.16	4	8,514.36	5.32E-04	1.3282	1.5372	0.2459
	1100	31.0	18.0	29.5	18.0	29.5	17.0	0.0	28.22	0.0	20.34	23.0	2,404	2	127.04	58.2	4,203.0	101.8	1.0	42.79	4,633.12	18,532.47	4	9,246.99	5.77E-04	1.4822	1.7154	0.2745
	1130	31.0	18.0	29.5	18.0	29.5	17.0	0.0	28.23	0.0	20.34	24.0	2,385	2	125.06	57.7	4,258.0	100.4	1.5	42.60	4,693.78	18,774.99	4	9,367.99	5.85E-04	1.4948	1.7300	0.2768
	1200	31.5	18.0	30.0	18.0	29.5	17.0	0.0	28.27	0.0	20.34	24.0	2,439	2	127.40	55.6	3,771.0	96.5	2.0	43.39	4,156.91	16,627.64	4	8,296.55	5.18E-04	1.3484	1.5605	0.2497
	1230	31.5	19.0	30.5	18.0	29.5	18.0	0.0	28.28	0.0	20.36	26.0	2,244	2	131.00	48.0	3,695.0	87.5	2.5	39.68	4,073.13	16,292.53	4	8,129.34	5.08E-04	1.2082	1.3983	0.2237
	1300	32.0	19.0	31.0	18.0	29.5	18.0	0.0	28.28	0.0	20.36	26.0	2,195	2	132.98	46.3	3,407.0	84.0	3.0	38.68	3,755.66	15,022.63	4	7,495.71	4.68E-04	1.0861	1.2569	0.2011
	1330	32.0	19.0	31.5	18.0	29.5	18.0	0.0	28.28	0.0	20.36	26.0	2,655	2	126.14	52.0	3,524.0	88.2	3.5	47.33	3,884.63	15,538.53	4	7,753.13	4.84E-04	1.3746	1.5909	0.2545
	1400	32.5	18.0	32.0	18.0	29.5	19.0	0.0	28.29	0.0	20.35	26.0	2,427	2	127.40	53.8	3,816.0	92.7	4.0	43.18	4,206.51	16,826.06	4	8,395.55	5.24E-04	1.3578	1.5714	0.2514
	1430	32.5	19.0	32.5	18.0	29.5	19.0	0.0	28.29	0.0	20.35	26.0	2,415	2	128.48	56.1	3,782.0	93.9	4.5	42.88	4,169.03	16,676.14	4	8,320.75	5.19E-04	1.3366	1.5468	0.2475
	1500	33.0	19.0	33.0	18.0	29.5	18.0	0.0	28.30	0.0	20.38	25.0	2,363	2	129.38	58.4	3,451.0	96.0	5.0	41.90	3,804.16	15,216.65	4	7,592.52	4.74E-04	1.1915	1.3790	0.2206
	1530	33.0	19.0	33.5	19.0	29.5	18.0	0.0	28.32	0.0	20.36	25.0	2,501	2	123.44	58.2	3,370.0	86.8	5.5	44.79	3,714.87	14,859.49	4	7,414.31	4.63E-04	1.2441	1.4398	0.2304
	1600	33.5	18.0	34.0	19.0	29.5	19.0	0.0	28.33	0.0	20.36	25.0	2,401	2	125.96	57.2	3,216.0	56.2	6.0	42.82	3,545.11	14,180.45	4	7,075.50	4.42E-04	1.1348	1.3133	0.2101
	1630	34.0	18.0	34.5	19.0	29.5	19.0	0.0	28.33	0.0	20.36	25.0	2,267	2	125.06	57.9	3,675.0	71.9	6.5	40.49	4,051.08	16,204.34	4	8,085.34	5.05E-04	1.2263	1.4192	0.2271
	1700	34.5	18.0	35.0	18.0	29.5	19.0	1.0	28.33	0.0	20.36	26.0	2,815	2	127.40	57.9	3,454.0	86.5	7.0	50.08	3,807.47	15,229.87	4	7,599.12	4.74E-04	1.4255	1.6497	0.2640
	1730	35.0	18.0	35.5	18.0	29.5	18.0	0.0	28.34	0.0	20.37	25.0	2,396	2	125.96	58.3	3,878.0	92.3	7.5	42.73	4,274.86	17,099.44	4	8,531.96	5.33E-04	1.3656	1.5804	0.2529
	1800	35.0	19.0	36.0	18.0	30.0	18.0	0.0	28.34	0.0	20.37	25.0	2,501	2	126.68	58.4	2,999.0	76.5	8.0	44.55	3,305.91	13,223.62	4	6,598.08	4.12E-04	1.1010	1.2742	0.2039
	1830	35.0	19.0	36.0	19.0	30.0	19.0	0.0	28.35	0.0	20.37	26.0	2,342	2	127.76	56.6	3,610.0	86.1	8.5	41.64	3,979.43	15,917.73	4	7,942.33	4.96E-04	1.2388	1.4336	0.2294
	1900	35.0	19.0	36.0	19.0	30.0	18.0	0.0	28.35	0.0	20.38	25.0	2,910	2	127.94	57.7	3,160.0	83.2	9.0	51.72	3,483.38	13,933.53	4	6,952.29	4.34E-04	1.3469	1.5588	0.2494
	1930	35.0	18.0	36.0	19.0	30.0	18.0	0.0	28.35	0.0	20.38	25.0	2,762	2	122.18	55.2	3,345.0	82.1	9.5	49.58	3,687.31	14,749.26	4	7,359.31	4.59E-04	1.3666	1.5816	0.2531
	2000	35.0	18.0	36.0	19.0	30.0	18.0	0.0	28.35	0.0	20.39	25.0	2,561	2	126.14	52.1	3,610.0	79.9	10.0	45.66	3,979.43	15,917.73	4	7,942.33	4.96E-04	1.3583	1.5720	0.2515
	2030	35.0	18.0	36.0	18.0	30.0	19.0	0.0	28.36	0.0	20.39	26.0	2,750	2	129.56	51.7	3,765.0	80.2	10.5	48.74	4,150.29	16,601.18	4	8,283.35	5.17E-04	1.5124	1.7503	0.2800
	2100	35.0	18.0	36.0	19.0	30.0	19.0	0.0	28.37	0.0	20.39	26.0	2,210	2	132.98	51.3	3,100.0	92.7	11.0	38.95	3,417.24	13,668.97	4	6,820.29	4.26E-04	0.9950	1.1515	0.1842
	2130	35.0	19.0	36.0	19.0	30.0	19.0	0.0	28.37	0.0	20.39	26.0	2,330	2	129.56	56.2	2,965.0	86.3	11.5	41.30	3,268.43	13,073.70	4	6,523.27	4.07E-04	1.0091	1.1679	0.1869
	2200	35.0	19.0	36.0	19.0	30.0	18.0	0.0	28.37	0.0	20.39	26.0	2,811	2	126.68	55.2	3,213.0	74.3	12.0	50.07	3,541.81	14,167.22	4	7,068.90	4.41E-04	1.3258	1.5343	0.2455
	2230	35.0	19.0	36.0	19.0	30.0	18.0	0.0	28.37	0.0	20.40	26.0	2,610	2	131.18	52.7	3,222.0	66.6	12.5	46.13	3,551.73	14,206.91	4	7,088.70	4.43E-04	1.2250	1.4177	0.2268
	2300	35.0	18.0	36.0	18.0	30.0	19.0	0.0	28.38	0.0	20.40	26.0	2,555	2	122.18	53.2	3,454.0	71.2	13.0	45.86	3,807.47	15,229.87	4	7,599.12	4.74E-04	1.3054	1.5108	0.2417
	2330	35.0	18.0	36.0	18.0	30.0	18.0	0.0	28.38	0.0	20.40	26.0	2,472	2	129.74	58.4	3,786.0	82.6	13.5	43.80	4,173.44	16,693.78	4	8,329.55	5.20E-04	1.3667	1.5816	0.2531
	2400	35.0	19.0	36.0	18.0	30.0	18.0	0.0	28.38	0.0	20.40	25.0	2,510	2	132.98	58.7	3,012.0	93.1	14.0	44.23	3,320.24	13,280.94	4	6,626.68	4.14E-04	1.0979	1.2707	0.2033
No readings recorded between 2400 and 0800																											
4/25/2017	0800	31.0	21.0	30.0	19.0	29.5	18.0	2.0	28.81	0.0	20.71	26.0	2,311	2	126.68	46.4	3,943.0	87.0	22.0	41.16	4,346.51	17,386.04	4	8,674.96	5.42E-04	1.3376	1.5480	0.2477
	0900	31.0	21.0	30.0	19.0	29.5	19.0	0.0	28.81	0.0	20.71	26.0	2,565	2	129.20	45.6	3,717.0	82.9	23.0	45.49	4,097.38	16,389.53	4	8,177.74	5.11E-04	1.3935	1.6127	0.2580
	1000	32.0	20.0	31.0	20.0	29.5	19.0	0.0	28.83	0.0	20.71	25.0	2,402	2	131.90	42.9	3,682.0	76.1	24.0	42.41	4,058.80	16,235.20	4	8,100.74	5.06E-04	1.2868	1.4892	0.2383
	1100	32.0	21.0	31.0	20.0	29.5	20.0	0.0	28.87	0.0	20.72	26.0	2,753	2	140.18	39.0	3,550.0	75.0	25.0	47.93	3,913.29	15,653.17	4	7,810.33	4.88E-04	1.4023	1.6229	0.2597
	1200	33.0	20.0	32.0	22.0	29.5	21.0	0.0	28.89	0.0	20.72	26.0	2,600	2	140.72	38.4	3,612.0	80.3	26.0	45.23	3,981.64	15,926.55	4	7,946.73	4.96E-04	1.3463	1.5581	0.2493
	1300	33.0	21.0	32.0	21.0	29.5	19.0	0.0	28.81	0.0	20.72	25.0	2,655	2	143.96	36.1	3,406.0	75.9	27.0	45.94	3,754.56	15,018.23	4	7,493.51	4.68E-04	1.2894	1.4922	0.2388
	1400	34.0	21.0	33.0	22.0	29.5	20.0	0.0	28.76	0.0	20.72	27.0	2,238	2	143.60	36.5	3,391.0	73.0	28.0	38.75	3,738.02	14,952.09	4	7,460.51	4.66E-04	1.0828	1.2531	0.2005
	1500	34.0	22.0	33.0	22.0	29.5	20.0	0.0	28.76	0.0	20.71	27.0	2,176	2	145.38	38.2	3,502.0	80.2	29.0	37.56	3,860.38	15,441.52	4	7,704.72	4.81E-04	1.0840	1.2545	0.2007
	1600	35.0	20.0	34.0	22.0	29.5	20.0	0.0	28.72	1.0	20.71	25.0	2,201	2	145.38	37.7	3,604.0	66.7	30.0	37.99	3,972.82	15,891.28	4	7,929.13	4.95E-04	1.1284	1.3059	0.2089
	1700	35.0	20.0	34.0	22.0	29.5	20.0	0.0	28.71	0.0	20.70	25.0	2,213	2	145.76	36.4	3,211.0	71.2	31.0	38.18	3,539.60	14,158.40	4	7,064.50	4.41E-04	1.0102	1.1691	0.1871
	1800	35.0	22.0	35.0	21.0	29.5	20.0	1.0	28.70	0.0	20.72	27.0	2,197	2	145.76	36.2	3,505.0	58.5	32.0	37.90	3,863.69	15,454.75	4	7,711.32	4.81E-04	1.0947	1.2669	0.2027
	1900	35.0	21.0	35.0	20.0	29.5	19.0	0.0	28.65	0.0	20.72	26.0	2,206	2	146.30	37.1	3,621.0	64.9	33.0	38.02	3,991.56	15,966.23	4	7,966.53	4.97E-04	1.1346	1.3131	0.2101
	2000	35.0	21.0	36.0	20.0	29.5	20.0	1.0	28.65	1.0	20.73	27.0	2,187	2	146.30	36.6	3,838.0	72.6	34.0	37.69	4,230.77	16,923.06	4	8,443.95	5.27E-04	1.1922	1.3798	0.2208
	2100	35.0	20.0	36.0	20.0	29.5	18.0	1.0	28.61	0.0	20.74	27.0	2,188	2	146.12	36.9	3,332.0	85.5	35.0	37.72	3,672.98	14,691.93	4	7,330.71	4.58E-04	1.0358	1.1988	0.1918
	2200	35.0	22.0	36.0	21.0	29.5	18.0	0.0	28.71	0.0	20.76	27.0	2,600	2	145.94	35.1	3,021.0	79.6	36.0	44.84	3,330.16	13,320.63	4	6,646.48	4.15E-04	1.1163	1.2919	0.2067
	2300	35.0	21.0	36.0	21.0	29.5	20.0	0.0	28.70	0.0	20.76	27.0	2,752	2	146.30	42.2	3,554.0	77.2	37.0	47.43	3,917.70	15,670.81	4	7,819.13	4.88E-04	1.3892	1.6077	0.2572
	2400	35.0	21.0	36.0	20.0	29.5	20.0	0.0	28.70	0.0	20.76	26.0	2,661	2	146.30	46.4	3,621.0	65.0	38.0	45.86	3,991.56	15,966.23	4	7,966.53	4.97E-04	1.3686	1.5839	0.2534
No readings recorded between 2400 and 0800																											

Date	Time	12430-MW24		12430-RW02		12430-MW01		12430-MW25		12430-MW15		System Vacuum	Effluent Velocity	Pipe Diameter	Effluent Temp.	Relative Humidity	Vapor Conc. Pre-Treatment	Vapor Conc. Post Treatment	Elapsed Time	Q_{std}	PPM_d	PPM_v	K	C_{cm}	C_c	PMR_c	PMR_g	PMR_g
		Stinger Depth	Vacuum	Stinger Depth	Vacuum	Stinger Depth	Vacuum	Vacuum	DTW	Vacuum	DTW																
		(feet)	(in. HG)	(feet)	(in. HG)	(feet)	(in. HG)	(in. H2O)	(ft BTOC)	(in. H2O)	(ft BTOC)	(in. HG)	(ft/min)	(in)	(F)	(%)	(ppm)	(ppm)	(hours)	(DSCFM)				(mg/dsm3)	(lb/dscf)	(lb/hr)	(lb/hr)	(gal/hr)
4/26/2017	0800	31.0	20.0	30.0	21.0	29.5	20.0	2.0	28.64	0.0	20.77	27.0	3,226	2	137.06	42.8	3,226.0	61.4	46.0	56.46	3,556.14	14,224.54	4	7,097.50	4.43E-04	1.5011	1.7372	0.2780
	1000	31.0	21.0	30.0	21.0	29.5	20.0	0.0	28.66	0.0	20.77	27.0	3,409	2	143.60	37.1	3,409.0	74.8	48.0	59.02	3,757.86	15,031.45	4	7,500.11	4.68E-04	1.6580	1.9189	0.3070
	1200	31.0	21.0	30.0	22.0	29.5	21.0	0.0	28.73	0.0	20.77	26.0	3,166	2	147.74	32.0	3,160.0	70.9	50.0	54.44	3,483.38	13,933.53	4	6,952.29	4.34E-04	1.4177	1.6407	0.2625
	1400	31.0	20.0	30.0	21.0	29.5	21.0	0.0	28.74	0.0	20.78	26.0	3,381	2	148.10	32.3	3,381.0	72.6	52.0	58.10	3,727.00	14,907.99	4	7,438.51	4.64E-04	1.6189	1.8735	0.2998
	1600	31.0	20.0	30.0	20.0	29.5	21.0	1.0	28.79	0.0	20.79	26.0	3,725	2	147.56	40.1	3,725.0	30.2	54.0	64.07	4,106.20	16,424.81	4	8,195.34	5.12E-04	1.9668	2.2762	0.3642
	1800	31.0	20.0	30.0	20.0	29.5	21.0	1.0	28.75	1.0	20.79	27.0	3,301	2	147.38	37.6	3,301.0	46.7	56.0	56.79	3,638.81	14,555.24	4	7,262.50	4.53E-04	1.5450	1.7880	0.2861
	2000	31.0	21.0	30.0	21.0	29.5	20.0	0.0	28.76	0.0	20.80	26.0	3,212	2	147.20	37.2	3,212.0	57.2	58.0	55.28	3,540.70	14,162.81	4	7,066.70	4.41E-04	1.4632	1.6934	0.2709
	2200	31.0	20.0	30.0	21.0	29.5	20.0	0.0	28.76	0.0	20.80	27.0	3,554	2	147.38	37.0	3,554.0	50.9	60.0	61.15	3,917.70	15,670.81	4	7,819.13	4.88E-04	1.7909	2.0726	0.3316
	2400	31.0	20.0	30.0	21.0	29.5	20.0	0.0	28.76	0.0	20.80	26.0	3,776	2	147.38	37.2	3,776.0	44.6	62.0	64.96	4,162.42	16,649.68	4	8,307.55	5.19E-04	2.0216	2.3396	0.3743
No readings recorded between 2400 and 0800																											
4/27/2017	0800	31.0	19.0	30.0	20.0	29.5	19.0	2.5	28.80	1.0	20.81	27.0	2,228	2	138.74	34.0	3,510.0	53.6	70.0	38.89	3,869.20	15,476.80	4	7,722.32	4.82E-04	1.1248	1.3017	0.2083
	1000	31.0	18.0	30.0	19.0	29.5	19.0	0.0	28.71	0.0	20.76	25.0	2,461	2	134.60	39.9	3,345.0	57.9	72.0	43.25	3,687.31	14,749.26	4	7,359.31	4.59E-04	1.1923	1.3798	0.2208
	1200	31.0	18.0	30.0	19.0	29.5	18.0	0.0	28.73	0.0	20.77	25.0	2,544	2	144.14	36.1	3,187.0	54.2	74.0	44.00	3,513.14	14,052.58	4	7,011.69	4.38E-04	1.1557	1.3375	0.2140
	1400	31.0	19.0	30.0	18.0	29.5	19.0	0.0	28.74	0.0	20.77	23.0	2,489	2	137.66	41.8	3,276.0	61.5	76.0	43.52	3,611.25	14,445.01	4	7,207.50	4.50E-04	1.1749	1.3597	0.2176
	1600	31.0	19.0	30.0	18.0	29.5	20.0	0.0	28.71	1.0	20.78	25.0	2,488	2	137.66	36.6	3,675.0	58.2	78.0	43.50	4,051.08	16,204.34	4	8,085.34	5.05E-04	1.3175	1.5247	0.2440
	1800	31.0	20.0	30.0	19.0	29.5	20.0	0.0	28.71	0.0	20.78	23.0	2,376	2	134.96	42.7	3,325.0	49.6	80.0	41.73	3,665.27	14,661.07	4	7,315.31	4.57E-04	1.1435	1.3234	0.2117
	2000	31.0	20.0	30.0	20.0	29.5	19.0	1.0	28.70	1.0	20.78	25.0	2,333	2	131.72	39.6	3,961.0	62.6	82.0	41.20	4,366.35	17,465.41	4	8,714.57	5.44E-04	1.3449	1.5565	0.2490
	2200	31.0	20.0	30.0	20.0	29.5	19.0	0.0	28.70	0.0	20.78	25.0	2,565	2	133.38	37.7	3,401.0	50.5	84.0	45.17	3,749.04	14,996.18	4	7,482.51	4.67E-04	1.2661	1.4652	0.2344
	2400	31.0	21.0	30.0	19.0	29.5	20.0	0.0	28.70	0.0	20.78	25.0	2,600	2	142.16	40.1	3,535.0	68.9	86.0	45.12	3,896.76	15,587.03	4	7,777.33	4.86E-04	1.3144	1.5212	0.2434
No readings recorded between 2400 and 0800																											
4/28/2017	0800	31.0	20.0	30.0	20.0	29.5	19.0	1.5	28.79	0.0	20.73	26.0	2,411	2	129.74	44.7	3,109.0	64.0	94.0	42.72	3,427.16	13,708.65	4	6,840.09	4.27E-04	1.0946	1.2668	0.2027
	1000	31.0	19.0	30.0	21.0	29.5	19.0	0.0	28.79	0.0	20.73	26.0	2,596	2	132.98	43.4	3,224.0	66.8	96.0	45.75	3,553.93	14,215.72	4	7,093.10	4.43E-04	1.2155	1.4067	0.2251
									Average Values				2,583	2	135.22	46.3	3500.0	74.4	--	45.32	3,858.16	15,432.64	4.00	7700.29	0.0004807	1.3071	1.5127	0.2420
												B_{wv}	0.093	B_{ww}	0.056													

Total Pounds of Carbon (emissions) 125.4803

Total Pounds of Gasoline (as emissions) 145.2187

Total Gallons of Gasoline (as emissions) 23.2350

NOTES:

inches of Hg - inches of mercury

ppm - parts per million

Q_{std} - flow at DSCFM

DSCFM - Dry Standard Cubic Feet per Minute

PPM_d - "dry" concentration

PPM_v - volumetric concentration of VOC emissions as carbon, dry basis, at STP

K - number of carbons in calibration gas

C_{cm} - mass concentration of VOC emissions as carbon

PMR_c - pollutant mass removal of VOCs as carbon

PMR_g - pollutant mass removal of VOCs as gasoline

B_{ww} - lb of water per lb of dry air

B_{wv} - water vapor % by volume

Extraction Well Information					
Extraction Well ID	Time	Depth to Free-Product (feet BTOC)	Depth to Water (feet BTOC)	Total Well Depth (feet BTOC)	Target Stinger Depth (feet BTOC)
12430-MW01	Initial	24.83	29.29	30	30
	Post	27.69	28.11		
12430-MW24	Initial	25.87	30.62	35	35
	Post	27.74	27.81		
12430-RW02	Initial	25.58	28.63	38	36
	Post	26.94	26.99		

Radius of Influence Monitoring Well Information				
Monitoring Well ID	Time	Depth to Free-Product (feet BTOC)	Depth to Water (feet BTOC)	Total Well Depth (feet BTOC)
12430-MW15	Initial	--	20.33	26
	24-Hour	--	20.71	
	48-Hour	--	20.77	
	72-Hour	--	20.76	
	96-Hour	--	20.73	
12430-MW25	Initial	--	28.21	38
	24-Hour	--	28.83	
	48-Hour	--	28.66	
	72-Hour	--	28.71	
	96-Hour	--	28.79	

WESTSIDE QUICK STOP – UST PERMIT #12430
LONG-TERM AFVR/MMPE EVENT

ATTACHMENT C

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			WTN - 22771

GENERATOR

5. Generator's Name and Mailing Address

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

SCDHEC
2600 Bull St
Columbia, SC

Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

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

8. Designated Facility Name and Site Address — U.S. EPA ID Number

Facility's Phone:

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON Reg / NON Haz well water #15314	2	PVC TANK	612	gal	
2.	UST Permit #12430 AFVR					
3.	Totalizer 73013 – 73625					
4.						

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name — Signature — Month 4 Day 21 Year 17

INT'L

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

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month 4 Day 21 Year 17

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

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

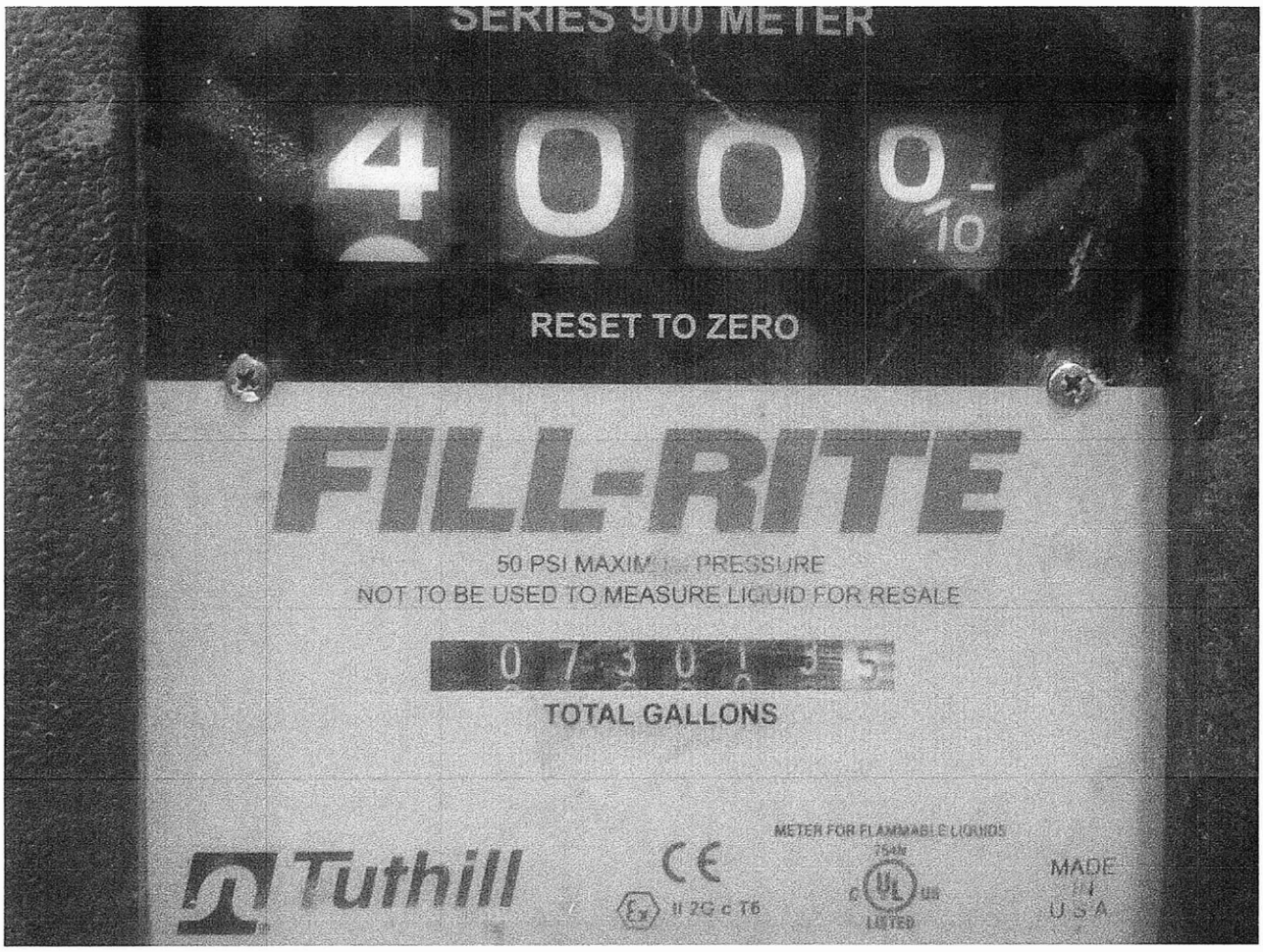
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name Steven Mikan — Signature — Month 4 Day 21 Year 17

GC Labels • Printed in the USA
1-800-997-6966

TRANSPORTER #1

Reorder Part# MANIFEST-C6NHWC
913-897-6966


SERIES 900 METER
400 0 1/10
RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 3 0 1 5
TOTAL GALLONS
Tuthill
METER FOR FLAMMABLE LIQUIDS
754N
LISTED
MADE IN U.S.A.


0 0 0 0
1/10
RESET TO ZERO
FILL-RITE
50 PSI MAXIM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 3 6 2 5
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
Tuthill
II 2G c T6
MADE
U.S.A.

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number | 2. Page 1 of | 3. Emergency Response Phone | 4. Waste Tracking Number: WTH 000473

5. Generator's Name and Mailing Address: Petra-Tech Env LLC
2435 E. North St. Suite 1108-202
Greenville, SC
Generator's Phone:

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

6. Transporter 1 Company Name | U.S. EPA ID Number

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC
305 S. Main St.
Mauldin, SC
Facility's Phone:

U.S. EPA ID Number: SCR 000 762 168

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON Reg/NON HAZ Well water #15314	2	PVC TANK	615	gal
2.	UST Permit #04951 Scotchman #25 Development water/Contract water	~100 gallons			
3.	UST Permit #05160 Barkers #76 well Dev water/Contract water	~20 gallons			
4.	UST Permit #12430 Westside Quick Stop. Contract/AFVR Water	~495 gallons			

13. Special Handling Instructions and Additional Information
Totalizer 72518-73013

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ryan McCormack | Signature | Month: 4 | Day: 21 | Year: 17

INT'L

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name | Signature | Month: 4 | Day: 21 | Year: 17

Transporter 2 Printed/Typed Name: Ryan McCormack | Signature | Month | Day | Year

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

17b. Alternate Facility (or Generator) | U.S. EPA ID Number

Facility's Phone:

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

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

Printed/Typed Name: Paul Whitaker | Signature | Month: 4


SERIES 900 METER
2569 9/10
RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0725184
TOTAL GALLONS
Tuthill
METER FOR FLAMMABLE LIQUIDS
754N
LISTED


400
10
RESET TO ZERO
FILL-RITE
50 PSI MAXIM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 3 0
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
Tuthill
II 2G c T6
MADE
U S A

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			WTN 000972

5. Generator's Name and Mailing Address: Petra Tech Env LLC
2435 E North St. Suite 110B-206
Greenville, SC
Generator's Phone:

Generator's Site Address (if different than mailing address): SCDHEC
2600 Bull St.
Columbia, SC

6. Transporter 1 Company Name: Petra-Tech Env LLC — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC
305 S main St.
Mauldin SC
Facility's Phone: — U.S. EPA ID Number: SCR000762468

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON Reg/NON HAL well water #15314	1	PUC TANK	615	gal	
2.	Totalizer 73896 - 74504 608 Actual					
3.						
4.						

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ryan McCormick — Signature: Ryan McCk — Month 4 Day 24 Year 17

INT'L

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ryan McCormack — Signature: Ryan McCk — Month 4 Day 24 Year 17

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

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

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

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

Printed/Typed Name: Daniel Whitmire — Signature — Month 4 Day 24 Year 17


SERIES 900 METER
RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
TOTAL GALLONS
Tuthill
METER FOR FLAMMABLE LIQUIDS
II 2G c T6
LISTED


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 4 5 0 4
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
Tuthill
II 2G c T6
LISTED
MADE IN U.S.A.

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
			WTN 000975

GENERATOR

5. Generator's Name and Mailing Address
Petra Tech ENV LLC
2435 E North St. Suite 1128-202
Greenville, SC 29615
Generator's Phone: (864) 248-2618

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

6. Transporter 1 Company Name: Petra-Tech Env LLC — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC
305 S. Main St.
Mauldin SC
Facility's Phone: (864) 352-9953
U.S. EPA ID Number: SCR 000 762468

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON HAZ/NON Reg well water #16374	2	PVC TANK	608	gal
2.	Tri County Tire Co UST #06209 Purge water/Contact Water	~205	gallons		
3.	Westside Quick Stop. UST #12430, AFVR/Contact water				
4.	74937-75340				

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ryan McCormack — Signature: Ryan McCormack — Month 4 Day 27 Year 17

INT'L

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ryan McCormack — Signature: Ryan McCormack — Month 4 Day 27 Year 17

Transporter 2 Printed/Typed Name — Signature — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

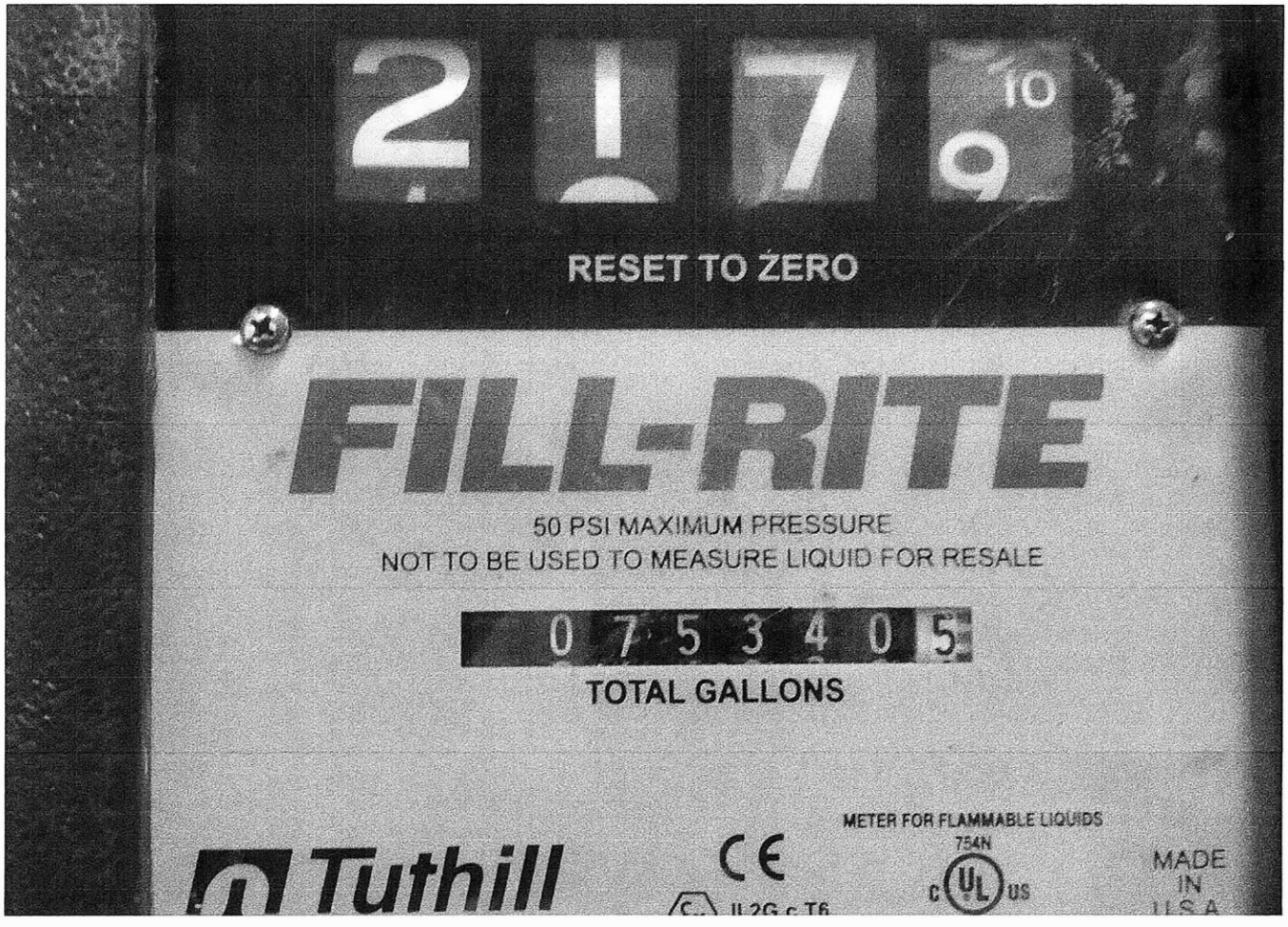
17b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

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

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

Printed/Typed Name: David Whitmire — Signature — Month 4 Day 27 Year 17


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
TOTAL GALLONS
Tuthill
METER FOR FLAMMABLE LIQUIDS
754N
II 2G c T6
LISTED
MADE
IN
U.S.A.


2179
10
RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 5 3 4 0 5
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
Tuthill
MADE IN U.S.A.

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

NON-HAZARDOUS WASTE MANIFEST	1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number
				WTN 000976

5. Generator's Name and Mailing Address: Petra Tech Env LLC, 2435 E North St Suit 1108-202, Greenville, SC 29615, (864) 248-0018

Generator's Site Address (if different than mailing address): DHEC 2600 Ball St, Columbia, SC

Generator's Phone:

6. Transporter 1 Company Name: Petra Tech Env LLC — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC, 305 S. Main St., Mauldin SC — U.S. EPA ID Number: SCR 000762468

Facility's Phone: (864) 352-9953

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	
1.	NON HAZ/NON Reg Well Water #16374	2	PVC TANK	560 Km	gal	
2.	Westside Quick Stop AFVR UST #12430					well water
3.	75994-76482 = 488 gallons					
4.	Sporty Joes Purge water UST Permit #01203 ≈78 gallons					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ryan McCormack — Signature: [signature] — Month 4 Day 28 Year 17

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

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

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: Ryan McCormack — Signature: [signature] — Month 4 Day 28 Year 17

Transporter 2 Printed/Typed Name: — Signature: — Month Day Year

17. Discrepancy

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

Manifest Reference Number:

17b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

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

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

Printed/Typed Name: Daniel Whitmire — Signature: [signature] — Month 4 Day 28 Year 17

GENERATOR — INT'L — TRANSPORTER — DESIGNATED FACILITY

GC Labels • Printed in the USA
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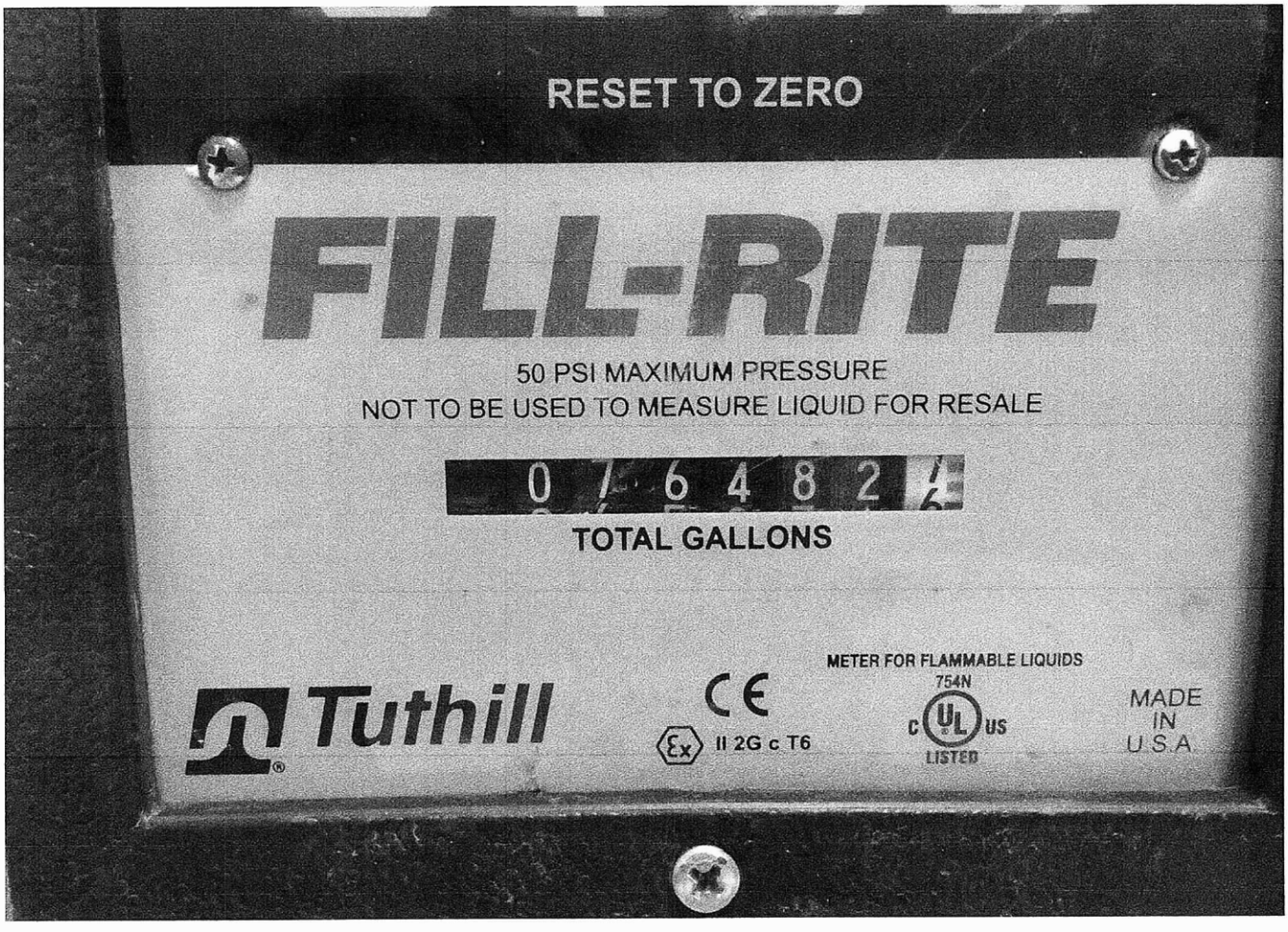
DESIGNATED FACILITY'S COPY

Reorder Part# MANIFEST-C6NHWC
913-897-6966


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 5 9 9 4
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
Tuthill
II 2G c T6
LISTED
MADE IN U.S.A


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 6 4 8 2
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
Tuthill
II 2G c T6
LISTED
MADE IN U.S.A.

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

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number	2. Page 1 of	3. Emergency Response Phone	4. Waste Tracking Number

GENERATOR

5. Generator's Name and Mailing Address: Petra Tech Env, LLC
2435 E North St. Suite 1104-202
Greenville, SC
Generator's Phone: (864) 248-0018

Generator's Site Address (if different than mailing address): SCDHEC
2600 Bull St.
Columbia, SC

6. Transporter 1 Company Name: Petra-Tech Env LLC — U.S. EPA ID Number:

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

8. Designated Facility Name and Site Address: VLS Recovery Services, LLC
305 Smand St.
Maddin, SC
Facility's Phone: (864) 352-9953 — U.S. EPA ID Number: SCR000762468

	9. Waste Shipping Name and Description	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.
1.	NON HAZ/NON Reg well water #16374	1	PVC TANK	315	gal
2.	Westside Quick Stop AVR UST Permit # 12430				
3.	Totalizer 76482 - 76795			313 Actual	
4.					

13. Special Handling Instructions and Additional Information

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: Ryan McCormack — Signature: [signature] — Month: 4 Day: 28 Year: 17

INT'L

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

TRANSPORTER

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name — Signature — Month: 4 Day: 28 Year: 17

Transporter 2 Printed/Typed Name: Ryan McCormack — Signature: [signature] — Month Day Year

DESIGNATED FACILITY

17. Discrepancy

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

Manifest Reference Number:

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

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

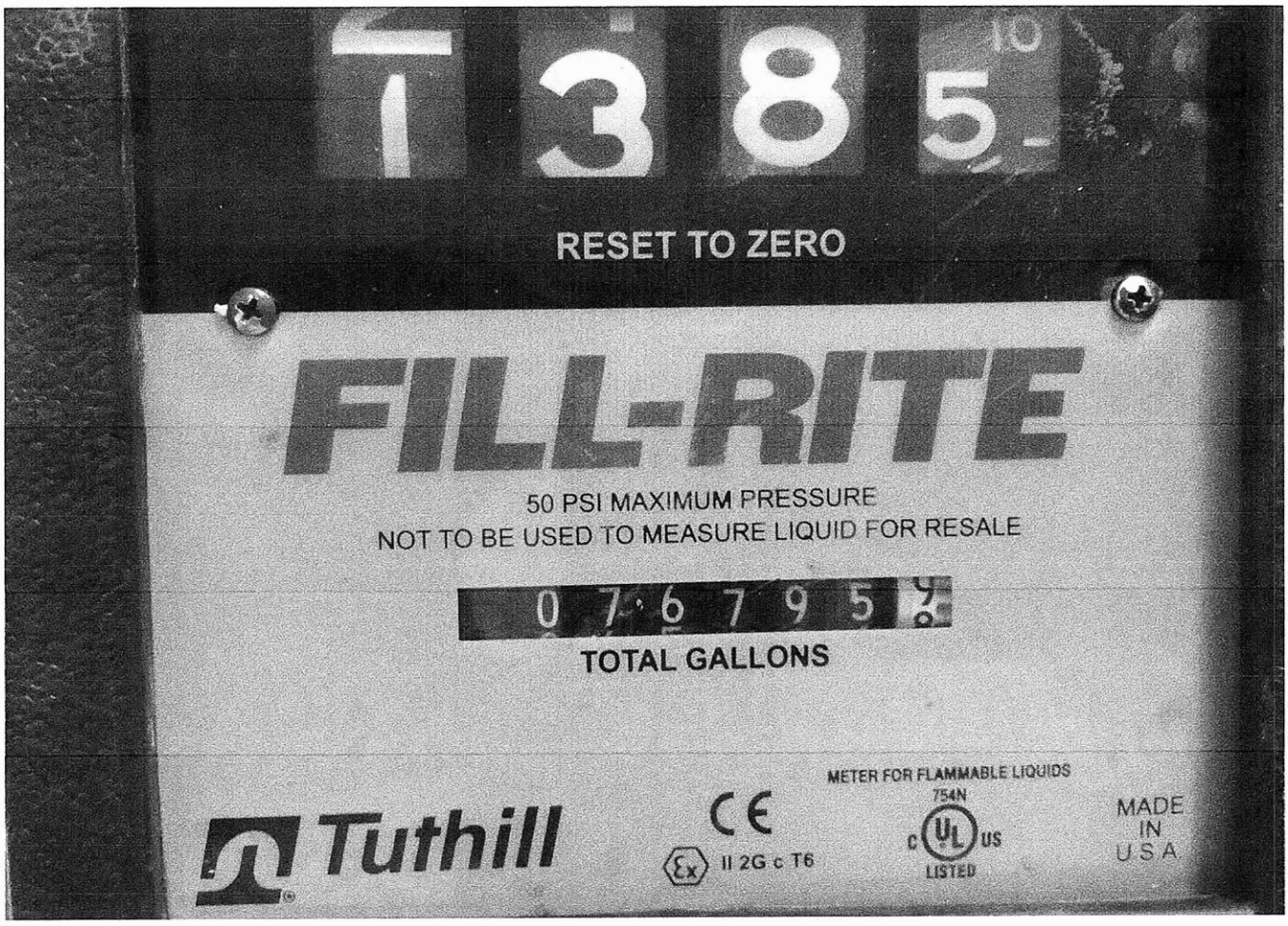
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

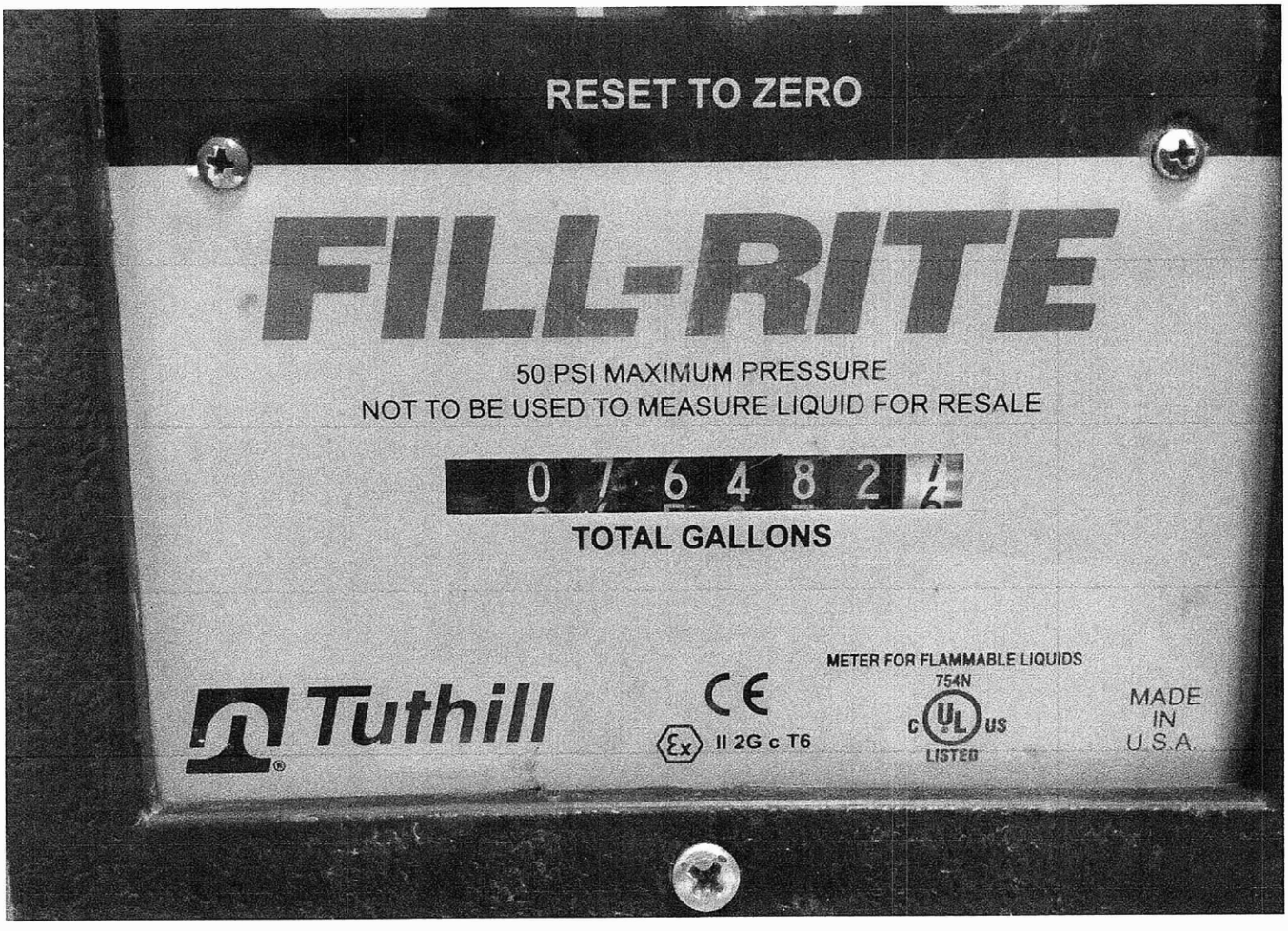
Printed/Typed Name: David Whitmire — Signature: [signature] — Month: 4 Day: 28 Year: 17

GC Labels • Printed in the USA
1-800-997-6966

DESIGNATED FACILITY'S COPY

Reorder Part# MANIFEST-C6NHWC
913-897-6966


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
LISTED
MADE IN USA
Tuthill
II 2G c T6


RESET TO ZERO
FILL-RITE
50 PSI MAXIMUM PRESSURE
NOT TO BE USED TO MEASURE LIQUID FOR RESALE
0 7 6 4 8 2
TOTAL GALLONS
METER FOR FLAMMABLE LIQUIDS
754N
LISTED
Tuthill
II 2G c T6
MADE IN U.S.A.

Document Receipt Information

☒ Hard Copy ☒ CD ☐ Email

Date Received 6-6-2017

Permit Number 12430

Project Manager Tom Knight

Name of Contractor Petro-Tech

UST Certification Number

Docket Number 29T

Scanned

Tier II Assessment Report

TIER II ASSESSMENT REPORT

Westside Quick Stop
SCDHEC UST Permit #12430
Cost Agreement #52649
821 West Parker Road
Greenville, South Carolina
Greenville County

PTE Job No. J16-232-A

May 29, 2017

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May 29, 2017

South Carolina Department of Health and Environmental Control
Division of Underground Storage Tank Management
Bureau of Land and Waste Management
2600 Bull Street
Columbia, South Carolina 29201-1708

Attention: Mr. Tom Knight, P.G.

Subject: **Tier II Assessment Report**
Westside Quick Stop
821 West Parker Road
Greenville, Greenville County, South Carolina
SCDHEC UST Permit #12430
Cost Agreement #52649
PTE Job No. J16-232-A

Dear Mr. Knight,

On behalf of Shree Gajvakra LLC and Environmental Laboratories, Inc., Petra-Tech Environmental, LLC submits herein the completed Tier II Assessment Report for the subject site. This submittal is in response to the South Carolina Department of Health and Environmental Control's (SCDHEC) directive letter dated October 10, 2016 and was performed in general accordance with Petra-Tech Environmental, LLC's Site Specific Work Plan dated July 9, 2016.

Please do not hesitate to contact us at 864.631.2490 if you have any questions concerning this submittal.

Sincerely,

Petra-Tech Environmental

Trever Z. Slack, P.G.
Principal Hydrogeologist
Registered, South Carolina #2565



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1.0 INTRODUCTION

The subject property is located at 821 West Parker Road in Greenville, Greenville County, South Carolina (**Figure 1**) and currently operates as a retail petroleum fueling station and convenience store. The site is bordered primarily by residential properties with the exception of a commercial property to the northeast and northwest.

1.1 Site History

According to the South Carolina Department of Health and Environmental Control Online Underground Storage Tank Registry database, three underground storage tanks (one 1,000-gallon kerosene and two 6,000-gallon regular gasoline) are currently in use at the site. Additionally, a 4,000-gallon super/premium gasoline underground storage tank is located at the site and is currently classified as extended-out-of-use. Two separate releases have been reported at the site. An Initial Groundwater Assessment, Tier I Assessment, and initial Tier II Assessment have been completed in response to these releases.

A Tier II Assessment Site Specific Work Plan was submitted to the South Carolina Department of Health and Environmental Control on July 9, 2016, and was accepted in a Tier II Directive letter dated October 10, 2016. The results of the Tier II Assessment are contained herein. Two 96-hour long-term AFVR/MMPE events were conducted in conjunction with the current scope of work and details of the events are being submitted under separate cover.

1.2 Regional Geology and Hydrogeology

The site is located in the Piedmont Physiographic Province, which generally consists of rolling, well-rounded hills dissected by streams and drainage features. Floodplains are relatively narrow, and ridgetops (stream divides) are typically narrow with only a few hundred feet of elevation difference between the ridgetops and valleys. The Piedmont Physiographic Province ranges in elevation from approximately 300 feet to 1,500 feet above mean sea level (AMSL).

Geologically, the site is located within the Piedmont belt of South Carolina which consists of thrust sheets containing a variety of gneisses, schists, amphibolites, ultramafic bodies, and intrusive granitoids. The typical residual soil profile consists of clayey soils near the surface, where soil weathering is more advanced, underlain by sandy silts and silty sands. Residual soil zones which develop by the in-situ chemical weathering of bedrock (saprolite) range in thickness from a few feet to more than 100 feet, and generally consist of sand with lesser amounts of silt, clay, and large rock fragments.

A transitional zone of partially weathered rock is typically found beneath the saprolite and overlies the parent bedrock. Weathering in this zone is facilitated by fractures, joints, and the presence of less resistant rock types. Consequently, the profile of the partially weathered rock and parent bedrock is commonly irregular, even over short horizontal distances. Additionally, it is not unusual to find lenses and boulders of hard rock and zones of partially weathered rock well above the general bedrock level. According to Horton Et Al. (2001)[1], the site is underlain by Middle Paleozoic aged gneissic granite.

[1] Horton, Horton, J.Wright, and Dicken, Connie L., 2001, Preliminary Geologic Map of the Appalachian Piedmont and Blue Ridge, South Carolina Segment: U.S. Geological Survey, Open-File Report 01-298, CD [http://pubs.er.usgs.gov/publication/ofr01298]

Groundwater in the Piedmont usually occurs under unconfined conditions in three primary zones: 1) residual soil (saprolite); 2) partially weathered rock; and 3) fractured bedrock. These zones are typically interconnected through bedrock fractures, pore spaces, and other secondary permeability features, and the configuration of the water table aquifer generally resembles the local topography. Seasonal high-water tables are typically observed during the winter and spring months when maximum infiltration capacity occurs due to low intensity, long duration precipitation events and reduced evaporation and transpiration. Seasonal low water tables are typically observed during the summer and fall months when minimum infiltration capacity occurs due to higher surface runoff caused by high intensity, short duration precipitation events and greater evaporation and transpiration.

2.0 ASSESSMENT INFORMATION

The completed scope of services was based on Petra-Tech Environmental's Site specific Work Plan dated July 9, 2016, and subsequent email and verbal correspondence with South Carolina Department of Health and Environmental Control project manager Mr. Tom Knight, P.G.. During the Tier II Assessment, the following activities were performed:

- Soil and groundwater screening
- Installation of shallow and intermediate groundwater monitoring wells
- Installation of groundwater recovery wells
- Slug tests in two shallow and two intermediate monitoring wells
- Completion of a comprehensive groundwater sampling event.

2.1 Site Specific Geology and Hydrogeology

Borings performed during the Tier II Assessment encountered soils consisting primarily of residual clayey silts and sandy silts underlain by sandy silts and silty sands. These sandy silts and silty sands transition into various degrees of weathered saprolite followed by partially weathered rock and bedrock. Soil boring records are provided in **Appendix E**. A soil sample was collected from the screened interval of monitoring wells 12430-MW16 and 12430-MW16I and submitted for laboratory grain size analysis. Grain size analysis results indicated a clayey, course to fine sandy silt for the 12430-MW16 screened interval and a clayey, course to fine sandy silt for the 12430-MW16I screened interval.

Grain size distribution is summarized below:

Sample ID	Sample Depth (feet BGS)	% Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Silt	% Clay
MW16	25.0	0.1	3.0	9.0	19.3	50.0	18.6
MW16I	60.0	0.7	2.0	15.0	20.4	43.0	19.0

2.2 Summary of Field Screening Activities

Groundwater field screening was completed at the site on January 19 and January 20, 2017. Continuous core soil screening was completed at the site on January 19, January 20, and on March 4, 2017. Quality Assurance verification for field screening activities was provided by Ms. Kaye Jones. Details of the groundwater field screening activities are included in Section 3.2.1 below.

2.2.1 Groundwater Field Screening Activities

Ten temporary shallow groundwater screening borings (GW01 through GW07 and GW09 through GW11) were performed using an AMS 9500 VTR direct push drill. Shallow groundwater screening borings ranged in depth from 30.0 to 35.0 feet below ground surface (320 total feet).

Each groundwater screening boring location was established in the field from map-scaled distances, by measuring from site landmarks, and estimating right angles (**Figure 2**). survey coordinates for the groundwater screening borings were obtained using a handheld Geographic Positioning System device. Groundwater samples collected in the field were screened using a portable MiniRAE® Lite Photo-Ionization Detector (PID). After representative samples were collected from each boring, the temporary boreholes were abandoned to the ground surface with a bentonite cement grout pursuant to South Carolina well standards[2]. Groundwater screening boring 1903 Well Records are included in **Appendix D**.

Select groundwater samples from sentinel borings were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), naphthalene, 1,2-dichloroethane (1,2-DCA), and methyl-tert-butyl-ether (MTBE) by Environmental Protection Agency (EPA) Method 8260B. Field screening and laboratory analytical results are summarized in **Table 1**. Groundwater screening laboratory data sheets are provided in **Appendix B**.

2.2.2 Soil Field Screening Activities

Three temporary soil screening borings (SB01 through SB03) were performed on January 19 and January 20, 2017 using an AMS 9500 VTR direct push drill. Staff remobilized to the site on March 4, 2017 to complete an additional soil screening boring (SB04). Soil borings were drilled proximal to the UST basin (suspected source area) and were advanced to probe refusal. The purpose of the soil screening borings was to provide detailed lithological and vertical PID field screening results for the areas proximal to the underground storage tank basin.

Each soil screening boring location was established in the field from map-scaled distances, by measuring from site landmarks, and estimating right angles (**Figure 2**). Survey coordinates for the borings were obtained using a handheld Geographic Positioning System device. Soil samples were screened at one foot intervals using a portable MiniRAE® Lite Photo-Ionization Detector described by a geologist. After representative samples were collected from each boring, the temporary boreholes were abandoned to the ground surface with a bentonite cement grout. Lithologic descriptions and 1903 Water Well Records are included in **Appendix D**.

[2] South Carolina Well Standards and Regulations, SCDHEC, Promulgated Pursuant to Section 44-55-40 of the 1976 South Carolina Code of Laws, R. 61-71, April 26, 2002.

2.3 Summary of Well Installation Activities

Following completion of field screening activities, twenty-four groundwater monitoring wells (12430-MW04I, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW14I, 12430-MW15, 12430-MW15I, 12430-MW16, 12430-MW16I, 12430-MW17, 12430-MW17I, 12430-MW18, 12430-MW19, 12430-MW19I, 12430-MW20, 12430-MW21, 12430-MW22, 12430-MW22I, 12430-MW23, 12430-MW24, 12430-MW25, 12430-MW26, 12430-MW26I, and 12430-MWXR) and three groundwater recovery wells (12430-RW01, 12430-RW02, and 1230-RW03) were installed from March 6, 2017 through March 29, 2017 to complete the assessment of petroleum hydrocarbons in groundwater. Intermediate monitoring wells were advanced to the top of rock (drill refusal). As directed by the South Carolina Department of Health and Environmental Control, deep monitoring wells were not advanced into bedrock at this time. The well locations were based on the groundwater field screening results and communication with former South Carolina Department of Health and Environmental Control project manager Mr. Tom Knight, P.G.. Monitoring well installations were performed by Mr. Robyn Barkley (SC Licensed Well Driller #0934-A), Mr. Michael Carey (SC Licensed Well Driller #1920-D), Mr. Daniel Burch (SC Licensed Well Driller #2175-D), and Mr. Ryan McCormack (SC Licensed Well Driller #2174-D). Quality Assurance verification for monitoring well installation activities was provided by Ms. Kaye Jones.

2.3.1 Type II Wells

Shallow water table groundwater monitoring wells, recovery wells, and intermediate groundwater monitoring wells installed outside of the source area were installed as Type II monitoring wells using an AMS 9630 PRO or AMS 9500 VTR drill utilizing hollow stem auger (3.5-inch and 4.5-inch inside diameter) drilling techniques. The monitoring wells consist of 2-inch ID, schedule 40 PVC casing with flush-threaded joints. The bottom 10-foot section of each shallow water table monitoring well, 5-foot section of each intermediate groundwater monitoring well installed outside of the source area, and 20-foot section of each recovery well is a manufactured well screen with 0.010-inch wide machined slots. Standard sand filter pack, bentonite seal, and grout were installed to the ground surface.

Total well depths for Type II wells are:

Shallow Water Table Groundwater Monitoring Wells

12430-MW12	35.69 feet below ground surface
12430-MW14	25.57 feet below ground surface
12430-MW15	26.83 feet below ground surface
12430-MW16	27.71 feet below ground surface
12430-MW17	28.82 feet below ground surface
12430-MW18	29.30 feet below ground surface
12430-MW19	39.69 feet below ground surface
12430-MW20	40.87 feet below ground surface
12430-MW21	35.14 feet below ground surface
12430-MW22	35.06 feet below ground surface
12430-MW23	39.87 feet below ground surface
12430-MW24	35.25 feet below ground surface
12430-MW25	38.20 feet below ground surface
12430-MW26	36.45 feet below ground surface
12430-MWXR	38.25 feet below ground surface

Intermediate Groundwater Monitoring Wells

12430-MW17I	60.41 feet below ground surface

Recovery Wells

12430-RW01	40.69 feet below ground surface
12430-RW02	38.08 feet below ground surface
12430-RW03	40.00 feet below ground surface

Well construction diagrams and 1903 Water Well Records are included in **Appendix E**. Well construction data is provided in **Table 2**.

2.3.2 Type III Wells

Monitoring wells 12430-MW04I, 12430-MW12I, 12430-MW14I, 12430-MW15I, 12430-MW16I, 12430-MW19I, 12430-MW22I, and 12430-MW26I were installed as Type III, vertical extent (telescoping) monitoring wells. The wells were installed using an AMS 9630 PRO drill utilizing mud rotary drilling techniques. The telescoping wells were constructed with a 6-inch ID schedule 40 PVC outer casing installed to an approximate depth of 40-feet below ground surface (12430-MW04I, 12430-MW12I, 12430-MW14I, 12430-MW15I, 12430-MW16I, and 12430-MW22I) and 45.0 feet below ground surface (12430-MW19I and 12430-MW26I). The casings were grouted to the ground surface with a bentonite-cement grout and allowed to cure for at least 24 hours. After curing, a 5.5-inch outside diameter roller cone bit was utilized to advance the borehole through the outer casing to the termination depth. A 2-inch ID schedule 40 PVC casing with flush-threaded joints was installed in each borehole, and the bottom 5-foot section of each well is a manufactured well screen with 0.010-inch machined slots. Standard filter sand pack, bentonite seal, and grout were installed to the ground surface.

Total well depth for Type III wells are:

Intermediate Groundwater Monitoring Wells

12430-MW04I	53.17 feet below ground surface
12430-MW12I	45.63 feet below ground surface
12430-MW14I	67.92 feet below ground surface
12430-MW15I	62.13 feet below ground surface
12430-MW16I	65.49 feet below ground surface
12430-MW19I	70.68 feet below ground surface
12430-MW22I	49.72 feet below ground surface
12430-MW26I	55.11 feet below ground surface

Monitoring well construction diagrams and 1903 Water Well Records are included in **Appendix E**. Monitoring well construction data is provided in **Table 2**.

2.3.3 General

At assigned intervals, drill cuttings were collected for soil classification and representative portions of the test samples were visually examined and classified by a geologist. Soil samples were screened at 5-foot intervals using a photo-ionization detector.

To help prevent cross-contamination, downhole drilling equipment was steam cleaned between borings. Approximately 12.88 tons of petroleum impacted drill cuttings generated during the installation of the monitoring wells were transported off-site for disposal. Waste transportation and disposal records are included in **Appendix G**.

Monitoring well installations were performed by a South Carolina licensed driller and were developed through a combination of surging and overpumping. The monitoring well locations were surveyed by a licensed surveyor (George B. Souther RLS, SC #21232) to establish horizontal control and vertical elevations of the top of PVC casing and ground surface. The results of the comprehensive site survey are included as **Appendix A**. The site survey was used to create a site base map (**Figure 3**) for the site.

2.4 Groundwater Sampling

Groundwater monitoring wells were sampled on April 10, April 11, and April 15, 2017 by Mr. Thomas Vaughan and Mr. Jimmy Slagh of Petra-Tech Environmental, LLC. Quality Assurance verification was provided by Ms. Kaye Jones. Groundwater monitoring wells 12430-MW03, 12430-MW04, 12430-MW07, and 12430-MW09 were dry at the time of the sampling event.

Groundwater monitoring wells were developed by purging until it was determined that groundwater flow through the well screen was not inhibited by silt or fine sand and field parameters had stabilized. Approximately 525 gallons of purge-water generated during the monitoring well development and sampling was transported off-site for disposal. Waste transportation and disposal records are attached in **Appendix G**. Monitoring well purging and sampling logs are included in **Appendix B**.

Sample containers were marked in the field with identifying numbers, properly preserved, placed into sample coolers, secured, and maintained at less than 4 degrees Celsius. The samples and chain-of-custody records were submitted to Pace Analytical Services for analysis of BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B, 1,2-dibromoethane (EDB) by EPA Method 8011, and total lead by EPA Method 6010B . One duplicate sample per twenty wells sampled and one field blank for each day in the field was analyzed for BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B, EDB by EPA Method 8011, and total lead by EPA Method 6010B. Additionally, one trip blank for each sample cooler was analyzed for BTEX, naphthalene, MTBE, 8-oxygenates, and 1,2-DCA by EPA Method 8260B.

2.5 Tier II Assessment Results

2.5.1 Groundwater Occurrence

Site-wide stabilized groundwater elevations were recorded on April 10, 2017. A tabulation of the groundwater level data is provided in **Table 2**. A water table elevation contour map showing the occurrence and direction of groundwater flow in the water table aquifer is presented as **Figure 4**. Groundwater flow from the source area is generally to the southeast.

Figures 5A through **5C** provide hydrogeologic cross-sections through the subsurface soils. The cross-sections depict the surveyed ground surface elevation, subsurface lithologies, monitoring wells and their respective screened intervals, and the static groundwater elevation.

2.5.2 Groundwater Monitoring Well Sampling Results

Of the thirty groundwater monitoring wells sampled for laboratory analysis during the Tier II Assessment, eleven wells (12430-MW02, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW14I, 12430-MW20, 12430-MW21, 12430-MW23, 12430-MW25, 12430-MW0XR, and 12430-RW03) detected petroleum compounds above South Carolina established Risk-Based Screening Levels.

Petroleum compounds detected above Risk-Based Screening Level concentrations include:

- Benzene — 12430-MW02, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW14I, 12430-MW20, 12430-MW21, 12430-MW23, 12430-MW25, 12430-MW0XR, and 12430-RW03
- Toluene — 12430-MW12, 12430-MW12I, 12430-MW21, 12430-MW0XR, and 12430-RW03
- Ethylbenzene — 12430-RW03
- MTBE — 12430-MW21, 12430-MW23, 12430-MW0XR, and 12430-RW03
- Naphthalene — 12430-MW21, 12430-MW23, and 12430-RW03
- EDB — 12430-MW21
- Di-Isopropyl-Ether (DIPE) — 12430-MW21 and 12430-RW03
- Tert-Amy-Alcohol (TAA) — 12430-MW02, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW20, 12430-MW21, and 12430-MW23

Free-Phase petroleum product was detected in wells 12430-MW01 (4.46-feet), 12430-MW24 (4.48-feet), 12430-RW01 (2.64 feet), 12430-RW02 (4.05 feet), and 12430-MW0X (>1.47 feet). The results of the laboratory analyses are summarized in **Table 3** and are shown on **Figures 6a through 6d**. Laboratory data sheets are provided in **Appendix B**.

2.5.3 Aquifer Evaluation

Slug tests were performed in monitoring wells 12430-MW16, 12430-MW16I, 12430-MW19, and 12430-MW19I to determine the hydraulic conductivity of the formation material exposed to the well screen. A SCDHEC *Summary of Slug Test Form* is provided in **Appendix F**. The data from the tests are presented on **Table 4**.

Hydraulic Conductivity

Hydraulic conductivity is defined as the ability of the aquifer material to conduct water under a hydraulic gradient. Eight slug tests were performed at the site during the current scope of work to measure the in-situ hydraulic conductivity of the aquifer and were evaluated using the Bouwer and Rice Method[3] for partially-penetrating wells in an unconfined aquifer (slug testing results are included in **Appendix F**). The hydraulic conductivity values measured at the site were 6.139 x 10^{-4} cm/sec and 6.042 x 10^{-4} cm/sec (12430-MW16), 2.980 x 10^{-4} cm/sec and 1.289 x 10^{-4} cm/sec (12430-MW16I), 7.495 x 10^{-5} cm/sec and 7.522 x 10^{-5} cm/sec (12430-MW19), 5.263 x 10^{-4} cm/sec and 4.060 x 10^{-4} cm/sec (12430-MW19I). The site-wide geometric mean hydraulic conductivity value is 3.421 x 10^{-4} cm/sec in the shallow wells and 3.398 x 10^{-4} cm/sec in the intermediate wells (**Table 4**).

Horizontal Hydraulic Gradient

The horizontal hydraulic gradient is determined by dividing the difference in groundwater elevations at two locations by the horizontal distance between those locations along the direction of groundwater flow. The horizontal hydraulic gradient across the site for the shallow unconfined aquifer is approximately 0.0011 feet/feet between groundwater monitoring wells 12430-MW12 and 12430-MW19, and 0.0006 feet/feet between groundwater monitoring wells 12430-MW12I and 12430-MW19I.

Effective Porosity

Total porosity is the total volume of void spaces in a rock or sediment divided by the total volume of that rock or sediment. Effective porosity is less than total porosity, and is the ratio of those void spaces which are interconnected allowing water of other fluids to flow to the total volume of the rock or sediment. A number of scientific studies have been undertaken to identify relationships between effective porosity and the physical characteristics of rock or soil (lithology) in order to estimate the effective porosity for different lithological formations.

An effective porosity value of 0.27 was estimated on grain size analysis indicating a clayey, course to fine sandy, silt for the shallow and intermediate screened intervals. The effective porosity was estimated based on published values of effective porosity for a fine sand (McWhorter and Sunada 1977[4]) which ranged from 0.01 to 0.46 with an arithmetic mean of 0.33 and for a silt which ranged from 0.01 to 0.39 with an arithmetic mean of 0.20.

Groundwater Flow Velocity

The velocity of groundwater flow is derived from the equation:

$$V = \frac{Ki}{n_e}$$

[3] Bouwer, H., and Rice, R., A Slug Test for Determining Conductivity of Unconfined Aquifers with Completely or Partially Penetrating Wells, *Water Resources Research,* v. 12, o. 423-428.

[4] Mcwhorter, D. and Sunada, D., 1977, Groundwater Hydrology and Hydraulics, Water Resources Publication, 290 pp.

Where

V is the flow velocity
K is the hydraulic conductivity
i is the horizontal hydraulic gradient
n_e is the effective porosity

Based on these parameters and the data provided above, the geometric mean horizontal movement of groundwater is approximately 1.85 feet/year in the shallow screened interval and 0.73 feet/year in the intermediate interval at the site. **Table 4** summarizes the groundwater flow velocity calculations.

3.0 TIER II RISK EVALUATION AND RECOMMENDATIONS

- Twenty-four groundwater monitoring wells (12430-MW04I, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW14I, 12430-MW15, 12430-MW15I, 12430-MW16, 12430-MW16I, 12430-MW17, 12430-MW17I, 12430-MW18, 12430-MW19, 12430-MW19I, 12430-MW20, 12430-MW21, 12430-MW22, 12430-MW22I, 12430-MW23, 12430-MW24, 12430-MW25, 12430-MW26, 12430-MW26I, and 12430-MW0XR) and three groundwater recovery wells (12430-RW01, 12430-RW02, and 1230-RW03) were installed from March 6, 2017 through March 29, 2017 to assess the horizontal extent of groundwater contamination at the subject site. Deep wells were not advanced into bedrock.

- Thirty groundwater monitoring wells were sampled for laboratory analysis during the Tier II Assessment. Eleven wells (12430-MW02, 12430-MW12, 12430-MW12I, 12430-MW14, 12430-MW14I, 12430-MW20, 12430-MW21, 12430-MW23, 12430-MW25, 12430-MW0XR, and 12430-RW03) detected petroleum compounds above South Carolina established Risk-Based Screening Levels. Compounds detected above South Carolina established Risk-Based Screening Level concentrations include benzene, toluene, ethylbenzene, naphthalene, MTBE, EDB, DIPE, and TAA.

- Free-Phase petroleum product was detected in wells 12430-MW01 (4.46-feet), 12430-MW24 (4.48-feet), 12430-RW01 (2.64 feet), 12430-RW02 (4.05 feet), and 12430-MW0X (>1.47 feet) on April 10, 2017.

- Groundwater flow from the source area is primarily to the southeast.

- The dissolved phase groundwater contaminant plume is generally defined with the exception of a narrow area to the southeast of monitoring well 12430-MW23. Additional monitoring wells should be installed downgradient of this location; however, these properties are residential homes and will require gaining sensitive site access.

  Two 96-hour Aggressive Fluid Vapor Recovery (AFVR) events were implemented in conjunction with the current Tier II Assessment and were effective at removing petroleum product as both free-phase and equivalent vapor phase. Details of the AFVR events were submitted under separate cover. Additional 96-hour Aggressive Fluid Vapor Recovery (AFVR) events should be implemented as soon as possible.

  Groundwater sampling events should be implemented on a semi-annual schedule to monitor migration of the groundwater contaminant plume.

TABLES

TABLE 1
Summary of Groundwater Screening Results
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

			Groundwater Screening Sample									
	Method	**RBSL (µg/L)**	GW01	GW02	GW03	GW04	GW05	GW06	GW07	GW09	GW10	GW11
Boring Depth (ft bgs)	NA	NA	35	35	35	30	35	30	30	30	30	30
Depth-to-Groundwater (ft bgs)	NA	NA	29.6	29.1	29.5	24.9	30.6	24.1	25.0	26.1	24.2	24.0
Sample Depth (ft bgs)	NA	NA	25-35	25-35	25-35	20-30	25-35	20-30	20-30	20-30	20-30	20-30
PID Reading (ppm)	NA	NA	+5000	658	0.9	0.4	76.2	0.0	0.2	0.1	167	0.0
Benzene (µg/L)	8260B	5	***21000***	***190***	***0.94J***	<0.40	***54***	<0.40	<0.40	<0.40	***230***	<0.40
Toluene (µg/L)	8260B	1,000	***47000***	***25***	***0.81J***	<0.40	***20***	<0.40	<0.40	<0.40	***200***	<0.40
Ethylbenzene (µg/L)	8260B	700	***3500***	***2.4***	<0.40	<0.40	***3.0J***	<0.40	<0.40	<0.40	***47***	<0.40
Xylenes (µg/L)	8260B	10,000	***17000***	***27***	<0.40	<0.40	***20***	<0.40	<0.40	<0.40	***170***	<0.40
Naphthalene (µg/L)	8260B	25	***480J***	***0.70J***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<2.0	<0.40
1,2-DCA (µg/L)	8260B	5	<200	***6.5***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	<2.0	<0.40
MTBE (µg/L)	8260B	40	***75000***	***3.2***	<0.40	<0.40	<2.0	<0.40	<0.40	<0.40	***9.5***	<0.40

NOTES:

RBSL - Risk Based Screening Level

Shaded values indicate concentrations exceeding South Carolina established RBSLs.

PID - MiniRae Lite Photoionization Detector

ppm - parts per million

ft bgs - feet below ground surface

NA - Not Applicable

NT - Not Tested. Sample not submitted for laboratory analysis

TABLE 2
Monitoring Well and Groundwater Surface Elevation Data
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

Monitoring Well	Ground Surface Elevation	Top-of-Casing Elevation	Date	Free-Product Depth Below Top-of-Casing	Groundwater Depth Below Top-of-Casing	Free-Product Thickness	Groundwater Elevation	Well Depth BGS	Screened Interval Depth	Screened Interval Elevation
12430-MW01	1005.56	1005.32	08/13/2013	-	17.97	-	987.35	30.00	15.00 - 30.00	990.56 - 975.56
			03/31/2015	-	22.63	-	982.69			
			04/10/2017	25.21	29.37	4.16	978.86			
			04/24/2017	24.83	29.29	4.46	979.15			
12430-MW02	1006.50	1006.20	08/13/2013	-	18.85	-	987.35	30.00	15.00 - 30.00	991.50 - 976.50
			03/31/2015	-	21.69	-	984.51			
			04/10/2017	-	27.44	-	978.76			
12430-MW03	1008.72	1008.49	08/13/2013	-	21.00	-	987.49	30.00	15.00 - 30.00	993.72 - 978.72
			03/31/2015	-	23.81	-	984.68			
			04/10/2017	DRY			NA			
12430-MW04	1008.45	1008.27	03/31/2015	-	23.47	-	984.80	30.49	20.29 - 30.29	988.16 - 978.16
			04/10/2017	DRY			NA			
12430-MW04I	1008.35	1008.12	04/10/2017	-	29.36	-	978.76	53.17	47.97 - 52.97	960.38 - 955.38
12430-MW05	998.24	997.73	03/31/2015	-	13.01	-	984.72	20.80	10.60 - 20.60	987.64 - 977.64
			04/10/2017	-	18.61	-	979.12			
12430-MW06	998.58	998.27	03/31/2015	-	13.32	-	984.95	21.47	11.27 - 21.27	987.31 - 977.31
			04/10/2017	-	19.01	-	979.26			
12430-MW07	1006.27	1005.88	03/31/2015	-	19.61	-	986.27	31.04	20.84 - 30.84	985.43 - 975.43
			04/10/2017	DRY			NA			
12430-MW08	1007.86	1007.43	03/31/2015	-	22.71	-	984.72	31.10	20.90 - 30.90	986.96 - 976.96
			04/10/2017	-	28.58	-	978.85			
12430-MW09	1009.07	1008.55	03/31/2015	-	23.20	-	985.35	30.04	19.84 - 29.84	989.23 - 979.23
			04/10/2017	DRY			NA			
12430-MW10	1008.54	1008.22	03/31/2015	-	22.94	-	985.28	30.47	20.27 - 30.27	988.27 - 978.27
			04/10/2017	-	29.30	-	978.92			
12430-MW11	1008.26	1007.84	03/31/2015	-	22.82	-	985.02	30.83	20.63 - 30.63	987.63 - 977.63
			04/10/2017	-	29.37	-	978.47			
12430-MW12	1005.64	1005.35	04/10/2017	-	26.59	-	978.76	35.69	25.49 - 35.49	980.15 - 970.15
12430-MW12I	1005.65	1005.37	04/10/2017	-	26.65	-	978.72	45.63	40.43 - 45.43	965.22 - 960.22
12430-MW14	1000.38	1000.02	04/10/2017	-	21.25	-	978.77	25.57	15.37 - 25.37	985.01 - 975.01
12430-MW14I	1000.31	1000.11	04/10/2017	-	21.41	-	978.70	67.92	62.72 - 67.72	937.59 - 932.59
12430-MW15	1000.15	999.88	04/10/2017	-	21.18	-	978.70	26.83	16.63 - 26.63	983.52 - 973.52
12430-MW15I	1000.06	999.88	04/10/2017	-	21.24	-	978.64	62.13	56.93 - 61.93	943.13 - 938.13
12430-MW16	1001.01	1000.63	04/10/2017	-	22.10	-	978.53	27.71	17.51 - 27.51	983.50 - 973.50
12430-MW16I	1001.10	1000.72	04/10/2017	-	22.11	-	978.61	65.49	60.29 - 65.29	940.81 - 935.81
12430-MW17	1000.25	999.85	04/10/2017	-	21.36	-	978.49	28.82	18.62 - 28.62	981.63 - 971.63
12430-MW17I	1000.44	1000.01	04/10/2017	-	21.46	-	978.55	60.41	55.21 - 60.21	945.23 - 940.23
12430-MW18	1003.14	1002.78	04/10/2017	-	24.38	-	978.40	29.30	19.10 - 29.10	984.04 - 974.04
12430-MW19	1008.61	1008.24	04/10/2017		29.68	-	978.56	39.69	29.49 - 39.49	979.12 - 969.12
12430-MW19I	1008.55	1008.18	04/10/2017	-	29.57	-	978.61	70.68	65.48 - 70.48	943.07 - 938.07
12430-MW20	1008.40	1008.01	04/10/2017	-	29.41	-	978.60	40.87	30.67 - 40.67	977.73 - 967.73
12430-MW21	1007.16	1006.73	04/10/2017	-	28.06	-	978.67	35.14	24.94 - 34.94	982.22 - 972.22
12430-MW22	1007.45	1007.12	04/10/2017	-	28.31	-	978.81	35.06	24.86 - 34.86	982.59 - 972.59
12430-MW22I	1007.28	1007.03	04/10/2017	-	28.29	-	978.74	49.72	44.52 - 49.52	962.76 - 957.76
12430-MW23	1008.66	1008.24	04/10/2017	-	29.61	-	978.63	39.87	29.67 - 39.67	978.99 - 968.99
12430-MW24	1006.83	1006.39	04/10/2017	26.56	31.04	4.48	978.49	35.25	25.05 - 35.05	981.78 - 971.78
			04/24/2017	25.87	30.62	4.75	979.10			
12430-MW25	1007.57	1007.27	04/10/2017	-	28.72	-	978.55	38.20	28.00 - 38.00	979.57 - 969.57
12430-MW26	1007.68	1007.33	04/10/2017	-	28.52	-	978.81	36.45	26.25 - 36.25	981.43 - 971.43
12430-MW26I	1007.67	1007.27	04/10/2017	-	28.53	-	978.74	55.11	49.91 - 54.91	957.76 - 952.76
12430-RW01	1007.18	1006.69	04/10/2017	27.34	29.98	2.64	978.56	40.69	20.49 - 40.49	986.69 - 966.69
			04/17/2017	26.99	30.19	3.20	978.74			
12430-RW02	1006.53	1006.23	04/10/2017	26.58	30.63	4.05	978.44	38.08	17.88 - 37.88	988.65 - 968.65
			04/24/2017	25.58	28.63	3.05	979.74			
12430-RW03	1006.17	1005.90	04/10/2017	-	27.19	-	978.71	40.00	19.80 - 39.80	986.37 - 966.37
12430-MWX	1007.47	1007.20	04/10/2017	28.53	NA	+1.47	NA	30.27	20.07 - 30.07	987.40 - 977.40
			04/17/2017	28.30	NA	+1.70	NA			
12430-MWXR	1007.67	1007.31	04/10/2017	-	28.66	-	978.65	38.25	28.05 - 38.05	979.62 - 969.62
			04/17/2017	28.43	28.45	0.02	978.87			

NOTES:
Measurements are in feet
BGS - below ground surface
Elevations are NAVD 88

TABLE 3
Summary of Groundwater Analytical Results
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

		Free-Product Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	EDB (µg/L)	1,2 DCA (µg/L)	ETBE (µg/L)	ETBA (µg/L)	TAME (µg/L)	DIPE (µg/L)	Ethanol (µg/L)	TBF (µg/L)	TBA (µg/L)	TAA (µg/L)	Lead (µg/L)
		---	RBSL 5	RBSL 1,000	RBSL 700	RBSL 10,000	RBSL 40	RBSL 25	RBSL 0.05	RBSL 5	RBSL 47	RBSL NE	RBSL 128	RBSL 150	RBSL 10,000	RBSL NE	RBSL 1,400	RBSL 240	RBSL 15
12430-MW01	08/13/2013	-	***27000***	***54000***	***2700***	***13000***	***5200***	<500	***0.90***	<500	<500	<10000	<5000	***2600***	<50000	<2500	<10000	***27000***	<10
	03/30/2015	-	***27000***	***54000***	***2700***	***13000***	***5200***	<500	***0.93***	<500	<500	<10000	<5000	***2600***	<50000	<2500	<10000	***28000***	<10
		-	***3000***	***6300***	***440***	***2500***	***800***	<20	<0.049	<7.4	<10	<75	<13	***68***	<960	<33	***180 J***	***1800***	<4.7
	04/10/2017	4.46	***3000***	***6200***	***420***	***2500***	***820***	<20	<0.0049	<7.4	<10	<75	<13	***67***	<960	<33	***190 J***	***1900***	<4.7
			NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12430-MW02	08/13/2013	-	***1000***	***1000***	***200***	***570***	***23***	<20	<0.019	<20	<20	<400	<200	<100	<2000	<100	<400	***910***	<10
	03/30/2015	-	***23000***	***51000***	***3200***	***15000***	***520***	***620***	***0.36***	<74	<100	<750	<130	***1600***	<9600	<330	<1100	***20000***	<4.7
	04/11/2017	-	***851***	***659***	***139***	***562***	<8.5	<10.0	<0.021	<9.0	<18.0	<160	<17.0	<8.5	<655	<36.5	<288	***687***	***22.0***
12430-MW03	08/13/2013	-	<1	<1	<1	<1	<1	<1	<0.020	<1	<1	<20	<10	<5	<100	<5	<20	<20	<10
	03/30/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***9 J***
	04/10/2017		DRY																
12430-MW04	03/30/2015	-	***41***	***31***	***6.7***	***63***	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	***4.4***	<19	<0.66	<2.3	***5.1 J***	***6.4 J***
	04/10/2017		DRY																
12430-MW04I	04/11/2017	-	***3.8 J***	***1.9 J***	<1.6	<2.7	<1.7	<2.0	<0.019	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW05	03/31/2015	-	***0.22 J***	***0.70 J***	<0.33	<0.33	<0.40	<0.40	<0.019	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	<4.7
	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW06	03/31/2015	-	***0.18 J***	***0.73 J***	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***14***
	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	***46.4***
12430-MW07	03/31/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.019	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	4.8 J
	04/10/2017		DRY																
12430-MW08	03/30/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	***26***	***14 J***	<4.7
	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW09	03/30/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	<4.7
	04/10/2017		DRY																
12430-MW10	03/30/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.0049	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	***3.6 J***	<1.5	<4.7
	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	***286***
12430-MW11	03/30/2015	-	<0.13	<0.33	<0.33	<0.33	<0.40	<0.40	<0.020	<0.15	<0.20	<1.5	<0.25	<0.40	<19	<0.66	<2.3	<1.5	***6.7 J***
	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	***2.3 J***	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	***77.5 J***	***68.4***
12430-MW12	04/15/2017	-	***2050***	***3930***	***422***	***1580***	<34.0	<40.0	<0.019	<36.0	<72.0	<642	<68.0	<34.0	<2620	<146	<1150	***3010***	<2.5
12430-MW12I	04/15/2017	-	***2700***	***6210***	***576***	***2740***	<68.0	<80.0	<0.020	<72.0	<144	<1280	<136	<68.0	<5240	<292	<2310	***3680 J***	<2.5
12430-MW14	04/11/2017	-	***746***	***748***	***80.5***	***476***	<8.5	<10.0	<0.020	<9.0	<18.0	<160	<17.0	<8.5	***795 J***	<36.5	<288	***2050***	***3.1 J***
		-	***764***	***749***	***79.6***	***462***	<8.5	<10.0	<0.020	<9.0	<18.0	<160	<17.0	<8.5	<655	<36.5	<288	***2220***	***10.6***
12430-MW14I	04/11/2017	-	***33.4***	***16.0***	***2.6 J***	***15.0***	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	***111***	<2.5
12430-MW15	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW15I	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW16	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	***2.8 J***
12430-MW16I	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW17	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW17I	04/10/2017		<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW18	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.019	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5

12430-MW19	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW19I	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW20	04/10/2017	-	***341***	***286***	***26.1***	***119***	<4.2	<5.0	<0.020	<4.5	<9.0	<80.2	<8.5	***39.3***	<328	<18.2	<144	***1010***	<2.5
12430-MW21	04/15/2017	-	***5520***	***1620***	***675***	***5700***	***1240***	***285***	***0.42***	<72.0	<144	<1280	<136	***585***	<5240	<292	<2310	***4390***	<2.5
12430-MW22	04/15/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW22I	04/15/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW23	04/10/2017	-	***1400***	<20.0	<20.0	<33.8	***47.4 J***	***72.4***	<0.020	<22.5	<45.0	<401	<42.5	***44.7 J***	<1640	<91.2	<721	***1030 J***	<2.5
12430-MW24	04/10/2017	4.48	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12430-MW25	04/15/2017	-	***11.6***	***2.0 J***	<1.6	<2.7	***3.7 J***	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
			11.4	***2.5 J***	<1.6	<2.7	***3.5 J***	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW26	04/15/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW26I	04/15/2017	-	2.6 J	2.8 J	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	<2.5
12430-MW0X	04/10/2017	<1.47	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12430-MW0XR	04/11/2017	-	***3580***	***9410***	***621***	***3390***	***516***	<200	<0.020	<180	<360	<3210	<340	<170	<13100	<730	<5770	<7680	***18.2***
12430-RW01	04/10/2017	2.64	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12430-RW02	04/10/2017	4.05	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
12430-RW03	04/15/2017	-	***7020***	***12200***	***1890***	***9200***	***298 J***	***275 J***	<0.020	<180	<360	<3210	<340	***251 J***	<13100	<730	<5770	<7680	<2.5
			6750	***11700***	***1890***	***9100***	***304 J***	***269 J***	<0.020	<180	<360	<3210	<340	***257 J***	<13100	<730	<5770	<7680	<2.5
Field Blank 1	04/10/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A
Field Blank 2	04/11/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A
Field Blank 3	04/15/2017	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A
Trip Blank 1	--	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A
Trip Blank 2	--	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A
Trip Blank 3	--	-	<1.7	<1.6	<1.6	<2.7	<1.7	<2.0	<0.020	<1.8	<3.6	<32.1	<3.4	<1.7	<131	<7.3	<57.7	<76.8	N/A

NOTES:
RBSL - Risk Based Screening Level
Bold values indicate concentrations detected above the laboratory method detection limit.
Shaded values indicate concentrations exceeding RBSLs.
NE - Not Established
NT - Not Tested

TABLE 4
Groundwater Velocity
Westside Quick Stop - UST Permit #12430
Greenville, Greenville County, South Carolina

Shallow wells								
VELOCITY CALCULATION	**Hydraulic Conductivity (K) (centimeters/second)**	**Hydraulic Conductivity (K) (feet/day)**	**Hydraulic Conductivity (K) (feet/year)**	**Hydraulic Gradient (i) (unitless)**	**Effective Porosity (n) (unitless)**	**Groundwater Velocity (V) (feet/day)**	**Groundwater Velocity (V) (feet/year)**	**Groundwater Velocity (V) (meters/second)**
12430-MW16	6.139E-04	1.74	635.20	0.0011	0.27	7.22E-03	2.64	2.55E-08
	6.042E-04	1.71	625.16			7.11E-03	2.60	2.51E-08
12430-MW19	7.495E-05	0.21	77.55	0.0011	0.27	8.66E-04	0.32	3.05E-09
	7.522E-05	0.21	77.83			8.69E-04	0.32	3.06E-09
Mathematical Mean	3.421E-04	1.22	445.97	0.0011	0.27	5.07E-03	1.85	1.79E-08

Intermediate Wells								
VELOCITY CALCULATION	**Hydraulic Conductivity (K) (centimeters/second)**	**Hydraulic Conductivity (K) (feet/day)**	**Hydraulic Conductivity (K) (feet/year)**	**Hydraulic Gradient (i) (unitless)**	**Effective Porosity (n) (unitless)**	**Groundwater Velocity (V) (feet/day)**	**Groundwater Velocity (V) (feet/year)**	**Groundwater Velocity (V) (meters/second)**
12430-MW16I	2.980E-04	0.84	308.34	0.0006	0.27	1.88E-03	0.69	6.62E-09
	1.289E-04	0.37	133.37			8.12E-04	0.30	2.86E-09
12430-MW19I	5.263E-04	1.49	544.56	0.0006	0.27	3.32E-03	1.21	1.17E-08
	4.060E-04	1.15	420.09			2.56E-03	0.93	9.02E-09
Mathematical Mean	3.398E-04	0.90	328.76	0.0006	0.27	2.00E-03	0.73	7.06E-09

Notes:

Hydraulic conductivity values were obtained from slug tests performed by Petra-Tech Environmental, LLC.

Effective porosity values for the shallow and intermediate wells screened in a clayey, course to fine sandy silt were estimated from published values of effective porosity for a fine sand (ranging from 0.01 to 0.46; arithmetic mean 0.33) and silt (ranging from 0.01 to 0.39; arithmetic mean 0.20) (McWorter and Sunada 1977).

Hydraulic gradient for the shallow aquifer was calculated based on groundwater elevations from and distances between monitoring wells 12430-MW12 and 12430-MW19 (Figure 4a).

Hydraulic gradient for the intermediate aquifer was calculated based on groundwater elevations from and distances between monitoring wells 12430-MW12I and 12430-MW19I (Figure 4b).

Groundwater velocity derived from the equation V = Ki/n.

FIGURES



Reference: USGS 7.5-Minute series Greenville Quadrangle - 2011; Contour Interval = 10 feet

500 250 0 500

APPROXIMATE SCALE IN FEET

N

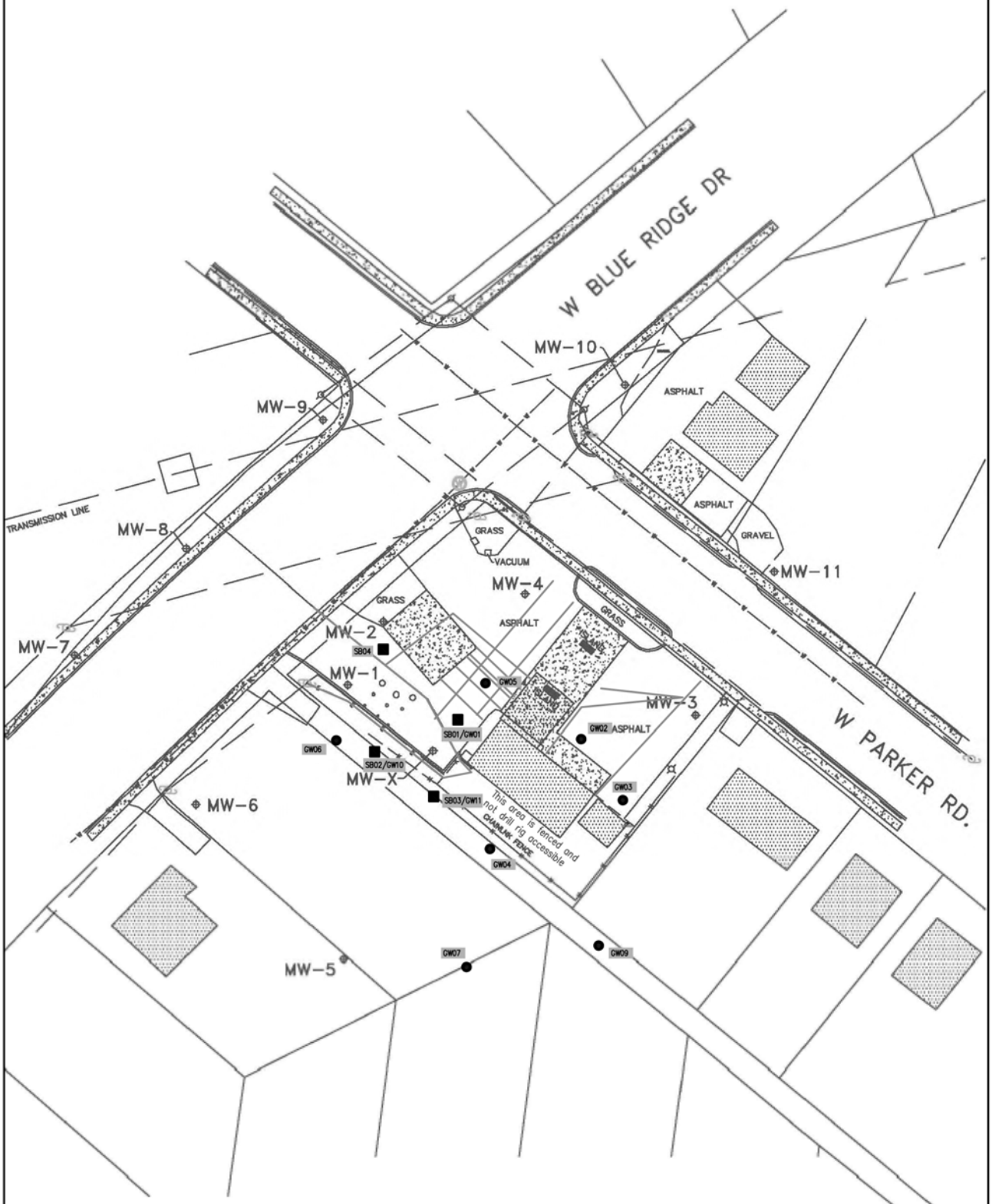
● SITE

Title	Site Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 W. Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 1

REFERENCE: Site Survey by Souther Land Surveying dated 16 April 2015



Groundwater Monitoring Well

Underground Utility (Various Types) Identified with Ground Penetrating Radar

Groundwater Screening Boring Location

Soil / Groundwater Screening Boring Location

60 30 0 60

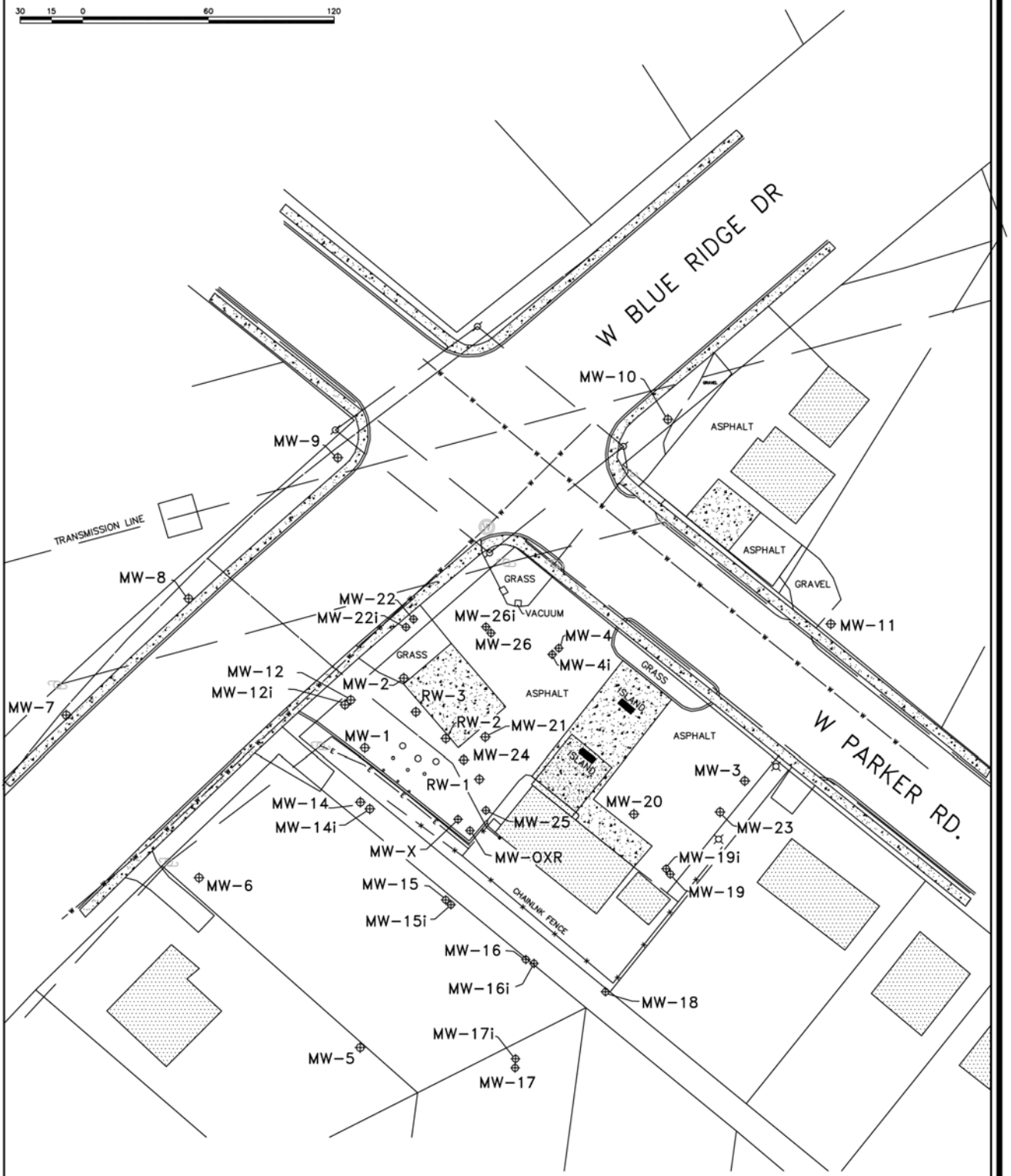
APPROXIMATE SCALE IN FEET

Title	Groundwater Screening Boring Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 2

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017



Groundwater Monitoring Well

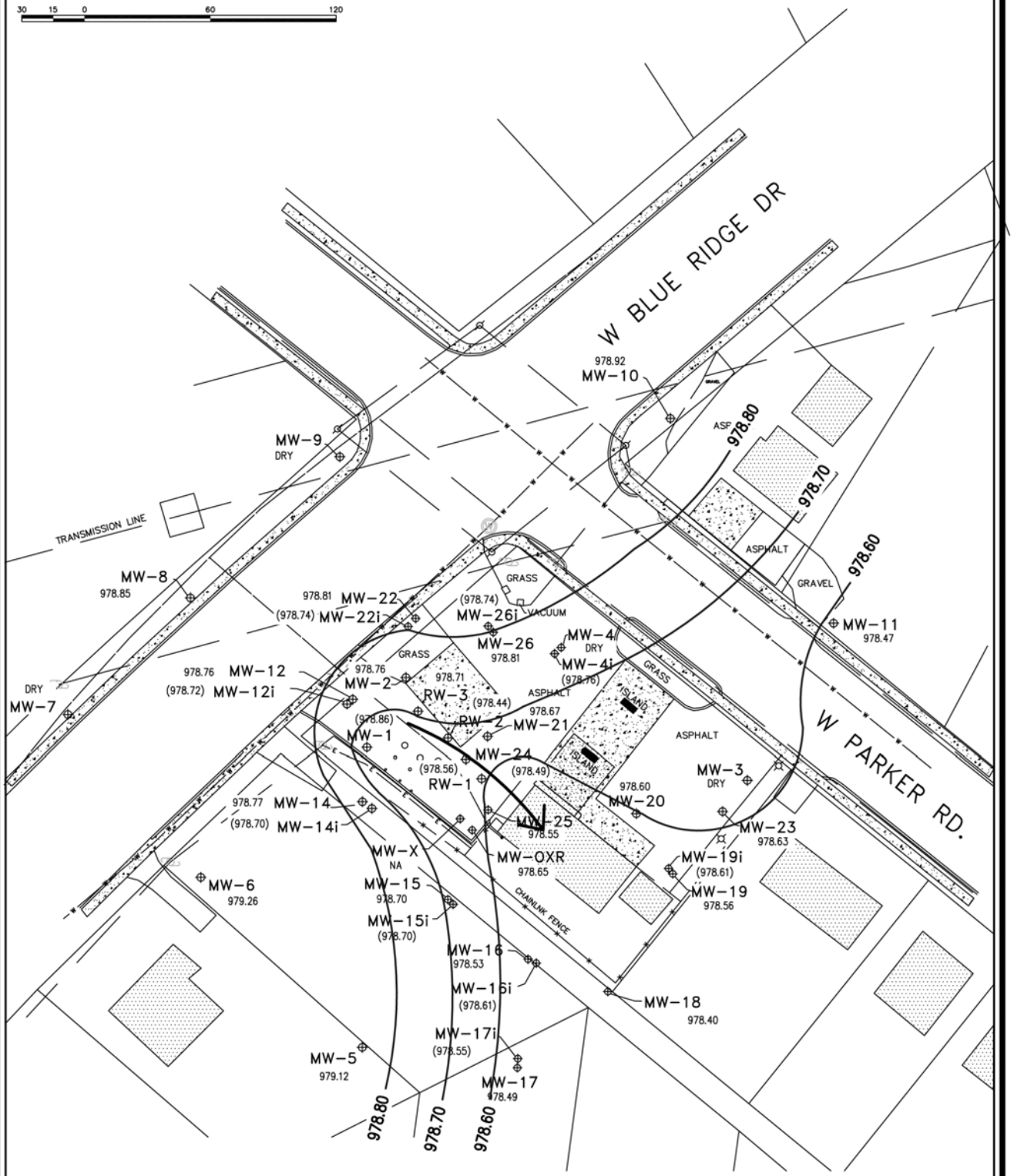
Title	Monitoring Well Location Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 3

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



Groundwater Monitoring Well

Groundwater Potentiometric Contour
Contour Interval = 0.10-feet

541.28 Groundwater Elevation (April 10, 2017)

(541.28) Groundwater Elevation Not Used For Contouring Purposes

Approximate Groundwater Flow Direction

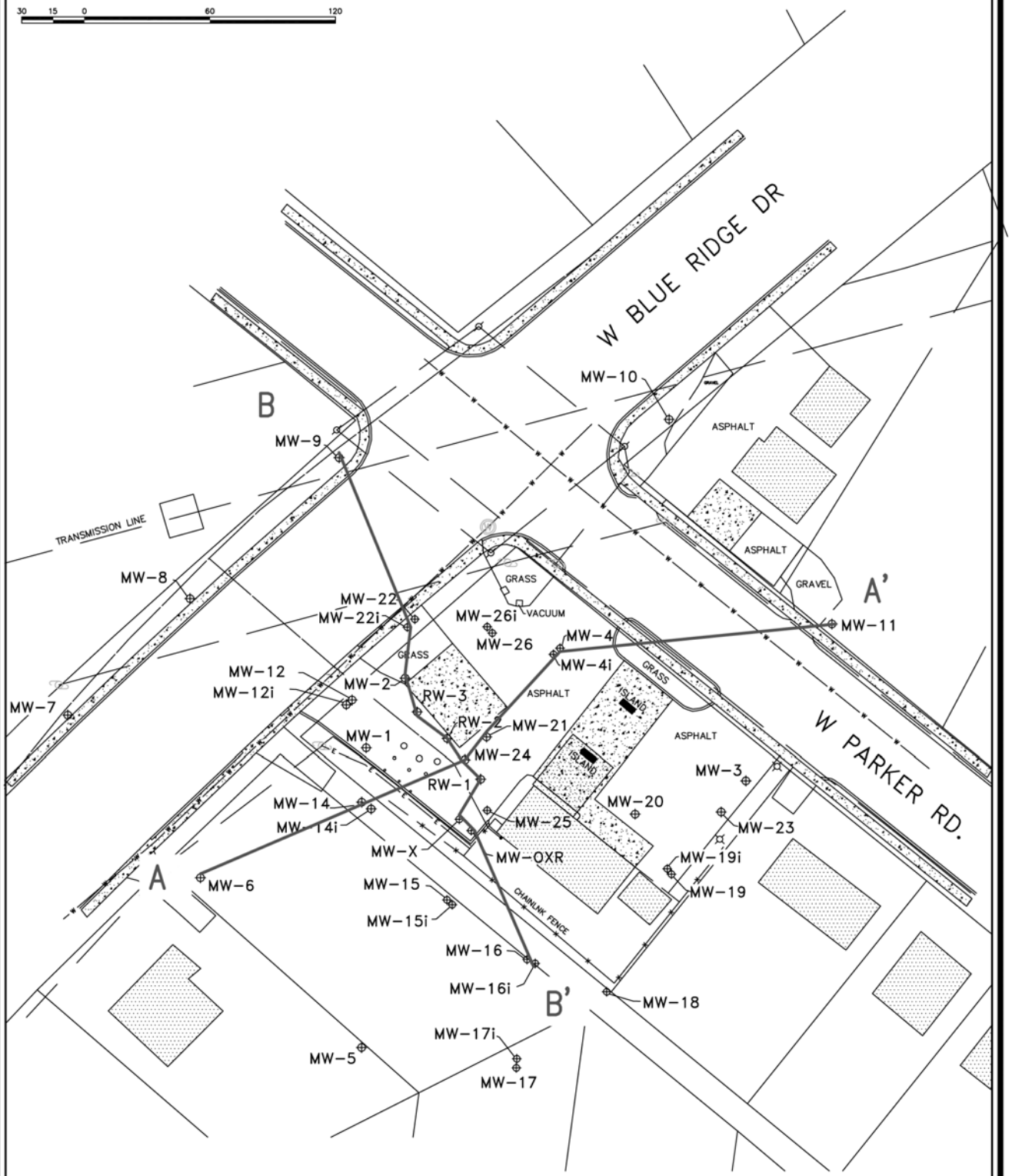
Title	Groundwater Potentiometric Map – April 2017
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 4

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120

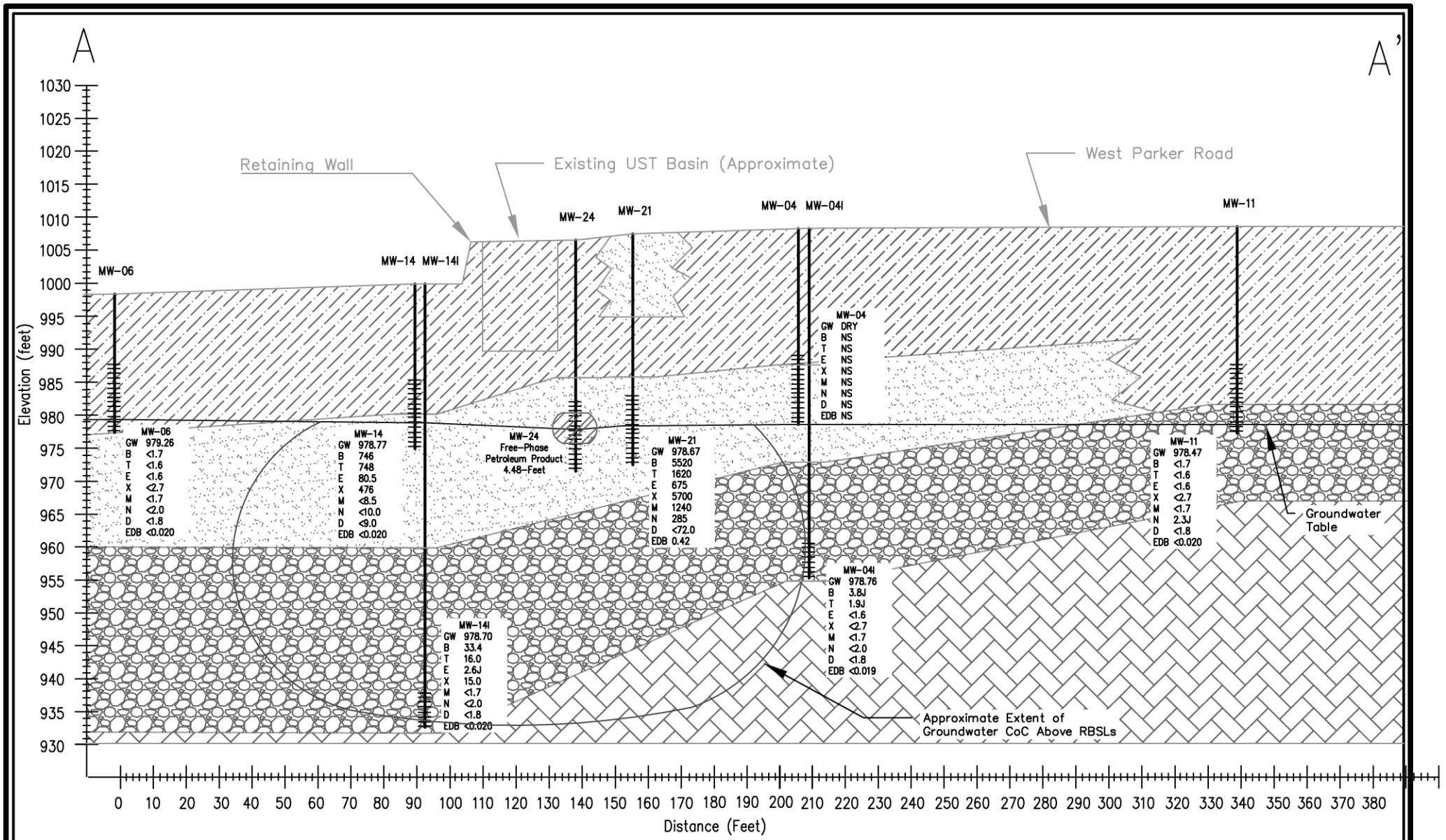


Groundwater Monitoring Well

Title	Subsurface Geologic Cross-Section Reference Map
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	02/04/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 5a



Predominantly Silty Sand

Predominantly Sandy Silt & Clayey Silt

Predominantly Partially Weathered Rock

Bedrock – Gneissic Granite

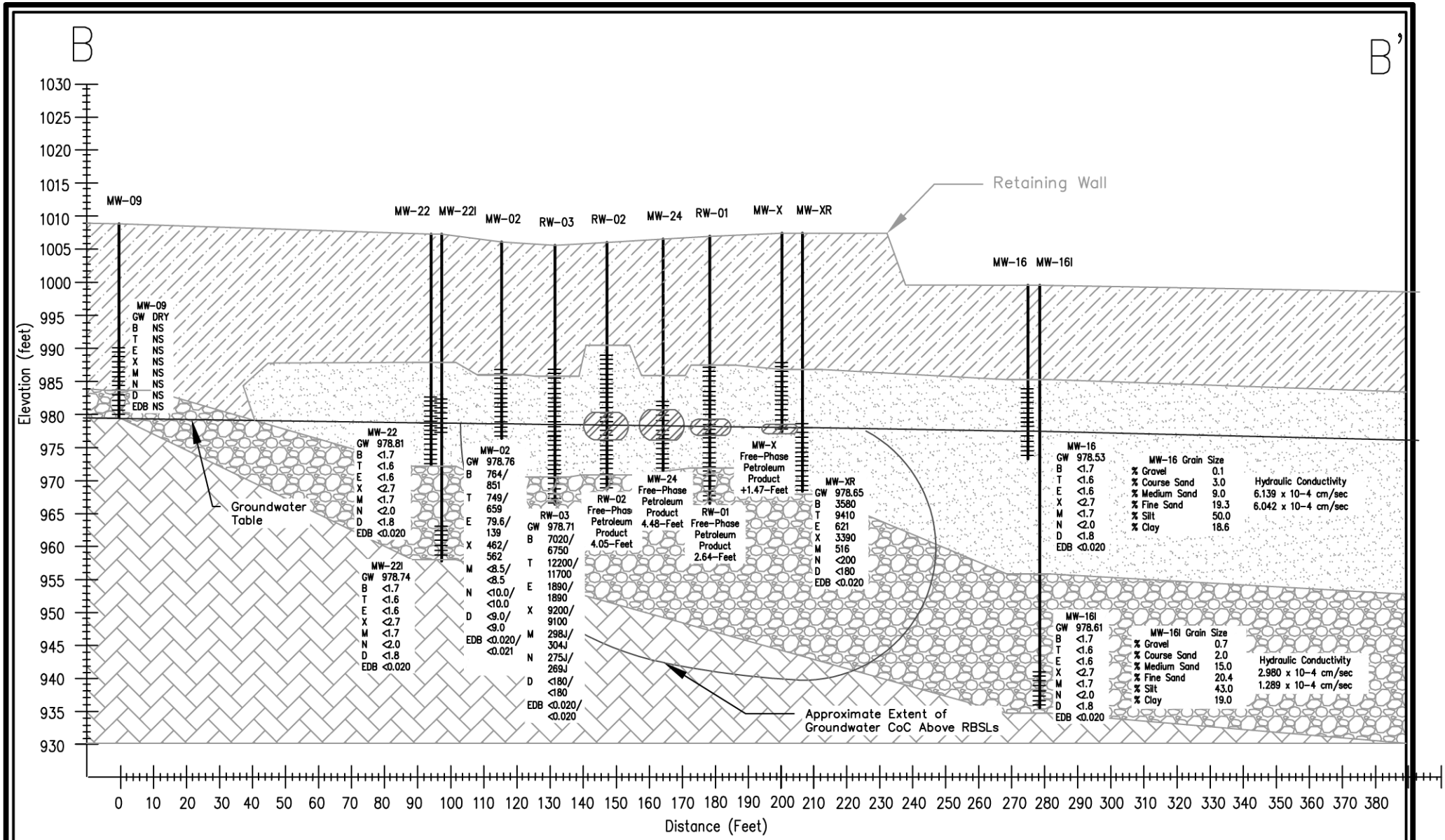
GW – Groundwater Elevation
B – Benzene
T – Toluene
E – Ethylbenzene
X – Xylenes
M – Methyl-Tert-Butyl Ether
N – Naphthalene
D – 1,2-Dichloroethane
EDB – Ethylene Dibromide

Note: Please refer to Figure 5a for Geologic Cross-Section Reference Map

TITLE	Geologic Cross Section A-A'
PROJECT	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
DATE	05/20/2017
JOB NO.	J16-232-A

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Figure No. 5b



Predominantly Silty Sand

Predominantly Sandy Silt & Clayey Silt

Predominantly Partially Weathered Rock

Bedrock – Gneissic Granite

GW – Groundwater Elevation
B – Benzene
T – Toluene
E – Ethylbenzene
X – Xylenes
M – Methyl-Tert-Butyl Ether
N – Naphthalene
D – 1,2-Dichloroethane
EDB – Ethylene Dibromide

Note: Please refer to Figure 5a for Geologic Cross-Section Reference Map

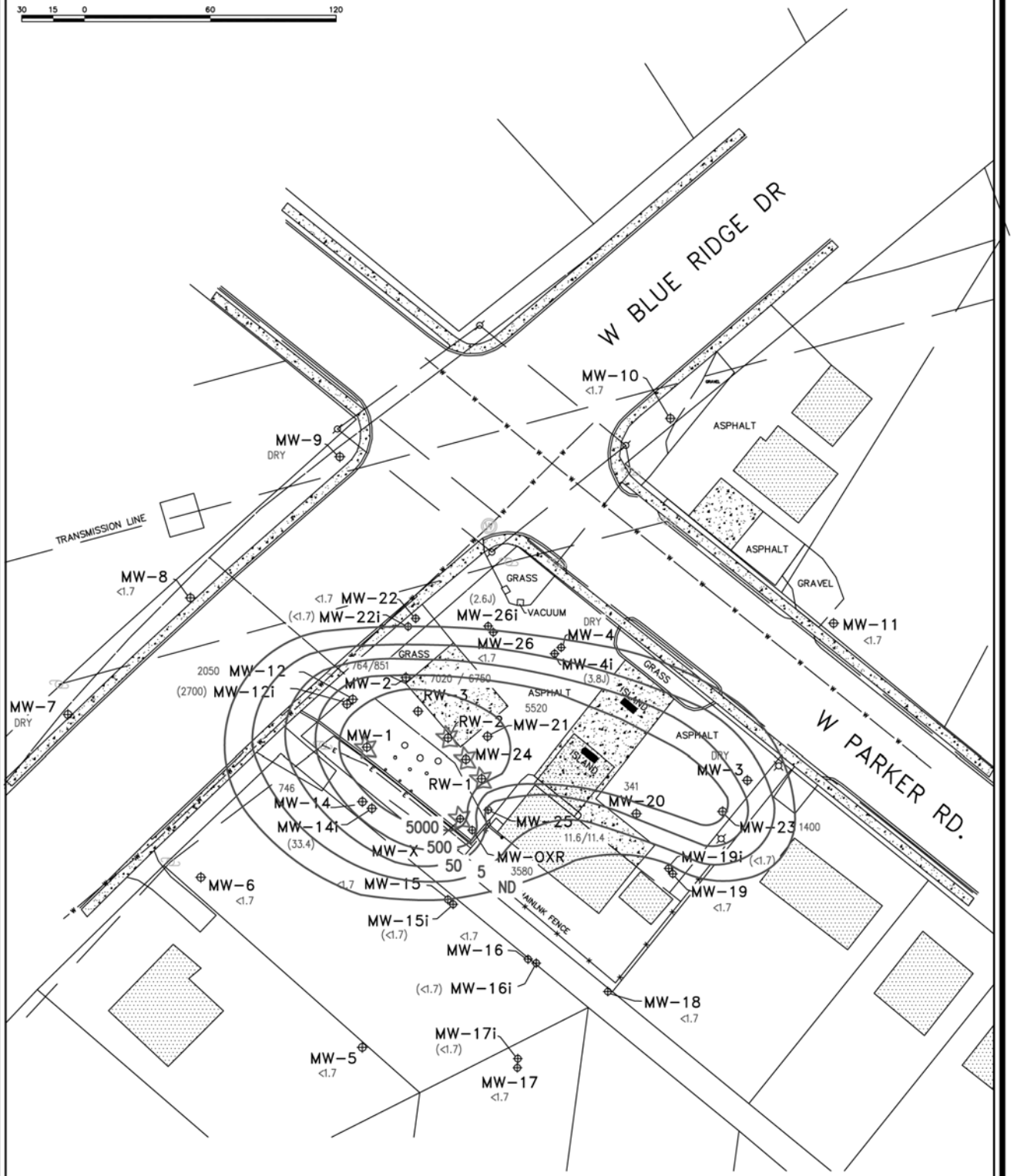
TITLE	Geologic Cross Section B-B'
PROJECT	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
DATE	05/20/2017
JOB NO.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 5c

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



Groundwater Monitoring Well

Free-Phase Petroleum Product Present

2.5J — Benzene Concentration in Micrograms Per Liter

(2.5J) — Benzene Concentration In Micrograms Per Liter Not Used For Contouring Purposes Due To The Depth Of The Screened Interval

Benzene Isoconcentration Line

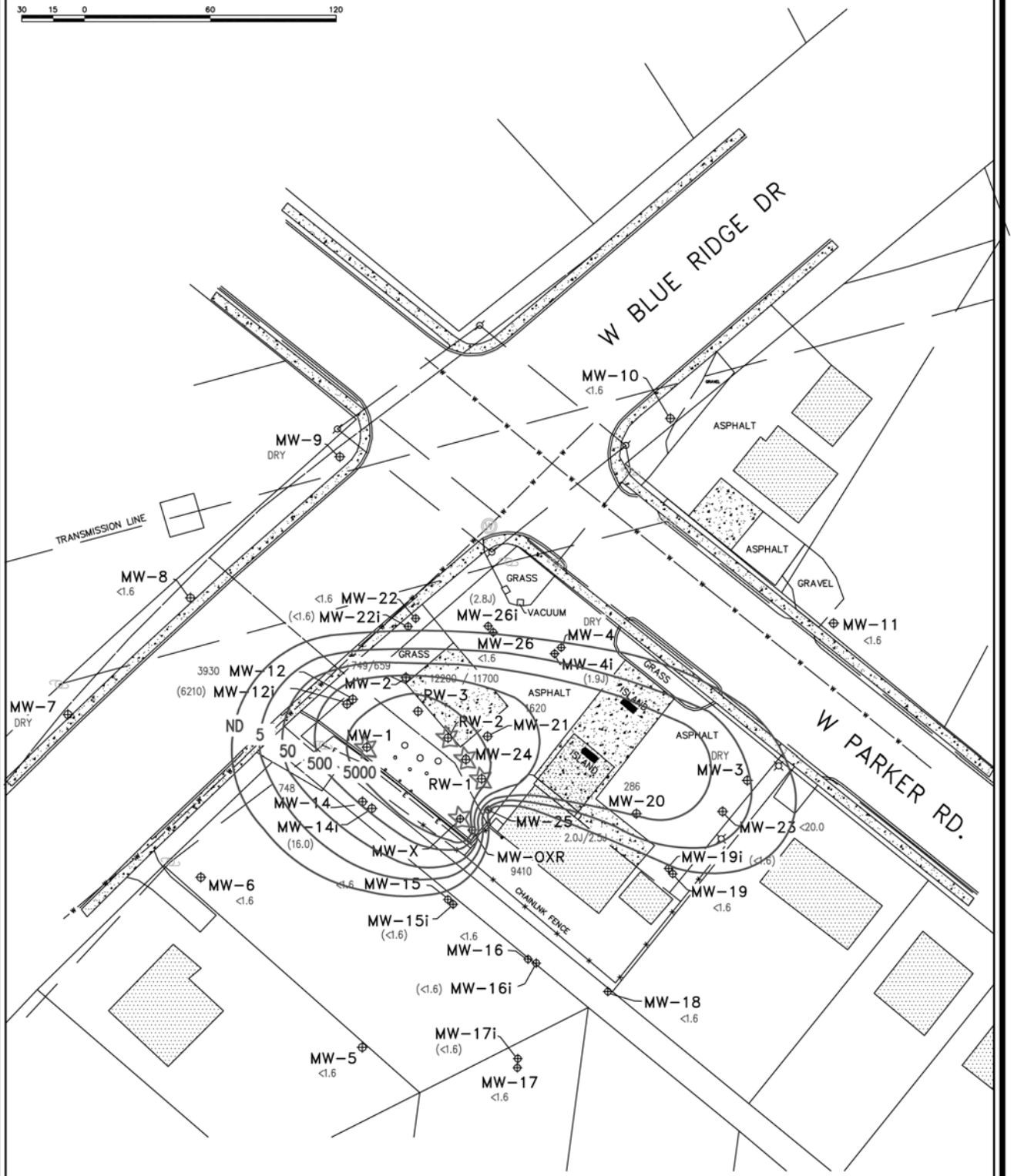
Title	Benzene Isoconcentration Map – April 2017
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 6a

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



Groundwater Monitoring Well

Free-Phase Petroleum Product Present

2.5J — Toluene Concentration in Micrograms Per Liter

(2.5J) — Toluene Concentration In Micrograms Per Liter Not Used For Contouring Purposes Due To The Depth Of The Screened Interval

Toluene Isoconcentration Line

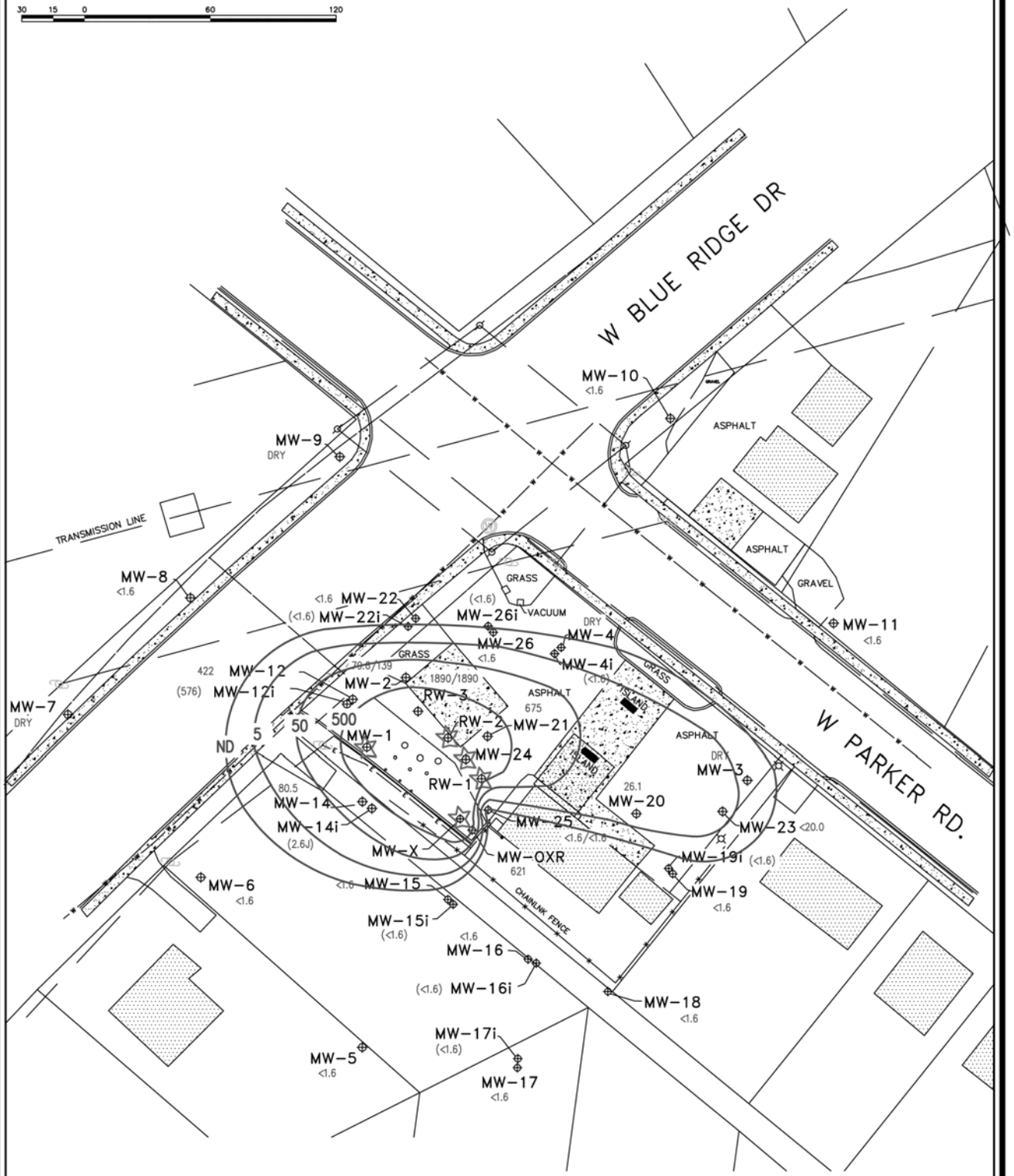
Title	Toluene Isoconcentration Map – April 2017
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 6b

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



Groundwater Monitoring Well

Free-Phase Petroleum Product Present

2.5J Ethylbenzene Concentration in Micrograms Per Liter

(2.5J) Ethylbenzene Concentration In Micrograms Per Liter Not Used For Contouring Purposes Due To The Depth Of The Screened Interval

Ethylbenzene Isoconcentration Line

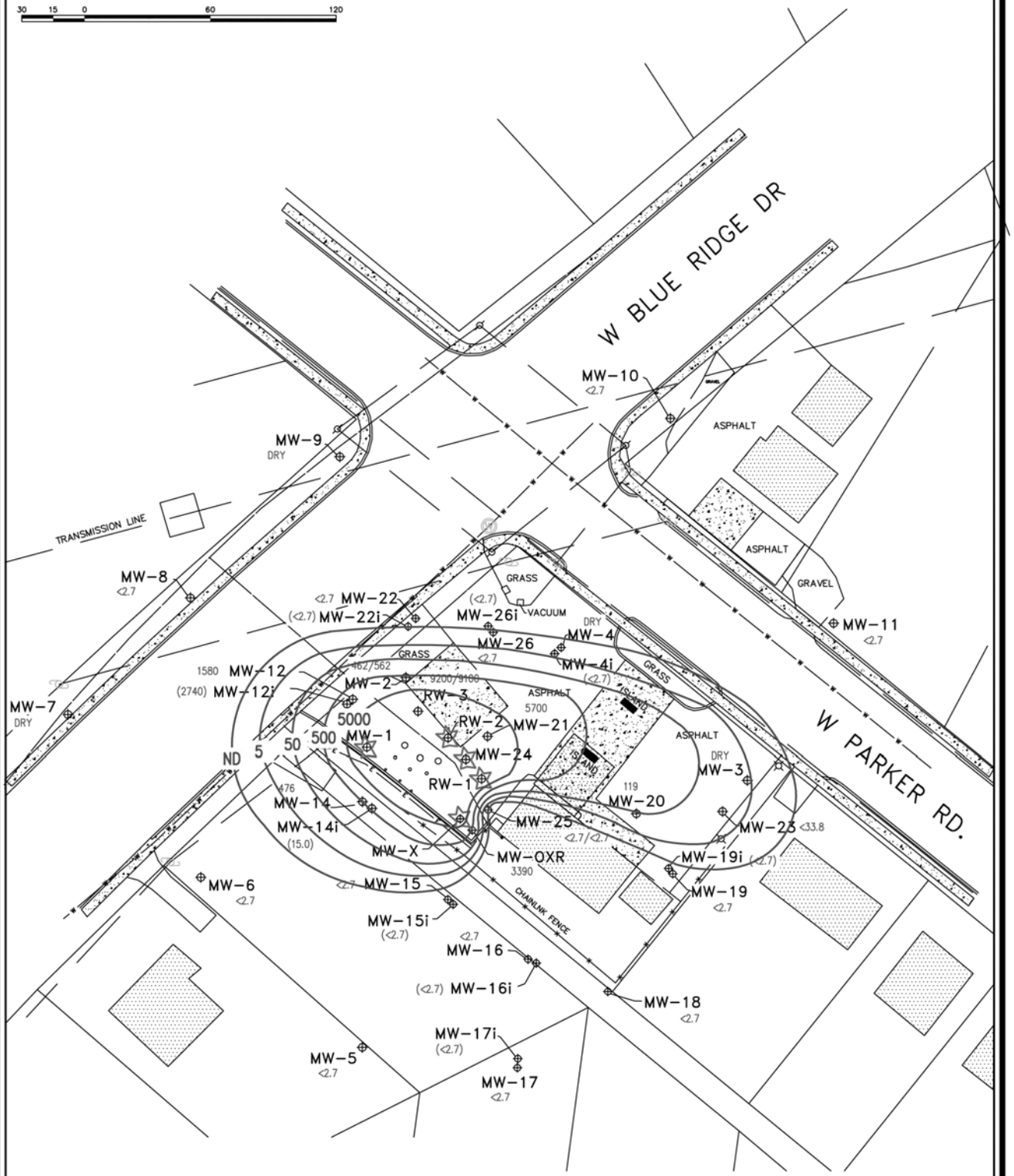
Title	Ethylbenzene Isoconcentration Map – April 2017
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 6c

REFERENCE: Site Survey by Souther Land Surveying dated 4 May 2017

30 15 0 60 120



Groundwater Monitoring Well

Free-Phase Petroleum Product Present

2.5J Xylenes Concentration in Micrograms Per Liter

(2.5J) Xylenes Concentration In Micrograms Per Liter Not Used For Contouring Purposes Due To The Depth Of The Screened Interval

Xylenes Isoconcentration Line

Title	Xylenes Isoconcentration Map – April 2017
Project	Westside Quick Stop (UST Permit #12430) 821 West Parker Road Greenville, South Carolina Greenville County
Date	05/18/2017
Job No.	J16-232-A

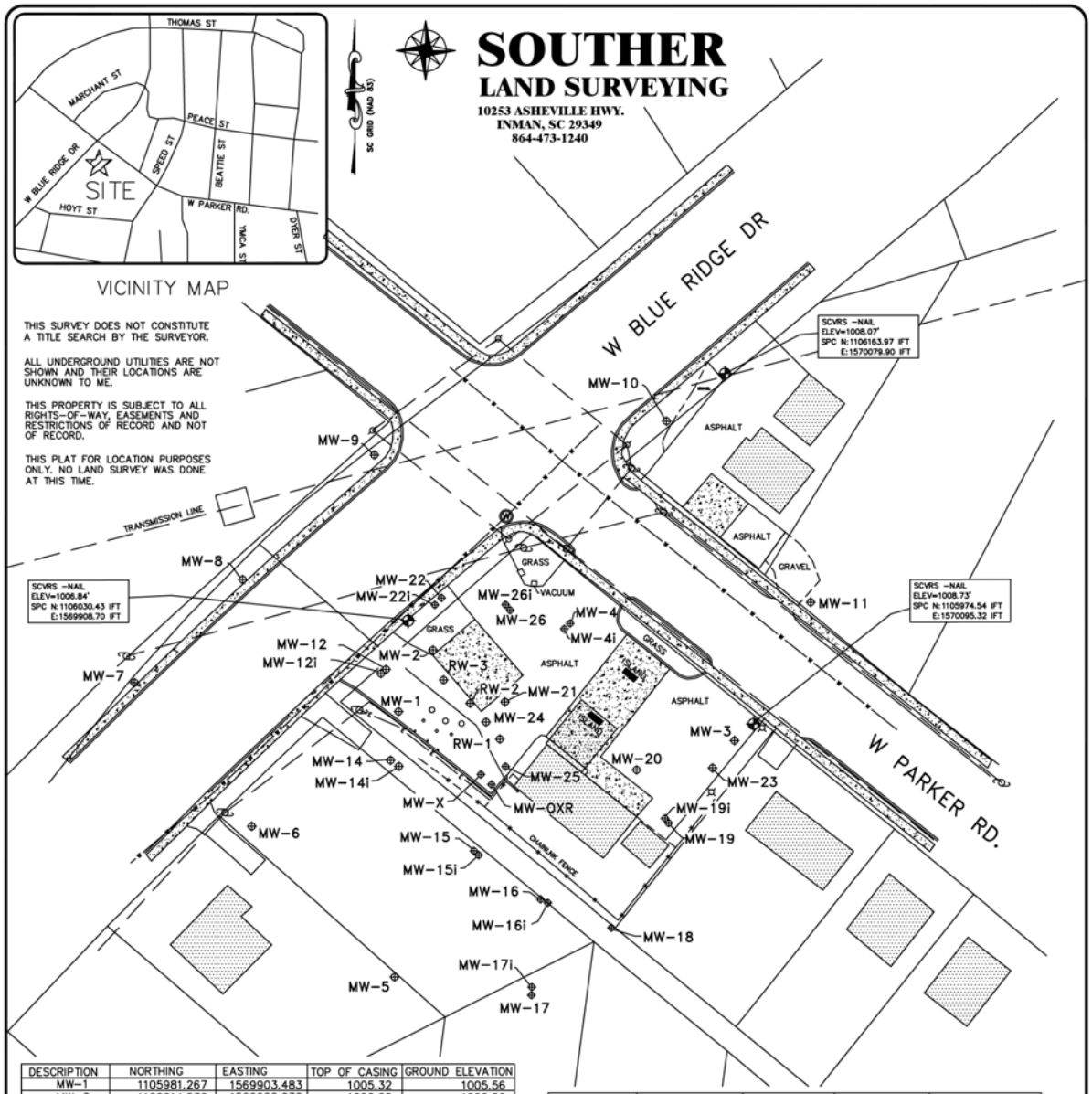
petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Figure No. 6d

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX A

SITE SURVEY PLAT



SOUTHER
LAND SURVEYING

10253 ASHEVILLE HWY.
INMAN, SC 29349
864-473-1240

DESCRIPTION	NORTHING	EASTING	TOP OF CASING	GROUND ELEVATION
MW-1	1105981.267	1569903.483	1005.32	1005.56
MW-2	1106014.536	1569922.038	1006.20	1006.50
MW-3	1105965.609	1570084.952	1008.49	1008.72
MW-4	1106028.887	1569996.103	1008.27	1008.45
MW-4i	1106025.898	1569992.992	1008.12	1008.35
MW-5	1105838.029	1569901.258	997.73	998.24
MW-6	1105919.246	1569824.171	998.27	998.58
MW-7	1105996.860	1569760.810	1005.88	1006.27
MW-8	1106052.610	1569819.230	1007.43	1007.86
MW-9	1106119.988	1569890.488	1008.55	1009.07
MW-10	1106138.309	1570048.269	1008.22	1008.54
MW-11	1106040.426	1570126.139	1007.84	1008.26
MW-12	1106004.065	1569896.698	1005.35	1005.64
MW-12i	1106001.843	1569893.944	1005.37	1005.65
MW-14	1105954.887	1569899.114	1000.02	1000.38
MW-14i	1105951.681	1569903.625	1000.11	1000.31
MW-15	1105903.442	1569942.091	999.88	1000.15
MW-15i	1105901.172	1569944.625	999.88	1000.06

DESCRIPTION	NORTHING	EASTING	TOP OF CASING	GROUND ELEVATION
MW-16	1105878.821	1569979.285	1000.63	1001.01
MW-16i	1105876.922	1569983.153	1000.72	1001.10
MW-17	1105828.289	1569975.249	999.85	1000.25
MW-17i	1105832.627	1569975.437	1000.01	1000.44
MW-18	1105864.728	1570018.453	1002.78	1003.14
MW-19	1105920.966	1570049.399	1008.24	1008.61
MW-19i	1105923.515	1570047.380	1008.18	1008.55
MW-20	1105949.720	1570032.020	1008.01	1008.40
MW-21	1105986.401	1569960.977	1006.73	1007.16
MW-22	1106042.709	1569926.689	1007.12	1007.45
MW-22i	1106038.956	1569923.081	1007.03	1007.28
MW-23	1105950.718	1570073.127	1008.24	1008.66
MW-24	1105975.615	1569950.706	1006.39	1006.83
MW-25	1105951.543	1569961.286	1007.27	1007.57
MW-26	1106036.115	1569963.725	1007.33	1007.68
MW-26i	1106039.049	1569961.273	1007.27	1007.67
RW-1	1105966.397	1569958.159	1006.69	1007.18
RW-2	1105985.756	1569942.169	1006.23	1006.53
RW-3	1105998.360	1569927.850	1005.90	1006.17
MW-X	1105947.218	1569947.979	1007.20	1007.47
MW-OXR	1105941.807	1569953.653	1007.31	1007.67

LEGEND

- SURFACE WATER
- SITE WELL
- 1/2" REBAR FOUND
- 1/2" REBAR SET
- PK NAIL FOUND IN ROAD
- PK NAIL SET IN ROAD
- LIGHT POLE
- POWER POLE
- GUY POLE
- WATER METER
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- ATT MANHOLE
- CATCH BASIN
- GRATE
- TELEPHONE PEDESTAL
- FIRE HYDRANT
- SS — SANITARY SEWER LINE
- T — TELEPHONE LINE
- E — UNDERGROUND ELECTRIC
- UNDERGROUND GAS LINE

NOTES:

ALL PINS ARE 1/2" REBAR OR PK NAILS IN ROAD, UNLESS OTHERWISE NOTED.

SITE SURVEY FOR:

PETRA-TECH ENVIRONMENTAL, LLC

GREENVILLE COUNTY
WESTSIDE QUICK STOP
UST PERMIT #12430
821 W. PARKER ROAD
GREENVILLE, SOUTH CAROLINA
16 APRIL 2015
REVISED 04 MAY 2017

GRAPHIC SCALE

30 15 0 60 120

1 INCH = 60 FEET

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION NO.C02524 SOUTHER LAND SURVEYING, INC.

SOUTH CAROLINA PROFESSIONAL SEAL 21232 LAND SURVEYOR GEORGE B. SOUTHER

GEORGE B. SOUTHER P.L.S. 21232

JOB NO. 05014

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX B

WELL PURGING AND SAMPLING LOGS, CHAIN-OF-CUSTODY FORMS, LABORATORY ANALYTICAL DATA

dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 4/10/17	Site ID #: 12430	Site Name: Magnolia Quick Stop
County: Greenville	Project Manager:	Field Personnel: T. Jones, S. Daughtry, [illegible]

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW1	30	15-30	25.21	29.37	4.16	Y	Y	Y	Y	Y
MW2	30	15-30	–	27.44	–	–	–	Y	Y	Y
MW3	30	15-30	–	Dry	–	–	–	Y	Y	Y
MW4	30	20-30	–	Dry	–			Y	Y	N
MW04I	52.94	48-53	–	29.36	–	–	–	Y	Y	N
MW05	20	10-20	–	18.61	–	–	–	Y	Y	N
MW06	20	10-20	–	19.01	–	–	–	Y	Y	Y
MW07	30	20-30	–	Dry	–	–	–	Y	Y	N
MW08	30	20-30	–	28.58	–	–	–	Y	Y	Y
MW09	30	20-30	–	Dry	–	–	–	Y	Y	N
MW10	30	20-30	–	29.30	–	–	–	Y	Y	N
MW11	30	20-30	–	29.37	–	–	–	Y	Y	N
12	35.40	25-35	–	26.59	–	–	–	Y	Y	N

Notes: _____

Signature: _____

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 4/10/17	Site ID #: 12430	Site Name: Westside Quickstop
County: Greenville	Project Manager:	Field Personnel: Thomas Vaughan, James Sloan

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW 12I	49.35	44-46	—	26.65	—	—	—	Y	Y	N
MW 14	25.21	14.7-24.7	—	21.25	—	—	—	Y	Y	N
MW 14I	67.72	63-68	—	21.41	—	—	—	Y	Y	N
MW 15	26.56	16.3-26.3	—	21.18	—	—	—	Y	Y	N
MW 15I	61.95	56.6-61.6	—	21.24	—	—	—	Y	Y	N
MW16	27.33	16.9-26.9	—	22.10	—	—	—	Y	Y	N
MW 16I	65.11	59.6-64.6	—	22.11	—	—	—	Y	Y	N
MW 17	28.42	18-28	—	21.36	—	—	—	Y	Y	N
MW 17I	59.98	55-60	—	21.46	—	—	—	Y	Y	N
MW 18	28.94	19-29	—	24.38	—	—	—	Y	Y	N
MW 19	39.32	28.7-38.7	—	29.68	—	—	—	Y	Y	N
MW 19I	70.71	64.7-69.7	—	24.57	—	—	—	Y	Y	N
MW20	40.48	29.9-39.9	—	29.41	—	—	—	Y	Y	N

Notes: _____

Signature: _____

dhec

Underground Storage Tank Management Division
Field Data Information Sheet – Monitoring Well Gauging

Site Information

Date: 4/10/17	Site ID #: 12430	Site Name: Westside Quick Stop
County: Greenville	Project Manager:	Field Personnel: Thomas Vaughan, James Sloan

Well Gauging Information

Well ID:	Total Well Depth (ft.)	Screened Interval (ft.)	Depth to Free Product (ft.)	Depth to Ground water (ft.)	Free Product Thickness (ft.)	Confirmed with Bailer?	Photos Taken ?	Well Pad OK?	Bolts in Well Cover?	Water in Well Vault?
MW21	34.71	25-35	—	28.06	—	—	—	Y	Y	N
MW22	34.73	24.5-34.5	—	28.31	—	—	—	Y	Y	N
MW22E	49.47	44-49	—	28.29	—	—	—	Y	Y	N
MW23	39.45	28.6-38.6	—	29.61	—	—	—	Y	Y	N
MW24	34.91	25-35	26.56	31.04	4.48	Y	Y	Y	Y	N
MW25	37.90	27.3-37.3	—	28.72	—	—	—	Y	Y	N
MW26	36.10	26-36	—	28.52	—	—	—	Y	Y	N
MW26E	54.71	50-55	—	28.53	—	—	—	Y	Y	N
RW01	40.20	20-40	27.34	29.98	2.54	Y	Y	Y	Y	N
RW02	37.78	18-38	26.58	30.63	4.03	Y	Y	Y	Y	N
RW03	39.91	20-40	—	27.19	—	—	—	Y	Y	N
MWOX	30	15-30	28.53	Bottom of well	—	—	—	Y	Y	Y
MWOXR	37.89	28.05-38.05	—	28.66	—	—	—	Y	Y	N

Notes: _____

_____

_____

_____ Signature: _____

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW01	WEATHER:	DATE: 4/10/17	

PURGING DATA

DTP 25.21

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 15 to 30 feet	Depth to Water (feet BTOC): 29.37	Purge Method: N/A
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS

4.16' FP

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW02	WEATHER: Cool, Windy		DATE: 4/10/17

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	30	15 to 30 feet	27.44	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand** To	**Well Tag Bentonite** To	**Well Tag Grout** To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1630	—	—	17.92	—	5.92	—	126	—	.126	—	2.71	—	Strong	N
1640	2	2	16.84	1.08	5.71	.21	82	44	384	258	1.46	1.25		
1645	1	3	16.71	.13	5.65	.06	61	21	76	308	1.03	.43		
1650	1	4	16.65	.06	5.66	.01	44	12	21.43	55	1.05	.02		
1655	.5	4.5	16.66	.01	5.65	.01	52	3	12.38	9	1.02	.03		
1700	.5	5	16.65	.01	5.64	.01	55	3	10.17	2	1.22	—		
1705	.5	5.5	16.66	—	5.64	—	53	2	9.62	1	1.01	.01		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/11/17	1705
SAMPLING METHOD: B	**DUPLICATE COLLECTED:** (YES) OR (NO)	**FIELD-FILTERED:** YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW03	WEATHER:	Cool, Windy
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	30	15 to 30 feet	Dry	
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
		To	To	To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V	TV		
SAMPLING METHOD	**DUPLICATE COLLECTED** YES OR NO	**FIELD-FILTERED:** YES OR NO **FILTER SIZE:** Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

Dry

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW04	WEATHER:	Cool, Windy
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 20 to 30 feet	Depth to Water (feet BTOC): Dry	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
			Not				Sampled							

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Dry

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: West Side Quick Stop	SITE LOCATION: Greenville, SC	
WELL NO: MW04I	WEATHER: Sunny	DATE: 4/11/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 52.44	Screened Interval: 48 to 53 feet	Depth to Water (feet BTOC): 29.36	Purge Method: ESP
Well Tag Installation Date: 3/23/17	Well Tag Driller License Number	Well Tag Sand: 44 To 47	Well Tag Bentonite: 41 To 44	Well Tag Grout: 0 To 41

6in 40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1820	—	—	18.94	—	5.88	—	19	—	2.01	—	301	—	N	N
1828	3	3	18.68	.26	5.59	.29	24	5	1.48	.53	185	116		
1836	3	6	18.66	.02	5.48	.11	25	1	1.37	.11	82	103		
1843	2	8	18.64	.02	5.43	.05	25	0	1.32	.05	51	31		
1850	2	10	18.63	.01	5.40	.03	26	1	1.24	.03	20.19	30.81		
1857	2	12	18.63	0	5.40	0	26	0	1.27	.02	8.36	11.83		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/11/17	SAMPLING TIME: 1400
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW05	WEATHER:	Cool, Clear
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	20	10 to 20 feet	18.61	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
		To	To	To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1500	—	—	19.27	—	5.92	—	89	—	2.17	—	21.45	—	None	—
1515	2	2	18.94	.33	5.71	.21	76	13	1.93	.24	+1000	—		—
1525	.5	2.5	18.91	.03	5.65	.06	63	13	1.61	.32	328	—		Dry
1535	.5	3	18.96	.05	5.65	—	60	3	1.04	.57	40	288		↓
1545	.5	3.5	18.90	.06	5.64	.01	62	2	1.09	.05	26	14		↓

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/11/17	1555
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Purged dry @ lowest pump setting - Sampled upon recovery

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW06	WEATHER:	Cool, Clear
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	20	10 to 20 feet	19.01	ESP.
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand** To	**Well Tag Bentonite** To	**Well Tag Grout** To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1520	—	—	17.46	—	5.93	—	72	—	3.19	—	19	—	NO	N
1530	1	1	17.31	.15	5.71	.22	31	41	2.76	.43	+1000	—		N
1540	1	2	17.01	.30	5.41	.30	29	2	2.61	.15	321	—		Y
1550	.5	2.5	17.00	.01	5.47	.06	27	2	2.43	.18	52	269		Y
1600	.5	3	17.03	.03	5.56	.09	25	2	2.05	.38	61	9		Y

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V	TV	4/11/17	1615
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: well purged to dryness @ lowest Pump Setting. Sample collected @ recovery

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO	MW07	WEATHER:	DATE: 4/10/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 20 to 30 feet	Depth to Water (feet BTOC): Dry	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
		Not Sampled												

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Dry

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW08	WEATHER:	Cool, Clear
DATE:	4/11/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	30	20 to 30 feet	28.58	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand** To	**Well Tag Bentonite** To	**Well Tag Grout** To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1720	—	—	17.27	—	5.92	—	62	—	3.17	—	16	—	NO	N
1730	1	1	16.01	1.26	5.61	.31	31	31	2.94	.23	192	176		Y
1740	.5	1.5	16.53	.52	5.55	.06	35	4	2.61	.33	261	69		Y
1750	.5	2	16.46	.07	5.50	.05	26	9	2.73	.11	105	156		Y
1800	.5	2.5	16.42	.04	5.52	.02	29	3	2.70	.03	38	67		X

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V	TV	4/11/17	1805
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

well purged to dryness @ lowest pump setting. Sampled @ recovery.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC
WELL NO: MW09	WEATHER:	DATE:

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 20 to 30 feet	Depth to Water (feet BTOC): Dry	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	INTENDED ANALYSIS AND/OR METHOD
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Dry

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW10	WEATHER: Cool, Clear	DATE: 4/10/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 20 to 30 feet	Depth to Water (feet BTOC): 29.30	Purge Method: ESP/B
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1815	—	—	14.26	—	5.27	—	86	—	2.78	—	13	—	NO	N
1830	.5	.5	18.15	1.11	5.11	.16	41	45	3.46	.68	+1000	—		Y
1845	.5	1	17.56	.59	5.05	.06	27	14	3.05	.41	328	—		Y
1905	.5	1.5	17.32	.24	5.02	.03	39	12	3.15	.10	104	224		Y

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/10/17	SAMPLING TIME: 1915
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

Purged to dryness. Sample collected upon recovery.

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC
WELL NO: MW11	WEATHER: Cool, Clear	DATE: 4/10/17

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	30	20 to 30 feet	29.37	ESP+B
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
		To	To	To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1630	—	—	17.46	—	6.17	—	39	—	2.47	—	946	—	N	N
1645	1.5	.5	16.31	1.15	5.48	2.31	46	7	3.83	1.36	>1000	—	N	Y
1700	1.6	1	16.52	.21	5.11	.37	28	18	2.61	1.22	247	—	N	Y

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/10/17	SAMPLING TIME: 1715
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

Purged to dryness. Sample collected upon recovery

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC
WELL NO: MW12	WEATHER: warm, windy
	DATE: 4/15/17

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	35.40	25 to 35 feet	26.59	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
		To	To	To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
0850	—	—	17.26	—	6.27	—	162	—	1.06	—	86	—	Y	N
0901	2	2	17.01	.25	5.91	.36	65	97	0.92	.14	492	406	Y	
0915	1	3	16.99	.02	5.68	.23	60	5	1.00	.08	370	122	Y	
0926	1.5	4.5	16.87	.12	5.73	.05	58	2	0.90	.10	62.	308	Y	
0936	.5	5	16.92	.05	5.70	.03	56	2	6.91	.01	13.17	49	Y	
0946	.5	5.5	16.90	.02	5.72	.02	55	1	0.90	.01	9.56	3	Y	

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Trever S.	TS	4/15/17	0946
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW12I	WEATHER: Cool, windy		DATE: 4/15/17

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	45.35	40 to 45 feet	26.65	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand** To	**Well Tag Bentonite** To	**Well Tag Grout** To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
0755	—	—	18.61	—	5.92	—	62	—	4.92	—	>1000	—	Y	N
0805	5	5	19.21	.60	5.61	.31	38	24	5.61	.69	328	—		
0821	3	8	18.94	.78	5.43	.18	36	2	3.01	2.60	105	223		
0832	2	10	19.06	.07	5.45	.02	34	2	1.62	1.39	62	43		
0845	5	15	12.01	.05	5.43	.03	35	1	1.66	.04	26.17	36		
0900	3	18	14.00	.81	5.40	.12	34	1	1.65	.01	9.04	17		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Trever S.	TS	4/15/17	0900
SAMPLING METHOD B	**DUPLICATE COLLECTED** YES OR (NO)	**FIELD-FILTERED:** YES OR (NO)	**FILTER SIZE:** / **Filtration Equipment Type:**

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	West Side QuickStop	SITE LOCATION:	Greenville SC
WELL NO:	MW14	WEATHER:	Sunny
		DATE:	4/11/17

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	25.21	14.7 to 24.7 feet	21.25	RFPP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
3/8/17	1920	12 To 24.7	9 To 12	0 To 9

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1455	—	—	17.09	—	5.81	—	71	—	2.91	—	508	—	Y	N
1502	1	1	16.68	.41	4.99	.82	58	13	3.30	.49	149	359		
1509	1	2	16.65	.03	4.91	.08	57	1	3.57	.03	87	62		
1516	1	3	16.62	.03	4.90	.01	57	0	3.68	.11	52	35		
1523	1	4	16.61	.01	4.88	.02	56	1	3.62	.06	17.96	32.04		
1530	1	5	16.61	0	4.83	0	56	0	3.60	.02	7.39	12.57		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units

Dissolved Oxygen: ± 0.2 mg/L or ± 10%

Temperature: ± 0.2 °C

Turbidity: ≤ 10 NTU or ± 10%

Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/11/17	1535
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:** Y ES OR NO	
B	1540 (YES) OR NO DUPA	**FILTER SIZE:**	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	INTENDED ANALYSIS AND/OR METHOD
	3	AG	40mL	HCl	Y	
	3	AG	40	HCl	Y	8260B
	1	PE	250	HNO_3	Y	8011
						6010

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop | SITE LOCATION: Greenville SC

WELL NO: MW 14I | WEATHER: Sunny | DATE: 4/11/17

PURGING DATA

Well Diameter (inches): 2 | Total Well Depth (feet BTOC): 67.72 | Screened Interval: 63 to 68 feet | Depth to Water (feet BTOC): 21.41 | Purge Method: ESP

Well Tag Installation Date: 3/8/17 | Well Tag Driller License Number: 1920 | Well Tag Sand: 60 To 68 | Well Tag Bentonite: 57 To 60 | Well Tag Grout: 0 To 57

Bin 49

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1355	—	—	19.01	—	5.77	—	28	—	3.88	—	891	—	N	N
1405	5	5	18.78	.23	5.79	.36	25	3	4.50	.68	555	336		
1415	5	10	18.76	.02	5.78	.01	25	0	4.73	.23	230	325		
1424	4	14	18.75	.01	5.84	.04	24	1	4.79	.06	71	159		
1433	4	18	18.78	.03	5.81	.03	25	1	4.85	.06	38.11	32.89		
1442	4	22	18.79	.01	5.83	.02	25	0	4.87	.02	9.49	25.62		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units

Dissolved Oxygen: ± 0.2 mg/L or ± 10%

Temperature: ± 0.2 °C

Turbidity: ≤ 10 NTU or ± 10%

Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V. | SAMPLER(S) SIGNATURE(S): TV | SAMPLING DATE: 4/11/17 | SAMPLING TIME: 1445

SAMPLING METHOD: B | DUPLICATE COLLECTED: YES OR (NO) | FIELD-FILTERED: YES OR (NO) | FILTER SIZE: | Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION / **SAMPLE PRESERVATION**

SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	INTENDED ANALYSIS AND/OR METHOD
	3	AG	40mL	HCl	Y	
	3	AG	40	HCl	Y	8260B
	1	PE	250	HNO_3	Y	8011
						6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside	SITE LOCATION:	Greenville, SC
WELL NO:	MW 15	WEATHER:	Sunny
DATE:	4/11/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	26.56	16.3 to 26.3 feet	21.18	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
3/7/17	1920	14 To 26.3	11 To 14	0 To 11

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1218	—	—	18.00	—	4.85	—	13	—	7.42	—	665	—	N	N
1219	1	1	16.78	1.22	4.88	.03	12	1	5.84	1.58	196	469		
1227	2	3	16.82	.05	4.95	.07	12	0	5.71	.13	178	18		
1234	1	4	16.72	.10	4.95	0	12	0	5.61	.10	27.42	12.48		
1241	1	5	16.99	.07	4.94	.01	12	0	5.54	.07	16.60	10.82		
1248	1	6	16.95	.04	4.92	.02	12	0	5.49	.06	8.18	8.42		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/11/17	1250
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: *AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other*

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop	SITE LOCATION:	Greenville
WELL NO:	MW15I	WEATHER:	Sunny
		DATE:	4/11/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 61.95	Screened Interval: 56.6 to 61.6 feet	Depth to Water (feet BTOC): 21.24	Purge Method: ESP
Well Tag Installation Date: 3/6/17	Well Tag Driller License Number: 1720	Well Tag Sand: 53 To 61.6	Well Tag Bentonite: 50 To 53	Well Tag Grout: 0 To 50

6.3
40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1119	—	—	17.55	—	5.23	—	13	—	7.23	—	198	—	N	N
1119	4	4	17.56	0	5.19	.04	12	1	6.40	.83	87	61		
1128	4	8	17.56	.01	5.18	.01	12	0	6.51	.11	56	31		
1137	4	12	17.57	.01	5.16	.02	12	0	6.66	.14	24.48	31.52		
1146	4	16	17.57	0	5.13	.03	12	0	6.78	.12	14.03	10.45		
1155	4	20	17.57	0	5.11	.02	12	0	6.81	.03	8.12	5.91		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): T.	SAMPLING DATE: 4/11/17	SAMPLING TIME: 1200
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quickstop	SITE LOCATION:	Greenville SC
WELL NO:	MW16	WEATHER:	Sunny
DATE:	4/11/17		

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 27.33	Screened Interval: 18.4 to 26.9 feet	Depth to Water (feet BTOC): 22.10	Purge Method: RFPP
Well Tag Installation Date: 3/16/17	Well Tag Driller License Number: 1920	Well Tag Sand: 14 To 26.2	Well Tag Bentonite: 11 To 14	Well Tag Grout: 0 To 11

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1036	—	—	16.87	—	4.92	—	72	—	5.85	—	156	—	N	N
1043	1	1	16.79	-.08	4.86	-.06	73	1	7.11	1.26	29.11	127.84		
1050	1	2	16.98	.03	4.93	.03	72	1	7.24	.13	14.03	14.08		
1057	1	3	17.08	.10	4.82	.01	72	0	7.28	.09	9.38	4.65		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thames V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/11/17	SAMPLING TIME: 1100
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: ~~Tri-County Tire Co.~~ Westside Quick Stop	SITE LOCATION: ~~Marion, SC~~ Greenville SC	
WELL NO: MW 16E	WEATHER: Sunny	DATE: 4/11/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 69.11	Screened Interval: 59.6 to 69.6 feet	Depth to Water (feet BTOC): 22.11	Purge Method: ESP
Well Tag Installation Date: 3/7/17	Well Tag Driller License Number: 1920	Well Tag Sand: 57 To 64.6	Well Tag Bentonite: 54 To 57	Well Tag Grout: 0 To 54

6in 40

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
940	—	—	17.16	—	5.46	—	19	—	4.91	—	190	—	N	N
949	4	4	17.21	.05	5.36	.10	16	3	6.05	1.14	32.64	2.36		
958	4	8	17.22	.01	5.29	.07	16	0	6.36	.31	27.81	10.63		
1007	4	12	17.21	.01	5.27	.02	16	0	6.58	.22	14.11	13.70		
1016	4	16	17.21	0	5.25	.02	16	0	6.70	.12	11.09	3.03		
1023	4	20	17.21	0	5.29	.01	16	0	6.77	.07	7.01	4.02		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/11/17	SAMPLING TIME: 1030
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B
—	3	AG	40ml	HCL	Y	8011
—	1	PE	250ml	HNO3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop	SITE LOCATION:	Greenville SC
WELL NO:	MW 17	WEATHER:	Sunny
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 28.42	Screened Interval: 18 to 28 feet	Depth to Water (feet BTOC): 21.36	Purge Method: RFPP
Well Tag Installation Date: 3/22/17	Well Tag Driller License Number: 1920	Well Tag Sand: 17 To 28	Well Tag Bentonite: 14 To 17	Well Tag Grout: 0 To 14

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1342	—	—	19.90	—	5.81	—	36	—	4.27	—	483	—	N	N
1348	1	1	20.33	.43	5.38	.43	20	16	3.92	.35	46.00	437		
1354	1	2	20.48	.09	5.28	.10	17	3	3.92	.10	12.41	33.59		
1400	1	3	20.39	.09	5.17	.11	16	1	4.02	.11	10.24	2.12		
1406	1	4	20.41	.02	5.20	.03	16	0	4.15	.13	6.83	3.46		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/10/17	SAMPLING TIME: 1410
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	624.1
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	West side Quick Stop	SITE LOCATION:	Greenville SC
WELL NO:	MW17F	WEATHER:	Sunny
DATE:	4/10/17		

PURGING DATA

21.46

Well Diameter (inches)	Total Well Depth (feet BTOC)	Screened Interval:	Depth to Water (feet BTOC)	Purge Method:
2	59.98	55 to 60 feet	[redacted]	ESP

Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand	Well Tag Bentonite	Well Tag Grout
3/22/17	1929	54 To 60	51 To 54	0 To 51

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1618	—	—	17.23	—	5.54	—	29	—	6.06	—	101	—	N	N
1622	4	4	17.32	.09	5.83	.29	26	3	5.67	.39	95.9	15.69		
1626	4	8	17.28	.04	5.88	.05	25	1	5.50	.17	87.70	17.71		
1630	3	11	17.26	.02	5.91	.03	25	0	5.43	.13	150.8	17.52		
1634	3	14	17.25	.01	5.92	.01	24	1	5.38	.05	160.1	4.17		
1638	3	17	17.25	0	5.92	0	24	0	5.37	.01	8.33	2.63		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/10/17	1500

SAMPLING METHOD	DUPLICATE COLLECTED	FIELD-FILTERED:
B	YES OR (NO)	Y ES OR (NO)
		FILTER SIZE:
		Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop	SITE LOCATION:	Greenville, SC
WELL NO:	MW18	WEATHER:	Sunny
DATE:	4/11/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	28.94	18 to 29 feet	24.98	RFPP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
3/20/17	1920	18 To 29	15 To 18	0 To 15

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
832	—	—	16.67	—	5.54	—	21	—	4.91	—	843	—	N	N
839	1	1	16.79	.12	4.96	.58	22	1	4.93	.02	628	265		
846	1	2	16.83	.04	4.96	0	21	1	5.55	.62	108	520		
853	1	3	16.84	.01	4.96	0	21	0	5.69	.14	22.14	89.86		
900	1	4	16.87	.03	4.90	.06	21	0	5.85	.16	13.60	13.54		
907	1	5	16.88	.01	4.88	.02	21	0	5.78	.07	7.81	5.79		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/11/17	419
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	YES OR (NO)	YES OR (NO)	
		FILTER SIZE:	
		Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40mL	HCl	Y	8011
	1	PE	250mL	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop	SITE LOCATION:	Greenville SC
WELL NO:	MW 19	WEATHER:	Sunny
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches)	Total Well Depth (feet BTOC)	Screened Interval: to feet	Depth to Water (feet BTOC)	Purge Method:
2	39.32	28.7 to 38.7	29.69	ESP

Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand	Well Tag Bentonite	Well Tag Grout
3/8/17	1920	26 To 38.7	23 To 26	0 To 23

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1621	—	—	19.15	—	5.36	—	69	—	4.37	—	688	—	N	N
1627	1	1	18.83	.32	5.96	.60	35	33	2.68	1.69	500	188		
1634	1	2	19.57	.69	7.01	1.05	30	5	5.69	3.00	107	393		
1641	1	3	19.60	.03	7.03	.02	29	1	5.66	.02	32.1	74.89		
1648	1	4	19.56	.04	6.94	.09	28	1	5.53	.13	9.25	22.86		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/10/17	1650

SAMPLING METHOD	DUPLICATE COLLECTED	FIELD-FILTERED:
B	YES OR (NO)	YES OR (NO)
		FILTER SIZE:
		Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quickstop	SITE LOCATION:	Greenville SC
WELL NO:	MW20	WEATHER:	Sunny
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	40.48	29.8 39.9 feet	29.41	RFPP

Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand	Well Tag Bentonite	Well Tag Grout
3/8/17	1420	27 To 39.9	24 To 27	0 To 24

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1810	—	—	20.08	—	5.08	—	27	—	2.81	—	788	—	Y	N
1817	1	1	19.91	.17	5.12	.04	20	7	1.59	1.22	404	388		
1824	1	2	20.28	.37	5.19	.07	17	3	1.39	.20	194	210		
1831	1	3	20.23	.05	5.07	.12	18	1	1.39	0	93	101		
1838	1	4	20.23	0	5.07	.02	17	2	1.28	.11	33.39	59.61		
1845	1	5	20.25	.02	5.04	.03	17	0	1.19	.09	8.83	24.57		

WELL CAPACITY (Gallons Per Foot): 0.75" = 0.02; 1" = 0.04; 1.25" = 0.06; 2" = 0.16; 3" = 0.37; 4" = 0.65; 5" = 1.02; 6" = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/10/17	1850

SAMPLING METHOD	DUPLICATE COLLECTED	FIELD-FILTERED:
B	YES OR NO	YES OR NO FILTER SIZE: Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW21	WEATHER: windy, Cool	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 34.71	Screened Interval: 25 to 35 feet	Depth to Water (feet BTOC): 28.06	Purge Method: ESP.
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
0940	—	—	19.61	—	5.72	—	62	—	2.17	—	1000	—	Slug	N
0945	2	2	18.86	.75	5.41	.31	39	23	1.05	1.12	304	—		N
0950	1	3	18.51	.35	5.33	.08	31	8	0.96	.09	831	527		N
0955	1	4	18.55	.04	5.30	.03	35	4	0.90	.06	62	769		N
1000	1	5	18.52	.03	5.35	.05	35	—	0.91	.01	15.17	47		N
1005	.5	5.5	18.53	.01	5.33	.02	35	—	0.90	.01	9.01	6		N

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1008
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW22	WEATHER: Cool, Windy	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 34.73	Screened Interval: 25 to 35 feet	Depth to Water (feet BTOC): 28.31	Purge Method: ESP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1130	—	—	19.01	—	6.51	—	62	—	2.17	—	>1000	—	None	NO
1135	2	2	18.56	.45	6.32	.19	47	15	1.56	.61	328	—		
1140	2	4	17.92	.64	6.34	.02	45	2	1.63	.93	101	227		
1145	1	5	17.89	.03	6.35	.01	45	—	1.65	.02	18.16	83		
1150	1	6	17.90	.01	6.35	—	46	1	1.66	.01	9.55	9		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1150
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW22I	WEATHER: Cool, windy	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 49.47	Screened Interval: 45 to 50 feet	Depth to Water (feet BTOC): 28.29	Purge Method: ESP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1216	—	—	19.46	—	6.92	—	78	—	2.65	—	18	—	N	N
1232	5	5	18.31	1.85	6.51	.41	62	16	2.03	.62	649	631	N	N
1240	3	8	18.05	.26	6.38	.13	58	4	2.09	.06	132	517	N	N
1252	3	11	18.12	.07	6.42	.04	56	2	2.10	.01	65	167	N	N
1305	2	13	18.08	.04	6.40	.02	58	2	2.05	.05	347	332	N	N
1321	2	15	18.05	.03	6.40	—	58	—	2.01	.04	32	365	N	N
1333	2	17	18.05	—	6.41	.01	58	—	2.00	.01	18.17	13	N	N
1846	1	18	18.06	.01	6.41	—	58	—	2.01	.01	9.43	9	N	N

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1346
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop	SITE LOCATION:	Greenville SC
WELL NO:	MW23	WEATHER:	Sunny
DATE:	4/10/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	39.45	28.6 to 38.6 feet	29.61	RFPP

Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand	Well Tag Bentonite	Well Tag Grout
3/8/17	1920	26 To 38.6	23 To 26	0 To 23

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1702	—	—	20.20	—	5.40	—	21	—	1.63	—	986	—	N	N
1709	1	1	20.03	.17	4.86	.54	18	3	1.19	.44	703	283		
1716	1	2	19.99	.05	4.79	.07	17	.1	1.17	.02	199	504		
1723	1	3	19.98	0	4.76	.03	17	0	1.13	.04	56	143		
1730	1	4	20.02	.04	4.74	.02	17	0	1.09	.04	39.16	1684		
1737	1	5	19.91	.11	4.74	0	17	0	1.08	.01	16.37	2286		
1744	1	6	19.87	.04	4.73	.01	17	0	1.21	.13	9.01	7.52		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Thomas V.	TV	4/10/17	1745

SAMPLING METHOD	DUPLICATE COLLECTED	FIELD-FILTERED:
B	YES OR (NO)	YES OR (NO) FILTER SIZE: Filtration Equipment Type:

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40mL	HCl	Y	8260B
	3	AG	40	HCl	Y	8011
	1	PE	250	HNO_3	Y	6010

REMARKS:

MATERIAL CODES: AG = Amber Glass; CG = Clear Glass; PE = Polyethylene; PP = Polypropylene; S = Silicone; T = Teflon; O = Other

SAMPLING EQUIPMENT CODES: APP = After Peristaltic Pump; B = Bailer; BP = Bladder Pump; ESP = Electric Submersible Pump; RFPP = Reverse Flow Peristaltic Pump; SM = Straw Method (Tubing Gravity Drain); O = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW24	WEATHER:	DATE:

PURGING DATA

DTP 26.56

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 34.81	Screened Interval: to feet	Depth to Water (feet BTOC): 31.04	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: 4.48' FP Not Sampled

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME:	Westside Quick Stop – UST Permit #12430	SITE LOCATION:	Greenville, Greenville County, SC
WELL NO:	MW25	WEATHER:	Cool, Windy
DATE:	4/15/17		

PURGING DATA

Well Diameter (inches):	Total Well Depth (feet BTOC):	Screened Interval:	Depth to Water (feet BTOC):	Purge Method:
2	37.90	to feet	28.72	ESP
Well Tag Installation Date:	**Well Tag Driller License Number**	**Well Tag Sand**	**Well Tag Bentonite**	**Well Tag Grout**
		To	To	To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
0931	—	—	19.17	—	7.21	—	38	—	2.17	—	25	—	Slight	NO
0946	2	2	18.06	1.11	6.84	.37	21	17	1.96	.21	846	821		
0952	2	4	17.54	.52	6.61	.23	27	6	1.81	.15	300	546		
1009	1	5	17.32	.22	6.55	.06	25	2	1.85	.04	205	95		
1021	1	6	17.35	.03	6.55	—	26	1	1.82	.03	111	94		
1036	1	7	17.35	—	6.54	.01	26	—	1.80	.02	23.17	88		
1045	1	8	17.34	.01	6.54	—	26	—	1.80	—	9.04	14		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION:	SAMPLER(S) SIGNATURE(S):	SAMPLING DATE:	SAMPLING TIME:
Trever S.	TS	4/15/17	1047
SAMPLING METHOD	**DUPLICATE COLLECTED**	**FIELD-FILTERED:**	
B	@1050 (YES) OR (NO)	YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW26	WEATHER: Cool, Windy	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 36.10	Screened Interval: to feet	Depth to Water (feet BTOC): 28.52	Purge Method: ESP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1339	—	—	19.11	—	6.21	—	69	—	1.92	—	26	—	N	N
1351	2	2	18.46	.65	6.45	.24	38	31	2.56	.64	149	123	N	N
1406	2	4	18.31	.15	6.41	.04	36	2	2.31	.25	78	71	N	N
1415	1	5	18.30	.01	6.40	.01	36	—	2.32	.01	25.13	53	N	N
1430	1	6	18.30	—	6.40	—	36	—	2.30	.02	10	15	N	N

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1430
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW26I	WEATHER: Cool windy	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 54.71	Screened Interval: to feet	Depth to Water (feet BTOC): 28.53	Purge Method: ESP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1501	—	—	19.17	—	6.74	—	47	—	2.46	—	32	—	N	N
1513	5	5	18.46	.71	6.43	.31	62	15	2.03	.43	1000	—		
1526	5	10	18.01	.45	6.33	.11	58	4	1.96	.07	142	—		
1538	2	12	18.10	.09	6.30	.02	59	1	1.90	.06	32.17	110		
1551	2	14	18.11	.01	6.30	—	60	1	1.94	.04	13.84	19		
1605	2	16	18.10	.01	6.30	—	60	—	1.95	.01	9.60	4		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1605
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR NO	FIELD-FILTERED: YES OR NO; FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC
WELL NO: RW01	WEATHER:	DATE:

PURGING DATA

DTP 27.34

Well Diameter (inches): 4	Total Well Depth (feet BTOC): 40.20	Screened Interval: to feet	Depth to Water (feet BTOC): 29.98	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Not Sampled 2.54' FP

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC
WELL NO: RW02	WEATHER:	DATE:

PURGING DATA DTP 26.58

Well Diameter (inches): 4	Total Well Depth (feet BTOC): 37.78	Screened Interval: to feet	Depth to Water (feet BTOC): 30.63	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO

Not Sampled

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS: Not sampled 4.03' FP

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: RW03	WEATHER: Cool, Windy	DATE: 4/15/17

PURGING DATA

Well Diameter (inches): 4	Total Well Depth (feet BTOC): 39.91	Screened Interval: to feet	Depth to Water (feet BTOC): 27.19	Purge Method: ESP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1800	—	—	20.16	—	6.92	—	72	—	2.16	—	21	—	Y	NO
1805	10	10	19.43	.73	6.56	.36	61	11	1.93	.53	382	361		
1810	5	15	19.01	.42	6.40	.16	65	4	1.54	.39	501	119		
1820	5	20	18.46	.55	6.45	.05	55	10	1.40	.14	192	309		
1830	5	25	18.32	.14	6.42	.03	54	4	1.48	.08	84	108		
1840	4	29	18.36	.04	6.41	.01	60	1	1.50	.02	16.17	68		
1850	5	34	18.33	.03	6.40	.01	60	—	1.51	.01	10.93	6		
1900	4	38	18.32	.01	6.40	—	54	1	1.52	.01	9.11	1		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Trever S.	SAMPLER(S) SIGNATURE(S): TS	SAMPLING DATE: 4/15/17	SAMPLING TIME: 1902
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
~	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430		SITE LOCATION: Greenville, Greenville County, SC
WELL NO: MW0X	WEATHER:	DATE:

28.53 to bottom of well → Product

PURGING DATA

Well Diameter (inches): 2	Total Well Depth (feet BTOC): 30	Screened Interval: 15 to 30 feet	Depth to Water (feet BTOC):	Purge Method:
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
			NOT Sampled											

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Temperature: ± 0.2 °C
Turbidity: ≤ 10 NTU or ± 10%
Specific Conductance: ± 5%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE:	SAMPLING TIME:
SAMPLING METHOD	DUPLICATE COLLECTED YES OR NO	FIELD-FILTERED: YES OR NO FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
	3	AG	40ml	HCL	Y	8011 EDB
	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS:

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

GROUNDWATER SAMPLING FIELD LOG

SITE NAME: Westside Quick Stop – UST Permit #12430	SITE LOCATION: Greenville, Greenville County, SC	
WELL NO: MW 10XR	WEATHER:	DATE: 4/11/17

PURGING DATA

37.84 28.66

Well Diameter (inches): 2	Total Well Depth (feet BTOC): [redacted]	Screened Interval: to feet	Depth to Water (feet BTOC): [redacted]	Purge Method: GSP
Well Tag Installation Date:	Well Tag Driller License Number	Well Tag Sand To	Well Tag Bentonite To	Well Tag Grout To

TIME	VOLUME PURGED (gallons)	CUMUL. VOLUME PURGED (gallons)	TEMP. (°C)	Δ	pH (su)	Δ	COND. (µS)	Δ	DO (mg/L)	Δ	TURBIDITY (NTU)	Δ	ODOR	DRY YES OR NO
1421	—	—	21.11	—	6.92	—	118	—	1.92	—	55	—	Y	N
1435	2	2	19.60	1.61	6.51	.41	73	45	1.06	.86	78	23		
1446	2	4	17.14	.54	6.63	.12	61	12	1.11	.05	184	106		
1452	1	5	16.88	.26	6.66	.03	42	19	1.18	.07	926	742		
1501	1	6	16.92	.04	6.65	.02	36	6	1.18	—	305	621		
1513	1	7	16.95	.03	6.61	.04	38	2	1.15	.03	20.1	285		
1521	1	8	16.97	.02	6.60	.01	38	—	1.16	.01	16.99	9		
1530	1	9	16.96	.01	6.60	—	38	—	1.16	—	9.61	2		

WELL CAPACITY (Gallons Per Foot): **0.75"** = 0.02; **1"** = 0.04; **1.25"** = 0.06; **2"** = 0.16; **3"** = 0.37; **4"** = 0.65; **5"** = 1.02; **6"** = 1.47

STABILIZATION CRITERIA

pH: ± 0.2 units
Temperature: ± 0.2 °C
Specific Conductance: ± 5%
Dissolved Oxygen: ± 0.2 mg/L or ± 10%
Turbidity: ≤ 10 NTU or ± 10%

SAMPLING DATA

SAMPLED BY (PRINT) / AFFILIATION: Thomas V.	SAMPLER(S) SIGNATURE(S): TV	SAMPLING DATE: 4/11/17	SAMPLING TIME: 1530
SAMPLING METHOD: B	DUPLICATE COLLECTED: YES OR (NO)	FIELD-FILTERED: YES OR (NO) FILTER SIZE: Filtration Equipment Type:	

SAMPLE CONTAINER SPECIFICATION				SAMPLE PRESERVATION		INTENDED ANALYSIS AND/OR METHOD
SAMPLE ID CODE	# CONTAINERS	MATERIAL CODE	VOLUME	PRESERVATIVE USED	ARE SAMPLE CONTAINERS PRE-PRESERVED FROM LAB	
—	3	AG	40ml	HCL	Y	8260B BTEX+M+N+1,2-DCA+8-Oxygenates
—	3	AG	40ml	HCL	Y	8011 EDB
—	1	PE	250ml	HNO3	Y	6010 Total Lead

REMARKS

MATERIAL CODES: **AG** = Amber Glass; **CG** = Clear Glass; **PE** = Polyethylene; **PP** = Polypropylene; **S** = Silicone; **T** = Teflon; **O** = Other

SAMPLING EQUIPMENT CODES: **APP** = After Peristaltic Pump; **B** = Bailer; **BP** = Bladder Pump; **ESP** = Electric Submersible Pump; **RFPP** = Reverse Flow Peristaltic Pump; **SM** = Straw Method (Tubing Gravity Drain); **O** = Other (Specify)

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SHEALY ENVIRONMENTAL SERVICES, INC.

Report of Analysis

Petra-Tech Environmental
2435 East North Street
Suite 1108-202
Greenville, SC 29615
Attention: Trever Slack

Project Name: **Westside Quickstop**

Project Number: **J15-213-A**

Lot Number: **SA24042**

Date Completed: **01/26/2017**

Lucas Odom
Project Manager

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The following non-paginated documents are considered part of this report: Chain of Custody Record and Sample Receipt Checklist.

Case Narrative
Petra-Tech Environmental
Lot Number: SA24042

This Report of Analysis contains the analytical result(s) for the sample(s) listed on the Sample Summary following this Case Narrative. The sample receiving date is documented in the header information associated with each sample.

All results listed in this report relate only to the samples that are contained within this report.

Sample receipt, sample analysis, and data review have been performed in accordance with the most current approved NELAC standards, the Shealy Environmental Services, Inc. ("Shealy") Quality Assurance Management Plan (QAMP), standard operating procedures (SOPs), and Shealy policies. Any exceptions to the NELAC standards, the QAMP, SOPs or policies are qualified on the results page or discussed below.

If you have any questions regarding this report please contact the Shealy Project Manager listed on the cover page.

Sample Summary
Petra-Tech Environmental
Lot Number: SA24042

Sample Number	Sample ID	Matrix	Date Sampled	Date Received
001	GW03	Aqueous	01/20/2017 1755	01/24/2017
002	GW02	Aqueous	01/20/2017 1720	01/24/2017
003	GW04	Aqueous	01/20/2017 1400	01/24/2017
004	GW05	Aqueous	01/20/2017 1515	01/24/2017
005	GW06	Aqueous	01/20/2017 1440	01/24/2017
006	GW07	Aqueous	01/20/2017 1430	01/24/2017
007	GW09	Aqueous	01/20/2017 1330	01/24/2017
008	GW01	Aqueous	01/19/2017 1500	01/24/2017
009	GW10	Aqueous	01/19/2017 1815	01/24/2017
010	GW11	Aqueous	01/20/2017 1200	01/24/2017

(10 samples)

Executive Summary
Petra-Tech Environmental
Lot Number: SA24042

Sample	Sample ID	Matrix	Parameter	Method	Result	Q	Units	Page
001	GW03	Aqueous	Benzene	8260B	0.94	J	ug/L	5
001	GW03	Aqueous	Toluene	8260B	0.81	J	ug/L	5
002	GW02	Aqueous	Benzene	8260B	190		ug/L	6
002	GW02	Aqueous	1,2-Dichloroethane	8260B	6.5		ug/L	6
002	GW02	Aqueous	Ethylbenzene	8260B	2.4		ug/L	6
002	GW02	Aqueous	Methyl tertiary butyl ether	8260B	3.2		ug/L	6
002	GW02	Aqueous	Naphthalene	8260B	0.70	J	ug/L	6
002	GW02	Aqueous	Toluene	8260B	25		ug/L	6
002	GW02	Aqueous	Xylenes (total)	8260B	27		ug/L	6
004	GW05	Aqueous	Benzene	8260B	54		ug/L	8
004	GW05	Aqueous	Ethylbenzene	8260B	3.0	J	ug/L	8
004	GW05	Aqueous	Toluene	8260B	20		ug/L	8
004	GW05	Aqueous	Xylenes (total)	8260B	20		ug/L	8
008	GW01	Aqueous	Benzene	8260B	21000		ug/L	12
008	GW01	Aqueous	Ethylbenzene	8260B	3500		ug/L	12
008	GW01	Aqueous	Methyl tertiary butyl ether	8260B	75000		ug/L	12
008	GW01	Aqueous	Naphthalene	8260B	480	J	ug/L	12
008	GW01	Aqueous	Toluene	8260B	47000		ug/L	12
008	GW01	Aqueous	Xylenes (total)	8260B	17000		ug/L	12
009	GW10	Aqueous	Benzene	8260B	230		ug/L	13
009	GW10	Aqueous	Ethylbenzene	8260B	47		ug/L	13
009	GW10	Aqueous	Methyl tertiary butyl ether	8260B	9.5		ug/L	13
009	GW10	Aqueous	Toluene	8260B	200		ug/L	13
009	GW10	Aqueous	Xylenes (total)	8260B	170		ug/L	13

(24 detections)

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-001**

Description: **GW03** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1755**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1526	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**0.94**	**J**	**1.0**	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	**108-88-3**	**8260B**	**0.81**	**J**	**1.0**	**0.40**	**ug/L**	**1**
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		99	70-130
Bromofluorobenzene		92	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-002**

Description: **GW02** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1720**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1551	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**190**		**1.0**	**0.40**	**ug/L**	**1**
1,2-Dichloroethane	**107-06-2**	**8260B**	**6.5**		**1.0**	**0.40**	**ug/L**	**1**
Ethylbenzene	**100-41-4**	**8260B**	**2.4**		**1.0**	**0.40**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**3.2**		**1.0**	**0.40**	**ug/L**	**1**
Naphthalene	**91-20-3**	**8260B**	**0.70**	**J**	**1.0**	**0.40**	**ug/L**	**1**
Toluene	**108-88-3**	**8260B**	**25**		**1.0**	**0.40**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**27**		**1.0**	**0.40**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		96	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-003**

Description: **GW04** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1400**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1616	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-004**

Description: **GW05** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1515**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	01/25/2017 1641	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**54**		**5.0**	**2.0**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**3.0**	**J**	**5.0**	**2.0**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		5.0	2.0	ug/L	1
Naphthalene	91-20-3	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**20**		**5.0**	**2.0**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**20**		**5.0**	**2.0**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		98	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-005**

Description: **GW06** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1440**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1706	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	70-130
Bromofluorobenzene		94	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-006**

Description: **GW07** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1430**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1731	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		90	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-007**

Description: **GW09** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1330**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1756	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		98	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** | Laboratory ID: **SA24042-008**

Description: **GW01** | Matrix: **Aqueous**

Date Sampled: **01/19/2017 1500**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	500	01/25/2017 1821	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**21000**		**500**	**200**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		500	200	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**3500**		**500**	**200**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**75000**		**500**	**200**	**ug/L**	**1**
Naphthalene	**91-20-3**	**8260B**	**480**	**J**	**500**	**200**	**ug/L**	**1**
Toluene	**108-88-3**	**8260B**	**47000**		**500**	**200**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**17000**		**500**	**200**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		98	70-130

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time

ND = Not detected at or above the MDL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** | Laboratory ID: **SA24042-009**

Description: **GW10** | Matrix: **Aqueous**

Date Sampled: **01/19/2017 1815**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	5	01/25/2017 1846	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	**71-43-2**	**8260B**	**230**		**5.0**	**2.0**	**ug/L**	**1**
1,2-Dichloroethane	107-06-2	8260B	ND		5.0	2.0	ug/L	1
Ethylbenzene	**100-41-4**	**8260B**	**47**		**5.0**	**2.0**	**ug/L**	**1**
Methyl tertiary butyl ether (MTBE)	**1634-04-4**	**8260B**	**9.5**		**5.0**	**2.0**	**ug/L**	**1**
Naphthalene	91-20-3	8260B	ND		5.0	2.0	ug/L	1
Toluene	**108-88-3**	**8260B**	**200**		**5.0**	**2.0**	**ug/L**	**1**
Xylenes (total)	**1330-20-7**	**8260B**	**170**		**5.0**	**2.0**	**ug/L**	**1**

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		94	70-130
Bromofluorobenzene		91	70-130
Toluene-d8		97	70-130

PQL = Practical quantitation limit | B = Detected in the method blank | E = Quantitation of compound exceeded the calibration range | H = Out of holding time

ND = Not detected at or above the MDL | J = Estimated result < PQL and ≥ MDL | P = The RPD between two GC columns exceeds 40% | N = Recovery is out of criteria

Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Client: **Petra-Tech Environmental** Laboratory ID: **SA24042-010**

Description: **GW11** Matrix: **Aqueous**

Date Sampled: **01/20/2017 1200**

Date Received: **01/24/2017**

Volatile Organic Compounds by GC/MS

Run	Prep Method	Analytical Method	Dilution	Analysis Date	Analyst	Prep Date	Batch
1	5030B	8260B	1	01/25/2017 1910	JM1		32541

Parameter	CAS Number	Analytical Method	Result	Q	PQL	MDL	Units	Run
Benzene	71-43-2	8260B	ND		1.0	0.40	ug/L	1
1,2-Dichloroethane	107-06-2	8260B	ND		1.0	0.40	ug/L	1
Ethylbenzene	100-41-4	8260B	ND		1.0	0.40	ug/L	1
Methyl tertiary butyl ether (MTBE)	1634-04-4	8260B	ND		1.0	0.40	ug/L	1
Naphthalene	91-20-3	8260B	ND		1.0	0.40	ug/L	1
Toluene	108-88-3	8260B	ND		1.0	0.40	ug/L	1
Xylenes (total)	1330-20-7	8260B	ND		1.0	0.40	ug/L	1

Surrogate	Q	Run 1 % Recovery	Acceptance Limits
1,2-Dichloroethane-d4		97	70-130
Bromofluorobenzene		93	70-130
Toluene-d8		96	70-130

PQL = Practical quantitation limit
B = Detected in the method blank
E = Quantitation of compound exceeded the calibration range
H = Out of holding time
ND = Not detected at or above the MDL
J = Estimated result < PQL and ≥ MDL
P = The RPD between two GC columns exceeds 40%
N = Recovery is out of criteria
Where applicable, all soil sample analysis are reported on a dry weight basis unless flagged with a "W"

Chain of Custody
and
Miscellaneous Documents

Shealy Environmental Services, Inc.
106 Vantage Point Drive West Columbia, SC 29172 (803) 791-9700 Fax (803) 791-9111 www.shealylab.com

SHEALY ENVIRONMENTAL SERVICES, INC.

106 Vantage Point Drive • West Columbia, SC 29172
Telephone No. 803-791-9700 Fax No. 803-791-9111
www.shealylab.com

Chain of Custody Record

Number 61442

Client: Petra Tech Env.	Report to Contact: Trevor Sleek	Telephone No. / E-mail: tsleek@petratechenv.com	Quote No.
Address: 2435 E. N. St. Ste 1108-207	Sampler's Signature: X	Analysis (Attach list if more space is needed)	Page 1 of 1
City: Greenville State: SC Zip Code: 29615	Printed Name: Thomas Vaughan		SA24042
Project Name: Westside Quickstop			
Project No.: 15-213-A	P.O. No.		

Sample ID / Description (Containers for each sample may be combined on one line.)	Date	Time	# of Containers	Matrix: Aqueous	Matrix: Solid	Matrix: Non-Aqueous	No. of Containers by Preservative Type: Unpres.	H2SO4	HNO3	HCl	NaOH	Zn Acet.	Analysis: 8260B (TCL + MTBE + 1,2DCE)	Remarks / Cooler I.D.
GW08	1/20/17	1755	6	X						2			X	Screening only
GW02		1720								2			X	
GW04		1400								2			X	
GW05		1515								2			X	No QA/QC
GW06		1440								2			X	
GW07		1430								2			X	
GW09		1330								2			X	
GW01	1/19/17	1500								2			X	
GW10		1815								2			X	
GW11	1/20/17	1300								2			Y	

Turn Around Time Required (Prior lab approval required for expedited TAT.) ☑ Standard ☐ Rush (Specify)

Sample Disposal ☐ Return to Client ☑ Disposal by Lab

Possible Hazard Identification ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison ☐ Unknown

QC Requirements (Specify)

	Date	Time		Date	Time
1. Relinquished by	1.24.17	0940	1. Received by	1.24.17	0940
2. Relinquished by	1.24.17	13:28	2. Received by	1-24-17	13:28
3. Relinquished by	Date	Time	3. Received by	Date	Time
4. Relinquished by	1-24-17	14:19	4. Laboratory received by	1/24/17	1419

Note: All samples are retained for four weeks from receipt unless other arrangements are made.

LAB USE ONLY
Received on ice (Circle) (Yes) No Ice Pack
Receipt Temp. 2.0 °C

DISTRIBUTION: WHITE & YELLOW-Return to laboratory with Sample(s); PINK-Field/Client Copy

Shealy Environmental Services, Inc.
Document Number: ME0018C-07

Page 1 of 1
Effective Date: 11/29/2016
Expiry Date: 11/29/2021

Sample Receipt Checklist (SRC)

Client: Petra Tech Cooler Inspected by/date: Zaz / 1/24/17 Lot #: SA24042

Means of receipt: ☑ SESI ☐ Client ☐ UPS ☐ FedEx ☐ Other			
Yes ☐	No ☑		1. Were custody seals present on the cooler?
Yes ☐	No ☐	NA ☑	2. If custody seals were present, were they intact and unbroken?

pH strip ID: NA Cl strip ID: NA

Cooler ID/Original temperature upon receipt/Derived (corrected) temperature upon receipt:

12.0/2.0 °C ___/___/___ °C ___/___/___ °C ___/___/___ °C

Method: ☑ Temperature Blank ☐ Against Bottles IR Gun ID: 6 IR Gun Correction Factor: 0 °C

Method of coolant: ☑ Wet Ice ☐ Blue Ice ☐ Dry Ice ☐ None

Yes ☐	No ☐	NA ☑	3. If temperature of any cooler exceeded 6.0°C, was Project Manager Notified? PM was Notified by: phone / email / face-to-face (circle one).
Yes ☐	No ☐	NA ☑	4. Is the commercial courier's packing slip attached to this form?
Yes ☑	No ☐		5. Were proper custody procedures (relinquished/received) followed?
Yes ☑	No ☐		6. Were sample IDs listed on the COC?
Yes ☑	No ☐		7. Were sample IDs listed on all sample containers?
Yes ☑	No ☐		8. Was collection date & time listed on the COC?
Yes ☑	No ☐		9. Was collection date & time listed on all sample containers?
Yes ☑	No ☐		10. Did all container label information (ID, date, time) agree with the COC?
Yes ☑	No ☐		11. Were tests to be performed listed on the COC?
Yes ☑	No ☐		12. Did all samples arrive in the proper containers for each test and/or in good condition (unbroken, lids on, etc.)?
Yes ☑	No ☐		13. Was adequate sample volume available?
Yes ☐	No ☑		14. Were all samples received within ½ the holding time or 48 hours, whichever comes first?
Yes ☐	No ☑		15. Were any samples containers missing/excess (circle one) samples Not listed on COC?
Yes ☑	No ☐	NA ☐	16. Were bubbles present >"pea-size" (¼"or 6mm in diameter) in any VOA vials?
Yes ☐	No ☐	NA ☑	17. Were all DRO/metals/nutrient samples received at a pH of < 2?
Yes ☐	No ☐	NA ☑	18. Were all cyanide and/or sulfide samples received at a pH >12?
Yes ☐	No ☐	NA ☑	19. Were all applicable NH3/TKN/cyanide/phenol/BNA (<0.5mg/L) samples free of residual chlorine?
Yes ☐	No ☐	NA ☑	20. Were collection temperatures documented on the COC for NC samples?
Yes ☐	No ☐	NA ☑	21. Were client remarks/requests (i.e. requested dilutions, MS/MSD designations, etc…) correctly transcribed from the COC into the comment section in LIMS?
Yes ☐	No ☑		22. Was the quote number used taken from the container label?

Sample Preservation (Must be completed for any sample(s) incorrectly preserved or with headspace.)

Sample(s) _____ were received incorrectly preserved and were adjusted accordingly in sample receiving with _____ (H_2SO_4, HNO_3, HCl, NaOH) using SR # _____.

Sample(s) 002 (2) were received with bubbles >6 mm in diameter.

Samples(s) _____ were received with TRC >0.5 mg/L (If #21 is No) and were adjusted accordingly in sample receiving with sodium thiosulfate ($Na_2S_2O_3$) with Shealy ID: _____.

SC Drinking Water Project Sample(s) pH verified to be < 2 by _____ Date: _____

Sample(s) _____ were Not received at a pH of < 2 and were adjusted accordingly using SR# _____

Sample labels applied by: Zaz Verified by: _____ Date: 1/24/17

Comments: _____

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

April 21, 2017

Trever Slack
Petra-Tech Environmental, LLC
2435 E. North Street
Suite 1108-202
Greenville, SC 29615

RE: Project: Westside Quick Stop
Pace Project No.: 92337290

Dear Trever Slack:
Enclosed are the analytical results for sample(s) received by the laboratory on April 14, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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

CERTIFICATIONS

Project: Westside Quick Stop
Pace Project No.: 92337290

Charlotte Certification IDs

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

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92337290001	MW 20	Water	04/10/17 18:50	04/14/17 14:50
92337290002	MW 17	Water	04/10/17 14:10	04/14/17 14:50
92337290003	MW 17 I	Water	04/10/17 15:00	04/14/17 14:50
92337290004	MW 19I	Water	04/10/17 16:15	04/14/17 14:50
92337290005	MW 19	Water	04/10/17 16:50	04/14/17 14:50
92337290006	MW 23	Water	04/10/17 17:45	04/14/17 14:50
92337290007	MW 11	Water	04/10/17 17:15	04/14/17 14:50
92337290008	MW 10	Water	04/10/17 19:15	04/14/17 14:50
92337290009	MW 04I	Water	04/11/17 11:00	04/14/17 14:50
92337290010	MW 15I	Water	04/11/17 12:00	04/14/17 14:50
92337290011	MW 15	Water	04/11/17 12:50	04/14/17 14:50
92337290012	MW 14I	Water	04/11/17 14:45	04/14/17 14:50
92337290013	MW 14	Water	04/11/17 15:35	04/14/17 14:50
92337290014	MW 16I	Water	04/11/17 10:30	04/14/17 14:50
92337290015	MW 18	Water	04/11/17 09:10	04/14/17 14:50
92337290016	MW 05	Water	04/11/17 15:55	04/14/17 14:50
92337290017	MW 06	Water	04/11/17 16:15	04/14/17 14:50
92337290018	MW 02	Water	04/11/17 17:05	04/14/17 14:50
92337290019	MW XR	Water	04/11/17 15:30	04/14/17 14:50
92337290020	MW 08	Water	04/11/17 18:05	04/14/17 14:50
92337290021	FB-1	Water	04/10/17 17:24	04/14/17 14:50
92337290022	FIELD BLANK 2	Water	04/11/17 13:08	04/14/17 14:50
92337290023	Trip Blank	Water	04/10/17 00:00	04/14/17 14:50
92337290024	Trip Blank 2	Water	04/10/17 00:00	04/14/17 14:50
92337290025	MW-16	Water	04/11/17 11:00	04/14/17 14:50
92337290026	DUP A	Water	04/11/17 15:40	04/14/17 14:50

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SAMPLE ANALYTE COUNT

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92337290001	MW 20	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290002	MW 17	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290003	MW 17 I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290004	MW 19I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290005	MW 19	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290006	MW 23	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290007	MW 11	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290008	MW 10	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290009	MW 04I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290010	MW 15I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290011	MW 15	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290012	MW 14I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337290013	MW 14	EPA 8011	HSK	2	PASI-C

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SAMPLE ANALYTE COUNT

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290014	MW 16I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290015	MW 18	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290016	MW 05	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290017	MW 06	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290018	MW 02	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290019	MW XR	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337290020	MW 08	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337290021	FB-1	EPA 8011	HSK	2	PASI-C
		EPA 8260	GAW	18	PASI-C
92337290022	FIELD BLANK 2	EPA 8011	HSK	2	PASI-C
		EPA 8260	GAW	18	PASI-C
92337290023	Trip Blank	EPA 8011	HSK	2	PASI-C
		EPA 8260	CAH	18	PASI-C
92337290024	Trip Blank 2	EPA 8011	HSK	2	PASI-C
		EPA 8260	CAH	18	PASI-C
92337290025	MW-16	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337290026	DUP A	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C

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SUMMARY OF DETECTION

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92337290001	**MW 20**					
EPA 8260	tert-Amyl Alcohol	1010	ug/L	250	04/19/17 11:04	
EPA 8260	Benzene	341	ug/L	12.5	04/19/17 11:04	
EPA 8260	Diisopropyl ether	39.3	ug/L	12.5	04/19/17 11:04	
EPA 8260	Ethylbenzene	26.1	ug/L	12.5	04/19/17 11:04	
EPA 8260	Toluene	286	ug/L	12.5	04/19/17 11:04	
EPA 8260	Xylene (Total)	119	ug/L	25.0	04/19/17 11:04	
92337290006	**MW 23**					
EPA 8260	tert-Amyl Alcohol	1030J	ug/L	1250	04/19/17 10:29	
EPA 8260	Benzene	1400	ug/L	62.5	04/19/17 10:29	
EPA 8260	Diisopropyl ether	44.7J	ug/L	62.5	04/19/17 10:29	
EPA 8260	Methyl-tert-butyl ether	47.4J	ug/L	62.5	04/19/17 10:29	
EPA 8260	Naphthalene	72.4	ug/L	62.5	04/19/17 10:29	
92337290007	**MW 11**					
EPA 6010	Lead	68.4	ug/L	5.0	04/18/17 16:28	
EPA 8260	tert-Amyl Alcohol	77.5J	ug/L	100	04/19/17 03:26	
EPA 8260	Naphthalene	2.3J	ug/L	5.0	04/19/17 03:26	
92337290008	**MW 10**					
EPA 6010	Lead	286	ug/L	5.0	04/18/17 16:31	
92337290009	**MW 04I**					
EPA 8260	Benzene	3.8J	ug/L	5.0	04/19/17 04:02	
EPA 8260	Toluene	1.9J	ug/L	5.0	04/19/17 04:02	
92337290012	**MW 14I**					
EPA 8260	tert-Amyl Alcohol	111	ug/L	100	04/20/17 05:24	
EPA 8260	Benzene	33.4	ug/L	5.0	04/20/17 05:24	
EPA 8260	Ethylbenzene	2.6J	ug/L	5.0	04/20/17 05:24	
EPA 8260	Toluene	16.0	ug/L	5.0	04/20/17 05:24	
EPA 8260	Xylene (Total)	15.0	ug/L	10.0	04/20/17 05:24	
92337290013	**MW 14**					
EPA 6010	Lead	3.1J	ug/L	5.0	04/19/17 00:32	
EPA 8260	tert-Amyl Alcohol	2050	ug/L	500	04/19/17 10:55	
EPA 8260	Benzene	746	ug/L	25.0	04/19/17 10:55	
EPA 8260	Ethanol	795J	ug/L	1000	04/19/17 10:55	
EPA 8260	Ethylbenzene	80.5	ug/L	25.0	04/19/17 10:55	
EPA 8260	Toluene	748	ug/L	25.0	04/19/17 10:55	
EPA 8260	Xylene (Total)	476	ug/L	50.0	04/19/17 10:55	
92337290017	**MW 06**					
EPA 6010	Lead	46.4	ug/L	5.0	04/19/17 00:54	
92337290018	**MW 02**					
EPA 6010	Lead	22.0	ug/L	5.0	04/19/17 00:57	
EPA 8260	tert-Amyl Alcohol	687	ug/L	500	04/19/17 11:11	
EPA 8260	Benzene	851	ug/L	25.0	04/19/17 11:11	
EPA 8260	Ethylbenzene	139	ug/L	25.0	04/19/17 11:11	

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SUMMARY OF DETECTION

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92337290018	**MW 02**					
EPA 8260	Toluene	659	ug/L	25.0	04/19/17 11:11	
EPA 8260	Xylene (Total)	562	ug/L	50.0	04/19/17 11:11	
92337290019	**MW XR**					
EPA 6010	Lead	18.2	ug/L	5.0	04/19/17 01:01	
EPA 8260	Benzene	3580	ug/L	500	04/19/17 10:46	
EPA 8260	Ethylbenzene	621	ug/L	500	04/19/17 10:46	
EPA 8260	Methyl-tert-butyl ether	516	ug/L	500	04/19/17 10:46	
EPA 8260	Toluene	9410	ug/L	500	04/19/17 10:46	
EPA 8260	Xylene (Total)	3390	ug/L	1000	04/19/17 10:46	
92337290025	**MW-16**					
EPA 6010	Lead	2.8J	ug/L	5.0	04/19/17 01:04	
92337290026	**DUP A**					
EPA 6010	Lead	10.6	ug/L	5.0	04/19/17 01:07	
EPA 8260	tert-Amyl Alcohol	2220	ug/L	500	04/20/17 15:44	
EPA 8260	Benzene	764	ug/L	25.0	04/20/17 15:44	
EPA 8260	Ethylbenzene	79.6	ug/L	25.0	04/20/17 15:44	
EPA 8260	Toluene	749	ug/L	25.0	04/20/17 15:44	
EPA 8260	Xylene (Total)	462	ug/L	50.0	04/20/17 15:44	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 20 **Lab ID: 92337290001** Collected: 04/10/17 18:50 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:32	04/18/17 00:11	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	123	%	60-140		1	04/17/17 15:32	04/18/17 00:11	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 15:47	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1010**	ug/L	250	192	2.5		04/19/17 11:04	75-85-4	
tert-Amylmethyl ether	ND	ug/L	25.0	8.5	2.5		04/19/17 11:04	994-05-8	
Benzene	**341**	ug/L	12.5	4.2	2.5		04/19/17 11:04	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	250	80.2	2.5		04/19/17 11:04	624-95-3	
tert-Butyl Alcohol	ND	ug/L	250	144	2.5		04/19/17 11:04	75-65-0	
tert-Butyl Formate	ND	ug/L	125	18.2	2.5		04/19/17 11:04	762-75-4	
1,2-Dichloroethane	ND	ug/L	12.5	4.5	2.5		04/19/17 11:04	107-06-2	
Diisopropyl ether	**39.3**	ug/L	12.5	4.2	2.5		04/19/17 11:04	108-20-3	
Ethanol	ND	ug/L	500	328	2.5		04/19/17 11:04	64-17-5	
Ethylbenzene	**26.1**	ug/L	12.5	4.0	2.5		04/19/17 11:04	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	25.0	9.0	2.5		04/19/17 11:04	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	12.5	4.2	2.5		04/19/17 11:04	1634-04-4	
Naphthalene	ND	ug/L	12.5	5.0	2.5		04/19/17 11:04	91-20-3	
Toluene	**286**	ug/L	12.5	4.0	2.5		04/19/17 11:04	108-88-3	
Xylene (Total)	**119**	ug/L	25.0	6.8	2.5		04/19/17 11:04	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	91	%	70-130		2.5		04/19/17 11:04	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		2.5		04/19/17 11:04	17060-07-0	
Toluene-d8 (S)	102	%	70-130		2.5		04/19/17 11:04	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 17 **Lab ID: 92337290002** Collected: 04/10/17 14:10 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:32	04/18/17 00:31	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	110	%	60-140		1	04/17/17 15:32	04/18/17 00:31	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 15:50	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 01:58	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 01:58	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 01:58	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 01:58	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 01:58	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 01:58	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 01:58	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:58	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 01:58	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 01:58	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 01:58	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:58	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 01:58	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 01:58	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 01:58	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/19/17 01:58	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/19/17 01:58	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		04/19/17 01:58	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 17 I **Lab ID: 92337290003** Collected: 04/10/17 15:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:33	04/18/17 00:50	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	117	%	60-140		1	04/17/17 15:33	04/18/17 00:50	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 15:53	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 02:16	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 02:16	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 02:16	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 02:16	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 02:16	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 02:16	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 02:16	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:16	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 02:16	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 02:16	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 02:16	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:16	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 02:16	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 02:16	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 02:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		04/19/17 02:16	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/19/17 02:16	17060-07-0	
Toluene-d8 (S)	109	%	70-130		1		04/19/17 02:16	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 19I **Lab ID: 92337290004** Collected: 04/10/17 16:15 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:33	04/18/17 01:09	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	117	%	60-140		1	04/17/17 15:33	04/18/17 01:09	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 15:57	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 02:34	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 02:34	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 02:34	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 02:34	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 02:34	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 02:34	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 02:34	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:34	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 02:34	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 02:34	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 02:34	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:34	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 02:34	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 02:34	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 02:34	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/19/17 02:34	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%	70-130		1		04/19/17 02:34	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		04/19/17 02:34	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 19 **Lab ID: 92337290005** Collected: 04/10/17 16:50 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:33	04/18/17 01:28	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	110	%	60-140		1	04/17/17 15:33	04/18/17 01:28	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 16:00	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 02:51	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 02:51	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 02:51	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 02:51	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 02:51	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 02:51	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 02:51	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:51	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 02:51	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 02:51	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 02:51	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 02:51	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 02:51	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 02:51	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 02:51	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		04/19/17 02:51	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		04/19/17 02:51	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/19/17 02:51	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 23 **Lab ID: 92337290006** Collected: 04/10/17 17:45 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:33	04/17/17 18:25	106-93-4	L1,M1
Surrogates									
1-Chloro-2-bromopropane (S)	146	%	60-140		1	04/17/17 15:33	04/17/17 18:25	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 16:03	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**1030J**	ug/L	1250	960	12.5		04/19/17 10:29	75-85-4	
tert-Amylmethyl ether	ND	ug/L	125	42.5	12.5		04/19/17 10:29	994-05-8	
Benzene	**1400**	ug/L	62.5	21.2	12.5		04/19/17 10:29	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	1250	401	12.5		04/19/17 10:29	624-95-3	
tert-Butyl Alcohol	ND	ug/L	1250	721	12.5		04/19/17 10:29	75-65-0	
tert-Butyl Formate	ND	ug/L	625	91.2	12.5		04/19/17 10:29	762-75-4	
1,2-Dichloroethane	ND	ug/L	62.5	22.5	12.5		04/19/17 10:29	107-06-2	
Diisopropyl ether	**44.7J**	ug/L	62.5	21.2	12.5		04/19/17 10:29	108-20-3	
Ethanol	ND	ug/L	2500	1640	12.5		04/19/17 10:29	64-17-5	
Ethylbenzene	ND	ug/L	62.5	20.0	12.5		04/19/17 10:29	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	125	45.0	12.5		04/19/17 10:29	637-92-3	
Methyl-tert-butyl ether	**47.4J**	ug/L	62.5	21.2	12.5		04/19/17 10:29	1634-04-4	
Naphthalene	**72.4**	ug/L	62.5	25.0	12.5		04/19/17 10:29	91-20-3	
Toluene	ND	ug/L	62.5	20.0	12.5		04/19/17 10:29	108-88-3	
Xylene (Total)	ND	ug/L	125	33.8	12.5		04/19/17 10:29	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		12.5		04/19/17 10:29	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		12.5		04/19/17 10:29	17060-07-0	
Toluene-d8 (S)	103	%	70-130		12.5		04/19/17 10:29	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 11 **Lab ID: 92337290007** Collected: 04/10/17 17:15 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 19:25	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	144	%	60-140		1	04/17/17 15:34	04/17/17 19:25	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**68.4**	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 16:28	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**77.5J**	ug/L	100	76.8	1		04/19/17 03:26	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 03:26	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 03:26	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 03:26	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 03:26	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 03:26	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 03:26	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 03:26	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 03:26	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 03:26	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 03:26	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 03:26	1634-04-4	
Naphthalene	**2.3J**	ug/L	5.0	2.0	1		04/19/17 03:26	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 03:26	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 03:26	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		04/19/17 03:26	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		1		04/19/17 03:26	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/19/17 03:26	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 10 **Lab ID: 92337290008** Collected: 04/10/17 19:15 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 19:45	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	115	%	60-140		1	04/17/17 15:34	04/17/17 19:45	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**286**	ug/L	5.0	2.5	1	04/14/17 21:35	04/18/17 16:31	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 03:44	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 03:44	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 03:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 03:44	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 03:44	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 03:44	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 03:44	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 03:44	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 03:44	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 03:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 03:44	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 03:44	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 03:44	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 03:44	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 03:44	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		04/19/17 03:44	460-00-4	
1,2-Dichloroethane-d4 (S)	87	%	70-130		1		04/19/17 03:44	17060-07-0	
Toluene-d8 (S)	108	%	70-130		1		04/19/17 03:44	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 04I **Lab ID: 92337290009** Collected: 04/11/17 11:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	04/17/17 15:34	04/17/17 20:05	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	155	%	60-140		1	04/17/17 15:34	04/17/17 20:05	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:14	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 04:02	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 04:02	994-05-8	
Benzene	**3.8J**	ug/L	5.0	1.7	1		04/19/17 04:02	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 04:02	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 04:02	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 04:02	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 04:02	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:02	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 04:02	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 04:02	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 04:02	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:02	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 04:02	91-20-3	
Toluene	**1.9J**	ug/L	5.0	1.6	1		04/19/17 04:02	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 04:02	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/19/17 04:02	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/19/17 04:02	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/19/17 04:02	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 15I **Lab ID: 92337290010** Collected: 04/11/17 12:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 20:45	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	79	%	60-140		1	04/17/17 15:34	04/17/17 20:45	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:23	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 04:19	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 04:19	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 04:19	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 04:19	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 04:19	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 04:19	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 04:19	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:19	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 04:19	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 04:19	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 04:19	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:19	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 04:19	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 04:19	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 04:19	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	91	%	70-130		1		04/19/17 04:19	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/19/17 04:19	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		04/19/17 04:19	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 15 **Lab ID: 92337290011** Collected: 04/11/17 12:50 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 21:05	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	169	%	60-140		1	04/17/17 15:34	04/17/17 21:05	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:26	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 04:37	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 04:37	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 04:37	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 04:37	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 04:37	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 04:37	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 04:37	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:37	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 04:37	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 04:37	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 04:37	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:37	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 04:37	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 04:37	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 04:37	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		04/19/17 04:37	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		1		04/19/17 04:37	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		04/19/17 04:37	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 14I **Lab ID: 92337290012** Collected: 04/11/17 14:45 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 21:25	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	101	%	60-140		1	04/17/17 15:34	04/17/17 21:25	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:29	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**111**	ug/L	100	76.8	1		04/20/17 05:24	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 05:24	994-05-8	
Benzene	**33.4**	ug/L	5.0	1.7	1		04/20/17 05:24	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 05:24	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 05:24	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 05:24	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 05:24	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 05:24	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 05:24	64-17-5	
Ethylbenzene	**2.6J**	ug/L	5.0	1.6	1		04/20/17 05:24	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 05:24	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 05:24	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 05:24	91-20-3	
Toluene	**16.0**	ug/L	5.0	1.6	1		04/20/17 05:24	108-88-3	
Xylene (Total)	**15.0**	ug/L	10.0	2.7	1		04/20/17 05:24	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		04/20/17 05:24	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		1		04/20/17 05:24	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		04/20/17 05:24	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 14 **Lab ID: 92337290013** Collected: 04/11/17 15:35 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 21:44	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	127	%	60-140		1	04/17/17 15:34	04/17/17 21:44	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**3.1J**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:32	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**2050**	ug/L	500	384	5		04/19/17 10:55	75-85-4	
tert-Amylmethyl ether	ND	ug/L	50.0	17.0	5		04/19/17 10:55	994-05-8	
Benzene	**746**	ug/L	25.0	8.5	5		04/19/17 10:55	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		04/19/17 10:55	624-95-3	
tert-Butyl Alcohol	ND	ug/L	500	288	5		04/19/17 10:55	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		04/19/17 10:55	762-75-4	
1,2-Dichloroethane	ND	ug/L	25.0	9.0	5		04/19/17 10:55	107-06-2	
Diisopropyl ether	ND	ug/L	25.0	8.5	5		04/19/17 10:55	108-20-3	
Ethanol	**795J**	ug/L	1000	655	5		04/19/17 10:55	64-17-5	
Ethylbenzene	**80.5**	ug/L	25.0	8.0	5		04/19/17 10:55	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		04/19/17 10:55	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	25.0	8.5	5		04/19/17 10:55	1634-04-4	
Naphthalene	ND	ug/L	25.0	10.0	5		04/19/17 10:55	91-20-3	
Toluene	**748**	ug/L	25.0	8.0	5		04/19/17 10:55	108-88-3	
Xylene (Total)	**476**	ug/L	50.0	13.5	5		04/19/17 10:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		5		04/19/17 10:55	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		5		04/19/17 10:55	17060-07-0	
Toluene-d8 (S)	98	%	70-130		5		04/19/17 10:55	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 16I **Lab ID: 92337290014** Collected: 04/11/17 10:30 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 22:04	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	94	%	60-140		1	04/17/17 15:34	04/17/17 22:04	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:35	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 04:55	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 04:55	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 04:55	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 04:55	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 04:55	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 04:55	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 04:55	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:55	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 04:55	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 04:55	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 04:55	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 04:55	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 04:55	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 04:55	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 04:55	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/19/17 04:55	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/19/17 04:55	17060-07-0	
Toluene-d8 (S)	106	%	70-130		1		04/19/17 04:55	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 18 **Lab ID: 92337290015** Collected: 04/11/17 09:10 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	04/17/17 15:34	04/17/17 22:24	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	04/17/17 15:34	04/17/17 22:24	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:39	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 05:13	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 05:13	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 05:13	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 05:13	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 05:13	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 05:13	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 05:13	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:13	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 05:13	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 05:13	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 05:13	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:13	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 05:13	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 05:13	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 05:13	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	91	%	70-130		1		04/19/17 05:13	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/19/17 05:13	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/19/17 05:13	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 05 **Lab ID: 92337290016** Collected: 04/11/17 15:55 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:34	04/17/17 22:44	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	04/17/17 15:34	04/17/17 22:44	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:51	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 05:30	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 05:30	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 05:30	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 05:30	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 05:30	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 05:30	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 05:30	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:30	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 05:30	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 05:30	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 05:30	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:30	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 05:30	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 05:30	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 05:30	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		1		04/19/17 05:30	460-00-4	
1,2-Dichloroethane-d4 (S)	86	%	70-130		1		04/19/17 05:30	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		04/19/17 05:30	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 06 **Lab ID: 92337290017** Collected: 04/11/17 16:15 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:35	04/17/17 23:04	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	79	%	60-140		1	04/17/17 15:35	04/17/17 23:04	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**46.4**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:54	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 05:48	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 05:48	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 05:48	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 05:48	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 05:48	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 05:48	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 05:48	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:48	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 05:48	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 05:48	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 05:48	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 05:48	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 05:48	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 05:48	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 05:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	96	%	70-130		1		04/19/17 05:48	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		04/19/17 05:48	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/19/17 05:48	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 02 **Lab ID: 92337290018** Collected: 04/11/17 17:05 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.021	0.021	1	04/17/17 15:35	04/17/17 23:24	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	83	%	60-140		1	04/17/17 15:35	04/17/17 23:24	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**22.0**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 00:57	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**687**	ug/L	500	384	5		04/19/17 11:11	75-85-4	
tert-Amylmethyl ether	ND	ug/L	50.0	17.0	5		04/19/17 11:11	994-05-8	
Benzene	**851**	ug/L	25.0	8.5	5		04/19/17 11:11	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		04/19/17 11:11	624-95-3	
tert-Butyl Alcohol	ND	ug/L	500	288	5		04/19/17 11:11	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		04/19/17 11:11	762-75-4	
1,2-Dichloroethane	ND	ug/L	25.0	9.0	5		04/19/17 11:11	107-06-2	
Diisopropyl ether	ND	ug/L	25.0	8.5	5		04/19/17 11:11	108-20-3	
Ethanol	ND	ug/L	1000	655	5		04/19/17 11:11	64-17-5	
Ethylbenzene	**139**	ug/L	25.0	8.0	5		04/19/17 11:11	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		04/19/17 11:11	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	25.0	8.5	5		04/19/17 11:11	1634-04-4	
Naphthalene	ND	ug/L	25.0	10.0	5		04/19/17 11:11	91-20-3	
Toluene	**659**	ug/L	25.0	8.0	5		04/19/17 11:11	108-88-3	
Xylene (Total)	**562**	ug/L	50.0	13.5	5		04/19/17 11:11	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		5		04/19/17 11:11	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		5		04/19/17 11:11	17060-07-0	
Toluene-d8 (S)	99	%	70-130		5		04/19/17 11:11	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW XR **Lab ID: 92337290019** Collected: 04/11/17 15:30 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/17/17 23:44	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	140	%	60-140		1	04/17/17 15:36	04/17/17 23:44	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**18.2**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 01:01	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	10000	7680	100		04/19/17 10:46	75-85-4	
tert-Amylmethyl ether	ND	ug/L	1000	340	100		04/19/17 10:46	994-05-8	
Benzene	**3580**	ug/L	500	170	100		04/19/17 10:46	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	10000	3210	100		04/19/17 10:46	624-95-3	
tert-Butyl Alcohol	ND	ug/L	10000	5770	100		04/19/17 10:46	75-65-0	
tert-Butyl Formate	ND	ug/L	5000	730	100		04/19/17 10:46	762-75-4	
1,2-Dichloroethane	ND	ug/L	500	180	100		04/19/17 10:46	107-06-2	
Diisopropyl ether	ND	ug/L	500	170	100		04/19/17 10:46	108-20-3	
Ethanol	ND	ug/L	20000	13100	100		04/19/17 10:46	64-17-5	
Ethylbenzene	**621**	ug/L	500	160	100		04/19/17 10:46	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1000	360	100		04/19/17 10:46	637-92-3	
Methyl-tert-butyl ether	**516**	ug/L	500	170	100		04/19/17 10:46	1634-04-4	
Naphthalene	ND	ug/L	500	200	100		04/19/17 10:46	91-20-3	
Toluene	**9410**	ug/L	500	160	100		04/19/17 10:46	108-88-3	
Xylene (Total)	**3390**	ug/L	1000	270	100		04/19/17 10:46	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	91	%	70-130		100		04/19/17 10:46	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		100		04/19/17 10:46	17060-07-0	
Toluene-d8 (S)	104	%	70-130		100		04/19/17 10:46	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW 08 **Lab ID: 92337290020** Collected: 04/11/17 18:05 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 00:04	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	04/17/17 15:36	04/18/17 00:04	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 13:20	04/20/17 20:23	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 05:07	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 05:07	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 05:07	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 05:07	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 05:07	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 05:07	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 05:07	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 05:07	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 05:07	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 05:07	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 05:07	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 05:07	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 05:07	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 05:07	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 05:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		04/20/17 05:07	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/20/17 05:07	17060-07-0	
Toluene-d8 (S)	98	%	70-130		1		04/20/17 05:07	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: FB-1 **Lab ID: 92337290021** Collected: 04/10/17 17:24 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 00:24	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	103	%	60-140		1	04/17/17 15:36	04/18/17 00:24	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 01:23	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 01:23	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 01:23	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 01:23	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 01:23	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 01:23	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 01:23	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:23	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 01:23	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 01:23	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 01:23	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:23	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 01:23	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 01:23	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 01:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		04/19/17 01:23	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/19/17 01:23	17060-07-0	
Toluene-d8 (S)	105	%	70-130		1		04/19/17 01:23	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: FIELD BLANK 2 **Lab ID: 92337290022** Collected: 04/11/17 13:08 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 00:44	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	04/17/17 15:36	04/18/17 00:44	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/19/17 01:40	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/19/17 01:40	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/19/17 01:40	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/19/17 01:40	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/19/17 01:40	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/19/17 01:40	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/19/17 01:40	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:40	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/19/17 01:40	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/19/17 01:40	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/19/17 01:40	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/19/17 01:40	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/19/17 01:40	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/19/17 01:40	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/19/17 01:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		04/19/17 01:40	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/19/17 01:40	17060-07-0	
Toluene-d8 (S)	109	%	70-130		1		04/19/17 01:40	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: Trip Blank **Lab ID: 92337290023** Collected: 04/10/17 00:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 01:03	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	04/17/17 15:36	04/18/17 01:03	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 02:50	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 02:50	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 02:50	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 02:50	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 02:50	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 02:50	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 02:50	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 02:50	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 02:50	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 02:50	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 02:50	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 02:50	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 02:50	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 02:50	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 02:50	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 02:50	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/20/17 02:50	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		04/20/17 02:50	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: Trip Blank 2 **Lab ID: 92337290024** Collected: 04/10/17 00:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 01:23	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	104	%	60-140		1	04/17/17 15:36	04/18/17 01:23	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 03:07	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 03:07	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 03:07	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 03:07	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 03:07	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 03:07	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 03:07	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 03:07	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 03:07	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 03:07	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 03:07	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 03:07	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 03:07	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 03:07	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 03:07	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 03:07	460-00-4	
1,2-Dichloroethane-d4 (S)	92	%	70-130		1		04/20/17 03:07	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		04/20/17 03:07	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: MW-16 **Lab ID: 92337290025** Collected: 04/11/17 11:00 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:36	04/18/17 01:43	106-93-4	L1
Surrogates									
1-Chloro-2-bromopropane (S)	108	%	60-140		1	04/17/17 15:36	04/18/17 01:43	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**2.8J**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 01:04	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 06:32	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 06:32	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 06:32	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 06:32	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 06:32	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 06:32	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 06:32	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 06:32	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 06:32	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 06:32	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 06:32	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 06:32	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 06:32	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 06:32	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 06:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		04/20/17 06:32	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/20/17 06:32	17060-07-0	
Toluene-d8 (S)	102	%	70-130		1		04/20/17 06:32	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337290

Sample: DUP A **Lab ID: 92337290026** Collected: 04/11/17 15:40 Received: 04/14/17 14:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/17/17 15:38	04/18/17 03:23	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	182	%	60-140		1	04/17/17 15:38	04/18/17 03:23	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	**10.6**	ug/L	5.0	2.5	1	04/14/17 21:35	04/19/17 01:07	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**2220**	ug/L	500	384	5		04/20/17 15:44	75-85-4	
tert-Amylmethyl ether	ND	ug/L	50.0	17.0	5		04/20/17 15:44	994-05-8	
Benzene	**764**	ug/L	25.0	8.5	5		04/20/17 15:44	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	500	160	5		04/20/17 15:44	624-95-3	
tert-Butyl Alcohol	ND	ug/L	500	288	5		04/20/17 15:44	75-65-0	
tert-Butyl Formate	ND	ug/L	250	36.5	5		04/20/17 15:44	762-75-4	
1,2-Dichloroethane	ND	ug/L	25.0	9.0	5		04/20/17 15:44	107-06-2	
Diisopropyl ether	ND	ug/L	25.0	8.5	5		04/20/17 15:44	108-20-3	
Ethanol	ND	ug/L	1000	655	5		04/20/17 15:44	64-17-5	
Ethylbenzene	**79.6**	ug/L	25.0	8.0	5		04/20/17 15:44	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	50.0	18.0	5		04/20/17 15:44	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	25.0	8.5	5		04/20/17 15:44	1634-04-4	
Naphthalene	ND	ug/L	25.0	10.0	5		04/20/17 15:44	91-20-3	
Toluene	**749**	ug/L	25.0	8.0	5		04/20/17 15:44	108-88-3	
Xylene (Total)	**462**	ug/L	50.0	13.5	5		04/20/17 15:44	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		5		04/20/17 15:44	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		5		04/20/17 15:44	17060-07-0	
Toluene-d8 (S)	98	%	70-130		5		04/20/17 15:44	2037-26-5	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 356791 Analysis Method: EPA 6010
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005, 92337290006, 92337290007, 92337290008

METHOD BLANK: 1979551 Matrix: Water
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005, 92337290006, 92337290007, 92337290008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	2.5	04/18/17 14:38	

LABORATORY CONTROL SAMPLE: 1979552

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	497	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979553 1979554

Parameter	Units	92337124008 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	524	500	500	895	851	74	65	75-125	5	20	M6

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 356792 Analysis Method: EPA 6010
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Associated Lab Samples: 92337290009, 92337290010, 92337290011, 92337290012, 92337290013, 92337290014, 92337290015, 92337290016, 92337290017, 92337290018, 92337290019, 92337290025, 92337290026

METHOD BLANK: 1979555 Matrix: Water
Associated Lab Samples: 92337290009, 92337290010, 92337290011, 92337290012, 92337290013, 92337290014, 92337290015, 92337290016, 92337290017, 92337290018, 92337290019, 92337290025, 92337290026

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	2.5	04/18/17 23:58	

LABORATORY CONTROL SAMPLE: 1979556

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	484	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979559 1979560

Parameter	Units	92337290009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	475	479	95	95	75-125	1	20	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 357177
QC Batch Method: EPA 3010A
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Associated Lab Samples: 92337290020

METHOD BLANK: 1981328
Matrix: Water
Associated Lab Samples: 92337290020

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	2.5	04/20/17 20:07	

LABORATORY CONTROL SAMPLE: 1981329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	514	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1981330 1981331

Parameter	Units	92337290020 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	520	520	104	104	75-125	0	20	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 357103 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005, 92337290006, 92337290007, 92337290008, 92337290009, 92337290010, 92337290011, 92337290014, 92337290015, 92337290016, 92337290017, 92337290019, 92337290021, 92337290022

METHOD BLANK: 1981018 Matrix: Water
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005, 92337290006, 92337290007, 92337290008, 92337290009, 92337290010, 92337290011, 92337290014, 92337290015, 92337290016, 92337290017, 92337290019, 92337290021, 92337290022

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/19/17 01:05	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/19/17 01:05	
Benzene	ug/L	ND	5.0	1.7	04/19/17 01:05	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/19/17 01:05	
Ethanol	ug/L	ND	200	131	04/19/17 01:05	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/19/17 01:05	
Ethylbenzene	ug/L	ND	5.0	1.6	04/19/17 01:05	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/19/17 01:05	
Naphthalene	ug/L	ND	5.0	2.0	04/19/17 01:05	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/19/17 01:05	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/19/17 01:05	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/19/17 01:05	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/19/17 01:05	
Toluene	ug/L	ND	5.0	1.6	04/19/17 01:05	
Xylene (Total)	ug/L	ND	10.0	2.7	04/19/17 01:05	
1,2-Dichloroethane-d4 (S)	%	91	70-130		04/19/17 01:05	
4-Bromofluorobenzene (S)	%	94	70-130		04/19/17 01:05	
Toluene-d8 (S)	%	105	70-130		04/19/17 01:05	

LABORATORY CONTROL SAMPLE: 1981019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	50.1	100	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	907	91	70-130	
Benzene	ug/L	50	52.7	105	70-130	
Diisopropyl ether	ug/L	50	45.3	91	70-130	
Ethanol	ug/L	2000	2370	118	70-130	
Ethyl-tert-butyl ether	ug/L	100	97.2	97	70-130	
Ethylbenzene	ug/L	50	49.1	98	70-130	
Methyl-tert-butyl ether	ug/L	50	49.0	98	70-130	
Naphthalene	ug/L	50	52.0	104	70-130	
tert-Amyl Alcohol	ug/L	1000	980	98	70-130	
tert-Amylmethyl ether	ug/L	100	93.8	94	70-130	
tert-Butyl Alcohol	ug/L	500	455	91	70-130	
tert-Butyl Formate	ug/L	400	358	90	70-130	
Toluene	ug/L	50	47.7	95	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

LABORATORY CONTROL SAMPLE: 1981019

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Xylene (Total)	ug/L	150	139	93	70-130	
1,2-Dichloroethane-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			94	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE SAMPLE: 1981021

Parameter	Units	92337290019 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	2000	2080	103	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	40000	32400	81	70-130	
Benzene	ug/L	3580	2000	5940	118	70-130	
Diisopropyl ether	ug/L	ND	2000	2050	97	70-130	
Ethanol	ug/L	ND	80000	81500	102	70-130	
Ethyl-tert-butyl ether	ug/L	ND	4000	3770	94	70-130	
Ethylbenzene	ug/L	621	2000	2780	108	70-130	
Methyl-tert-butyl ether	ug/L	516	2000	2600	104	70-130	
Naphthalene	ug/L	ND	2000	2010	101	70-130	
tert-Amyl Alcohol	ug/L	ND	40000	39400	93	70-130	
tert-Amylmethyl ether	ug/L	ND	4000	3730	93	70-130	
tert-Butyl Alcohol	ug/L	ND	20000	17800	88	70-130	
tert-Butyl Formate	ug/L	ND	16000	12900	80	70-130	
Toluene	ug/L	9410	2000	10900	73	70-130	
1,2-Dichloroethane-d4 (S)	%				99	70-130	
4-Bromofluorobenzene (S)	%				92	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1981020

Parameter	Units	92337290017 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

SAMPLE DUPLICATE: 1981020

Parameter	Units	92337290017 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane-d4 (S)	%	91	87	5		
4-Bromofluorobenzene (S)	%	96	94	3		
Toluene-d8 (S)	%	107	108	0		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 357105 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337290013, 92337290018

METHOD BLANK: 1981029 Matrix: Water
Associated Lab Samples: 92337290013, 92337290018

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/19/17 05:31	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/19/17 05:31	
Benzene	ug/L	ND	5.0	1.7	04/19/17 05:31	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/19/17 05:31	
Ethanol	ug/L	ND	200	131	04/19/17 05:31	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/19/17 05:31	
Ethylbenzene	ug/L	ND	5.0	1.6	04/19/17 05:31	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/19/17 05:31	
Naphthalene	ug/L	ND	5.0	2.0	04/19/17 05:31	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/19/17 05:31	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/19/17 05:31	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/19/17 05:31	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/19/17 05:31	
Toluene	ug/L	ND	5.0	1.6	04/19/17 05:31	
Xylene (Total)	ug/L	ND	10.0	2.7	04/19/17 05:31	
1,2-Dichloroethane-d4 (S)	%	94	70-130		04/19/17 05:31	
4-Bromofluorobenzene (S)	%	99	70-130		04/19/17 05:31	
Toluene-d8 (S)	%	109	70-130		04/19/17 05:31	

LABORATORY CONTROL SAMPLE: 1981030

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	48.3	97	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	939	94	70-130	
Benzene	ug/L	50	54.9	110	70-130	
Diisopropyl ether	ug/L	50	49.4	99	70-130	
Ethanol	ug/L	2000	2320	116	70-130	
Ethyl-tert-butyl ether	ug/L	100	106	106	70-130	
Ethylbenzene	ug/L	50	51.6	103	70-130	
Methyl-tert-butyl ether	ug/L	50	54.7	109	70-130	
Naphthalene	ug/L	50	52.2	104	70-130	
tert-Amyl Alcohol	ug/L	1000	981	98	70-130	
tert-Amylmethyl ether	ug/L	100	107	107	70-130	
tert-Butyl Alcohol	ug/L	500	443	89	70-130	
tert-Butyl Formate	ug/L	400	411	103	70-130	
Toluene	ug/L	50	50.3	101	70-130	
Xylene (Total)	ug/L	150	153	102	70-130	
1,2-Dichloroethane-d4 (S)	%			99	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			97	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1981031 1981032

Parameter	Units	92337332006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dichloroethane	ug/L	ND	250	250	229	284	92	114	70-130	21	30	
3,3-Dimethyl-1-Butanol	ug/L	ND	5000	5000	3670	5510	73	110	70-130	40	30	R1
Benzene	ug/L	ND	250	250	280	345	109	136	70-130	21	30	M1
Diisopropyl ether	ug/L	ND	250	250	217	279	87	112	70-130	25	30	
Ethanol	ug/L	23400	10000	10000	9530	15000	-139	-85	70-130	44	30	M1,R1
Ethyl-tert-butyl ether	ug/L	ND	500	500	449	578	90	116	70-130	25	30	
Ethylbenzene	ug/L	435	250	250	688	776	101	136	70-130	12	30	M1
Methyl-tert-butyl ether	ug/L	ND	250	250	234	305	94	122	70-130	26	30	
Naphthalene	ug/L	270	250	250	525	601	102	132	70-130	13	30	M1
tert-Amyl Alcohol	ug/L	ND	5000	5000	3520	5610	70	112	70-130	46	30	R1
tert-Amylmethyl ether	ug/L	ND	500	500	489	623	98	125	70-130	24	30	
tert-Butyl Alcohol	ug/L	ND	2500	2500	1500	2490	59	99	70-130	50	30	M1,R1
tert-Butyl Formate	ug/L	ND	2000	2000	1310	1690	66	85	70-130	25	30	M1
Toluene	ug/L	823	250	250	976	1060	61	93	70-130	8	30	M1
1,2-Dichloroethane-d4 (S)	%						95	93	70-130			
4-Bromofluorobenzene (S)	%						99	100	70-130			
Toluene-d8 (S)	%						99	100	70-130			

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 357235 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337290012, 92337290020, 92337290023, 92337290024, 92337290025

METHOD BLANK: 1981729 Matrix: Water
Associated Lab Samples: 92337290012, 92337290020, 92337290023, 92337290024, 92337290025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/20/17 02:16	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/20/17 02:16	
Benzene	ug/L	ND	5.0	1.7	04/20/17 02:16	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/20/17 02:16	
Ethanol	ug/L	ND	200	131	04/20/17 02:16	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/20/17 02:16	
Ethylbenzene	ug/L	ND	5.0	1.6	04/20/17 02:16	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/20/17 02:16	
Naphthalene	ug/L	ND	5.0	2.0	04/20/17 02:16	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/20/17 02:16	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/20/17 02:16	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/20/17 02:16	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/20/17 02:16	
Toluene	ug/L	ND	5.0	1.6	04/20/17 02:16	
Xylene (Total)	ug/L	ND	10.0	2.7	04/20/17 02:16	
1,2-Dichloroethane-d4 (S)	%	93	70-130		04/20/17 02:16	
4-Bromofluorobenzene (S)	%	95	70-130		04/20/17 02:16	
Toluene-d8 (S)	%	101	70-130		04/20/17 02:16	

LABORATORY CONTROL SAMPLE: 1981730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	43.4	87	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	999	100	70-130	
Benzene	ug/L	50	47.1	94	70-130	
Diisopropyl ether	ug/L	50	42.9	86	70-130	
Ethanol	ug/L	2000	2410	120	70-130	
Ethyl-tert-butyl ether	ug/L	100	86.8	87	70-130	
Ethylbenzene	ug/L	50	45.4	91	70-130	
Methyl-tert-butyl ether	ug/L	50	43.3	87	70-130	
Naphthalene	ug/L	50	45.4	91	70-130	
tert-Amyl Alcohol	ug/L	1000	1060	106	70-130	
tert-Amylmethyl ether	ug/L	100	92.9	93	70-130	
tert-Butyl Alcohol	ug/L	500	502	100	70-130	
tert-Butyl Formate	ug/L	400	348	87	70-130	
Toluene	ug/L	50	46.3	93	70-130	
Xylene (Total)	ug/L	150	136	90	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			99	70-130	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

MATRIX SPIKE SAMPLE: 1982644

Parameter	Units	92337287002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	20.3	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	409	102	70-130	
Benzene	ug/L	ND	20	22.1	111	70-130	
Diisopropyl ether	ug/L	ND	20	19.8	99	70-130	
Ethanol	ug/L	ND	800	908	113	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	40.0	100	70-130	
Ethylbenzene	ug/L	ND	20	21.6	108	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	20.0	99	70-130	
Naphthalene	ug/L	ND	20	19.9	99	70-130	
tert-Amyl Alcohol	ug/L	ND	400	405	101	70-130	
tert-Amylmethyl ether	ug/L	ND	40	39.3	98	70-130	
tert-Butyl Alcohol	ug/L	ND	200	276	138	70-130	M1
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	M1,P5
Toluene	ug/L	ND	20	22.0	110	70-130	
1,2-Dichloroethane-d4 (S)	%				101	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1982645

Parameter	Units	92337287003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	92	102	10		
4-Bromofluorobenzene (S)	%	97	97	1		
Toluene-d8 (S)	%	98	101	3		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 357409
QC Batch Method: EPA 8260
Analysis Method: EPA 8260
Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337290026

METHOD BLANK: 1982596
Matrix: Water
Associated Lab Samples: 92337290026

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/20/17 12:15	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/20/17 12:15	
Benzene	ug/L	ND	5.0	1.7	04/20/17 12:15	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/20/17 12:15	
Ethanol	ug/L	ND	200	131	04/20/17 12:15	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/20/17 12:15	
Ethylbenzene	ug/L	ND	5.0	1.6	04/20/17 12:15	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/20/17 12:15	
Naphthalene	ug/L	ND	5.0	2.0	04/20/17 12:15	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/20/17 12:15	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/20/17 12:15	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/20/17 12:15	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/20/17 12:15	
Toluene	ug/L	ND	5.0	1.6	04/20/17 12:15	
Xylene (Total)	ug/L	ND	10.0	2.7	04/20/17 12:15	
1,2-Dichloroethane-d4 (S)	%	96	70-130		04/20/17 12:15	
4-Bromofluorobenzene (S)	%	102	70-130		04/20/17 12:15	
Toluene-d8 (S)	%	110	70-130		04/20/17 12:15	

LABORATORY CONTROL SAMPLE: 1982597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	47.3	95	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	830	83	70-130	
Benzene	ug/L	50	56.1	112	70-130	
Diisopropyl ether	ug/L	50	50.6	101	70-130	
Ethanol	ug/L	2000	2470	123	70-130	
Ethyl-tert-butyl ether	ug/L	100	105	105	70-130	
Ethylbenzene	ug/L	50	53.7	107	70-130	
Methyl-tert-butyl ether	ug/L	50	53.2	106	70-130	
Naphthalene	ug/L	50	48.5	97	70-130	
tert-Amyl Alcohol	ug/L	1000	879	88	70-130	
tert-Amylmethyl ether	ug/L	100	105	105	70-130	
tert-Butyl Alcohol	ug/L	500	411	82	70-130	
tert-Butyl Formate	ug/L	400	380	95	70-130	
Toluene	ug/L	50	51.7	103	70-130	
Xylene (Total)	ug/L	150	159	106	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			97	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

MATRIX SPIKE SAMPLE: 1982598

Parameter	Units	92337502004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	20.0	100	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	326	82	70-130	
Benzene	ug/L	11.6	20	36.4	124	70-130	
Diisopropyl ether	ug/L	ND	20	21.1	99	70-130	
Ethanol	ug/L	ND	800	403	50	70-130	M1
Ethyl-tert-butyl ether	ug/L	ND	40	39.7	99	70-130	
Ethylbenzene	ug/L	ND	20	23.5	114	70-130	
Methyl-tert-butyl ether	ug/L	3.7J	20	25.5	109	70-130	
Naphthalene	ug/L	ND	20	21.7	106	70-130	
tert-Amyl Alcohol	ug/L	ND	400	367	84	70-130	
tert-Amylmethyl ether	ug/L	ND	40	41.2	103	70-130	
tert-Butyl Alcohol	ug/L	ND	200	182	90	70-130	
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	2.0J	20	24.5	112	70-130	
1,2-Dichloroethane-d4 (S)	%				94	70-130	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				98	70-130	

SAMPLE DUPLICATE: 1982599

Parameter	Units	92337502013 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	11.4	12.3	8	30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	3.5J	3.5J		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	2.5J	2.1J		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	98	100	2		
4-Bromofluorobenzene (S)	%	102	100	2		
Toluene-d8 (S)	%	108	109	1		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 356873 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005

METHOD BLANK: 1979812 Matrix: Water
Associated Lab Samples: 92337290001, 92337290002, 92337290003, 92337290004, 92337290005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	0.020	04/17/17 17:27	
1-Chloro-2-bromopropane (S)	%	106	60-140		04/17/17 17:27	

LABORATORY CONTROL SAMPLE & LCSD: 1979813 1979814

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.25	0.28	0.32	114	128	60-140	13	20	
1-Chloro-2-bromopropane (S)	%				106	117	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979815 1979816

Parameter	Units	92336982002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.25	.25	0.31	0.31	123	123	60-140	0	20	
1-Chloro-2-bromopropane (S)	%						120	118	60-140			

SAMPLE DUPLICATE: 1979817

Parameter	Units	92336982003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	113	115	0		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 356874 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92337290006, 92337290007, 92337290008, 92337290009, 92337290010, 92337290011, 92337290012, 92337290013, 92337290014, 92337290015, 92337290016, 92337290017, 92337290018, 92337290019, 92337290020, 92337290021, 92337290022, 92337290023, 92337290024, 92337290025

METHOD BLANK: 1979818 Matrix: Water
Associated Lab Samples: 92337290006, 92337290007, 92337290008, 92337290009, 92337290010, 92337290011, 92337290012, 92337290013, 92337290014, 92337290015, 92337290016, 92337290017, 92337290018, 92337290019, 92337290020, 92337290021, 92337290022, 92337290023, 92337290024, 92337290025

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	0.020	04/17/17 17:25	
1-Chloro-2-bromopropane (S)	%	127	60-140		04/17/17 17:25	

LABORATORY CONTROL SAMPLE & LCSD: 1979819 1979820

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.24	0.32	0.36	130	146	60-140	14	20	L1
1-Chloro-2-bromopropane (S)	%				122	140	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979821 1979822

Parameter	Units	92337290006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.25	.25	0.49	0.51	199	208	60-140	4	20	M1
1-Chloro-2-bromopropane (S)	%						201	216	60-140			S0

SAMPLE DUPLICATE: 1979823

Parameter	Units	92337290009 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	155	151	1		S3

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337290

QC Batch: 356875
QC Batch Method: EPA 8011
Analysis Method: EPA 8011
Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92337290026

METHOD BLANK: 1979824
Matrix: Water
Associated Lab Samples: 92337290026

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.020	0.020	04/18/17 02:23	
1-Chloro-2-bromopropane (S)	%	110	60-140		04/18/17 02:23	

LABORATORY CONTROL SAMPLE & LCSD: 1979825 1979826

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.24	0.28	0.27	117	110	60-140	4	20	
1-Chloro-2-bromopropane (S)	%				114	100	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1979827 1979828

Parameter	Units	92337249005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.25	.25	0.28	0.28	112	114	60-140	2	20	
1-Chloro-2-bromopropane (S)	%						105	107	60-140			

SAMPLE DUPLICATE: 1979829

Parameter	Units	92337249006 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	ND		20	
1-Chloro-2-bromopropane (S)	%	102	108	7		

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QUALIFIERS

Project: Westside Quick Stop
Pace Project No.: 92337290

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

L1	Analyte recovery in the laboratory control sample (LCS) was above QC limits. Results for this analyte in associated samples may be biased high.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
M6	Matrix spike and Matrix spike duplicate recovery not evaluated against control limits due to sample dilution.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.
R1	RPD value was outside control limits.
S0	Surrogate recovery outside laboratory control limits.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92337290001	MW 20	EPA 8011	356873	EPA 8011	356927
92337290002	MW 17	EPA 8011	356873	EPA 8011	356927
92337290003	MW 17 I	EPA 8011	356873	EPA 8011	356927
92337290004	MW 19I	EPA 8011	356873	EPA 8011	356927
92337290005	MW 19	EPA 8011	356873	EPA 8011	356927
92337290006	MW 23	EPA 8011	356874	EPA 8011	356928
92337290007	MW 11	EPA 8011	356874	EPA 8011	356928
92337290008	MW 10	EPA 8011	356874	EPA 8011	356928
92337290009	MW 04I	EPA 8011	356874	EPA 8011	356928
92337290010	MW 15I	EPA 8011	356874	EPA 8011	356928
92337290011	MW 15	EPA 8011	356874	EPA 8011	356928
92337290012	MW 14I	EPA 8011	356874	EPA 8011	356928
92337290013	MW 14	EPA 8011	356874	EPA 8011	356928
92337290014	MW 16I	EPA 8011	356874	EPA 8011	356928
92337290015	MW 18	EPA 8011	356874	EPA 8011	356928
92337290016	MW 05	EPA 8011	356874	EPA 8011	356928
92337290017	MW 06	EPA 8011	356874	EPA 8011	356928
92337290018	MW 02	EPA 8011	356874	EPA 8011	356928
92337290019	MW XR	EPA 8011	356874	EPA 8011	356928
92337290020	MW 08	EPA 8011	356874	EPA 8011	356928
92337290021	FB-1	EPA 8011	356874	EPA 8011	356928
92337290022	FIELD BLANK 2	EPA 8011	356874	EPA 8011	356928
92337290023	Trip Blank	EPA 8011	356874	EPA 8011	356928
92337290024	Trip Blank 2	EPA 8011	356874	EPA 8011	356928
92337290025	MW-16	EPA 8011	356874	EPA 8011	356928
92337290026	DUP A	EPA 8011	356875	EPA 8011	356930
92337290001	MW 20	EPA 3010A	356791	EPA 6010	356835
92337290002	MW 17	EPA 3010A	356791	EPA 6010	356835
92337290003	MW 17 I	EPA 3010A	356791	EPA 6010	356835
92337290004	MW 19I	EPA 3010A	356791	EPA 6010	356835
92337290005	MW 19	EPA 3010A	356791	EPA 6010	356835
92337290006	MW 23	EPA 3010A	356791	EPA 6010	356835
92337290007	MW 11	EPA 3010A	356791	EPA 6010	356835
92337290008	MW 10	EPA 3010A	356791	EPA 6010	356835
92337290009	MW 04I	EPA 3010A	356792	EPA 6010	356834
92337290010	MW 15I	EPA 3010A	356792	EPA 6010	356834
92337290011	MW 15	EPA 3010A	356792	EPA 6010	356834
92337290012	MW 14I	EPA 3010A	356792	EPA 6010	356834
92337290013	MW 14	EPA 3010A	356792	EPA 6010	356834
92337290014	MW 16I	EPA 3010A	356792	EPA 6010	356834
92337290015	MW 18	EPA 3010A	356792	EPA 6010	356834
92337290016	MW 05	EPA 3010A	356792	EPA 6010	356834
92337290017	MW 06	EPA 3010A	356792	EPA 6010	356834
92337290018	MW 02	EPA 3010A	356792	EPA 6010	356834
92337290019	MW XR	EPA 3010A	356792	EPA 6010	356834
92337290020	MW 08	EPA 3010A	357177	EPA 6010	357379

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Westside Quick Stop
Pace Project No.: 92337290

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92337290025	**MW-16**	EPA 3010A	356792	EPA 6010	356834
92337290026	**DUP A**	EPA 3010A	356792	EPA 6010	356834
92337290001	**MW 20**	EPA 8260	357103		
92337290002	**MW 17**	EPA 8260	357103		
92337290003	**MW 17 I**	EPA 8260	357103		
92337290004	**MW 19I**	EPA 8260	357103		
92337290005	**MW 19**	EPA 8260	357103		
92337290006	**MW 23**	EPA 8260	357103		
92337290007	**MW 11**	EPA 8260	357103		
92337290008	**MW 10**	EPA 8260	357103		
92337290009	**MW 04I**	EPA 8260	357103		
92337290010	**MW 15I**	EPA 8260	357103		
92337290011	**MW 15**	EPA 8260	357103		
92337290012	**MW 14I**	EPA 8260	357235		
92337290013	**MW 14**	EPA 8260	357105		
92337290014	**MW 16I**	EPA 8260	357103		
92337290015	**MW 18**	EPA 8260	357103		
92337290016	**MW 05**	EPA 8260	357103		
92337290017	**MW 06**	EPA 8260	357103		
92337290018	**MW 02**	EPA 8260	357105		
92337290019	**MW XR**	EPA 8260	357103		
92337290020	**MW 08**	EPA 8260	357235		
92337290021	**FB-1**	EPA 8260	357103		
92337290022	**FIELD BLANK 2**	EPA 8260	357103		
92337290023	**Trip Blank**	EPA 8260	357235		
92337290024	**Trip Blank 2**	EPA 8260	357235		
92337290025	**MW-16**	EPA 8260	357235		
92337290026	**DUP A**	EPA 8260	357409		

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

Sample Condition Upon Receipt

Client Name: Petra tech

Project # WO#: 92337290

92337290

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

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

Date/Initials Person Examining Contents: RDT 4/14/17

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

Thermometer: ☐ IR Gun ID: 5

Type of Ice: ☑ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Correction Factor: 0 **Cooler Temp Corrected (°C):** 5.6 / 4.4

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

Temp should be above freezing to 6°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

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

				Comments/Discrepancy:
Chain of Custody Present?	☑ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☑ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☑ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☑ No	☐ N/A	4.
Sufficient Volume?	☑ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☑ Yes	☐ No	☐ N/A	6. DUPA metals and 6 vials not on chain
-Pace Containers Used?	☑ Yes	☐ No	☐ N/A	
Containers Intact?	☑ Yes	☐ No	☐ N/A	7.
Samples Field Filtered?	☐ Yes	☐ No	☑ N/A	8. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☐ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WT				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☑ No	☐ N/A	10.
Trip Blank Present?	☑ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☑ Yes	☐ No	☐ N/A	

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Sample Discrepancy: _____

Project Manager SCURF Review: TR **Date:** 4/19

Project Manager SRF Review: TR **Date:** 4/19

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

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

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

Project # **WO# : 92337290**

PM: PTE Due Date: 04/25/17

CLIENT: 92-Petra-Tec

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP3S-250 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP3Z-250 mL Plastic ZN Acetate & NaOH (>9)	BP3C-250 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	Cubitainer	VSGU-20 mL Scintillation vials (N/A)	GN	
1						1										6												
2						1										6												
3						1										6												
4						1										6												
5						1										6												
6						1										6												
7						1										6												
8						1										6												
9						1										6												
10						1										6												
11						1										6												
12						1										6												

pH Adjustment Log for Preserved Samples

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

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Petra-Tech Environmental	Report To: Slack, Trever	Attention:
Address: 2435 East North Street	Copy To:	Company Name:
Suite 1108-202, Greenville, SC 29615		Address:
Email:	Purchase Order #:	Pace Quote:
Phone: Fax	Project Name: Westside Quick Stop	Pace Project Manager: taylor.ezell@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 6009-3

Regulatory Agency
State / Location
SC

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

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SCDHEC VOC & EDB	Lead	Trip BLANK	DI Water	Coolers	Residual Chlorine (Y/N)	92337290
1	MW20	WT	G	4/10/17	1850				7			1	6						X	X					001
2	MW17				1410				7			1	6						X	X					002
3	MW17I				1500				7			1	6						X	X					003
4	MW19I				1615				7			1	6						X	X					004
5	MW19				1650				7			1	6						X	X					005
6	MW23				1745				7			1	6						X	X					006
7	MW11				1715				7			1	6						X	X					007
8	MW10				1915				7			1	6						X	X					008
9	MW04I			4/11/17	1900				7			1	6						X	X					009
10	MW16				1100				7			1	6						X	X					010
11	MW15I				1200				7			1	6						X	X					011
12	MW15				1250				7			1	6						X	X					012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature]	4/14/17	1430	[signature] / Pace Gmt	4.14.17	1130				
	[signature] / Pace Gmt	4-14-17	1450	[signature]	4/14/17	1450	5.6	Y	N	Y
							4.4			
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Trever Z Slack

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/14/17

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

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

Project #

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP3S-250 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP3Z-250 mL Plastic ZN Acetate & NaOH (>9)	BP3C-250 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	Cubitainer	VSGU-20 mL Scintillation vials (N/A)	GN	
1						1										6													
2						1										6													
3						1										6													
4						1										6													
5						1										6													
6						1										6													
7						1										6													
8						1										6													
9						1										6													
10						1	Lot# 4/14/17									6													
11																6													
12																2													
																2													

pH Adjustment Log for Preserved Samples

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

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Petra-Tech Environmental	Report To:	Slack, Trever	Attention:	
Address:	2435 East North Street	Copy To:		Company Name:	
Suite 1108-202, Greenville, SC 29615				Address:	
Email:		Purchase Order #:		Pace Quote:	
Phone:	Fax	Project Name:	Westside Quick Stop	Pace Project Manager:	taylor.ezell@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	6009-3

Regulatory Agency	
State / Location	SC

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

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

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SCDHEC VOC & EDB	Lead	Trip BLANK	DI Water	Coolers	Residual Chlorine (Y/N)	92337290-001
1	MW14I	WT	G	4/11/17	1445				7			1	6						X	X						003
2	MW14				1535				7			1	6						X	X						~~002~~ 014
3	MW16E				1030				7			1	6						X	X						~~003~~ 015
4	MW18				910				7			1	6						X	X						~~004~~ 016
5	MW05				1555				7			1	6						X	X						017
6	MW06				1615				7			1	6						X	X						018
7	MW02				1705				7			1	6						X	X						019
8	MW-XR				1530				7			1	6						X	X						020
9	MW08				1805				7			1	6						X	X						021
10	FB1			4/10/17	1724				7			1	6						X							022
11	FieldBlankZ			4/11/17	1308				7			1	6						X							023
12	TripBlankI																				X				024

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		4/14/17	1130	/ Pace Grnd	4-14-17	1130	
	/ Pace Grnd	4-14-17	1450		4/14/17	1450	5.6 4.4 / Y / N / Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Trever Z. Slack

SIGNATURE of SAMPLER: DATE Signed: 4/14/17

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

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

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Page : 1 Of 1

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Company:	Petra-Tech Environmental	Report To:	Slack, Trever	Attention:	
Address:	2435 East North Street	Copy To:		Company Name:	
Suite 1108-202, Greenville, SC 29615				Address:	
Email:		Purchase Order #:		Pace Quote:	
Phone:	Fax	Project Name:	Westside Quick Stop	Pace Project Manager:	taylor.ezell@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	6009-3

Regulatory Agency
State / Location
SC

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique MATRIX CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): SCDHEC VOC & EDB	Lead	Trip BLANK	DI Water	Coolers								Residual Chlorine (Y/N)	92337290
1	Trip Blank 2																						X								025
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
		4/14/17	1130	/ Pace Grnd	4.14.17	1130				
	/ Pace Grnd	4-14-17	1450	/	4/14/17	1450	5.6	Y	N	Y
							4.4			

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	Trevor Z. Slack		
SIGNATURE of SAMPLER:		DATE Signed:	4/14/17

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92337290 **Workorder Name:** Westside Quick Stop **Owner Received Date:** 4/14/2017 **Due Date:** 4/25/2017

Received at:	Send To Lab:
Pace Analytical Asheville 2225 Riverside Dr. Asheville, NC 28804 Phone (704)875-9092	Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092

Report To:
Taylor Ezell

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers						Requested Analysis												LAB USE ONLY
						HCL						EPA 8260	EPA 8011											
1	MW 20	PS	4/10/2017 18:50	92337290001	Water	6						X	X											
2	MW 17	PS	4/10/2017 14:10	92337290002	Water	6						X	X											
3	MW 17 I	PS	4/10/2017 15:00	92337290003	Water	6						X	X											
4	MW 19I	PS	4/10/2017 16:15	92337290004	Water	6						X	X											
5	MW 19	PS	4/10/2017 16:50	92337290005	Water	6						X	X											
6	MW 23	PS	4/10/2017 17:45	92337290006	Water	6						X	X											
7	MW 11	PS	4/10/2017 17:15	92337290007	Water	6						X	X											
8	MW 10	PS	4/10/2017 19:15	92337290008	Water	6						X	X											
9	MW 04I	PS	4/11/2017 11:00	92337290009	Water	6						X	X											
10	MW 15I	PS	4/11/2017 12:00	92337290010	Water	6						X	X											
11	MW 15	PS	4/11/2017 12:50	92337290011	Water	6						X	X											
12	MW 14I	PS	4/11/2017 14:45	92337290012	Water	6						X	X											
13	MW 14	PS	4/11/2017 15:35	92337290013	Water	6						X	X											
14	MW 16I	PS	4/11/2017 10:30	92337290014	Water	6						X	X											
15	MW 18	PS	4/11/2017 09:10	92337290015	Water	6						X	X											
16	MW 05	PS	4/11/2017 15:55	92337290016	Water	6						X	X											
17	MW 06	PS	4/11/2017 16:15	92337290017	Water	6						X	X											
18	MW 02	PS	4/11/2017 17:05	92337290018	Water	6						X	X											
19	MW XR	PS	4/11/2017 15:30	92337290019	Water	6						X	X											

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92337290 **Workorder Name:** Westside Quick Stop **Owner Received Date:** 4/14/2017 **Due Date:** 4/25/2017

Received at:	Send To Lab:
Pace Analytical Asheville 2225 Riverside Dr. Asheville, NC 28804 Phone (704)875-9092	Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092

Report To:
Taylor Ezell

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HCL	Requested Analysis: EPA 8260	Requested Analysis: EPA 8011	LAB USE ONLY
20	MW 08	PS	4/11/2017 18:05	92337290020	Water	6	X	X	
21	FB-1	PS	4/10/2017 17:24	92337290021	Water	6	X	X	
22	FIELD BLANK 2	PS	4/11/2017 13:08	92337290022	Water	6	X	X	
23	Trip Blank	PS	4/10/2017 00:00	92337290023	Water	2	X	X	
24	Trip Blank 2	PS	4/10/2017 00:00	92337290024	Water	2	X	X	

Transfers	Released By	Date/Time	Received By	Date/Time
1	[signature]	4/17/17 1100	[signature] / cf / stage / AVL	4/14/17 / 2135
2	[signature] / cf / storage / HVL	4/14/17 / 2355		
3				
4				

Comments

Cooler Temperature on Receipt _____ °C | **Custody Seal** Y or N | **Received on Ice** Y or N | **Samples Intact** Y or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document.*
This chain of custody is considered complete as is since this information is available in the owner laboratory.

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

April 24, 2017

Trever Slack
Petra-Tech Environmental, LLC
2435 E. North Street
Suite 1108-202
Greenville, SC 29615

RE: Project: Westside Quick Stop
Pace Project No.: 92337502

Dear Trever Slack:
Enclosed are the analytical results for sample(s) received by the laboratory on April 18, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

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

Sincerely,

Taylor Ezell
taylor.ezell@pacelabs.com
(704)875-9092
Project Manager

Enclosures

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

CERTIFICATIONS

Project: Westside Quick Stop
Pace Project No.: 92337502

Charlotte Certification IDs

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

Asheville Certification IDs

2225 Riverside Drive, Asheville, NC 28804
Florida/NELAP Certification #: E87648
Massachusetts Certification #: M-NC030
North Carolina Drinking Water Certification #: 37712
North Carolina Wastewater Certification #: 40
South Carolina Certification #: 99030001
Virginia/VELAP Certification #: 460222

REPORT OF LABORATORY ANALYSIS

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

SAMPLE SUMMARY

Project: Westside Quick Stop
Pace Project No.: 92337502

Lab ID	Sample ID	Matrix	Date Collected	Date Received
92337502001	12430-MW12	Water	04/15/17 09:46	04/18/17 11:36
92337502002	12430-MW12I	Water	04/15/17 09:00	04/18/17 11:36
92337502003	12430-MW21	Water	04/15/17 10:08	04/18/17 11:36
92337502004	12430-MW25	Water	04/15/17 10:47	04/18/17 11:36
92337502005	12430-MW22	Water	04/15/17 11:50	04/18/17 11:36
92337502006	12430-MW22I	Water	04/15/17 13:46	04/18/17 11:36
92337502007	12430-MW26	Water	04/15/17 14:30	04/18/17 11:36
92337502008	12430-MW26I	Water	04/15/17 16:05	04/18/17 11:36
92337502009	12430-RW03	Water	04/15/17 19:02	04/18/17 11:36
92337502010	FIELD BLANK	Water	04/15/17 11:55	04/18/17 11:36
92337502011	TRIP BLANK	Water	04/15/17 00:00	04/18/17 11:36
92337502012	DUP A	Water	04/15/17 19:05	04/18/17 11:36
92337502013	DUP B	Water	04/15/17 10:50	04/18/17 11:36

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SAMPLE ANALYTE COUNT

Project: Westside Quick Stop
Pace Project No.: 92337502

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
92337502001	12430-MW12	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502002	12430-MW12I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502003	12430-MW21	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502004	12430-MW25	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502005	12430-MW22	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337502006	12430-MW22I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337502007	12430-MW26	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337502008	12430-MW26I	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	CAH	18	PASI-C
92337502009	12430-RW03	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502010	FIELD BLANK	EPA 8011	HSK	2	PASI-C
		EPA 8260	CAH	18	PASI-C
92337502011	TRIP BLANK	EPA 8011	HSK	2	PASI-C
		EPA 8260	CAH	18	PASI-C
92337502012	DUP A	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C
92337502013	DUP B	EPA 8011	HSK	2	PASI-C
		EPA 6010	SH1	1	PASI-A
		EPA 8260	GAW	18	PASI-C

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SUMMARY OF DETECTION

Project: Westside Quick Stop
Pace Project No.: 92337502

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92337502001	**12430-MW12**					
EPA 8260	tert-Amyl Alcohol	3010	ug/L	2000	04/20/17 16:00	
EPA 8260	Benzene	2050	ug/L	100	04/20/17 16:00	
EPA 8260	Ethylbenzene	422	ug/L	100	04/20/17 16:00	
EPA 8260	Toluene	3930	ug/L	100	04/20/17 16:00	
EPA 8260	Xylene (Total)	1580	ug/L	200	04/20/17 16:00	
92337502002	**12430-MW12I**					
EPA 8260	tert-Amyl Alcohol	3680J	ug/L	4000	04/20/17 16:16	
EPA 8260	Benzene	2700	ug/L	200	04/20/17 16:16	
EPA 8260	Ethylbenzene	576	ug/L	200	04/20/17 16:16	
EPA 8260	Toluene	6210	ug/L	200	04/20/17 16:16	
EPA 8260	Xylene (Total)	2740	ug/L	400	04/20/17 16:16	
92337502003	**12430-MW21**					
EPA 8011	1,2-Dibromoethane (EDB)	0.42	ug/L	0.020	04/20/17 18:20	C2,D6
EPA 8260	tert-Amyl Alcohol	4390	ug/L	4000	04/20/17 16:32	
EPA 8260	Benzene	5520	ug/L	200	04/20/17 16:32	
EPA 8260	Diisopropyl ether	585	ug/L	200	04/20/17 16:32	
EPA 8260	Ethylbenzene	675	ug/L	200	04/20/17 16:32	
EPA 8260	Methyl-tert-butyl ether	1240	ug/L	200	04/20/17 16:32	
EPA 8260	Naphthalene	285	ug/L	200	04/20/17 16:32	
EPA 8260	Toluene	1620	ug/L	200	04/20/17 16:32	
EPA 8260	Xylene (Total)	5700	ug/L	400	04/20/17 16:32	
92337502004	**12430-MW25**					
EPA 8260	Benzene	11.6	ug/L	5.0	04/20/17 16:48	
EPA 8260	Methyl-tert-butyl ether	3.7J	ug/L	5.0	04/20/17 16:48	
EPA 8260	Toluene	2.0J	ug/L	5.0	04/20/17 16:48	
92337502008	**12430-MW26I**					
EPA 8260	Benzene	2.6J	ug/L	5.0	04/20/17 09:40	
EPA 8260	Toluene	2.8J	ug/L	5.0	04/20/17 09:40	
92337502009	**12430-RW03**					
EPA 8260	Benzene	7020	ug/L	500	04/20/17 17:20	
EPA 8260	Diisopropyl ether	251J	ug/L	500	04/20/17 17:20	
EPA 8260	Ethylbenzene	1890	ug/L	500	04/20/17 17:20	
EPA 8260	Methyl-tert-butyl ether	298J	ug/L	500	04/20/17 17:20	
EPA 8260	Naphthalene	275J	ug/L	500	04/20/17 17:20	
EPA 8260	Toluene	12200	ug/L	500	04/20/17 17:20	
EPA 8260	Xylene (Total)	9200	ug/L	1000	04/20/17 17:20	
92337502012	**DUP A**					
EPA 8260	Benzene	6750	ug/L	500	04/20/17 17:52	
EPA 8260	Diisopropyl ether	257J	ug/L	500	04/20/17 17:52	
EPA 8260	Ethylbenzene	1890	ug/L	500	04/20/17 17:52	
EPA 8260	Methyl-tert-butyl ether	304J	ug/L	500	04/20/17 17:52	
EPA 8260	Naphthalene	269J	ug/L	500	04/20/17 17:52	
EPA 8260	Toluene	11700	ug/L	500	04/20/17 17:52	
EPA 8260	Xylene (Total)	9100	ug/L	1000	04/20/17 17:52	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: Westside Quick Stop
Pace Project No.: 92337502

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
92337502013	**DUP B**					
EPA 8260	Benzene	11.4	ug/L	5.0	04/20/17 18:08	
EPA 8260	Methyl-tert-butyl ether	3.5J	ug/L	5.0	04/20/17 18:08	
EPA 8260	Toluene	2.5J	ug/L	5.0	04/20/17 18:08	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW12 **Lab ID: 92337502001** Collected: 04/15/17 09:46 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.019	0.019	1	04/20/17 14:27	04/20/17 17:00	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	106	%	60-140		1	04/20/17 14:27	04/20/17 17:00	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:26	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**3010**	ug/L	2000	1540	20		04/20/17 16:00	75-85-4	
tert-Amylmethyl ether	ND	ug/L	200	68.0	20		04/20/17 16:00	994-05-8	
Benzene	**2050**	ug/L	100	34.0	20		04/20/17 16:00	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	2000	642	20		04/20/17 16:00	624-95-3	
tert-Butyl Alcohol	ND	ug/L	2000	1150	20		04/20/17 16:00	75-65-0	
tert-Butyl Formate	ND	ug/L	1000	146	20		04/20/17 16:00	762-75-4	
1,2-Dichloroethane	ND	ug/L	100	36.0	20		04/20/17 16:00	107-06-2	
Diisopropyl ether	ND	ug/L	100	34.0	20		04/20/17 16:00	108-20-3	
Ethanol	ND	ug/L	4000	2620	20		04/20/17 16:00	64-17-5	
Ethylbenzene	**422**	ug/L	100	32.0	20		04/20/17 16:00	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	200	72.0	20		04/20/17 16:00	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	100	34.0	20		04/20/17 16:00	1634-04-4	
Naphthalene	ND	ug/L	100	40.0	20		04/20/17 16:00	91-20-3	
Toluene	**3930**	ug/L	100	32.0	20		04/20/17 16:00	108-88-3	
Xylene (Total)	**1580**	ug/L	200	54.0	20		04/20/17 16:00	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		20		04/20/17 16:00	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		20		04/20/17 16:00	17060-07-0	
Toluene-d8 (S)	102	%	70-130		20		04/20/17 16:00	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW12I **Lab ID: 92337502002** Collected: 04/15/17 09:00 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 17:20	106-93-4	M1
Surrogates									
1-Chloro-2-bromopropane (S)	126	%	60-140		1	04/20/17 14:27	04/20/17 17:20	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:29	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**3680J**	ug/L	4000	3070	40		04/20/17 16:16	75-85-4	
tert-Amylmethyl ether	ND	ug/L	400	136	40		04/20/17 16:16	994-05-8	
Benzene	**2700**	ug/L	200	68.0	40		04/20/17 16:16	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	4000	1280	40		04/20/17 16:16	624-95-3	
tert-Butyl Alcohol	ND	ug/L	4000	2310	40		04/20/17 16:16	75-65-0	
tert-Butyl Formate	ND	ug/L	2000	292	40		04/20/17 16:16	762-75-4	
1,2-Dichloroethane	ND	ug/L	200	72.0	40		04/20/17 16:16	107-06-2	
Diisopropyl ether	ND	ug/L	200	68.0	40		04/20/17 16:16	108-20-3	
Ethanol	ND	ug/L	8000	5240	40		04/20/17 16:16	64-17-5	
Ethylbenzene	**576**	ug/L	200	64.0	40		04/20/17 16:16	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	400	144	40		04/20/17 16:16	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	200	68.0	40		04/20/17 16:16	1634-04-4	
Naphthalene	ND	ug/L	200	80.0	40		04/20/17 16:16	91-20-3	
Toluene	**6210**	ug/L	200	64.0	40		04/20/17 16:16	108-88-3	
Xylene (Total)	**2740**	ug/L	400	108	40		04/20/17 16:16	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		40		04/20/17 16:16	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		40		04/20/17 16:16	17060-07-0	
Toluene-d8 (S)	103	%	70-130		40		04/20/17 16:16	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW21 **Lab ID: 92337502003** Collected: 04/15/17 10:08 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	**0.42**	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 18:20	106-93-4	C2,D6
Surrogates									
1-Chloro-2-bromopropane (S)	126	%	60-140		1	04/20/17 14:27	04/20/17 18:20	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:32	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	**4390**	ug/L	4000	3070	40		04/20/17 16:32	75-85-4	
tert-Amylmethyl ether	ND	ug/L	400	136	40		04/20/17 16:32	994-05-8	
Benzene	**5520**	ug/L	200	68.0	40		04/20/17 16:32	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	4000	1280	40		04/20/17 16:32	624-95-3	
tert-Butyl Alcohol	ND	ug/L	4000	2310	40		04/20/17 16:32	75-65-0	
tert-Butyl Formate	ND	ug/L	2000	292	40		04/20/17 16:32	762-75-4	
1,2-Dichloroethane	ND	ug/L	200	72.0	40		04/20/17 16:32	107-06-2	
Diisopropyl ether	**585**	ug/L	200	68.0	40		04/20/17 16:32	108-20-3	
Ethanol	ND	ug/L	8000	5240	40		04/20/17 16:32	64-17-5	
Ethylbenzene	**675**	ug/L	200	64.0	40		04/20/17 16:32	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	400	144	40		04/20/17 16:32	637-92-3	
Methyl-tert-butyl ether	**1240**	ug/L	200	68.0	40		04/20/17 16:32	1634-04-4	
Naphthalene	**285**	ug/L	200	80.0	40		04/20/17 16:32	91-20-3	
Toluene	**1620**	ug/L	200	64.0	40		04/20/17 16:32	108-88-3	
Xylene (Total)	**5700**	ug/L	400	108	40		04/20/17 16:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		40		04/20/17 16:32	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		40		04/20/17 16:32	17060-07-0	
Toluene-d8 (S)	105	%	70-130		40		04/20/17 16:32	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW25 **Lab ID: 92337502004** Collected: 04/15/17 10:47 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 19:00	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	117	%	60-140		1	04/20/17 14:27	04/20/17 19:00	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:35	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 16:48	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 16:48	994-05-8	
Benzene	**11.6**	ug/L	5.0	1.7	1		04/20/17 16:48	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 16:48	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 16:48	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 16:48	762-75-4	P5
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 16:48	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 16:48	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 16:48	64-17-5	M1
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 16:48	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 16:48	637-92-3	
Methyl-tert-butyl ether	**3.7J**	ug/L	5.0	1.7	1		04/20/17 16:48	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 16:48	91-20-3	
Toluene	**2.0J**	ug/L	5.0	1.6	1		04/20/17 16:48	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 16:48	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		04/20/17 16:48	460-00-4	
1,2-Dichloroethane-d4 (S)	99	%	70-130		1		04/20/17 16:48	17060-07-0	
Toluene-d8 (S)	107	%	70-130		1		04/20/17 16:48	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW22 **Lab ID: 92337502005** Collected: 04/15/17 11:50 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 19:20	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	99	%	60-140		1	04/20/17 14:27	04/20/17 19:20	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:38	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 08:49	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 08:49	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 08:49	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 08:49	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 08:49	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 08:49	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 08:49	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 08:49	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 08:49	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 08:49	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 08:49	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 08:49	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 08:49	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 08:49	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 08:49	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 08:49	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		04/20/17 08:49	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		04/20/17 08:49	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW22I **Lab ID: 92337502006** Collected: 04/15/17 13:46 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 19:40	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	101	%	60-140		1	04/20/17 14:27	04/20/17 19:40	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:42	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 09:06	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 09:06	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 09:06	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 09:06	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 09:06	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 09:06	762-75-4	M1
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 09:06	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:06	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 09:06	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 09:06	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 09:06	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:06	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 09:06	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 09:06	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 09:06	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 09:06	460-00-4	
1,2-Dichloroethane-d4 (S)	90	%	70-130		1		04/20/17 09:06	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		04/20/17 09:06	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW26 **Lab ID: 92337502007** Collected: 04/15/17 14:30 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 20:00	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	04/20/17 14:27	04/20/17 20:00	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:45	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 09:23	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 09:23	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 09:23	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 09:23	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 09:23	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 09:23	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 09:23	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:23	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 09:23	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 09:23	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 09:23	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:23	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 09:23	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 09:23	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 09:23	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 09:23	460-00-4	
1,2-Dichloroethane-d4 (S)	91	%	70-130		1		04/20/17 09:23	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		04/20/17 09:23	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-MW26I **Lab ID: 92337502008** Collected: 04/15/17 16:05 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 20:20	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	95	%	60-140		1	04/20/17 14:27	04/20/17 20:20	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 17:57	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 09:40	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 09:40	994-05-8	
Benzene	**2.6J**	ug/L	5.0	1.7	1		04/20/17 09:40	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 09:40	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 09:40	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 09:40	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 09:40	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:40	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 09:40	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 09:40	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 09:40	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 09:40	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 09:40	91-20-3	
Toluene	**2.8J**	ug/L	5.0	1.6	1		04/20/17 09:40	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 09:40	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		04/20/17 09:40	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		1		04/20/17 09:40	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		04/20/17 09:40	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: 12430-RW03 **Lab ID: 92337502009** Collected: 04/15/17 19:02 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:27	04/20/17 20:39	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	159	%	60-140		1	04/20/17 14:27	04/20/17 20:39	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 18:00	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	10000	7680	100		04/20/17 17:20	75-85-4	
tert-Amylmethyl ether	ND	ug/L	1000	340	100		04/20/17 17:20	994-05-8	
Benzene	**7020**	ug/L	500	170	100		04/20/17 17:20	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	10000	3210	100		04/20/17 17:20	624-95-3	
tert-Butyl Alcohol	ND	ug/L	10000	5770	100		04/20/17 17:20	75-65-0	
tert-Butyl Formate	ND	ug/L	5000	730	100		04/20/17 17:20	762-75-4	
1,2-Dichloroethane	ND	ug/L	500	180	100		04/20/17 17:20	107-06-2	
Diisopropyl ether	**251J**	ug/L	500	170	100		04/20/17 17:20	108-20-3	
Ethanol	ND	ug/L	20000	13100	100		04/20/17 17:20	64-17-5	
Ethylbenzene	**1890**	ug/L	500	160	100		04/20/17 17:20	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1000	360	100		04/20/17 17:20	637-92-3	
Methyl-tert-butyl ether	**298J**	ug/L	500	170	100		04/20/17 17:20	1634-04-4	
Naphthalene	**275J**	ug/L	500	200	100		04/20/17 17:20	91-20-3	
Toluene	**12200**	ug/L	500	160	100		04/20/17 17:20	108-88-3	
Xylene (Total)	**9200**	ug/L	1000	270	100		04/20/17 17:20	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		100		04/20/17 17:20	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		100		04/20/17 17:20	17060-07-0	
Toluene-d8 (S)	105	%	70-130		100		04/20/17 17:20	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: FIELD BLANK **Lab ID: 92337502010** Collected: 04/15/17 11:55 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:28	04/20/17 20:59	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	95	%	60-140		1	04/20/17 14:28	04/20/17 20:59	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 04:15	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 04:15	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 04:15	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 04:15	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 04:15	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 04:15	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 04:15	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 04:15	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 04:15	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 04:15	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 04:15	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 04:15	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 04:15	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 04:15	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 04:15	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		04/20/17 04:15	460-00-4	
1,2-Dichloroethane-d4 (S)	93	%	70-130		1		04/20/17 04:15	17060-07-0	
Toluene-d8 (S)	99	%	70-130		1		04/20/17 04:15	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: TRIP BLANK **Lab ID: 92337502011** Collected: 04/15/17 00:00 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:28	04/20/17 21:19	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	97	%	60-140		1	04/20/17 14:28	04/20/17 21:19	301-79-56	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 04:32	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 04:32	994-05-8	
Benzene	ND	ug/L	5.0	1.7	1		04/20/17 04:32	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 04:32	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 04:32	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 04:32	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 04:32	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 04:32	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 04:32	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 04:32	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 04:32	637-92-3	
Methyl-tert-butyl ether	ND	ug/L	5.0	1.7	1		04/20/17 04:32	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 04:32	91-20-3	
Toluene	ND	ug/L	5.0	1.6	1		04/20/17 04:32	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 04:32	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		04/20/17 04:32	460-00-4	
1,2-Dichloroethane-d4 (S)	94	%	70-130		1		04/20/17 04:32	17060-07-0	
Toluene-d8 (S)	100	%	70-130		1		04/20/17 04:32	2037-26-5	

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: DUP A **Lab ID: 92337502012** Collected: 04/15/17 19:05 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:28	04/20/17 21:39	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	158	%	60-140		1	04/20/17 14:28	04/20/17 21:39	301-79-56	S3
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 18:04	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	10000	7680	100		04/20/17 17:52	75-85-4	
tert-Amylmethyl ether	ND	ug/L	1000	340	100		04/20/17 17:52	994-05-8	
Benzene	**6750**	ug/L	500	170	100		04/20/17 17:52	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	10000	3210	100		04/20/17 17:52	624-95-3	
tert-Butyl Alcohol	ND	ug/L	10000	5770	100		04/20/17 17:52	75-65-0	
tert-Butyl Formate	ND	ug/L	5000	730	100		04/20/17 17:52	762-75-4	
1,2-Dichloroethane	ND	ug/L	500	180	100		04/20/17 17:52	107-06-2	
Diisopropyl ether	**257J**	ug/L	500	170	100		04/20/17 17:52	108-20-3	
Ethanol	ND	ug/L	20000	13100	100		04/20/17 17:52	64-17-5	
Ethylbenzene	**1890**	ug/L	500	160	100		04/20/17 17:52	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	1000	360	100		04/20/17 17:52	637-92-3	
Methyl-tert-butyl ether	**304J**	ug/L	500	170	100		04/20/17 17:52	1634-04-4	
Naphthalene	**269J**	ug/L	500	200	100		04/20/17 17:52	91-20-3	
Toluene	**11700**	ug/L	500	160	100		04/20/17 17:52	108-88-3	
Xylene (Total)	**9100**	ug/L	1000	270	100		04/20/17 17:52	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		100		04/20/17 17:52	460-00-4	
1,2-Dichloroethane-d4 (S)	95	%	70-130		100		04/20/17 17:52	17060-07-0	
Toluene-d8 (S)	105	%	70-130		100		04/20/17 17:52	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Westside Quick Stop
Pace Project No.: 92337502

Sample: DUP B **Lab ID: 92337502013** Collected: 04/15/17 10:50 Received: 04/18/17 11:36 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8011 GCS EDB and DBCP	Analytical Method: EPA 8011 Preparation Method: EPA 8011								
1,2-Dibromoethane (EDB)	ND	ug/L	0.020	0.020	1	04/20/17 14:28	04/20/17 21:59	106-93-4	
Surrogates									
1-Chloro-2-bromopropane (S)	100	%	60-140		1	04/20/17 14:28	04/20/17 21:59	301-79-56	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010A								
Lead	ND	ug/L	5.0	2.5	1	04/19/17 14:45	04/21/17 18:07	7439-92-1	
8260 MSV	Analytical Method: EPA 8260								
tert-Amyl Alcohol	ND	ug/L	100	76.8	1		04/20/17 18:08	75-85-4	
tert-Amylmethyl ether	ND	ug/L	10.0	3.4	1		04/20/17 18:08	994-05-8	
Benzene	**11.4**	ug/L	5.0	1.7	1		04/20/17 18:08	71-43-2	
3,3-Dimethyl-1-Butanol	ND	ug/L	100	32.1	1		04/20/17 18:08	624-95-3	
tert-Butyl Alcohol	ND	ug/L	100	57.7	1		04/20/17 18:08	75-65-0	
tert-Butyl Formate	ND	ug/L	50.0	7.3	1		04/20/17 18:08	762-75-4	
1,2-Dichloroethane	ND	ug/L	5.0	1.8	1		04/20/17 18:08	107-06-2	
Diisopropyl ether	ND	ug/L	5.0	1.7	1		04/20/17 18:08	108-20-3	
Ethanol	ND	ug/L	200	131	1		04/20/17 18:08	64-17-5	
Ethylbenzene	ND	ug/L	5.0	1.6	1		04/20/17 18:08	100-41-4	
Ethyl-tert-butyl ether	ND	ug/L	10.0	3.6	1		04/20/17 18:08	637-92-3	
Methyl-tert-butyl ether	**3.5J**	ug/L	5.0	1.7	1		04/20/17 18:08	1634-04-4	
Naphthalene	ND	ug/L	5.0	2.0	1		04/20/17 18:08	91-20-3	
Toluene	**2.5J**	ug/L	5.0	1.6	1		04/20/17 18:08	108-88-3	
Xylene (Total)	ND	ug/L	10.0	2.7	1		04/20/17 18:08	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		04/20/17 18:08	460-00-4	
1,2-Dichloroethane-d4 (S)	98	%	70-130		1		04/20/17 18:08	17060-07-0	
Toluene-d8 (S)	108	%	70-130		1		04/20/17 18:08	2037-26-5	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

QC Batch: 357181 Analysis Method: EPA 6010
QC Batch Method: EPA 3010A Analysis Description: 6010 MET
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502005, 92337502006, 92337502007, 92337502008, 92337502009, 92337502012, 92337502013

METHOD BLANK: 1981335 Matrix: Water
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502005, 92337502006, 92337502007, 92337502008, 92337502009, 92337502012, 92337502013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Lead	ug/L	ND	5.0	2.5	04/21/17 16:42	

LABORATORY CONTROL SAMPLE: 1981336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Lead	ug/L	500	494	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1981337 1981338

Parameter	Units	92337405017 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Lead	ug/L	ND	500	500	481	483	96	97	75-125	0	20	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

QC Batch: 357235 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337502010, 92337502011

METHOD BLANK: 1981729 Matrix: Water
Associated Lab Samples: 92337502010, 92337502011

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/20/17 02:16	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/20/17 02:16	
Benzene	ug/L	ND	5.0	1.7	04/20/17 02:16	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/20/17 02:16	
Ethanol	ug/L	ND	200	131	04/20/17 02:16	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/20/17 02:16	
Ethylbenzene	ug/L	ND	5.0	1.6	04/20/17 02:16	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/20/17 02:16	
Naphthalene	ug/L	ND	5.0	2.0	04/20/17 02:16	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/20/17 02:16	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/20/17 02:16	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/20/17 02:16	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/20/17 02:16	
Toluene	ug/L	ND	5.0	1.6	04/20/17 02:16	
Xylene (Total)	ug/L	ND	10.0	2.7	04/20/17 02:16	
1,2-Dichloroethane-d4 (S)	%	93	70-130		04/20/17 02:16	
4-Bromofluorobenzene (S)	%	95	70-130		04/20/17 02:16	
Toluene-d8 (S)	%	101	70-130		04/20/17 02:16	

LABORATORY CONTROL SAMPLE: 1981730

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	43.4	87	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	999	100	70-130	
Benzene	ug/L	50	47.1	94	70-130	
Diisopropyl ether	ug/L	50	42.9	86	70-130	
Ethanol	ug/L	2000	2410	120	70-130	
Ethyl-tert-butyl ether	ug/L	100	86.8	87	70-130	
Ethylbenzene	ug/L	50	45.4	91	70-130	
Methyl-tert-butyl ether	ug/L	50	43.3	87	70-130	
Naphthalene	ug/L	50	45.4	91	70-130	
tert-Amyl Alcohol	ug/L	1000	1060	106	70-130	
tert-Amylmethyl ether	ug/L	100	92.9	93	70-130	
tert-Butyl Alcohol	ug/L	500	502	100	70-130	
tert-Butyl Formate	ug/L	400	348	87	70-130	
Toluene	ug/L	50	46.3	93	70-130	
Xylene (Total)	ug/L	150	136	90	70-130	
1,2-Dichloroethane-d4 (S)	%			91	70-130	
4-Bromofluorobenzene (S)	%			99	70-130	
Toluene-d8 (S)	%			99	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

MATRIX SPIKE SAMPLE: 1982644

Parameter	Units	92337287002 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	20.3	101	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	409	102	70-130	
Benzene	ug/L	ND	20	22.1	111	70-130	
Diisopropyl ether	ug/L	ND	20	19.8	99	70-130	
Ethanol	ug/L	ND	800	908	113	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	40.0	100	70-130	
Ethylbenzene	ug/L	ND	20	21.6	108	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	20.0	99	70-130	
Naphthalene	ug/L	ND	20	19.9	99	70-130	
tert-Amyl Alcohol	ug/L	ND	400	405	101	70-130	
tert-Amylmethyl ether	ug/L	ND	40	39.3	98	70-130	
tert-Butyl Alcohol	ug/L	ND	200	276	138	70-130	M1
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	M1,P5
Toluene	ug/L	ND	20	22.0	110	70-130	
1,2-Dichloroethane-d4 (S)	%				101	70-130	
4-Bromofluorobenzene (S)	%				99	70-130	
Toluene-d8 (S)	%				99	70-130	

SAMPLE DUPLICATE: 1982645

Parameter	Units	92337287003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	92	102	10		
4-Bromofluorobenzene (S)	%	97	97	1		
Toluene-d8 (S)	%	98	101	3		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

QC Batch: 357236 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337502005, 92337502006, 92337502007, 92337502008

METHOD BLANK: 1981731 Matrix: Water
Associated Lab Samples: 92337502005, 92337502006, 92337502007, 92337502008

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/20/17 02:33	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/20/17 02:33	
Benzene	ug/L	ND	5.0	1.7	04/20/17 02:33	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/20/17 02:33	
Ethanol	ug/L	ND	200	131	04/20/17 02:33	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/20/17 02:33	
Ethylbenzene	ug/L	ND	5.0	1.6	04/20/17 02:33	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/20/17 02:33	
Naphthalene	ug/L	ND	5.0	2.0	04/20/17 02:33	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/20/17 02:33	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/20/17 02:33	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/20/17 02:33	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/20/17 02:33	
Toluene	ug/L	ND	5.0	1.6	04/20/17 02:33	
Xylene (Total)	ug/L	ND	10.0	2.7	04/20/17 02:33	
1,2-Dichloroethane-d4 (S)	%	93	70-130		04/20/17 02:33	
4-Bromofluorobenzene (S)	%	96	70-130		04/20/17 02:33	
Toluene-d8 (S)	%	100	70-130		04/20/17 02:33	

LABORATORY CONTROL SAMPLE: 1981732

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	41.6	83	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	959	96	70-130	
Benzene	ug/L	50	46.3	93	70-130	
Diisopropyl ether	ug/L	50	42.4	85	70-130	
Ethanol	ug/L	2000	2310	115	70-130	
Ethyl-tert-butyl ether	ug/L	100	87.4	87	70-130	
Ethylbenzene	ug/L	50	45.0	90	70-130	
Methyl-tert-butyl ether	ug/L	50	43.0	86	70-130	
Naphthalene	ug/L	50	45.3	91	70-130	
tert-Amyl Alcohol	ug/L	1000	1010	101	70-130	
tert-Amylmethyl ether	ug/L	100	91.7	92	70-130	
tert-Butyl Alcohol	ug/L	500	486	97	70-130	
tert-Butyl Formate	ug/L	400	344	86	70-130	
Toluene	ug/L	50	45.0	90	70-130	
Xylene (Total)	ug/L	150	135	90	70-130	
1,2-Dichloroethane-d4 (S)	%			92	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			97	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

MATRIX SPIKE SAMPLE: 1982524

Parameter	Units	92337502006 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	17.4	87	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	385	96	70-130	
Benzene	ug/L	ND	20	21.7	103	70-130	
Diisopropyl ether	ug/L	ND	20	17.6	88	70-130	
Ethanol	ug/L	ND	800	916	115	70-130	
Ethyl-tert-butyl ether	ug/L	ND	40	36.2	90	70-130	
Ethylbenzene	ug/L	ND	20	19.6	98	70-130	
Methyl-tert-butyl ether	ug/L	ND	20	18.0	90	70-130	
Naphthalene	ug/L	ND	20	18.4	91	70-130	
tert-Amyl Alcohol	ug/L	ND	400	403	99	70-130	
tert-Amylmethyl ether	ug/L	ND	40	38.0	95	70-130	
tert-Butyl Alcohol	ug/L	ND	200	226	113	70-130	
tert-Butyl Formate	ug/L	ND	160	92.8	58	70-130	M1,P5
Toluene	ug/L	ND	20	21.0	103	70-130	
1,2-Dichloroethane-d4 (S)	%				89	70-130	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				98	70-130	

SAMPLE DUPLICATE: 1982523

Parameter	Units	92337502005 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	ND	ND		30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	ND	ND		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	ND	ND		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	91	91	0		
4-Bromofluorobenzene (S)	%	98	100	2		
Toluene-d8 (S)	%	100	101	0		

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

QC Batch: 357409 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV SC
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502009, 92337502012, 92337502013

METHOD BLANK: 1982596 Matrix: Water
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502009, 92337502012, 92337502013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	5.0	1.8	04/20/17 12:15	
3,3-Dimethyl-1-Butanol	ug/L	ND	100	32.1	04/20/17 12:15	
Benzene	ug/L	ND	5.0	1.7	04/20/17 12:15	
Diisopropyl ether	ug/L	ND	5.0	1.7	04/20/17 12:15	
Ethanol	ug/L	ND	200	131	04/20/17 12:15	
Ethyl-tert-butyl ether	ug/L	ND	10.0	3.6	04/20/17 12:15	
Ethylbenzene	ug/L	ND	5.0	1.6	04/20/17 12:15	
Methyl-tert-butyl ether	ug/L	ND	5.0	1.7	04/20/17 12:15	
Naphthalene	ug/L	ND	5.0	2.0	04/20/17 12:15	
tert-Amyl Alcohol	ug/L	ND	100	76.8	04/20/17 12:15	
tert-Amylmethyl ether	ug/L	ND	10.0	3.4	04/20/17 12:15	
tert-Butyl Alcohol	ug/L	ND	100	57.7	04/20/17 12:15	
tert-Butyl Formate	ug/L	ND	50.0	7.3	04/20/17 12:15	
Toluene	ug/L	ND	5.0	1.6	04/20/17 12:15	
Xylene (Total)	ug/L	ND	10.0	2.7	04/20/17 12:15	
1,2-Dichloroethane-d4 (S)	%	96	70-130		04/20/17 12:15	
4-Bromofluorobenzene (S)	%	102	70-130		04/20/17 12:15	
Toluene-d8 (S)	%	110	70-130		04/20/17 12:15	

LABORATORY CONTROL SAMPLE: 1982597

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	50	47.3	95	70-130	
3,3-Dimethyl-1-Butanol	ug/L	1000	830	83	70-130	
Benzene	ug/L	50	56.1	112	70-130	
Diisopropyl ether	ug/L	50	50.6	101	70-130	
Ethanol	ug/L	2000	2470	123	70-130	
Ethyl-tert-butyl ether	ug/L	100	105	105	70-130	
Ethylbenzene	ug/L	50	53.7	107	70-130	
Methyl-tert-butyl ether	ug/L	50	53.2	106	70-130	
Naphthalene	ug/L	50	48.5	97	70-130	
tert-Amyl Alcohol	ug/L	1000	879	88	70-130	
tert-Amylmethyl ether	ug/L	100	105	105	70-130	
tert-Butyl Alcohol	ug/L	500	411	82	70-130	
tert-Butyl Formate	ug/L	400	380	95	70-130	
Toluene	ug/L	50	51.7	103	70-130	
Xylene (Total)	ug/L	150	159	106	70-130	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			100	70-130	
Toluene-d8 (S)	%			97	70-130	

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QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

MATRIX SPIKE SAMPLE: 1982598

Parameter	Units	92337502004 Result	Spike Conc.	MS Result	MS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	ND	20	20.0	100	70-130	
3,3-Dimethyl-1-Butanol	ug/L	ND	400	326	82	70-130	
Benzene	ug/L	11.6	20	36.4	124	70-130	
Diisopropyl ether	ug/L	ND	20	21.1	99	70-130	
Ethanol	ug/L	ND	800	403	50	70-130	M1
Ethyl-tert-butyl ether	ug/L	ND	40	39.7	99	70-130	
Ethylbenzene	ug/L	ND	20	23.5	114	70-130	
Methyl-tert-butyl ether	ug/L	3.7J	20	25.5	109	70-130	
Naphthalene	ug/L	ND	20	21.7	106	70-130	
tert-Amyl Alcohol	ug/L	ND	400	367	84	70-130	
tert-Amylmethyl ether	ug/L	ND	40	41.2	103	70-130	
tert-Butyl Alcohol	ug/L	ND	200	182	90	70-130	
tert-Butyl Formate	ug/L	ND	160	ND	0	70-130	P5
Toluene	ug/L	2.0J	20	24.5	112	70-130	
1,2-Dichloroethane-d4 (S)	%				94	70-130	
4-Bromofluorobenzene (S)	%				98	70-130	
Toluene-d8 (S)	%				98	70-130	

SAMPLE DUPLICATE: 1982599

Parameter	Units	92337502013 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dichloroethane	ug/L	ND	ND		30	
3,3-Dimethyl-1-Butanol	ug/L	ND	ND		30	
Benzene	ug/L	11.4	12.3	8	30	
Diisopropyl ether	ug/L	ND	ND		30	
Ethanol	ug/L	ND	ND		30	
Ethyl-tert-butyl ether	ug/L	ND	ND		30	
Ethylbenzene	ug/L	ND	ND		30	
Methyl-tert-butyl ether	ug/L	3.5J	3.5J		30	
Naphthalene	ug/L	ND	ND		30	
tert-Amyl Alcohol	ug/L	ND	ND		30	
tert-Amylmethyl ether	ug/L	ND	ND		30	
tert-Butyl Alcohol	ug/L	ND	ND		30	
tert-Butyl Formate	ug/L	ND	ND		30	
Toluene	ug/L	2.5J	2.1J		30	
Xylene (Total)	ug/L	ND	ND		30	
1,2-Dichloroethane-d4 (S)	%	98	100	2		
4-Bromofluorobenzene (S)	%	102	100	2		
Toluene-d8 (S)	%	108	109	1		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALITY CONTROL DATA

Project: Westside Quick Stop
Pace Project No.: 92337502

QC Batch: 357349 Analysis Method: EPA 8011
QC Batch Method: EPA 8011 Analysis Description: GCS 8011 EDB DBCP
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502005, 92337502006, 92337502007, 92337502008, 92337502009, 92337502010, 92337502011, 92337502012, 92337502013

METHOD BLANK: 1982318 Matrix: Water
Associated Lab Samples: 92337502001, 92337502002, 92337502003, 92337502004, 92337502005, 92337502006, 92337502007, 92337502008, 92337502009, 92337502010, 92337502011, 92337502012, 92337502013

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.019	0.019	04/20/17 15:41	
1-Chloro-2-bromopropane (S)	%	99	60-140		04/20/17 15:41	

LABORATORY CONTROL SAMPLE & LCSD: 1982319 1982320

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	.25	0.22	0.23	91	96	60-140	4	20	
1-Chloro-2-bromopropane (S)	%				100	100	60-140			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1982321 1982322

Parameter	Units	92337502002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2-Dibromoethane (EDB)	ug/L	ND	.25	.25	0.12	0.12	48	50	60-140	5	20	M1
1-Chloro-2-bromopropane (S)	%						121	121	60-140			

SAMPLE DUPLICATE: 1982323

Parameter	Units	92337502003 Result	Dup Result	RPD	Max RPD	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	0.42	0.55	26	20	D6
1-Chloro-2-bromopropane (S)	%	126	132	8		

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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

QUALIFIERS

Project: Westside Quick Stop
Pace Project No.: 92337502

DEFINITIONS

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

ND - Not Detected at or above adjusted reporting limit.

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

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

Acid preservation may not be appropriate for 2 Chloroethylvinyl ether.

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

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

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

TNI - The NELAC Institute.

LABORATORIES

PASI-A	Pace Analytical Services - Asheville
PASI-C	Pace Analytical Services - Charlotte

ANALYTE QUALIFIERS

C2	Relative percent difference between results from each column was greater than 40%. The lower of the two results was reported.
D6	The precision between the sample and sample duplicate exceeded laboratory control limits.
M1	Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.
P5	The EPA or method required sample preservation degrades this compound, therefore acceptable recoveries may not be achieved in sample matrix spikes.
S3	Surrogate recovery exceeded laboratory control limits. Analyte presence below reporting limits in associated sample.

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

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Westside Quick Stop
Pace Project No.: 92337502

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
92337502001	12430-MW12	EPA 8011	357349	EPA 8011	357441
92337502002	12430-MW12I	EPA 8011	357349	EPA 8011	357441
92337502003	12430-MW21	EPA 8011	357349	EPA 8011	357441
92337502004	12430-MW25	EPA 8011	357349	EPA 8011	357441
92337502005	12430-MW22	EPA 8011	357349	EPA 8011	357441
92337502006	12430-MW22I	EPA 8011	357349	EPA 8011	357441
92337502007	12430-MW26	EPA 8011	357349	EPA 8011	357441
92337502008	12430-MW26I	EPA 8011	357349	EPA 8011	357441
92337502009	12430-RW03	EPA 8011	357349	EPA 8011	357441
92337502010	FIELD BLANK	EPA 8011	357349	EPA 8011	357441
92337502011	TRIP BLANK	EPA 8011	357349	EPA 8011	357441
92337502012	DUP A	EPA 8011	357349	EPA 8011	357441
92337502013	DUP B	EPA 8011	357349	EPA 8011	357441
92337502001	12430-MW12	EPA 3010A	357181	EPA 6010	357383
92337502002	12430-MW12I	EPA 3010A	357181	EPA 6010	357383
92337502003	12430-MW21	EPA 3010A	357181	EPA 6010	357383
92337502004	12430-MW25	EPA 3010A	357181	EPA 6010	357383
92337502005	12430-MW22	EPA 3010A	357181	EPA 6010	357383
92337502006	12430-MW22I	EPA 3010A	357181	EPA 6010	357383
92337502007	12430-MW26	EPA 3010A	357181	EPA 6010	357383
92337502008	12430-MW26I	EPA 3010A	357181	EPA 6010	357383
92337502009	12430-RW03	EPA 3010A	357181	EPA 6010	357383
92337502012	DUP A	EPA 3010A	357181	EPA 6010	357383
92337502013	DUP B	EPA 3010A	357181	EPA 6010	357383
92337502001	12430-MW12	EPA 8260	357409		
92337502002	12430-MW12I	EPA 8260	357409		
92337502003	12430-MW21	EPA 8260	357409		
92337502004	12430-MW25	EPA 8260	357409		
92337502005	12430-MW22	EPA 8260	357236		
92337502006	12430-MW22I	EPA 8260	357236		
92337502007	12430-MW26	EPA 8260	357236		
92337502008	12430-MW26I	EPA 8260	357236		
92337502009	12430-RW03	EPA 8260	357409		
92337502010	FIELD BLANK	EPA 8260	357235		
92337502011	TRIP BLANK	EPA 8260	357235		
92337502012	DUP A	EPA 8260	357409		
92337502013	DUP B	EPA 8260	357409		

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

Sample Condition Upon Receipt

Client Name: PetroTech **Project #:**

WO# : 92337502

92337502

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

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

Date/Initials Person Examining Contents: 4/18/17

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

Thermometer: ☐ IR Gun ID: S **Type of Ice:** ☐ Wet ☐ Blue ☐ None ☐ Samples on ice, cooling process has begun

Correction Factor: 0 **Cooler Temp Corrected (°C):** 3.4.1 **Biological Tissue Frozen?** ☐ Yes ☐ No ☐ N/A

Temp should be above freezing to 6°C

USDA Regulated Soil (☐ N/A, water sample)

Did samples originate in a quarantine zone within the United States: CA, NY, or SC (check maps)? ☐ Yes ☐ No

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

				Comments/Discrepancy:
Chain of Custody Present?	☐ Yes	☐ No	☐ N/A	1.
Samples Arrived within Hold Time?	☐ Yes	☐ No	☐ N/A	2.
Short Hold Time Analysis (<72 hr.)?	☐ Yes	☐ No	☐ N/A	3.
Rush Turn Around Time Requested?	☐ Yes	☐ No	☐ N/A	4.
Sufficient Volume?	☐ Yes	☐ No	☐ N/A	5.
Correct Containers Used?	☐ Yes	☐ No	☐ N/A	6. No metals for field blank
-Pace Containers Used?	☐ Yes	☐ No	☐ N/A	
Containers Intact?	☐ Yes	☐ No	☐ N/A	7.
Samples Field Filtered?	☐ Yes	☐ No	☐ N/A	8. Note if sediment is visible in the dissolved container
Sample Labels Match COC?	☐ Yes	☐ No	☐ N/A	9.
-Includes Date/Time/ID/Analysis Matrix: WW				
Headspace in VOA Vials (>5-6mm)?	☐ Yes	☐ No	☐ N/A	10.
Trip Blank Present?	☐ Yes	☐ No	☐ N/A	11.
Trip Blank Custody Seals Present?	☐ Yes	☐ No	☐ N/A	

CLIENT NOTIFICATION/RESOLUTION **Field Data Required?** ☐ Yes ☐ No

Person Contacted: _____ Date/Time: _____

Comments/Sample Discrepancy: _____

Project Manager SCURF Review: (RE) **Date:** 4/20

Project Manager SRF Review: (RE) **Date:** 4/20

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

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

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

Project **WO#: 92337502**

PM: PTE Due Date: 04/25/17

CLIENT: 92-Petra-Tec

Item#	BP4U-125 mL Plastic Unpreserved (N/A) (Cl-)	BP3U-250 mL Plastic Unpreserved (N/A)	BP2U-500 mL Plastic Unpreserved (N/A)	BP1U-1 liter Plastic Unpreserved (N/A)	BP3S-250 mL Plastic H2SO4 (pH < 2) (Cl-)	BP3N-250 mL plastic HNO3 (pH < 2)	BP3Z-250 mL Plastic ZN Acetate & NaOH (>9)	BP3C-250 mL Plastic NaOH (pH > 12) (Cl-)	WGFU-Wide-mouthed Glass jar Unpreserved	AG1U-1 liter Amber Unpreserved (N/A) (Cl-)	AG1H-1 liter Amber HCl (pH < 2)	AG3U-250 mL Amber Unpreserved (N/A) (Cl-)	AG1S-1 liter Amber H2SO4 (pH < 2)	AG3S-250 mL Amber H2SO4 (pH < 2)	AG3A(DG3A)-250 mL Amber NH4Cl (N/A)(Cl-)	DG9H-40 mL VOA HCl (N/A)	VG9T-40 mL VOA Na2S2O3 (N/A)	VG9U-40 mL VOA Unp (N/A)	DG9P-40 mL VOA H3PO4 (N/A)	VOAK (6 vials per kit)-5035 kit (N/A)	V/GK (3 vials per kit)-VPH/Gas kit (N/A)	SP5T-125 mL Sterile Plastic (N/A – lab)	SP2T-250 mL Sterile Plastic (N/A – lab)	BP3A-250 mL Plastic (NH2)2SO4 (9.3-9.7)	Cubitainer	VSGU-20 mL Scintillation vials (N/A)	GN	
1						1										6												
2						1										6												
3						1										6												
4						1										6												
5						1										6												
6						1										6												
7						1										6												
8						1										6												
9						1										6												
10																6	2 RPS 4/15											
11						1										6												
12					1											6												
					1											6												

pH Adjustment Log for Preserved Samples

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

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: Petra-Tech Environmental	Report To: Slack, Trever	Attention:
Address: 2435 East North Street	Copy To:	Company Name:
Suite 1108-202, Greenville, SC 29615		Address:
Email:	Purchase Order #:	Pace Quote:
Phone: Fax	Project Name: Westside Quick Stop	Pace Project Manager: taylor.ezell@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 6009-3

Regulatory Agency
State / Location
SC

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

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SCDHEC VOC & EDB	Lead	Trip BLANK	DI Water	Coolers	Residual Chlorine (Y/N)	
1	12430-MW12			4/15/17			0946												X	X					92337364-001
2	12430-MW12I +0						0900												X	X					002
3	12430-MW21						1008												X	X					003
4	12430-MW25 +0						1047												X	X					004
5	12430-MW22						1150												X	X					005
6	12430-MW22I						1346												X	X					006
7	12430-MW26						1430												X	X					007
8	12430-MW26I						1605												X	X					008
9	12430-RW03						1902												X	X					009
10	Field Blank						1155												X	X					010
11	Trip Blank 1																				X				011
12	~~[illegible]~~ Dup A			4/15			1905																		

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	[signature]			Sta Bell	4.18.17	10:15				
	Sta Bell	9.18.17	11:30	[signature]	4/18/17	11:36	3.1	Y	~	Y
							4.1			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Trever Z. Slack

SIGNATURE of SAMPLER: [signature]

DATE Signed: 4/15/17

Pace Analytical

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	Petra-Tech Environmental	Report To:	Slack, Trever	Attention:	
Address:	2435 East North Street	Copy To:		Company Name:	
Suite 1108-202, Greenville, SC 29615				Address:	
Email:		Purchase Order #:		Pace Quote:	
Phone:	Fax	Project Name:	Westside Quick Stop	Pace Project Manager:	taylor.ezell@pacelabs.com,
Requested Due Date:		Project #:		Pace Profile #:	6009-3

Regulatory Agency
State / Location
SC

SAMPLE ID
One Character per box.
(A-Z, 0-9 / , -)
Sample Ids must be unique

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

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	SCDHEC VOC & EDB	Lead	Trip BLANK	DI Water	Coolers	Residual Chlorine (Y/N)	92337364-002
1	~~[illegible]~~ Dup 13			4/15	1050														X	X					
2	~~Trip Blank 2~~																			~~X~~					
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
				Stc Bell	4.18.17	10:15				
	Stc Bell	4.18.17	11:36	[signature]	4/18/17	11:36	3.1	Y	N	Y
							4.1			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: DATE Signed:

Intra-Regional Chain of Custody

Pace Analytical®
www.pacelabs.com

Workorder: 92337502 **Workorder Name:** Westside Quick Stop **Owner Received Date:** 4/18/2017 **Due Date:** 4/25/2017

Received at:	Send To Lab:
Pace Analytical Asheville 2225 Riverside Dr. Asheville, NC 28804 Phone (704)875-9092	Pace Analytical Charlotte 9800 Kincey Ave. Suite 100 Huntersville, NC 28078 Phone (704)875-9092

Report To:
Taylor Ezell

Item	Sample ID	Sample Type	Collect Date/Time	Lab ID	Matrix	Preserved Containers						Requested Analysis												LAB USE ONLY
						HCL						EPA 8260	EPA 8011											
1	12430-MW12	PS	4/15/2017 09:46	92337502001	Water							X	X											
2	12430-MW12I	PS	4/15/2017 09:00	92337502002	Water							X	X											
3	12430-MW21	PS	4/15/2017 10:08	92337502003	Water							X	X											
4	12430-MW25	PS	4/15/2017 10:47	92337502004	Water							X	X											
5	12430-MW22	PS	4/15/2017 11:50	92337502005	Water							X	X											
6	12430-MW22I	PS	4/15/2017 13:46	92337502006	Water							X	X											
7	12430-MW26	PS	4/15/2017 14:30	92337502007	Water							X	X											
8	12430-MW26I	PS	4/15/2017 16:05	92337502008	Water							X	X											
9	12430-RW03	PS	4/15/2017 19:02	92337502009	Water							X	X											
10	FIELD BLANK	PS	4/15/2017 11:55	92337502010	Water							X	X											
11	TRIP BLANK	PS	4/15/2017 00:00	92337502011	Water							X	X											
12	DUP A	PS	4/15/2017 19:05	92337502012	Water							X	X											
13	DUP B	PS	4/15/2017 10:50	92337502013	Water							X	X											

Transfers	Released By	Date/Time	Received By	Date/Time	Comments
1	[illegible]	4/19/17 1700	[illegible]	4/19/17 1705	
2	[illegible]	4/18/17 2355	[illegible]	4/19/17 0830	
3					
4					

Cooler Temperature on Receipt 2.3 °C | **Custody Seal** Y or (N) | **Received on Ice** (Y) or N | **Samples Intact** (Y) or N

****In order to maintain client confidentiality, location/name of the sampling site, sampler's name and signature may not be provided on this COC document. This chain of custody is considered complete as is since this information is available in the owner laboratory.*

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX C

TAX MAP AND TAX MAP INFORMATION TABLE

Not Applicable to Current Scope of Work

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX D

SOIL BORING LOGS, FIELD SCREENING LOGS, WATER WELL RECORDS
(DHEC FORM 1903)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **GW01**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 35.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = +5000 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
35.00 ft. Date Started: **1/19/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **25.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **25.00** ft. and **35.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **29.60** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.95"N 82º25'59.95"W

3. PUBLIC SYSTEM NAME: 12430 - **GW02**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 35.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 658 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
35.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **25.00** ft. depth
in. to ft. depth
Height: Below Surface: ft.
Drive Shoe:
Weight: lb./ft.

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **25.00** ft. and **35.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **29.10** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **GW03**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 35.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0.9 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
35.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **25.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **25.00** ft. and **35.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **29.50** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **GW04**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0.4 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **24.90** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **GW05**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 35.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 76.2 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
35.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **25.00** ft. depth
in. to ft. depth
Height: Below Surface: ft.
Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **25.00** ft. and **35.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **30.60** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C **D**
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **GW06**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **24.10** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A B C **D**
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: *Michael Carey*
Date: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'51.96"N 82º26'00.53"W

3. PUBLIC SYSTEM NAME: 12430 - **GW07**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0.2 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **25.00** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'51.75"N 82º25'59.51"W

3. PUBLIC SYSTEM NAME: 12430 - **GW09**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0.1 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **26.10** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.94"N 82º26'01.15"W

3. PUBLIC SYSTEM NAME: 12430 - **GW10**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 167 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/19/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **24.20** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A B C **D**
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.66"N 82º26'00.82"W

3. PUBLIC SYSTEM NAME: 12430 - **GW11**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 30.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = 0 ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
30.00 ft. Date Started: **1/20/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **1.25**
Type: **PVC**
1.3 in. to **20.00** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **PVC** Diameter: **1**
Slot/Gauge: **0.010** Length: **10**
Set Between: **20.00** ft. and **30.00** ft.
ft. and ft.
Sieve Analysis: Y/N

12. STATIC WATER LEVEL **24.00** ft. below land surface after 24 hours.

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A B C **D**
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

20. WATER WELL DRILLER'S CERTIFICATION: This well was drilled under my direction and this report is true to the best of my knowledge and belief.

Signed: Michael Carey
Date: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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FIELD BORING LOG (12430-SB01)

Job Name: Westside Quick Stop	**Job Number:** J16-232-A
Site Address: 821 West Parker Road, Greenville, South Carolina	
Drill Method: Direct Push Soil Core	**Drill Rig:** AMS 9500 VTR
Driller Name: M. Carey/R. Barkley	**Company:** ERGS, Inc.
Installation Date: January 20, 2017	**Logged By:** Thomas V.

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1				0.1		Asphalt / Concrete
	2				0.0		Approximately one foot of gravel fill underlain by moderate brown (5YR 3/4), dry, silty clay
	3				0.0		
	4				0.0		
	5				0.0		Moderate brown (5YR 3/4), dry, slightly micaceous, clayey silt
	6				0.0		Moderate brown (5YR 3/4), slightly moist, slightly micaceous, clayey silt
	7				0.0		Moderate reddish brown (10R 4/6), slightly moist, slightly micaceous, clayey silt with gravel
	8				0.0		
	9				0.0		
	10				0.0		
	11				0.0		
	12				0.0		
	13				104		Moderate reddish brown (10R 4/6), moist, slightly micaceous, silty clay. Approximate 6-inch thick highly weathered partially weathered rock strata encountered at 12.5 and 15.5 feet.
	14				265		
	15				953		
	16				236		
	17				608		Moderate reddish orange (10R 6/6), moist, moderately micaceous, clayey, fine sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric
	18				1054		
	19				1074		Dark yellowish orange (10YR 6/6), moist, moderately micaceous, clayey, silty, fine sand with greenish black (5GY 2/1) gneissic saprolitic fabric. Highly weathered partially weathered rock strata encountered at 20.5 feet.
	20				401		
	21				495		
	22				500		
	23				566		Dark yelowish orange (10YR 6/6), moist, moderately micaceous, clayey, medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric. Approximate 12-inch highly weathered partially weathered rock strata encountered at 24.5 feet.
	24				701		
	25				1129		
	26				1497		Pale reddish brown (10R 5/4) and moderate orange pink (5Y 8/4), moist, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	27				1233		
	28				1497		
	29				997		Moderate yellowish brown (10YR 5/4), moist, slightly micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	30				1479		
	31				1971		
	32				2241		Moderate yellowish brown (10YR 5/4), wet, slightly micaceous, slightly clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	33				2003		
	34				2001		
	35				1911		
	36				1107		
	37				991		
	38				957		
	39				992		
	40				1005		
	41				1100		
	42				1097		
	43				871		Moderately weathered partially weathered rock sampling as moderate reddish brown (10R 4/6), wet, moderately micaceous, clayey, silty, fine to course sand
	44				900		
	45				661		Moderate reddish brown (10R 4/6), wet, moderately micaceous, clayey, medium to course sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric.
	46				436		
	47				134		Partially weathered rock sampling as moderate reddish brown (10R 4/6), wet, highly micaceous, silty medium to course sand. Drill refusal encountered at 49 feet.
	48				35		
	49				86		
							Boring terminated at 49.0 feet below ground surface.

Legend

- Filter Sand Pack (_____ - _____ feet BGS)
- Bentonite Seal (_____ - _____ feet BGS)
- Bentonite-Cement Grout (__ - __ feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 49.0 feet below ground surface. Groundwater encountered at 29.0 feet below ground surface at time of boring.

Northing	=
Easting	=
Top of Casing Elevation	=
Ground Surface Elevation	=
Total Well Depth	=
Screen Length	=
Screen Size	=
Screened Interval Depth	=
6-inch Outer Casing Depth	=

FIELD BORING LOG (12430-SB02)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	Direct Push Soil Core	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	January 20, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1				0.0		Grass / Organic Soil
	2				0.0		Moderate reddish orange (10R 6/6), dry, clayey silt. Approximate 6-inch quartz layer encountered at 4.5 feet.
	3				0.0		
	4				0.0		
	5				0.0		Moderate reddish orange (10R 6/6), dry, clayey silt with gravel.
	6				0.0		
	7				0.0		Moderate yellowish brown (10R 6/6), slightly moist, clayey, fine sandy silt.
	8				0.0		
	9				0.0		
	10				23.9		Dusky yellowish brown (10YR 2/2) and moderate reddish brown (10R 4/6), slightly moist, clayey, fine to medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric. Approximate 6-inch thick highly weathered partially weathered rock strata encountered at 10.5 feet.
	11				23		
	12				10		
	13				9.4		
	14				9.0		
	15				12		Dusky yellowish brown (10YR 2/2) and moderate reddish brown (10R 4/6), moist, slightly micaceous, clayey, silty, fine to medium sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	16				12		
	17				9.7		
	18				9.4		
	19				9.0		
	20				9.5		
	21				5.1		
	22				4.1		
	23				1.1		Moderate yellowish brown (10YR 5/4), moist, slightly micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	24				0.7		
	25				0.6		Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, medium sandy silt
	26				0.1		
	27				0		Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	28				0		
	29				0		
	30				0		
	31				1.1		Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, medium to course sandy silt
	32				0.4		
	33				0.0		Moderate yellowish brown (10YR 5/4), wet, moderately micaceous, clayey, silty, medium to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	34				0.5		
	35				0.1		
	36				0.2		
	37				0.3		
	38				0.5		
	39				0.0		Partially weathered rock sampling as moderate yellowish brown (10YR 5/4), wet, highly micaceous, silty medium to course sand. Drill refusal encountered at 44 feet.
	40				0.1		
	41				0.1		
	42				0.2		
	43				0.1		
	44				0.2		
							Boring terminated at 44.0 feet below ground surface.

Legend

- Filter Sand Pack (_____ - _____ feet BGS)
- Bentonite Seal (_____ - _____ feet BGS)
- Bentonite-Cement Grout (__ - __ feet BGS)

Notes

Boring terminated at 44.0 feet below ground surface. Groundwater encountered at 24.0 feet below ground surface at time of boring.

Water Level at Time of Boring 24-Hour Water Level Sand Clayey Sand Silty Sand Clayey Silt Sandy Silt Sandy Clay Silty Clay Clay Silt Partially Weathered Rock Bedrock - Metamorphic Bedrock - Igneous Bedrock - Sedimentary Other -	Northing = Easting = Top of Casing Elevation = Ground Surface Elevation = Total Well Depth = Screen Length = Screen Size = Screened Interval Depth = 6-inch Outer Casing Depth =

FIELD BORING LOG (12430-SB03)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	Direct Push Soil Core	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	January 20, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry	Slightly Moist	Moist	Wet	Groundwater	Soil Description
	1				0.0						Broken Asphalt
	2				0.0						Dark yellowish orange (10YR 6/6), dry, clayey silt with gravel.
	3				0.0						
	4				0.0						Dark yellowish orange (10YR 6/6), dry, clayey silt.
	5				0.0						
	6				0.0						
	7				0.0						
	8				0.0						
	9				0.0						Moderate yellowish brown (10YR 5/4), dry, clayey, fine to medium sandy silt with greenish black (5GY 2/1) gneissic saprolitic fabric.
	10				0.0						
	11				0.0						Moderate yellowish brown (10YR 5/4), slightly moist, clayey, silty, fine to course sand with gravel
	12				0.0						
	13				0.0						Moderate yellowish brown (10YR 5/4), slightly moist, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	14				0.0						
	15				0.0						
	16				0.0						
	17				0.0						
	18				0.0						
	19				0.0						
	20				0.0						
	21				0.4						
	22				0.3						
	23				0.2						
	24				0.6					▽	
	25				0.9						Moderate yellowish brown (10YR 5/4), moist, clayey, fine to medium sandy, silt
	26				0.0						
	27				0.9						
	28				1.0						Moderate yellowish brown (10YR 5/4), wet, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	29				0.3						
	30				0.0						
	31				0.0						Moderate reddish brown (10R 4/6), wet, clayey, fine to medium sandy, silt
	32				0.0						
	33				0.0						
	34				0.2						Moderate yellowish brown (10YR 5/4), wet, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	35				0.4						Slight to moderately weathered partially weathered rock sampling as moderate yellowish brown (10YR 5/4) and very pale orange (10YR 8/2), wet, slightly clayey, silty, fine to course sand.
	36				0.0						
	37				0.0						
	38				0.0						
	39				0.0						
	40				0.0						
	41				0.0						
	42				0.0						
	43				0.0						
	44				0.0						
	45				0.0						
	46				0.0						Slightly weathered partially weathered rock sampling as very pale orange (10YR 8/2), wet, silty, medium to course sand. Drill refusal encountered at 47 feet.
	47				0.0						
											Boring terminated at 47.0 feet below ground surface.

Legend

Filter Sand Pack (_____ - _____ feet BGS)

Notes

Boring terminated at 47.0 feet below ground surface. Groundwater

Bentonite Seal (_____ - _____ feet BGS) Bentonite-Cement Grout (__ - __ feet BGS) Water Level at Time of Boring 24-Hour Water Level Sand Clayey Sand Silty Sand Clayey Silt Sandy Silt Sandy Clay Silty Clay Clay Silt Partially Weathered Rock Bedrock - Metamorphic Bedrock - Igneous Bedrock - Sedimentary Other -	encountered at 24.0 feet below ground surface at time of boring.
	Northing = Easting = Top of Casing Elevation = Ground Surface Elevation = Total Well Depth = Screen Length = Screen Size = Screened Interval Depth = 6-inch Outer Casing Depth =

FIELD BORING LOG (12430-SB04)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	Direct Push Soil Core	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 4, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry	Slightly Moist	Moist	Wet	Groundwater	Soil Description
	1				0.0						Broken Asphalt
	2				0.0						Dark yellowish orange (10YR 6/6), dry, clayey silt with gravel.
	3				0.0						Moderate yellowish brown (10YR 5/4), dry, clayey, fine to medium sandy silt
	4				0.0						
	5				0.2						
	6				0.8						
	7				0.2						
	8				0.1						
	9				0.3						
	10				0.8						
	11				0.7						
	12				0.1						
	13				0.4						Moderate yellowish brown (10YR 5/4), dry, clayey, silty, fine to course sand with greenish black (5GY 2/1) gneissic saprolitic fabric.
	14				0.9						
	15				1.1						
	16				2.0						
	17				3.5						
	18				10.5						
	19				16.8						
	20				12.8						
	21				13.7						
	22				25.8						
	23				103						
	24				125						
	25				299					▽	
	26				185						Dark yellowish brown (10YR 4/2), slightly moist to moist, clayey, fine to medium sandy, silt
	27				136						
	28				187						
	29				204						
	30				166						
	31				355						
	32				152						
	33				397					▽	
	34				428						Slight to moderately weathered partially weathered rock sampling as moderate yellowish brown (10YR 5/4) and very pale orange (10YR 8/2), wet, slightly clayey, silty, fine to course sand.
	35				403						
	36				352						
	37				584						
	38				102						
	39				136						
	40				245						
	41				258						
	42				357						
	43				135						
	44				294						
	45				201						
	46				284						Slightly weathered partially weathered rock sampling as very pale orange (10YR 8/2), wet, silty, medium to course sand. Drill refusal encountered at 47 feet.
	47				325						
											Boring terminated at 47.0 feet below ground surface.

Legend

Filter Sand Pack (_____ - _____ feet BGS)

Notes

Boring terminated at 47.0 feet below ground surface. Groundwater

Bentonite Seal (_____ - _____ feet BGS) Bentonite-Cement Grout (__ - __ feet BGS) Water Level at Time of Boring 24-Hour Water Level Sand Clayey Sand Silty Sand Clayey Silt Sandy Silt Sandy Clay Silty Clay Clay Silt Partially Weathered Rock Bedrock - Metamorphic Bedrock - Igneous Bedrock - Sedimentary Other -	encountered at 24.0 feet below ground surface at time of boring.
	Northing = Easting = Top of Casing Elevation = Ground Surface Elevation = Total Well Depth = Screen Length = Screen Size = Screened Interval Depth = 6-inch Outer Casing Depth =

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.96"N 82º26'00.69"W

3. PUBLIC SYSTEM NAME: 12430 - **SB01**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 49.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = NA ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
49.00 ft. Date Started: **1/19/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **NA**
Type: **NA**
NA in. to **NA** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **NA** Diameter: **NA**
Slot/Gauge: **0.010** Length: **NA**
Set Between: **NA** ft. and **NA** ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.94"N 82º26'01.15"W

3. PUBLIC SYSTEM NAME: 12430 - **SB02**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 44.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = NA ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
44.00 ft. Date Started: **1/19/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **NA**
Type: **NA**
NA in. to **NA** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **NA** Diameter: **NA**
Slot/Gauge: **0.010** Length: **NA**
Set Between: **NA** ft. and **NA** ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'52.66"N 82º26'00.82"W

3. PUBLIC SYSTEM NAME: 12430 - **SB03**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 47.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = NA ppm

6. TYPE: Mud Rotary, Jetted, Bored, Dug, Air Rotary, **Driven**, Cable tool, Auger, Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
47.00 ft. Date Started: **1/19/2017** Date Completed: **1/20/2017**

10. CASING: **Threaded** Welded
Diameter: **NA**
Type: **NA**
NA in. to **NA** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **NA** Diameter: **NA**
Slot/Gauge: **0.010** Length: **NA**
Set Between: **NA** ft. and **NA** ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible Jet (shallow) Turbine
Jet (deep) Reciprocating Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A B C **D**
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **1/20/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

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

1. WELL OWNER INFORMATION:
Name: **SCDHEC**
(last) (first)
Address: **2600 Bull Street**
City: **Columbia** State: **SC** Zip:
Phone:

2. LOCATION OF WELL: **COUNTY:** **Greenville**
Name: **Westside Quick Stop**
Address: **821 West Parker Road**
City: **Greenville, SC**
34º51'53.39"N 82º26'01.12"W

3. PUBLIC SYSTEM NAME: 12430 - **SB04**

4. ABANDONMENT: **Yes**
Grouted Depth: from 0.00 to 47.00 ft.

Formation Description	Thickness of Stratum	Depth to Bottom of Stratum

5. REMARKS:
PID / OVA = NA ppm

6. TYPE: Mud Rotary / Jetted / Bored / Dug / Air Rotary / **Driven** / Cable tool / Auger / Other

7. PERMIT NUMBER: **MWA #** 26386 **UST #** 12430

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

9. WELL DEPTH (completed)
47.00 ft. Date Started: **3/4/2017** Date Completed: **3/4/2017**

10. CASING: **Threaded** Welded
Diameter: **NA**
Type: **NA**
NA in. to **NA** ft. depth
in. to ft. depth
Height: Below
Surface: ft. Weight: lb./ft.
Drive Shoe:

11. SCREEN:
Type: **NA** Diameter: **NA**
Slot/Gauge: **0.010** Length: **NA**
Set Between: **NA** ft. and **NA** ft.
ft. and ft.
Sieve Analysis: Y/N

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

13. PUMPING LEVEL Below Land Surface.
ft. after hrs Pumping GPM
Pumping Test:
Yield:

14. WATER QUALITY
Chemical Analysis: Bacterial Analysis:

15. ARTIFICIAL FILTER (filter pack)
Installed from: ft. to ft.
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: Type: Amount:

18. PUMP: Date installed:
Mfr. Name: Model no.:
H.P.: Volts: Length of pipe: ft.
Capacity: gpm
TYPE:
Submersible / Jet (shallow) / Turbine
Jet (deep) / Reciprocating / Centrifugal

19. WELL DRILLER: Michael Carey **CERT NO.:** **1920**
Address: ERGS, LLC Level: A **B** C D
2435 East North St, Ste 1108-158
Greenville, SC 29615
Telephone: 864.248.0019 Fax: 877.409.8472

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: **3/4/17**

If D Level Driller, provide supervising driller's name.
Robyn Barkley 934-A

DHEC 1903 (07/2003) COPY 1 MAIL TO: S.C. DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL (ADDRESS ABOVE)

WESTSIDE QUICK STOP – UST PERMIT #12430
TIER II ASSESSMENT REPORT

APPENDIX E

WELL LOGS, WATER WELL RECORDS (DHEC FORM 1903)

FIELD BORING LOG (12430-MW04I)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	8.5" & 5.5" Roller Cone	**Drill Rig:**	AMS 9630
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 23, 2017	**Logged By:**	Thomas V.

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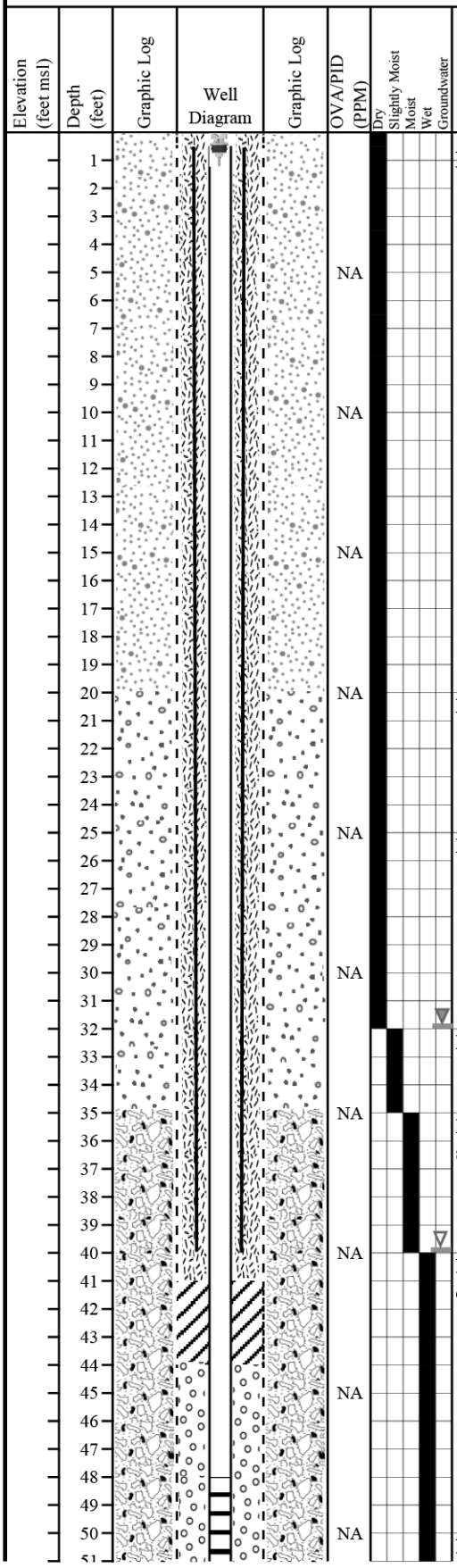
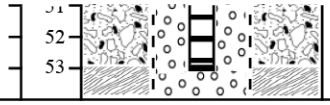


Soil Description
Asphalt
Very dark red (5R 2/6), dry, slightly clayey, fine to medium sandy silt
Dark yellowish brown (10YR 4/2), dry, slightly micaceous, silty, medium to course sand
Dusky red (5R 3/4), dry, clayey, silty, fine to course sand
Dusky red (5R 3/4), slightly moist to moist, clayey, silty, fine to course sand
Partially weathered rock sampling as dusky red (5R 3/4), moist, clayey, silty, fine to course sand
Partially weathered rock sampling as moderate brown (5YR 3/4), wet, highly micaceous, clayey, silty, fine to medium sand
Partially weathered rock sampling as moderate reddish brown (10R 4/6), highly micaceous,



	clayey, silty, fine to course sand
	Drill refusal encountered at approximately 54.0 feet below ground surface. Granitic gneiss bedrock.
	Boring terminated at 54.0 feet below ground surface.

Legend

- Filter Sand Pack (44.0 - 54.0 feet BGS)
- Bentonite Seal (41.0 - 44.0 feet BGS)
- Bentonite-Cement Grout (0.0 - 41.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 54.0 feet below ground surface. Groundwater encountered at 40.0 feet below ground surface at time of boring and 32.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106025.898
Easting	=	1569992.992
Top of Casing Elevation	=	1008.12
Ground Surface Elevation	=	1008.35
Total Well Depth	=	53.17
Screen Length	=	5
Screen Size	=	0.001
Screened Interval Depth	=	47.94-52.97
6-inch Outer Casing Depth	=	40

FIELD BORING LOG (12430-MW12)

Job Name: Westside Quick Stop	**Job Number:** J16-232-A
Site Address: 821 West Parker Road, Greenville, South Carolina	
Drill Method: 3.25-inch ID H.S.A	**Drill Rig:** AMS 9530
Driller Name: M. Carey/R. Barkley	**Company:** ERGS, Inc.
Installation Date: March 20, 2017	**Logged By:** Thomas V.

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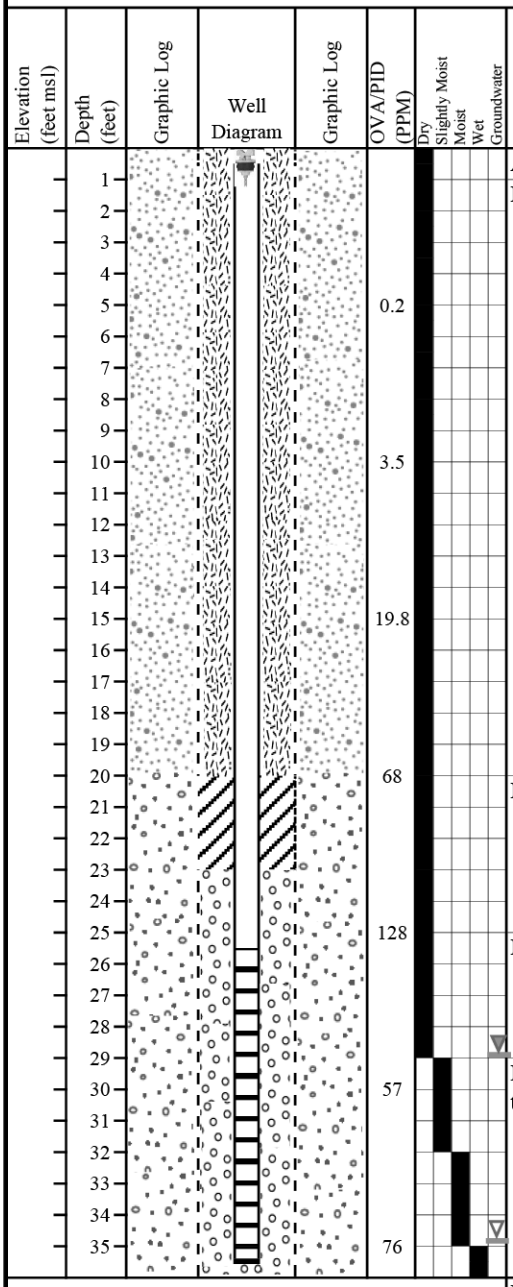


Soil Description
Asphalt
Blackish red (5R 2/2), dry, moderately micaceous, medium to course sandy, silt
Dusky red (5R 3/4), dry, slightly clayey, silty, fine to course sand
Dark reddish brown (10R 3/4), dry, slightly micaceous, clayey, silty, fine to course sand
Dark reddish brown (10R 3/4), slightly moist to wet, slightly micaceous, clayey, silty, fine to course sand
Boring terminated at 36.0 feet below ground surface.

Legend

- Filter Sand Pack (23.0 - 36.0 feet BGS)
- Bentonite Seal (20.0 - 23.0 feet BGS)
- Bentonite-Cement Grout (0 - 20.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt

Notes

Boring terminated at 36.0 feet below ground surface. Groundwater encountered at 35.0 feet below ground surface at time of boring and 29.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

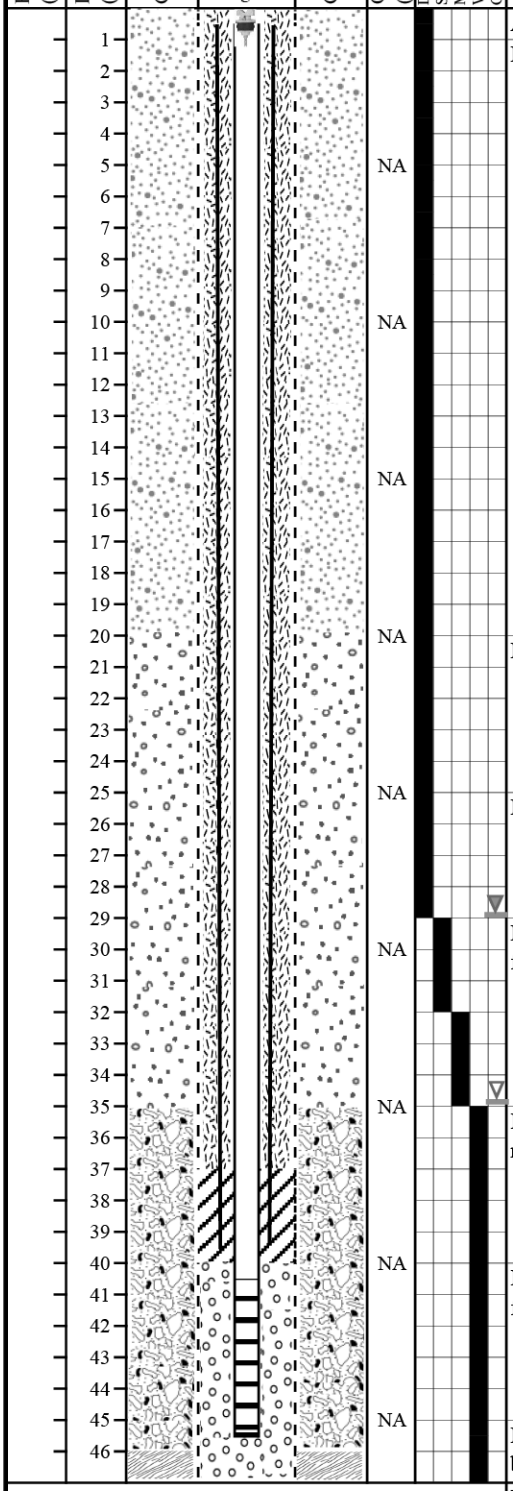
Northing	=	1106004.065
Easting	=	1569896.698

Sandy Clay	Top of Casing Elevation	=	1005.35
Silty Clay	Ground Surface Elevation	=	1005.64
Clay	Total Well Depth	=	35.69
Silt	Screen Length	=	10
Partially Weathered Rock	Screen Size	=	0.01
Bedrock - Metamorphic	Screened Interval Depth	=	25.49-35.49
Bedrock - Igneous	6-inch Outer Casing Depth	=	
Bedrock - Sedimentary			
Other -			

FIELD BORING LOG (12430-MW12I)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	8.5" & 5.5" Roller Cone	**Drill Rig:**	AMS 9530
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 20, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS



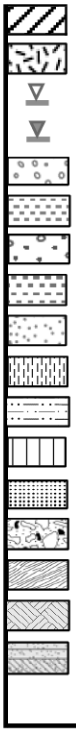
Soil Description
Asphalt
Blackish red (5R 2/2), dry, moderately micaceous, medium to course sandy, silt
Dusky red (5R 3/4), dry, slightly clayey, silty, fine to course sand
Dark reddish brown (10R 3/4), dry, slightly micaceous, clayey, silty, fine to course sand
Dark reddish brown (10R 3/4), slightly moist to moist, slightly micaceous, clayey, silty, fine to course sand
Partially weathered rock sampling as dark reddish brown (10R 3/4), wet, slightly micaceous, clayey, silty, fine to course sand
Partially weathered rock sampling as moderate brown (5YR 3/4), wet, highly micaceous, fine sandy clayey silt
Drill refusal encountered at approximately 47.0 feet below ground surface. Granitic gneiss bedrock.
Boring terminated at 47.0 feet below ground surface.

Legend

Filter Sand Pack (40.0 - 47.0 feet BGS)

Notes

Boring terminated at 47.0 feet below ground surface. Groundwater



Bentonite Seal (37.0 - 40.0 feet BGS)
Bentonite-Cement Grout (0 - 37.0 feet BGS)
Water Level at Time of Boring
24-Hour Water Level
Sand
Clayey Sand
Silty Sand
Clayey Silt
Sandy Silt
Sandy Clay
Silty Clay
Clay
Silt
Partially Weathered Rock
Bedrock - Metamorphic
Bedrock - Igneous
Bedrock - Sedimentary
Other -

encountered at 35.0 feet below ground surface at time of boring and 29.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1106001.843
Easting	=	1569893.944
Top of Casing Elevation	=	1005.37
Ground Surface Elevation	=	1005.65
Total Well Depth	=	45.63
Screen Length	=	5
Screen Size	=	0.01
Screened Interval Depth	=	40.43-45.43
6-inch Outer Casing Depth	=	40

FIELD BORING LOG (12430-MW14)

Job Name: Westside Quick Stop	**Job Number:** J16-232-A
Site Address: 821 West Parker Road, Greenville, South Carolina	
Drill Method: 3.25-inch ID H.S.A	**Drill Rig:** AMS 9500 VTR
Driller Name: M. Carey/R. Barkley	**Company:** ERGS, Inc.
Installation Date: March 8, 2017	**Logged By:** Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry	Slightly Moist	Moist	Wet	Groundwater	Soil Description
	1										Broken Asphalt
	2										Moderate reddish brown (10R 4/6), dry, clayey, fine to medium sandy silt
	3										
	4										
	5				0.3						
	6										
	7										
	8										
	9										
	10				0.9						
	11										
	12										
	13										
	14										
	15				6.5						Moderate reddish brown (10R 4/6), dry, clayey, fine to course sandy silt
	16										
	17										
	18										
	19										
	20				14.2					▼	Moderate reddish brown (10R 4/6), slightly moist to moist, clayey, silty, fine to course sand
	21										
	22										
	23										
	24										
	25				19.8						
	26										
	27									▽	
											Boring terminated at 28.0 feet below ground surface.

Legend

- Filter Sand Pack (14.0 - 28 feet BGS)
- Bentonite Seal (11.0 - 14.0 feet BGS)
- Bentonite-Cement Grout (0 - 11.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic

Notes

Boring terminated at 28.0 feet below ground surface. Groundwater encountered at 28.0 feet below ground surface at time of boring and 21.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1105954.887
Easting	=	1569899.114
Top of Casing Elevation	=	1000.02
Ground Surface Elevation	=	1000.38
Total Well Depth	=	25.57
Screen Length	=	10
Screen Size	=	0.01
Screened Interval Depth	=	15.37-25.37

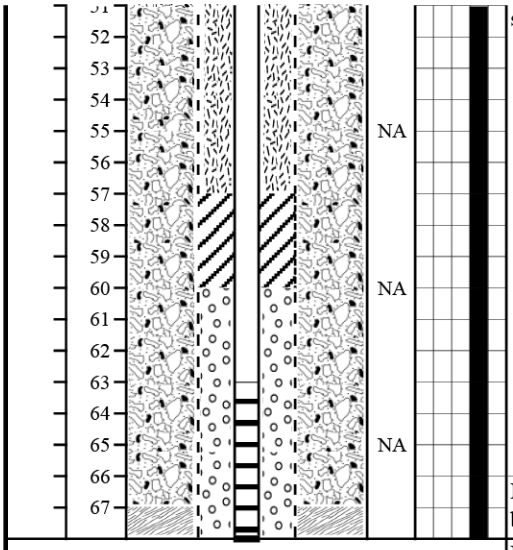
Bedrock - Igneous Bedrock - Sedimentary Other -	6-inch Outer Casing Depth =

FIELD BORING LOG (12430-MW14I)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	8.5" & 5.5" Roller Cone	**Drill Rig:**	AMS 9630
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 8, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1						Broken Asphalt
	2						Moderate reddish brown (10R 4/6), dry, clayey, fine to medium sandy silt
	3						
	4						
	5				NA		
	6						
	7						
	8						
	9						
	10				NA		
	11						
	12						
	13						
	14						
	15				NA		
	16						Moderate reddish brown (10R 4/6), dry, clayey, fine to course sandy silt
	17						
	18						
	19						
	20				NA		
	21						Moderate reddish brown (10R 4/6), dry to moist, clayey, silty, fine to medium sand
	22						
	23						
	24						
	25				NA		
	26						
	27						
	28						
	29						
	30				NA		Dark yellowish brown (10YR 4/2), wet, clayey, silty, fine to course sand
	31						
	32						
	33						
	34						
	35				NA		
	36						
	37						
	38						
	39						
	40				NA		Partially weathered rock sampling as dark yellowish brown (10YR 4/2), wet, clayey, silty, fine to course sand
	41						
	42						
	43						
	44						
	45				NA		
	46						
	47						
	48						
	49						
	50				NA		Partially weathered rock sampling as moderate yellowish brown (10YR 5/4), wet, clayey,
	51						



	silty, fine to course sand with gravel
	Drill refusal encountered at approximately 68.0 feet below ground surface. Granitic gneiss bedrock.
	Boring terminated at 68.0 feet below ground surface.

Legend

- Filter Sand Pack (60.0 - 68.0 feet BGS)
- Bentonite Seal (57.0 - 60.0 feet BGS)
- Bentonite-Cement Grout (0 - 57.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 68.0 feet below ground surface. Groundwater encountered at 30.0 feet below ground surface at time of boring and 24.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1105951.681
Easting	=	1569903.625
Top of Casing Elevation	=	1000.11
Ground Surface Elevation	=	1000.31
Total Well Depth	=	67.92
Screen Length	=	5
Screen Size	=	0.01
Screened Interval Depth	=	62.72-67.72
6-inch Outer Casing Depth	=	40

FIELD BORING LOG (12430-MW15)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	3.25-inch ID H.S.A	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 7, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1–5				0.0		Broken Asphalt Moderate reddish brown (10R 4/6), dry, fine sandy clayey silt
	6–10				0.0		
	11–15				0.0		Moderate brown (5YR 3/4), dry, clayey, fine to medium sandy silt
	16–20				0.0		
	21–25				0.0		Moderate brown (5YR 3/4), slightly moist to moist, clayey, fine to medium sandy silt
	26						Boring terminated at 27.0 feet below ground surface.

Legend

- Filter Sand Pack (14.0 - 27.0 feet BGS)
- Bentonite Seal (11.0 - 14.0 feet BGS)
- Bentonite-Cement Grout (0 - 11.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous

Notes

Boring terminated at 27.0 feet below ground surface. Groundwater encountered at 24.0 feet below ground surface at time of boring and 27.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1105903.442
Easting	=	1569942.091
Top of Casing Elevation	=	999.88
Ground Surface Elevation	=	1000.15
Total Well Depth	=	26.83
Screen Length	=	10
Screen Size	=	0.01
Screened Interval Depth	=	16.63-26.63
6-inch Outer Casing Depth	=	



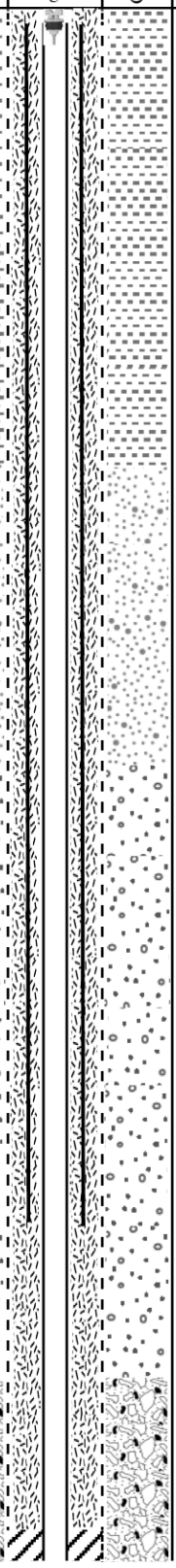
Bedrock - Sedimentary

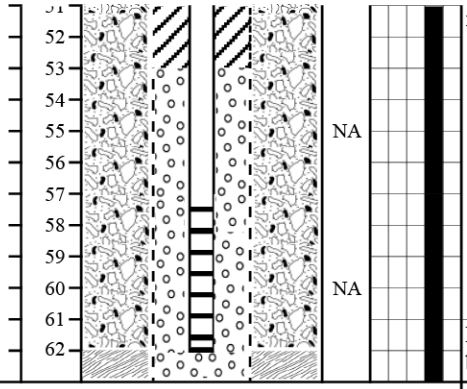
Other -

FIELD BORING LOG (12430-MW15I)

Job Name:	Westside Quick Stop	**Job Number:**	J16-232-A
Site Address:	821 West Parker Road, Greenville, South Carolina		
Drill Method:	8.5" & 5.5" Roller Cone	**Drill Rig:**	AMS 9500 VTR
Driller Name:	M. Carey/R. Barkley	**Company:**	ERGS, Inc.
Installation Date:	March 6, 2017	**Logged By:**	Thomas V.

petra-tech ENVIRONMENTAL, LLC
ENGINEERS & CONSULTANTS

Elevation (feet msl)	Depth (feet)	Graphic Log	Well Diagram	Graphic Log	OVA/PID (PPM)	Dry / Slightly Moist / Moist / Wet / Groundwater	Soil Description
	1–50				NA		Broken Asphalt
							Moderate reddish brown (10R 4/6), dry, fine sandy clayey silt
					NA		
					NA		
					NA		Moderate brown (5YR 3/4), dry, clayey, fine to medium sandy silt
					NA		Dark yellowish brown (10YR 4/2), slightly moist to wet, clayey, silty, fine to medium sand
					NA		
					NA		
					NA		
					NA		Partially weathered rock sampling as dark yellowish brown (10YR 4/2), wet, clayey, silty, fine to course sand
					NA		Partially weathered rock sampling as light olive brown (5Y 5/6), wet, slightly clayey, silty,



fine to course sand

Drill refusal encountered at approximately 63.0 feet below ground surface. Granitic gneiss bedrock.

Boring terminated at 63.0 feet below ground surface.

Legend

- Filter Sand Pack (53.0 - 63.0 feet BGS)
- Bentonite Seal (50.0 - 53.0 feet BGS)
- Bentonite-Cement Grout (0 - 50.0 feet BGS)
- Water Level at Time of Boring
- 24-Hour Water Level
- Sand
- Clayey Sand
- Silty Sand
- Clayey Silt
- Sandy Silt
- Sandy Clay
- Silty Clay
- Clay
- Silt
- Partially Weathered Rock
- Bedrock - Metamorphic
- Bedrock - Igneous
- Bedrock - Sedimentary
- Other -

Notes

Boring terminated at 63.0 feet below ground surface. Groundwater encountered at 30.0 feet below ground surface at time of boring and 24.0 feet below ground surface after 24 hours. Flush Mount well completion with 8-inch diameter steel, bolted manhole cover installed in a 2-foot by 2-foot concrete pad.

Northing	=	1105901.172
Easting	=	1569944.625
Top of Casing Elevation	=	999.88
Ground Surface Elevation	=	1000.06
Total Well Depth	=	62.13
Screen Length	=	10
Screen Size	=	0.01
Screened Interval Depth	=	56.93-61.93
6-inch Outer Casing Depth	=	40