Monitoring Well Installation Report

Gasoline Fueling Station – Royal Farms #001
2620 Mountain Road
Joppa, Harford County, Maryland 21085
OCP Case No. 2005-0357-HA
MDE Facility No. 3965

AEC Project Number: 05-056-RF001

Prepared for:

Maryland Department of the Environment
Oil Control Program
Attention: Jeanette Debartolomeo
1800 Washington Boulevard
Baltimore, Maryland 21230-1719

and

Two Farms, Inc. t/a Royal Farms
Attention: Tom Ruszin
3611 Roland Avenue
Baltimore, Maryland 21211

Prepared by:

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October 21, 2015

ADVANTAGE ENVIRONMENTAL CONSULTANTS, LLC

Monitoring Well Installation Report

Prepared by: Jeremy S. Sheidy
Title: Project Manager
Date: October 21, 2015

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Date: October 21, 2015

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Purpose 1
1.2 Location and Description 1

2.0 REGIONAL AND LOCAL GEOLOGY AND HYDROGEOLOGY 2
2.1 Regional Geology 2
2.2 Local Hydrogeology 2

3.0 INVESTIGATIVE METHODS 3
3.1 Geoprobe Boring and Hollow Stem Auger Drilling 3
3.1.1 Soil Sampling Methodology 3
3.1.2 Monitoring Well Installation 4
3.1.3 Equipment Decontamination Procedures 4
3.2 Groundwater Sampling and Gauging 4
3.2.1 Groundwater Gauging Procedures 4
3.2.2 Groundwater Sampling Methodology 5
3.3 Sample Handling Procedures 5
3.5 Investigation Derived Waste Management Procedures 5

4.0 INVESTIGATION ACTIVITY RESULTS 6
4.1 Soil Sample Analytical Data 6
4.2 Groundwater Sample Analytical Data 6
4.3 Recommendations 7

APPENDICES

APPENDIX A: FIGURES
FIGURE 1: SITE VICINITY MAP
FIGURE 2: SITE FEATURES MAP
FIGURE 3: GROUNDWATER GRADIENT MAP
FIGURE 4: SOIL QUALITY MAP
FIGURE 5: GROUNDWATER QUALITY MAP
APPENDIX B: MDE REPORT OF OBSERVATIONS
APPENDIX C: DATA TABLES
TABLE 1: GROUNDWATER ELEVATION DATA
TABLE 2: SOIL ANALYTICAL RESULTS
TABLE 3: GROUNDWATER ANALYTICAL RESULTS
APPENDIX D: BORING LOGS AND WELL CONSTRUCTION DIAGRAMS
APPENDIX E: DISPOSAL MANIFEST
APPENDIX F: LABORATORY ANALYTICAL RESULTS AND CHAIN-OF-CUSTODY DOCUMENTATION

1.0 INTRODUCTION

1.1 Purpose

Advantage Environmental Consultants, LLC (AEC) was contracted by Royal Farms/Two Farms, Inc. to install seven groundwater monitoring wells for the Royal Farms Store No. 001, located at 2620 Mountain Road, in Joppa, Maryland (herein referred to as the "Site"). A Site Vicinity Map is included as Figure 1 in Appendix A.

Four monitoring wells (MW-1R, MW-2R, MW-5R, and MW-6) were installed to replace existing wells that were abandoned prior to redevelopment of the site. Three monitoring wells (MW-7, MW-8, and MW-9) were installed in proximity to the new underground storage tank (UST) system, to meet UST system regulations established in the Code of Maryland Regulations (COMAR) pertaining to UST systems installed in high risk groundwater use areas (HRGUA). Monitoring well locations were selected based on proximity to the previously abandoned wells and proximity to the new UST system. Representatives from Two Farms, Inc. (Thomas Ruszin), AEC (Jeremy Sheidy), and the Maryland Department of the Environment (MDE) (Jeannette DeBartolomeo) were on Site on August 17, 2015 to mark the new monitoring well locations. A copy of the MDE Report of Observations is included in Appendix B.

All work was performed pursuant to AEC's *Environmental Redevelopment Work Plan,* dated October 24, 2015.

1.2 Location and Description

The Site is situated in an area which supports residential land uses and is northwest of the intersection of Mountain Road and Franklinville Road in Joppa, Harford County, Maryland. Residential properties border the Site to the north and vacant land border the Site to the west, east and south.

According to the United States Geological Survey (USGS) 7.5-Minute Series Edgewood, MD Topographic Quadrangle (produced in 2011), the Site elevation is approximately 180 feet above mean sea level (msl). Surface drainage at the Site is generally to the southwest towards an unnamed, intermittent tributary of the Little Gunpowder Falls, located approximately 1,700 feet west of the Site at its closest point. No surface water bodies are present on the Site.

The Site currently operates one 30,000-gallon gasoline, double-walled, fiber-glass reinforced plastic (FRP) UST; and one 30,000-gallon compartmentalized (20,000-gallon diesel, 10,000-gallon gasoline), double-walled FRP UST. The product piping is double-walled flexible plastic. The vent piping is double-walled FRP with tank top and under dispenser containment sumps. The current UST system was installed in April, 2015, and brought into service in September, 2015. A Site Features Map is included as Figure 2 in Appendix A.

Electrical service is provided to the Site by BGE. The site and surrounding properties are served by individual potable wells.

2.0 REGIONAL AND LOCAL GEOLOGY AND HYDROGEOLOGY

2.1 Regional Geology

According to the Maryland Geological Survey's Geologic Map of Maryland (1968); the Site is located in the Piedmont physiographic province, which is situated west of the fall line that separates the unconsolidated sediments of the Atlantic Coastal Plain province from the metamorphic units of the Piedmont. According to the map, the Site is underlain by the Potomac Group (Cretaceous). This formation consists of Interbedded quartzose gravels; protoquartzitic to orthoquartzitic argillaceous sands; and white, dark gray, and multicolored silts and clays.

2.2 Local Hydrogeology

According to the United States Geological Survey’s Ground Water Atlas of the United States, the primary drinking water aquifers are the crystalline rock aquifers of the Piedmont physiographic province.

Shallow groundwater flow generally follows topography. A groundwater gradient map was developed using the September 16, 2015 data and by comparing depths to top of casing elevations with the finished floor elevation of the new convenience store (184.95 feet). Groundwater flow is found to be generally to the north. The hydraulic gradient (change in head per unit distance (dh/dl) between MW-5R and MW-9 was 0.063 feet per foot during this monitoring event. Monitoring well gauging data is provided in Table 1 of Appendix C. The Groundwater Gradient Map is included as Figure 3 in Appendix A.

3.0 INVESTIGATIVE METHODS

3.1 Geoprobe Boring and Hollow Stem Auger Drilling

Drilling activities began on August 20, 2015 with the advancement of Geoprobe borings to collect soil samples in locations where the new monitoring wells were to be installed. AEC contracted Allied Well Drilling of Honey Brook, Pennsylvania to perform the Geoprobe boring activities. Ms. Jeannette DeBartolomeo of the MDE was on Site during Geoprobe boring activities. A copy of the MDE Report of Observations is included in Appendix B.

The Geoprobe borings were advanced by hydraulically driving a five-foot-long stainless steel hollow core with a stainless steel cutting shoe on the leading edge. For each sampling interval, a disposable non-reactive plastic liner is placed inside the core and the cutting shoe is threaded on. The core is driven through the sampling interval, thereby filling the core with a section of undisturbed sample. The liner is then removed from the core and cut open, revealing the sample. Each hollow core section was visually inspected and lithologically logged and screened for volatile organic compounds (VOCs) using a photoionization detector (PID). Upon completion of the boring activities, the borehole was filled with the drill cuttings to near the surface and then patched to match existing grade.

Hollow stem auger (HSA) drilling began on August 21, 2015. HSA drilling is performed using a hollow helical screw which is driven into the ground with rotation; the soil is lifted up the borehole by the blade of the screw. Ms. Jeannette DeBartolomeo of the MDE was on Site during HSA activities. A copy of the MDE Report of Observations is included in Appendix B.

3.1.1 Soil Sampling Methodology

An AEC Field Geologist logged the lithology of the borings and field screened soil cores for VOCs using a PID. The PID was calibrated prior to use, using fresh air (0.0 parts per million [ppm] VOCs) and a known concentration of isobutylene, prior to use. The criteria for selecting the soil samples were based on elevated PID readings or evidence of impact in soil. If no PID readings were encountered, samples were collected immediately above the observed groundwater interface. PID readings were encountered in each boring at depths of 4 to 33 feet bgs. Elevated readings were obtained in MW-2R, MW-5R, and MW-9. The highest reading at MW-2R was 6.9 ppm at 14 feet bgs. The highest reading at MW-5R was 8.2 ppm at 9.5 feet bgs. The highest reading at MW-9 was 37 ppm at 33 feet bgs. No petroleum odor was noted at any boring location. Boring logs and well construction diagrams are included as Appendix D.

VOC and total petroleum hydrocarbons (TPH) gasoline range organics (GRO) samples were collected and prepared using U.S. Environmental Protection Agency (EPA) Method 5035 via Terracore sampling. The Terracore sampler was inserted directly into the soil core using a reusable T-handle until the sample chamber was full (approximately 5 to 10 grams of soil). The outside of the sampler was then wiped clean of any soil or debris. The soil plugs were flush with the mouth of the sampler and any excess soil that extended

beyond the mouth of the sampler was removed. The plunger was seated in the handle top 90° until it was aligned with the slots in the body. The sample cores were then extruded into one methanol (5 milliliters) preserved 40 milliliter vial, three sodium bisulphate (5 milliliters) preserved 40 milliliter vials and a dry weight jar with a lid. The top and/or threads of the vials were then wiped clean and the lids quickly replaced on the vials.

Total petroleum hydrocarbons (TPH) diesel range organics (DRO) samples were collected using a laboratory supplied, pre-cleaned, four ounce glass jar. The top and/or threads of the jars were then wiped clean and the lids quickly replaced on the jars.

The soil samples were submitted for analysis for VOCs, including fuel oxygenates and naphthalene, via EPA Analytical Method 8260B and TPH gasoline range organics (GRO) and DRO via EPA Method 8015M.

3.1.2 Monitoring Well Installation

Groundwater monitoring wells were installed in each of the borings. The wells were constructed using two-inch diameter polyvinyl chloride (PVC) slotted screen and riser. A sand filter pack was placed to one foot above the top of the screen. A two foot thick bentonite seal was placed above the sand by dropping bentonite pellets into the annular space and hydrating in place. The remainder of the annular space above the bentonite seal was grouted to the surface. Each monitoring well was secured with a lockable well compression cap and housed within an eight-inch manhole. The monitoring wells were developed by a licensed well-driller using surge block and aggressive bailing techniques on between August 31, 2015 and September 2, 2015.

3.1.3 Equipment Decontamination Procedures

Prior to arriving at the Site and between each soil boring, all hand augers, core barrels, cutting shoes, probe rods, tips, sleeves, pushrods, samplers, tools, and other downhole equipment was decontaminated using a Liquinox and water solution followed by a water rinse. Fuel, lubricants, and other similar substances were handled in a manner consistent with accepted safety procedures and standard operating practices.

3.2 Groundwater Sampling and Gauging

Following installation and development, the monitoring wells were gauged and sampled on September 16, 2015. In addition, four tank field monitoring pipes (TFMP's) (TFMP-1 through TFMP-4) were gauged on this date. Ms. Jeannette DeBartolomeo of the MDE was on Site for a portion of groundwater sampling activities. A copy of the MDE Report of Observations is included in Appendix B.

3.2.1 Groundwater Gauging Procedures

Groundwater levels within each monitoring well and each of four TFMP's were measured using an electronic oil-water interface probe accurate to 0.01-feet. The interface probe was cleaned (Liquinox and water rinse) prior to use in each well. Static

groundwater was measured at depths ranging from 1.89 feet bgs in TFMP-1 to 14.46 feet bgs in MW-9. Measurable LPH was not detected in any wells during the gauging event. No petroleum odor was noted in the wells at the time of gauging. A groundwater gradient map depicting groundwater conditions on the day of the groundwater sampling event is included as Figure 3 in Appendix A. Table 1 in Appendix C also provides groundwater elevation data.

3.2.2 Groundwater Sampling Methodology

Prior to the collection of groundwater samples, AEC purged at least three well volumes from each monitoring well. All samples were collected using dedicated high-density polyethylene disposable bailers.

The analytical laboratory provided pre-preserved sample containers. The selected groundwater samples were placed in laboratory grade 40-milliliter glass vials with Teflon-lined septa which were pre-preserved with hydrochloric acid (VOCs and TPH GRO), and one-liter amber jars pre-preserved with hydrochloric acid (TPH DRO).

Groundwater samples were submitted to the analytical laboratory for analysis of VOCs, including fuel oxygenates and naphthalene, via EPA Analytical Method 8260B, and TPH GRO and DRO via EPA Analytical Method 8015M.

3.3 Sample Handling Procedures

After collection, sample labels were firmly attached to the container side, and the following information was legibly and indelibly written on the labels: facility name, sample identification, sampling date and time, preservatives added, and sample collector's initials. Once collected, the sample containers were placed on ice in a cooler to await delivery to the laboratory.

After the samples were sealed and labeled, they were packaged for transport to Maryland Spectral Services, located in Baltimore, Maryland. The following packaging procedures were followed: samples were packaged to prevent leakage or vaporization from the containers, samples were cushioned to avoid breakage; and, ice was added to the cooler to keep the samples cool.

3.5 Investigation Derived Waste Management Procedures

Investigation derived soil and well development water was containerized in 55-gallon drums, labeled (date of generation, site name/address, source, and contents), and staged on the Site. All purge water from the groundwater sampling was treated by granular activated carbon. The soil and groundwater drums were transported and disposed of according to applicable U.S. Department of Transportation, EPA, and MDE regulations on September 4, 2015. A copy of the disposal manifest is provided in Appendix E.

4.0 INVESTIGATION ACTIVITY RESULTS

4.1 Soil Sample Analytical Data

The laboratory analytical results for sample MW-1R-10' indicated all analytes were below laboratory detection limits (BDL).

The laboratory analytical results for sample MW-2R-14' indicated concentrations of benzene, ethylbenzene, isopropylbenzene (cumene), naphthalene, and TPH GRO below the MDE Non-Residential Cleanup Standards for soil (i.e., Generic Numeric Cleanup Standards for Groundwater and Soil – Interim Final Guidance Update No. 2.1, dated June 2008). Tert-butanol (TBA) and n-propylbenzene were also detected. There are no published Cleanup Standards for either analytes. All other analytes were BDL.

The laboratory analytical results for sample MW-5R-9.5' indicated concentrations of carbon disulfide and naphthalene below the MDE Non-Residential Cleanup Standards for soil. All other analytes were BDL.

The laboratory analytical results for sample MW-6-10' indicated all analytes were BDL.

The laboratory analytical results for sample MW-7-12' indicated all analytes were BDL.

The laboratory analytical results for sample MW-8-15' indicated concentrations of acetone, carbon disulfide, and TPH DRO below the MDE Non-Residential Cleanup Standards for soil. All other analytes were BDL.

The laboratory analytical results for sample MW-9-33' indicated concentrations of acetone, 2-butanone (MEK), carbon disulfide, naphthalene, and TPH DRO below the MDE Non-Residential Cleanup Standards for soil. All other analytes were BDL.

The results of the soil sample laboratory analyses are summarized on the Soil Quality Map included as Figure 4 in Appendix A and in Table 2 included in Appendix C. Laboratory analytical reports and chain-of-custody documentation are included in Appendix F.

4.2 Groundwater Sample Analytical Data

The laboratory analytical results for sample MW-1R indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards (i.e., Generic Numeric Cleanup Standards for Groundwater and Soil – Interim Final Guidance Update No. 2.1, dated June 2008). Methyl tert-butyl ether (MTBE) was detected at a concentration below MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

The laboratory analytical results for sample MW-2R indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards. MTBE was detected at a concentration below MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

The laboratory analytical results for sample MW-5R indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

The laboratory analytical results for sample MW-6 indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards. MTBE was detected at a concentration below MDE Type I and II Aquifers Cleanup Standards. TBA was also detected. There is no published Cleanup Standard for TBA. All other analytes were BDL.

The laboratory analytical results for sample MW-7 indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards. Cis-1,2-dichloroethene, and MTBE were detected at a concentration below MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

The laboratory analytical results for sample MW-8 indicated a TPH DRO concentration above MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

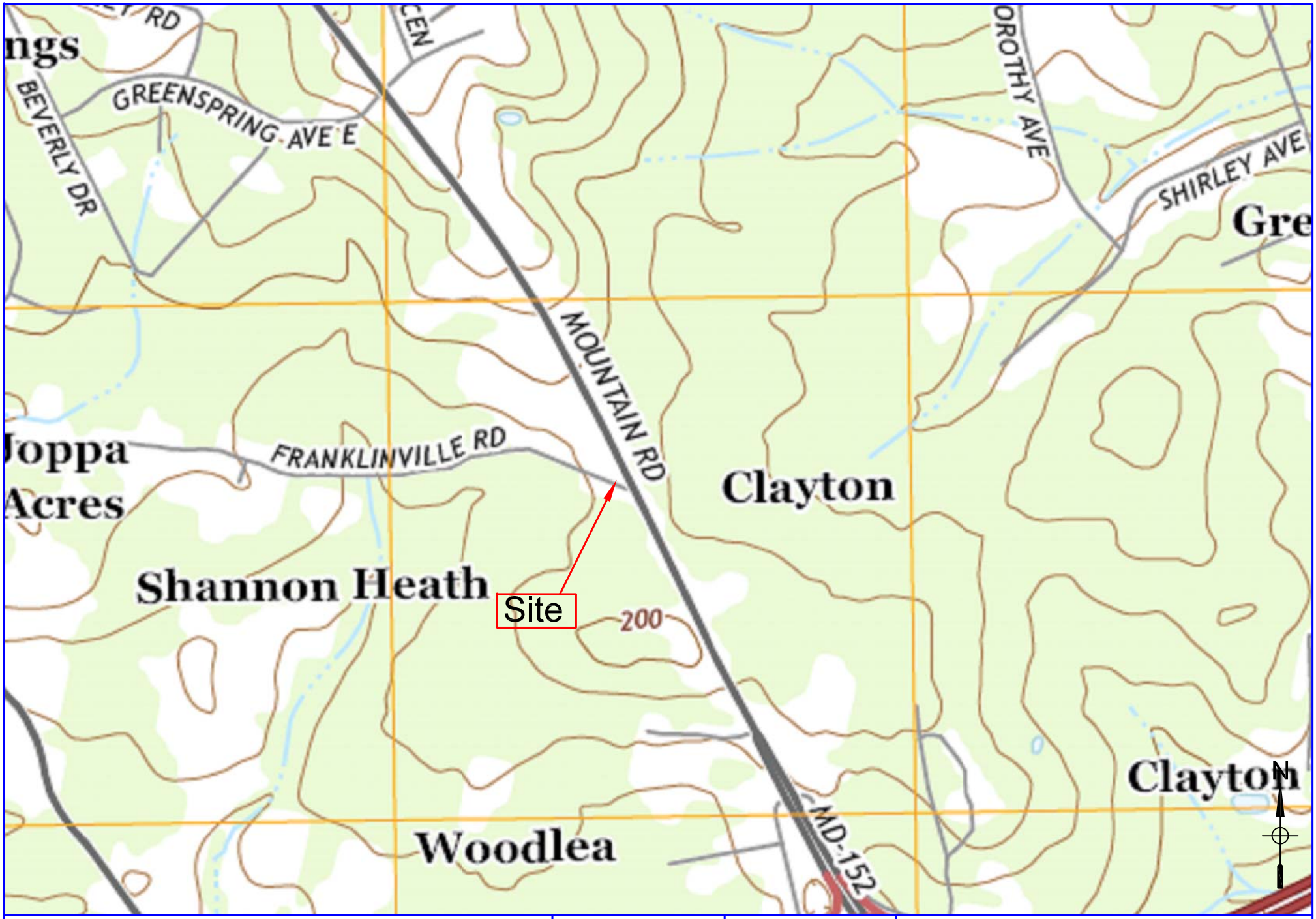
The laboratory analytical results for sample MW-9 indicated an acetone concentration below MDE Type I and II Aquifers Cleanup Standards. All other analytes were BDL.

The results of the groundwater sample laboratory analyses are summarized on the Groundwater Quality Map included as Figure 5 in Appendix A and in Table 3 included in Appendix C. Copies of the laboratory analytical reports and chain-of-custody forms are provided in Appendix F.

4.3 Recommendations

Due to the past presence of petroleum constituents in groundwater at the Site, AEC recommends quarterly sampling of the seven monitoring well network for a period of one year. Following one year of quarterly sampling, the sampling regime should be reassessed in consideration of the results obtained.

APPENDIX A
FIGURES



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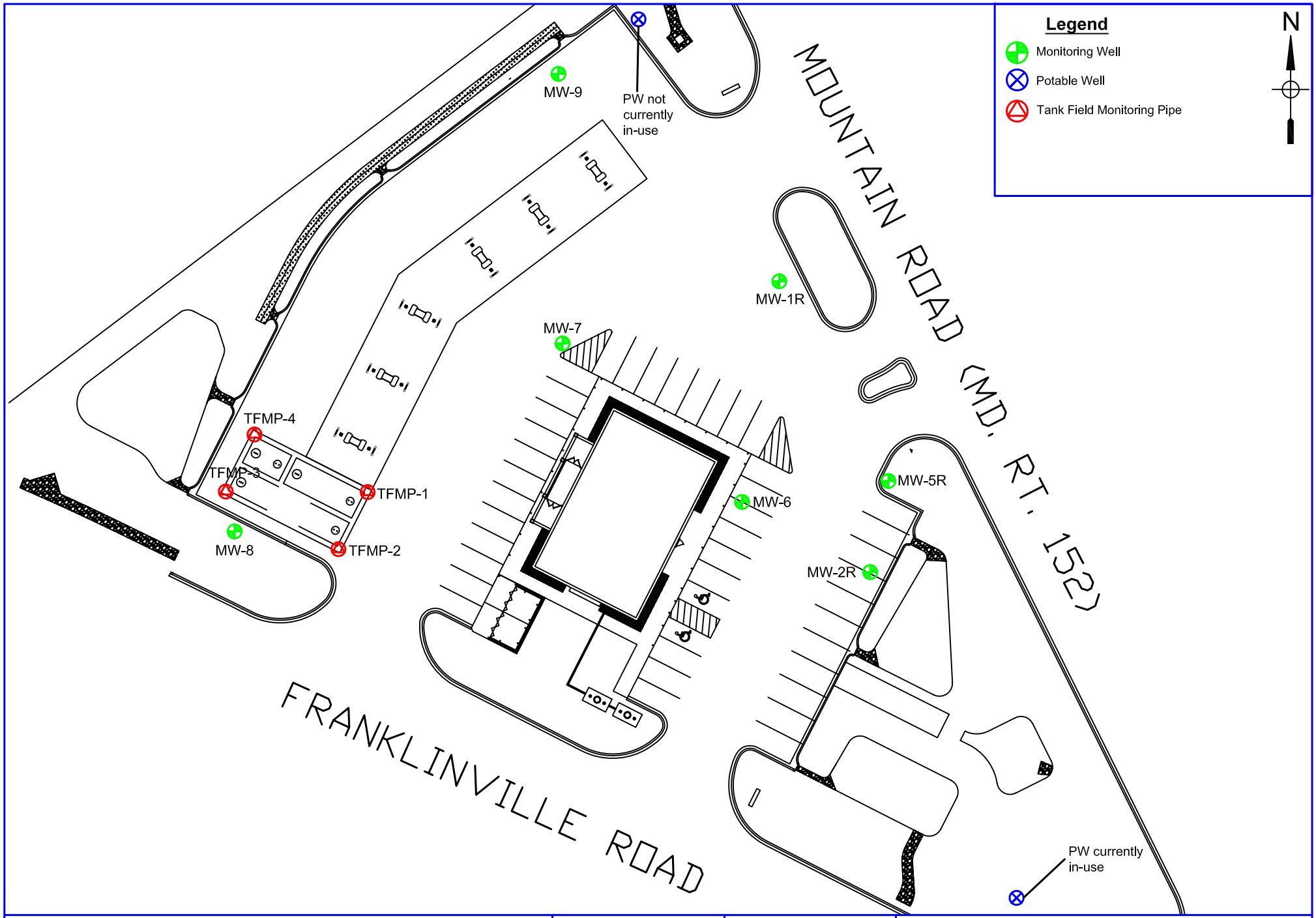
October 2015	Figure 1	Site Vicinity Map Royal Farms Store No. 001 2620 Mountain Road Joppa, MD 21085
Project No. 05-056	Drawn by: JSS	
Task No. RF-001		



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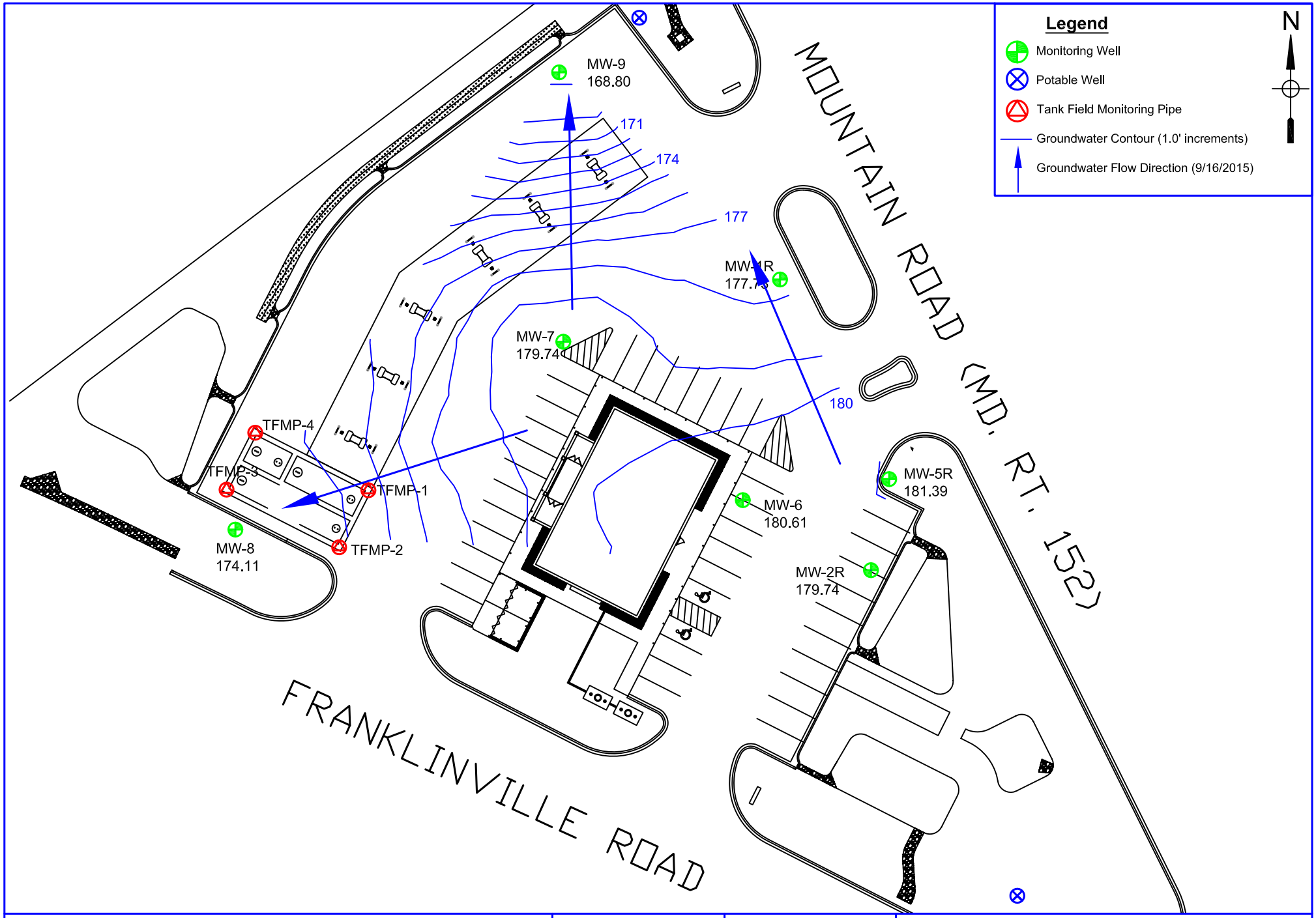
October 2015	Figure 2	Site Features Map Royal Farms No. 001 2620 Mountain Road Joppa, MD 21085
Project No. 05-056	Drawn by: JSS	
Task No. RF001	Scale: 1/4" = 1'	



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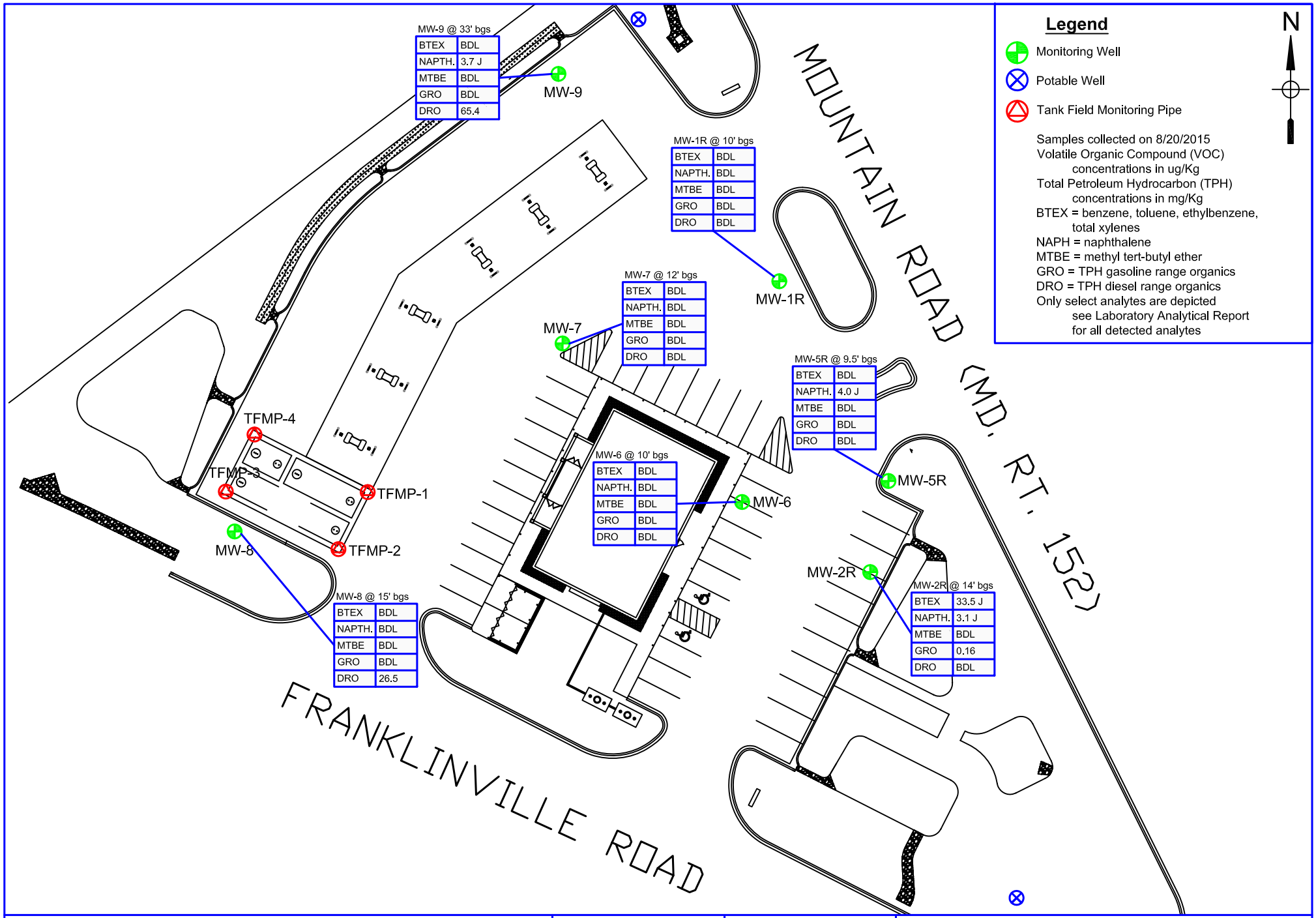
October 2015	Figure 3
Project No. 05-056	Drawn by: JSS
Task No. RF001	Scale: 1/4" = 1'

Groundwater Gradient Map
Royal Farms No. 001
2620 Mountain Road
Joppa, MD 21085



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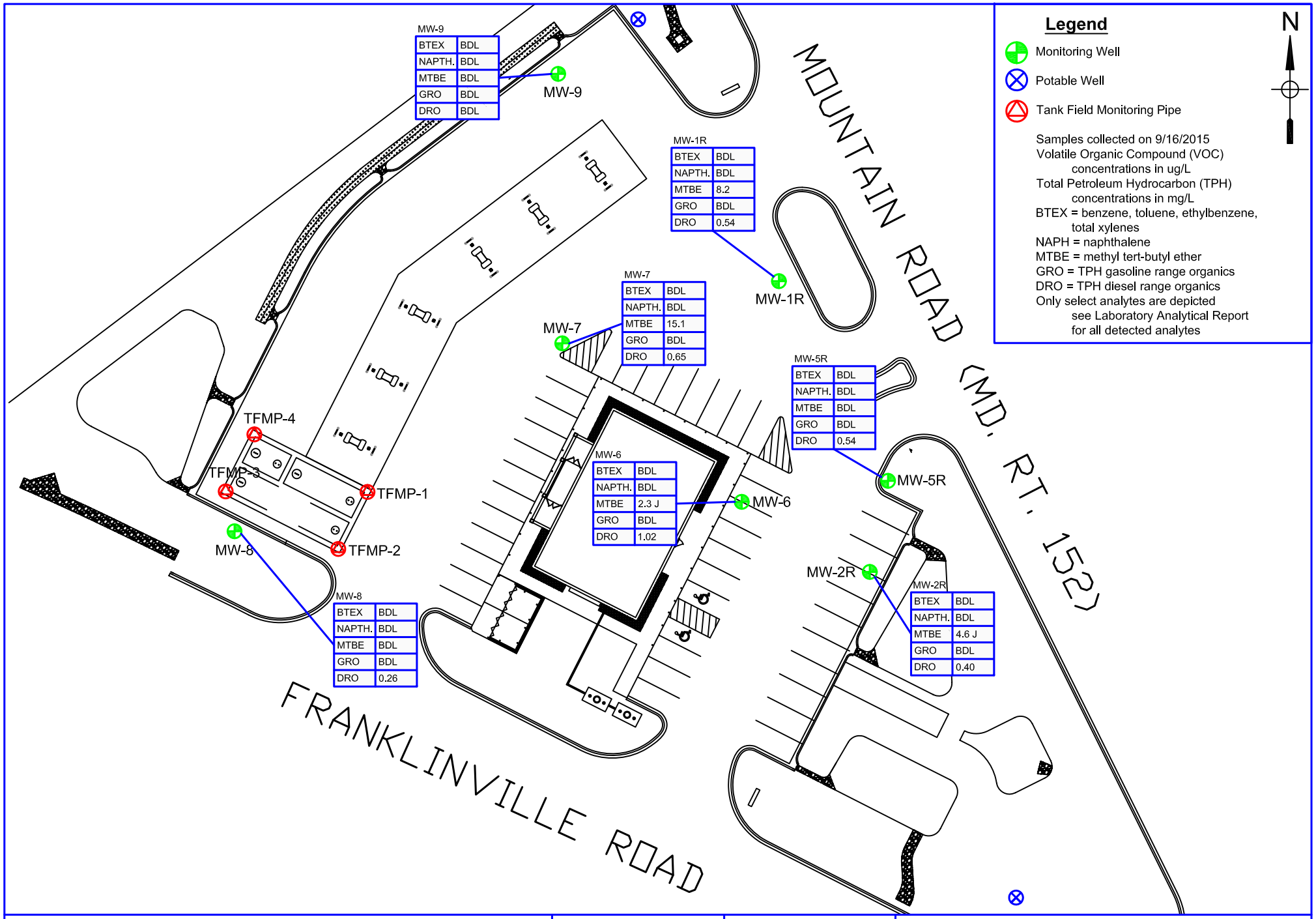
October 2015	Figure 4
Project No. 05-056	Drawn by: JSS
Task No. RF001	Scale: 1/4" = 1'

Soil Quality Map
Royal Farms No. 001
2620 Mountain Road
Joppa, MD 21085



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October 2015	Figure 5
Project No. 05-056	Drawn by: JSS
Task No. RF001	Scale: 1/4" = 1'

Groundwater Quality Map
Royal Farms No. 001
2620 Mountain Road
Joppa, MD 21085

APPENDIX B

MDE REPORT OF OBSERVATIONS

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard, Suite 620 • Baltimore Maryland 21230-1719
(410) 537-3442 • 1-800-633-6101 • http://www.mde.maryland.gov
LAND MANAGEMENT ADMINISTRATION
Oil Control Program

Report of Observations

Type of Inspection/Observations: Site Visit	**Date:** 8.17.15
Site/Facility Name: Royal Farms 1	**Facility ID #:**
Address: 2620 Mountain Road	**Case #:** 2005-0357HA
City / County: Joppa, MD	**Permit #:**

Remarks:
This writer was on-site with Tom Ruszin (Royal Farms) and Jeremy Sheidy (AEC) to cite monitoring well locations for both replacement monitoring wells and new monitoring wells to be installed for compliance with HRUGA regulations. Well locations were originally proposed as part of the *Underground Storage Tank System Closure Report – July 31, 2015.* However, due to both overhead and underground utilities (electrical, water, stormwater management, etc.), monitoring well locations had to be moved. While on-site today, rough locations for all proposed monitoring wells (MW-1R, MW-2R, MW-5R, MW-6; MW-7 through 9) were identified and marked. At this time, AEC and Royal Farms are waiting on well-~~s~~ gs permits from Harford County Health Department, at which time well installation will commence.

Note: There are 2 drinking water supply wells on-site. These wells should be denoted on any maps submitted with reports, as well as which well is currently in use at the property.

NOTES

- Report the following conditions to the Department immediately, but not later than 2 hours after the detection, at **410-537-3442** during normal business hours, or to the Emergency Response Division hotline at **1-866-633-4686**:
  - An oil spill or discharge
  - If a storage system fails a test for tightness,
  - A storage system is determined to be leaking,
  - There exists evidence of a discharge
  - Two consecutive inconclusive tests
  - Presence of liquid phase hydrocarbons
- Reports should **not** be made via voice messages to OCP case managers.
- Operating without a permit or in violation of a permit, regulation, or law may result in the assessment of civil or administrative penalties and or other legal sanctions.

MDE Representative: Jeannette DeBartolomeo	**Person Interviewed:** Tom Ruszch
Signature: Jeannette DeBartolomeo	**Signature:**
Date: 8.17.15	**Date:** 8/17/15
MDE Representative:	**Person Interviewed:** Jeremy Sheidy
Signature:	**Signature:**
Date:	**Date:** 8/17/15

Revised: 04/15/2015

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LAND MANAGEMENT ADMINISTRATION
Oil Control Program

Report of Observations

Type of Inspection/Observations: MW Installation – B3	**Date:** 8.20.15
Site/Facility Name: Royal Farms 1	**Facility ID #:**
Address: 2620 Mountain Road	**Case #:** 2005-0357HA
City / County: Joppa, MD	**Permit #:**

Remarks:
This writer was on-site with James Wolf and Jeremy Sheidy of AEC, and Allied Well Drilling (484-228-8534) for installation of both replacement monitoring wells and new monitoring wells to be installed for compliance with HRUGA regulations. Well locations were originally proposed as part of the *Underground Storage Tank System Closure Report – July 31, 2015.* However, due to both overhead and underground utilities (electrical, water, stormwater management, etc.), monitoring well locations had to be moved. Permits for the monitoring wells were received from the Harford County Health Department this morning. In accordance with the *Environmental Redevelopment Work Plan – October 24, 2014*, a direct push boring is being installed in each well location (with logging and collection of one soil sample) prior to installation of that monitoring well. Soils in the borings were mainly clay, with some gravel in the upper zones. Monitoring wells will be installed beginning tomorrow.

Direct Push Summary:

Monitoring Well	Total Depth (ft)	Groundwater at (ft)	Soil Sample Collected At (ft)	Highest PID reading	Notes
MW-1R	25 ft	10-12 ft (perched water at 2 ft)	10 ft	0 units	—
MW-2R	25 ft	10 ft	14 ft	6.9 units @14 ft	—
MW-5R	25 ft	9.5-13.5 ft	9.5 ft	8.2 units @ 9.5 ft	—
MW-6R	25 ft	12 ft	10 ft	0 units	—
MW-7	25 ft	12-16 ft	12 ft	0 units	—
MW-8	25 ft	15 ft	15 ft	0 units	Metallic smell in soils per JD
MW-9	35 ft	33 ft	33 ft	0 units	Organic smell 30-35 feet

NOTES

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  - An oil spill or discharge
  - If a storage system fails a test for tightness,
  - A storage system is determined to be leaking,
  - There exists evidence of a discharge
  - Two consecutive inconclusive tests
  - Presence of liquid phase hydrocarbons
- Reports should **not** be made via voice messages to OCP case managers.
- Operating without a permit or in violation of a permit, regulation, or law may result in the assessment of civil or administrative penalties and or other legal sanctions.

MDE Representative: Jeannette DeBartolomeo	**Person Interviewed:** James Wolf
Signature: Jeannette DeBartolomeo	**Signature:** [signature]
Date: 8.20.15	**Date:** 8-20-15

Revised: 04/15/2015

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Oil Control Program

Report of Observations

Type of Inspection/Observations: MW Installation – B3	**Date:** 8.21.15
Site/Facility Name: Royal Farms 1	**Facility ID #:**
Address: 2620 Mountain Road	**Case #:** 2005-0357HA
City / County: Joppa, MD	**Permit #:**

Remarks:
This writer was on-site with personnel from AEC and Allied Well Drilling (484-228-8534) for installation of new monitoring wells (to be installed for compliance with HRUGA regulations) and replacement monitoring wells. Monitoring well installation began today. Wells are being advanced via hollow-stem auger and will be installed with 2-inch PVC screen and casing.

MW-1R, MW-7, and MW-9 were advanced today. MW-5R was also started today. Since there was not enough sand to complete installation of the well, the auger was advanced to 20 feet, and the auger and rig will be left in place (with the boring covered) over the weekend; this well will be completed first Monday morning (8/24/15). The remaining monitoring wells are also scheduled to be completed Monday.

Note: Following monitoring well development, the wells must be allowed at least 2 weeks to re-equilibrate prior to conducting a groundwater sampling event.

Monitoring Summary (observed today):

Monitoring Well	Total Depth (ft)	Casing (ft)	Screen (ft)
MW-1R	30	0-5	5-25
MW-7	30	0-5	5-25
MW-9	45	0-5	5-45

NOTES

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  - Presence of liquid phase hydrocarbons
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- Operating without a permit or in violation of a permit, regulation, or law may result in the assessment of civil or administrative penalties and or other legal sanctions.

MDE Representative: Jeannette DeBartolomeo	**Person Interviewed:** Jeremy Shield
Signature: Jeannette DeBartolomeo	**Signature:** [illegible]
Date: 8.21.15	**Date:** 8-21-15

Revised: 04/15/2015

MARYLAND DEPARTMENT OF THE ENVIRONMENT

1800 Washington Boulevard, Suite 620 • Baltimore Maryland 21230-1719
(410) 537-3442 • 1-800-633-6101 • http://www.mde.maryland.gov
LAND MANAGEMENT ADMINISTRATION
Oil Control Program

Report of Observations

Type of Inspection/Observations: GW Sampling – B3	**Date:** 9.16.15
Site/Facility Name: Royal Farms 1	**Facility ID #:**
Address: 2620 Mountain Road	**Case #:** 2005-0357HA
City / County: Joppa, MD	**Permit #:**

Remarks:
This writer was on-site with personnel from AEC for sampling of new monitoring wells and replacement monitoring wells. The monitoring wells were also surveyed today. MW-9 had to be re-drilled to a depth of approximately 40 feet due to issues encountered with the well during well development.

The on-site supply well currently in use was also sampled today (supply well at corner of Mountain Road and Franklinville Road). This is a change from the well that was previously in use. At this time, no GAC filtration system is present on the supply well. A VOC sample was collected from this well earlier this year as part of the construction process; this sample was not submitted to MDE-OCP.

Monitoring Gauging Summary:

Monitoring Well	Depth to Water (ft)
MW-1R	6.85
MW-2R	2.59
MW-5R	2.90
MW-6	3.11
MW-7	3.65
MW-8	4.86
MW-9	14.46

NOTES

- Report the following conditions to the Department immediately, but not later than 2 hours after the detection, at **410-537-3442** during normal business hours, or to the Emergency Response Division hotline at **1-866-633-4686**:
  - An oil spill or discharge
  - If a storage system fails a test for tightness,
  - A storage system is determined to be leaking,
  - There exists evidence of a discharge
  - Two consecutive inconclusive tests
  - Presence of liquid phase hydrocarbons
- Reports should **not** be made via voice messages to OCP case managers.
- Operating without a permit or in violation of a permit, regulation, or law may result in the assessment of civil or administrative penalties and or other legal sanctions.

MDE Representative: Jeannette DeBartolomeo	**Person Interviewed:**
Signature: Jeannette DeBartolomeo	**Signature:**
Date: 9.16.15	**Date:**

Revised: 04/15/2015

APPENDIX C
DATA TABLES

Table 1 - Groundwater Elevation Data
Gasoline Fueling Station – Royal Farms #1
2620 Mountain Road, Joppa, Maryland 21085

Well No.	Date	Depth to Water	TOC Elevation	Water Elevation	Comments
MW-1R	9/16/2015	6.85	184.58	177.73	
MW-2R	9/16/2015	2.90	182.64	179.74	
MW-5R	9/16/2015	2.54	183.93	181.39	
MW-6	9/16/2015	3.11	183.72	180.61	
MW-7	9/16/2015	3.65	183.39	179.74	
MW-8	9/16/2015	4.86	178.97	174.11	
MW-9	9/16/2015	14.46	183.26	168.80	
TFMP-1	9/16/2015	1.89	NM	NM	
TFMP-2	9/16/2015	2.78	NM	NM	
TFMP-3	9/16/2015	3.86	NM	NM	
TFMP-4	9/16/2015	2.76	NM	NM	

All measurements in feet

TOC = Top of Casing

NM = Not Measured

NG = Not Gauged

LPH = Liquid Phase Hydrocaron

Table 2 - Soil Analytical Results
Gasoline Fueling Station – Royal Farms #1
2620 Mountain Road, Joppa, Maryland 21085

Well No.	Date	B	T	E	X	Total BTEX	Naphthalene	MTBE	TPH GRO	TPH DRO
MW-1R	8/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MW-2R	8/20/2015	2.4 J	BDL	31.1	BDL	33.5 J	3.1 J	BDL	0.16	BDL
MW-5R	8/20/2015	BDL	BDL	BDL	BDL	BDL	4.0 J	BDL	BDL	BDL
MW-6	8/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MW-7	8/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MW-8	8/20/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	26.5
MW-9	8/20/2015	BDL	BDL	BDL	BDL	BDL	3.7 J	BDL	BDL	65.4
Non-Residential Soil		**52,000**	**#######**	**10,000,000**	**20,000,000**	**NRS**	**2,000,000**	**720,000**	**620**	**620**

TPH GRO and DRO results in parts per million or mg/l

BTEX and MTBE results in parts per billion or ug/l

B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene MTBE = Methyl-tert-butyl-ether

TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics

BDL = Below Detection Limits J = Estimated Value NRS = No Regulatory Standard NS = Not Sampled

Some compounds may have been detected but are not tabulated on this spreadsheet.

MDE Standards (Generic Numeric Cleanup Standards for Groundwater and Soil - Interim Final Guidance Update No. 2.1 - June 2008)

Table 3 - Groundwater Analytical Results
Gasoline Fueling Station – Royal Farms #1
2620 Mountain Road, Joppa, Maryland 21085

Well No.	Date	B	T	E	X	Total BTEX	Naphthalene	MTBE	TPH GRO	TPH DRO
MW-1R	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	8.2	BDL	**0.54**
MW-2R	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	4.6 J	BDL	**0.40**
MW-5R	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**0.54**
MW-6	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	2.3 J	BDL	**1.02**
MW-7	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	15.1	BDL	**0.65**
MW-8	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	**0.26**
MW-9	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Type I and II Aquifers		**5**	**1000**	**700**	**10000**	**NRS**	**0.65**	**20**	**0.047**	**0.047**

TPH GRO and DRO results in parts per million or mg/l

BTEX and MTBE results in parts per billion or ug/l

B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene MTBE = Methyl-tert-butyl-ether

TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics

BDL = Below Detection Limits J = Estimated Value NRS = No Regulatory Standard NS = Not Sampled

Some compounds may have been detected but are not tabulated on this spreadsheet.

MDE Standards (Generic Numeric Cleanup Standards for Groundwater and Soil - Interim Final Guidance Update No. 2.1 - June 2008)

Table 4 - Potable Well Analytical Results
Gasoline Fueling Station – Royal Farms #1
2620 Mountain Road, Joppa, Maryland 21085

Well No.	Date	B	T	E	X	Total BTEX	Naphthalene	MTBE
PW-1 (Influent)	9/16/2015	BDL	0.68	BDL	BDL	0.68	BDL	4.11
PW-2a (Mid1)	9/16/2015	NS	NS	NS	NS	NS	NS	NS
PW-2b (Mid2)	9/16/2015	NS	NS	NS	NS	NS	NS	NS
PW-3 (Effluent)	9/16/2015	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Type I and II Aquifers		**5**	**1000**	**700**	**10000**	**NRS**	**0.65**	**20**

BTEX and MTBE results in parts per billion or ug/l

B = Benzene; T = Toluene; E = Ethylbenzene; X = Xylene MTBE = Methyl-tert-butyl-ether

TPH GRO = Total Petroleum Hydrocarbons Gasoline Range Organics

TPH DRO = Total Petroleum Hydrocarbons Diesel Range Organics

BDL = Below Detection Limits J = Estimated Value NRS = No Regulatory Standard NS = Not Sampled

Some compounds may have been detected but are not tabulated on this spreadsheet.

MDE Standards (Generic Numeric Cleanup Standards for Groundwater and Soil - Interim Final Guidance Update No. 2.1 - June 2008)

APPENDIX D

BORING LOGS AND WELL CONSTRUCTION DIAGRAMS

Project: RF-001	Sheet: 1 of 7	Boring No.: MW-1R	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: In the vicinity of former monitoring well MW-1	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-0.5'	Asphalt and Subbase			0.0	
0.5-4.5'	Mixed fill. Multicolored silty SAND and GRAVEL			0.0	
4.5-5'	Tan sandy SILT			0.0	
5-7'	Red clayey SAND with gravel			0.0	
7-10.5'	Red sandy CLAY		Soil Sample @10'	0.0	
10.5-12'	Tan/gray sande CLAY			0.0	
12-13'	Gray CLAY			0.0	
13-14'	Red sandy CLAY			0.0	
14'	3" lens of red SAND			0.0	
14-19.5'	Red and white CLAY			0.0	
19.5-20'	GRAVEL with clay			0.0	
20-25'	Red CLAY			0.0	
					No odors were encountered from the soils observed

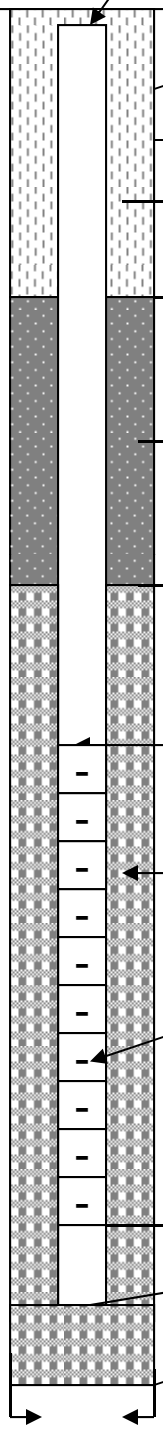
Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-1R	DATE BEGUN: 8/21/15 DATE FINISHED: 8/21/15

Reference Points & Elevations

DEPTH TO WATER (ft):1.85
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA

TOP OF RISER CASING (ft): 177.73' above mean sea level (MSL)

GROUND SURFACE (ft): 0' below ground surface (BGS)



SURFACE CASING DIA. (in.): 8
MATERIAL TYPE: Steel

BACKFILL TYPE: Grout

RISER CASING DIA. (in.): 2"
MATERIAL TYPE: PVC

TOP OF SEAL (FT): 3' BGS

ANNULAR SEAL
MATERIALTYPE: Bentonite

BOTTOM OF SEAL (FT): 4' BGS

TOP OF SCREEN (FT): 5' BGS

FILTER MATERIAL TYPE: Sand

SCREEN DIA. (in.): 2 inches
SCREEN MATERIALTYPE: Slotted PVC
SCREEN SLOT SIZE: 0.02 inch

BOTTOM OF SCREEN (FT): 29.75' BGS

BOTTOM OF HOLE (FT): 30' BGS

BOREHOLE DIAMETER (in): 6"

DEPTH (ft)	ELEV. (ft)
3.0	175.0
4.0	173.0
5.0	174.0
29.75	148.25
30.0	148.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

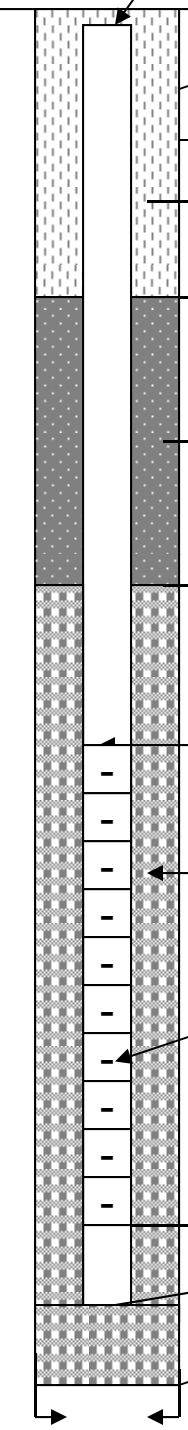
Project: RF-001	Sheet: 2 of 7	Boring No.: MW-6	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: Between the locations of former monitoring wells MW-3 & MW-4	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-0.5'	Asphalt and Subbase			0.0	
0.5-7.5'	Mixed fill. SAND with gravel and silt			0.0	
7.5-10.5'	Red/gray clayey SAND			0.0	
10.5-20'	Red and white CLAY		Soil Sample @14'	0.0	
20-21.5'	Brown clayey SAND, wet			0.0	
21.5-23'	Red and white CLAY			0.0	
23-24'	Brown sandy SILT, wet			0.0	
24-25'	Red dense CLAY			0.0	
					No odors were encountered from the soils observed

Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-6	DATE BEGUN: 8/24/15 DATE FINISHED: 8/24/15

Reference Points & Elevations

DEPTH TO WATER (ft): 3.11
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA



DEPTH (ft)	ELEV. (ft)
3.0	178.0
4.0	177.0
5.0	176.0
29.75	151.25
30.0	151.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

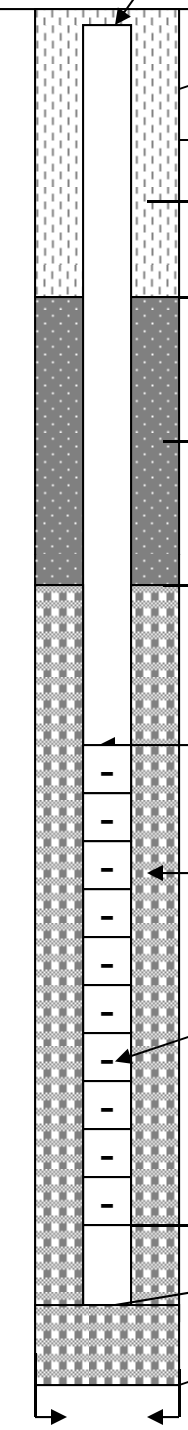
Project: RF-001	Sheet: 3 of 7	Boring No.: MW-2R	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: In the vicinity of former monitoring well MW-2	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-1'	Asphalt and Subbase			0.0	
1-5'	Sand and PEA GRAVEL			0.0	
5-7'	Gray/brown CLAY			0.0	
7-10.5'	Brown silty SAND, wet			0.0	
10.5-12'	Red CLAY with sand			0.0	
12-14'	Red silty SAND with clay, wet			0.0	
14'	Lens of stained SAND			0.0	
14-15'	White/red CLAY		Soil Sample @14'	0.0	
15-17'	White/red CLAY with sand			6.9	
17-20'	White/red CLAY			0.0	
20-23'	GRAVEL w/ silty sand, wet			0.0	
23-25'	Red CLAY			0.0	
					No odors were encountered from the soils observed

Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-2R	DATE BEGUN: 8/24/15 DATE FINISHED: 8/24/15

Reference Points & Elevations

DEPTH TO WATER (ft):2.54
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA



DEPTH (ft)	ELEV. (ft)
3.0	177.0
4.0	175.0
5.0	176.0
29.75	150.25
30.0	150.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

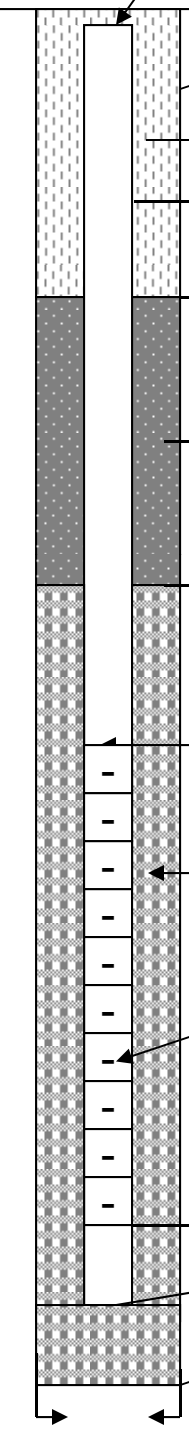
Project: RF-001	Sheet: 4 of 7	Boring No.: MW-5R	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: In the vicinity of former monitoring well MW-5	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-1'	Asphalt and Subbase			0.0	
1-2'	Brown SAND & GRAVEL			0.0	
2-6'	Brown clayey SILT with sand and gravel			5.1@4' 0.0@5'	
6-8.5'	Brown clayey SILT with sand			0.0	
8.5-9'	Red CLAY with sand			0.0	
9-9.5'	Red silty SAND with clay, wet		Soil Sample @9.5'	8.2	
9.5-13.5'	Lens of stained SAND			4.0	
13.5-22'	White/red CLAY			0.0	
22-23'	White/red CLAY with sand			0.0	
23-25'	White/red CLAY			0.0	
					No odors were encountered from the soils observed

Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-5R	DATE BEGUN: 8/21/15 DATE FINISHED: 8/24/15

Reference Points & Elevations

DEPTH TO WATER (ft): 2.90
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA



TOP OF RISER CASING (ft): 181.39' above mean sea level (MSL)

GROUND SURFACE (ft): 0' below ground surface (BGS)

SURFACE CASING DIA. (in.): 8
MATERIAL TYPE: Steel

BACKFILL TYPE: Grout

RISER CASING DIA. (in.): 2"
MATERIAL TYPE: PVC

TOP OF SEAL (FT): 3' BGS

ANNULAR SEAL
MATERIALTYPE: Bentonite

BOTTOM OF SEAL (FT): 4' BGS

TOP OF SCREEN (FT): 5' BGS

FILTER MATERIAL TYPE: Sand

SCREEN DIA. (in.): 2 inches
SCREEN MATERIALTYPE: Slotted PVC
SCREEN SLOT SIZE: 0.02 inch

BOTTOM OF SCREEN (FT): 29.75' BGS

BOTTOM OF HOLE (FT): 30' BGS

BOREHOLE DIAMETER (in): 6"

DEPTH (ft)	ELEV. (ft)
3.0	179.0
4.0	178.0
5.0	177.0
29.75	152.25
30.0	152.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

Project: RF-001	Sheet: 5 of 7	Boring No.: MW-7	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: Between the store and the dispenser canopy moving northwest from the northwest corner of the store	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-0.5'	Asphalt and Subbase			0.0	
0.5-3'	Mixed fill. SAND with gravel and clay			0.0	
3-5'	Gray GRAVEL with silt and sand			0.0	
5-7'	Gray/brown CLAY			0.0	
7-9'	Red/brown/white dense CLAY			0.0	
9-10'	Red/brown clayey SAND			0.0	
10-13'	Red/gray sandy CLAY		Soil Sample @12'	0.0	
13-17'	Red coarse SAND with gravel, wet			0.0	
17-20'	Red/white CLAY			0.0	
20-21'	Red/white clayey SAND			0.0	
21-25'	Red/white CLAY, stiff			0.0	
					No odors were encountered from the soils observed

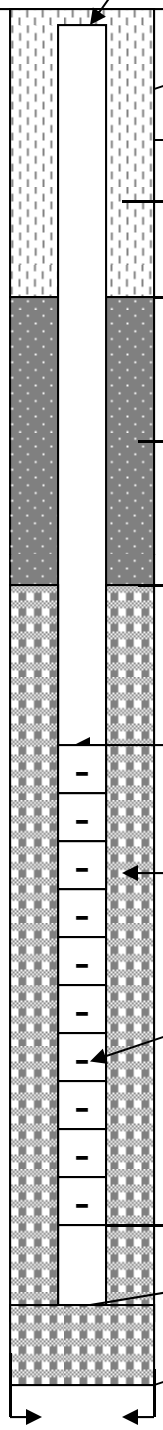
Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-7	DATE BEGUN: 8/21/15 DATE FINISHED: 8/21/15

Reference Points & Elevations

DEPTH TO WATER (ft):3.65
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA

TOP OF RISER CASING (ft): 183.39' above mean sea level (MSL)

GROUND SURFACE (ft): 0' below ground surface (BGS)



SURFACE CASING DIA. (in.): 8
MATERIAL TYPE: Steel

BACKFILL TYPE: Grout

RISER CASING DIA. (in.): 2"
MATERIAL TYPE: PVC

TOP OF SEAL (FT): 3' BGS

ANNULAR SEAL
MATERIALTYPE: Bentonite

BOTTOM OF SEAL (FT): 4' BGS

TOP OF SCREEN (FT): 5' BGS

FILTER MATERIAL TYPE: Sand

SCREEN DIA. (in.): 2 inches
SCREEN MATERIALTYPE: Slotted PVC
SCREEN SLOT SIZE: 0.02 inch

BOTTOM OF SCREEN (FT): 29.75' BGS

BOTTOM OF HOLE (FT): 30' BGS

BOREHOLE DIAMETER (in): 6"

DEPTH (ft)	ELEV. (ft)
3.0	181.0
4.0	180.0
5.0	179.0
29.75	154.25
30.0	154.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

Project: RF-001	Sheet: 6 of 7	Boring No.: MW-9	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: Approximately 15 feet northwest of the northwest corner of the dispenser canopy	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-1'	Asphalt and Subbase			0.0	
1-5'	Mixed fill. SAND and gravel with silt			0.0	
5-7.5'	Red/brown CLAY			0.0	
7.5-8'	Quartz GRAVEL			0.0	
8-10.5'	Red/brown CLAY			0.0	
10.5-11'	Brown silty SAND with GRAVEL			0.0	
11-13.5'	Red/gray CLAY, stiff			0.0	
13.5-22.5'	Red/gray silty CLAY			0.0	
22.5-25'	Gray CLAY, stiff			0.0	
25-27'	Red CLAY, stiff			0.0	
27-33'	Dark gray/black CLAY		Soil Sample @33'	0.0	
33-35'	Brown clayey SILT with gravel			0.0	
					No odors were encountered from the soils observed

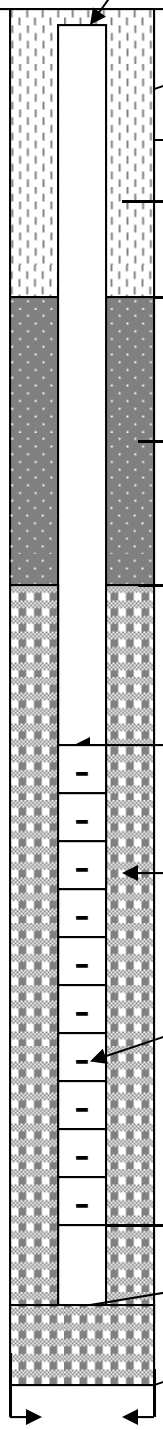
Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-9	DATE BEGUN: 8/21/15 DATE FINISHED: 8/21/15

Reference Points & Elevations

DEPTH TO WATER (ft): 14.46
DEPTH OF WELL (ft): 45
DRILLING METHOD: HSA

TOP OF RISER CASING (ft): 183.26' above mean sea level (MSL)

GROUND SURFACE (ft): 0' below ground surface (BGS)



SURFACE CASING DIA. (in.): 8
MATERIAL TYPE: Steel

BACKFILL TYPE: Grout

RISER CASING DIA. (in.): 2"
MATERIAL TYPE: PVC

TOP OF SEAL (FT): 3' BGS

ANNULAR SEAL
MATERIALTYPE: Bentonite

BOTTOM OF SEAL (FT): 4' BGS

TOP OF SCREEN (FT): 5' BGS

FILTER MATERIAL TYPE: Sand

SCREEN DIA. (in.): 2 inches
SCREEN MATERIALTYPE: Slotted PVC
SCREEN SLOT SIZE: 0.02 inch

BOTTOM OF SCREEN (FT): 29.75' BGS

BOTTOM OF HOLE (FT): 30' BGS

BOREHOLE DIAMETER (in): 6"

DEPTH (ft)	ELEV. (ft)
3.0	181.0
4.0	180.0
5.0	179.0
29.75	139.25
30.0	139.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

Project: RF-001	Sheet: 7 of 7	Boring No.: MW-8	Advantage Environmental Consultants, LLC
Site Location: 2620 Mountain Road Joppa, MD	Location: In the landscaped area south of the UST field.	Elevation:	Job Number: 05-056RF001
Drill Contractor: Allied	Engineer/Geologist: JDW	Date Begun: 8/20/2015	Date Finished: 8/20/15
Drill Rig/Driller Gary	Weather: 85° Overcast Humid	Groundwater (Depth/Elevation): See gauging data	
Hole Size: 2.5"	Drill Method: Direct Push	Drill Fluid: N/A	

Depth (feet)	Soil Classification	Sample Depth	Sample Type	PID Reading (ppm)	
0-1'	Asphalt and Subbase			0.0	
1-4.5'	Mixed fill. SAND with gravel and clay			0.0	
4.5-8'	Gray GRAVEL with silt and sand			0.0	
8-9'	Gray/brown CLAY			0.0	
9-10.5'	Red/brown clayey SAND			0.0	
10.5-13'	Red/brown CLAY with sand			0.0	
13-13.5'	Orange clayey SAND with gravel			0.0	
13.5-15'	Red and white CLAY, stiff		Soil Sample @15'	0.0	
15-15.5'	GRAVEL and silt, wet			0.0	
15.5-23'	Red/white CLAY			0.0	
23-25'	Dark gray/black CLAY			0.0	
					No odors were encountered from the soils observed

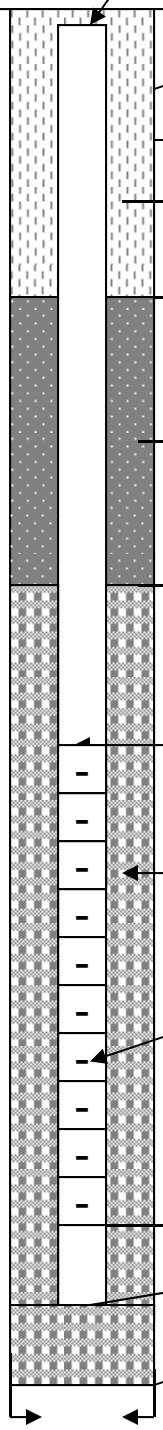
Monitoring Well Installation Report	PROJECT #: 05-056-RF001	Advantage Environmental Consultants, LLC
DRILLING CONTRACTOR: Allied AEC SUPERVISOR: Jeremy Sheidy	WELL ID: MW-8	DATE BEGUN: 8/24/15 DATE FINISHED: 8/24/15

Reference Points & Elevations

DEPTH TO WATER (ft): 4.86
DEPTH OF WELL (ft): 30
DRILLING METHOD: HSA

TOP OF RISER CASING (ft): 174.11' above mean sea level (MSL)

GROUND SURFACE (ft): 0' below ground surface (BGS)



SURFACE CASING DIA. (in.): 8
MATERIAL TYPE: Steel

BACKFILL TYPE: Grout

RISER CASING DIA. (in.): 2"
MATERIAL TYPE: PVC

TOP OF SEAL (FT): 3' BGS

ANNULAR SEAL
MATERIALTYPE: Bentonite

BOTTOM OF SEAL (FT): 4' BGS

TOP OF SCREEN (FT): 5' BGS

FILTER MATERIAL TYPE: Sand

SCREEN DIA. (in.): 2 inches
SCREEN MATERIALTYPE: Slotted PVC
SCREEN SLOT SIZE: 0.02 inch

BOTTOM OF SCREEN (FT): 29.75' BGS

BOTTOM OF HOLE (FT): 30' BGS

BOREHOLE DIAMETER (in): 6"

DEPTH (ft)	ELEV. (ft)
3.0	172.0
4.0	171.0
5.0	170.0
29.75	145.25
30.0	145.0

DATE DEVELOPED:9/1/15

METHOD DEVELOPED: Surge Block and Aggressive Bailing

APPENDIX E

DISPOSAL MANIFEST

Petroleum Management, Inc.

MD. Oil Operations Permit No: 2011-OPT-38311
EPA Identification No: MDR000525278
Federal ID No: 52-2014536

5218 Curtis Avenue ♦ Baltimore, Maryland 21226 ♦ Phone 410-354-0200 ♦ Fax 410-721-1390

Bill of Lading/Manifest **№** 12530

Generator/Shipper: Royal Farms		Billing Name: AEC		
Site Address: Mountain Rd		Address:		
City: Joppa	State: MD Zip:	City:	State:	Zip:
Phone: ( )	Contact:	Phone: ( )	Contact:	

Purchase Order NO:

MATERIAL CHARACTERIZATION (CHECK ALL THAT APPLY):

Description:	Gallons	Description:	Gallons	Description:	Gallons
Gasoline, 3, UN1203, PGII		Hazardous Waste, Liquid, 9 NA3082, PGIII		JP#4	
#2 Fuel Oil, 3, NA1993, PGIII		Hazardous Waste, Solid, 9 NA3077, PGIII		JP#5	
#4 Fuel Oil, 3 NA1993, PGIII		Paint Thinners, 3, UN1263, PGI		Jet A	
#6 Fuel Oil, 3, NA1993, PGIII		Ethylene Glycol, 9, UN3082, PGIII		Sludge	
Diesel, 3, NA1993, PGIII		Lube Oil		Petroleum Contaminated Water	
Flammable Liquids, NOS, 3, UN1993, PGI		Waste Oil		Other: Soil	
Corrosive Liquids, NOS, 8, UN1760, PGII		Kerosene		Other:	
No. of Drums	20	No. of Tanks:		Other:	
Scale Weights (Soil): Total: (Tons)		Tare: (Tons)		Net: (Tons)	

Service Description:
Picked up and Recovered (20) Drums of Soil and water

PLACARDS TENDERED: ☐ YES ☑ NO **EMERGENCY CONTACT (410) 354-0200**

Generator/Shipper Certification Statement

As the generator or shipper, I hereby certify that this material is properly classified and does not contain Polychlorinated Biphenyls (PCB'S). To the best of my knowledge it has not been mixed, combined or blended in any amount with any other material defined as hazardous waste under applicable law. Generator/Shipper agrees to indemnify and hold Petroleum Management, Inc. harmless for any damages arising from or in any way relating to a breach of this Certification Statement.

X Generator/Shipper Authorized Agent (Print) — Date of Service 9/4/15

X Generator/Shipper Authorized Agent Signature

HAULER/CARRIER INFORMATION

Co. Name: Petroleum Management, Inc.		Driver Name (print): Carlos Tovar	
Street: 5218 Curtis Avenue		Driver Signature	
City: Baltimore	State: MD Zip: 21226	Phone	

The above mentioned materials have been received by this facility and will be handled in accordance with all applicable rules and regulations. All quantities are subject to final verification by this facility and are indicated in far right box.

RECEIVING FACILITY ACCEPTANCE

Facility Name: Petroleum Management, Inc. 5218 Curtis Avenue Baltimore, MD 21226

Acceptance Signature

Phone

Total Quantity Received: 20

White - Original Yellow - Transporter Pink - Facility Gold - Customer

APPENDIX F

LABORATORY ANALYTICAL RESULTS AND
CHAIN-OF-CUSTODY DOCUMENTATION

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

27 August 2015

James Wolf
Advantage Environmental Consultants, LLC
8610 Baltimore Washington Blvd, Suite 217
Jessup, MD 20794
RE: RF-001

Enclosed are the results of analyses for samples received by the laboratory on 08/20/15 17:02.

A more detailed report format is available upon request, which lists the accreditation status for all analytical methods performed.

Please visit our website at www.mdspectral.com for a complete listing of our accreditations.

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

Sincerely,

Will Brewington
Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1R-10		5082018-01	Soil	08/20/15 10:05	08/20/15 17:02
MW-6-10		5082018-02	Soil	08/20/15 10:20	08/20/15 17:02
MW-2R-14		5082018-03	Soil	08/20/15 10:48	08/20/15 17:02
MW-5R-9.5		5082018-04	Soil	08/20/15 11:13	08/20/15 17:02
MW-7-12		5082018-05	Soil	08/20/15 12:18	08/20/15 17:02
MW-9-33		5082018-06	Soil	08/20/15 15:35	08/20/15 17:02
MW-8-15		5082018-07	Soil	08/20/15 14:44	08/20/15 17:02

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS can provide a certification list upon request.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-1R-10

5082018-01 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	ND		ug/kg dry	8.3	8.3	1	08/21/15	08/21/15 11:55	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	41.5	41.5	1	08/21/15	08/21/15 11:55	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Benzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Bromobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Bromochloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Bromodichloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Bromoform	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Bromomethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 11:55	WB
tert-Butanol (TBA)	ND		ug/kg dry	41.5	41.5	1	08/21/15	08/21/15 11:55	WB
2-Butanone (MEK)	ND		ug/kg dry	8.3	8.3	1	08/21/15	08/21/15 11:55	WB
n-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
sec-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
tert-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Carbon disulfide	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Carbon tetrachloride	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Chlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Chloroethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 11:55	WB
Chloroform	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Chloromethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 11:55	WB
2-Chlorotoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
4-Chlorotoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Dibromochloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Dibromomethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1-Dichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2-Dichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-1R-10

5082018-01 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Dichlorofluoromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,3-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
2,2-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Ethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Hexachlorobutadiene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
2-Hexanone	ND		ug/kg dry	8.3	8.3	1	08/21/15	08/21/15 11:55	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
4-Isopropyltoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
4-Methyl-2-pentanone	ND		ug/kg dry	8.3	8.3	1	08/21/15	08/21/15 11:55	WB
Methylene chloride	ND		ug/kg dry	8.3	8.3	1	08/21/15	08/21/15 11:55	WB
Naphthalene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
n-Propylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Styrene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Tetrachloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Toluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Trichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS can provide a certification list upon request.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-1R-10

5082018-01 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
o-Xylene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
m- & p-Xylenes	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 11:55	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*107 %*	*08/21/15*		*08/21/15 11:55*		
Surrogate: Toluene-d8			*85-114*	*98 %*	*08/21/15*		*08/21/15 11:55*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*85 %*	*08/21/15*		*08/21/15 11:55*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.09	0.03	1	08/26/15	08/26/15 00:12	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*99 %*	*08/26/15*		*08/26/15 00:12*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	ND		mg/kg dry	9.3	9.3	1	08/21/15	08/24/15 15:16	CMK
Surrogate: o-Terphenyl			*70-130*	*82 %*	*08/21/15*		*08/24/15 15:16*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**86**		%			1	08/21/15	08/21/15 13:56	AM

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-6-10

5082018-02 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	ND		ug/kg dry	8.4	8.4	1	08/21/15	08/21/15 12:28	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	41.8	41.8	1	08/21/15	08/21/15 12:28	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Benzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Bromobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Bromochloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Bromodichloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Bromoform	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Bromomethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 12:28	WB
tert-Butanol (TBA)	ND		ug/kg dry	41.8	41.8	1	08/21/15	08/21/15 12:28	WB
2-Butanone (MEK)	ND		ug/kg dry	8.4	8.4	1	08/21/15	08/21/15 12:28	WB
n-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
sec-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
tert-Butylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Carbon disulfide	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Carbon tetrachloride	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Chlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Chloroethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 12:28	WB
Chloroform	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Chloromethane	ND		ug/kg dry	4.2	4.2	1	08/21/15	08/21/15 12:28	WB
2-Chlorotoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
4-Chlorotoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Dibromochloromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Dibromomethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1-Dichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2-Dichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-6-10

5082018-02 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Dichlorofluoromethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,3-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
2,2-Dichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Ethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Hexachlorobutadiene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
2-Hexanone	ND		ug/kg dry	8.4	8.4	1	08/21/15	08/21/15 12:28	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
4-Isopropyltoluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
4-Methyl-2-pentanone	ND		ug/kg dry	8.4	8.4	1	08/21/15	08/21/15 12:28	WB
Methylene chloride	ND		ug/kg dry	8.4	8.4	1	08/21/15	08/21/15 12:28	WB
Naphthalene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
n-Propylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Styrene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Tetrachloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Toluene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Trichloroethene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-6-10

5082018-02 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
o-Xylene	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
m- & p-Xylenes	ND		ug/kg dry	4.2	1.7	1	08/21/15	08/21/15 12:28	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*108 %*	*08/21/15*		*08/21/15 12:28*		
Surrogate: Toluene-d8			*85-114*	*98 %*	*08/21/15*		*08/21/15 12:28*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*89 %*	*08/21/15*		*08/21/15 12:28*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.09	0.03	1	08/26/15	08/26/15 00:49	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*99 %*	*08/26/15*		*08/26/15 00:49*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	ND		mg/kg dry	8.7	8.7	1	08/21/15	08/24/15 15:42	CMK
Surrogate: o-Terphenyl			*70-130*	*102 %*	*08/21/15*		*08/24/15 15:42*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**92**		%			1	08/21/15	08/21/15 13:56	AM

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Analytical Results

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Project: RF-001

Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-2R-14

5082018-03 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 13:01	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	45.5	45.5	1	08/21/15	08/21/15 13:01	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Benzene	**2.4**	J	ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Bromobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Bromochloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Bromodichloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Bromoform	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Bromomethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 13:01	WB
tert-Butanol (TBA)	**110**		ug/kg dry	45.5	45.5	1	08/21/15	08/21/15 13:01	WB
2-Butanone (MEK)	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 13:01	WB
n-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
sec-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
tert-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Carbon disulfide	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Carbon tetrachloride	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Chlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Chloroethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 13:01	WB
Chloroform	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Chloromethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 13:01	WB
2-Chlorotoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
4-Chlorotoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Dibromochloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Dibromomethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1-Dichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2-Dichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001

Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-2R-14

5082018-03 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Dichlorofluoromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,3-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
2,2-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Ethylbenzene	**31.1**		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Hexachlorobutadiene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
2-Hexanone	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 13:01	WB
Isopropylbenzene (Cumene)	**3.5**	J	ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
4-Isopropyltoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
4-Methyl-2-pentanone	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 13:01	WB
Methylene chloride	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 13:01	WB
Naphthalene	**3.1**	J	ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
n-Propylbenzene	**6.2**		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Styrene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Tetrachloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Toluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Trichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-2R-14

5082018-03 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
o-Xylene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
m- & p-Xylenes	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 13:01	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*111 %*	*08/21/15*		*08/21/15 13:01*		
Surrogate: Toluene-d8			*85-114*	*96 %*	*08/21/15*		*08/21/15 13:01*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*92 %*	*08/21/15*		*08/21/15 13:01*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	**0.16**		mg/kg dry	0.09	0.03	1	08/26/15	08/26/15 01:26	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*08/26/15*		*08/26/15 01:26*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	ND		mg/kg dry	8.9	8.9	1	08/21/15	08/24/15 16:09	CMK
Surrogate: o-Terphenyl			*70-130*	*93 %*	*08/21/15*		*08/24/15 16:09*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**90**		%			1	08/21/15	08/21/15 13:56	AM

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Maryland spectral Services
Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-5R-9.5

5082018-04 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	ND		ug/kg dry	9.8	9.8	1	08/21/15	08/21/15 13:33	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	48.8	48.8	1	08/21/15	08/21/15 13:33	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Benzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Bromobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Bromochloromethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Bromodichloromethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Bromoform	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Bromomethane	ND		ug/kg dry	4.9	4.9	1	08/21/15	08/21/15 13:33	WB
tert-Butanol (TBA)	ND		ug/kg dry	48.8	48.8	1	08/21/15	08/21/15 13:33	WB
2-Butanone (MEK)	ND		ug/kg dry	9.8	9.8	1	08/21/15	08/21/15 13:33	WB
n-Butylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
sec-Butylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
tert-Butylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Carbon disulfide	**2.0**	J	ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Carbon tetrachloride	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Chlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Chloroethane	ND		ug/kg dry	4.9	4.9	1	08/21/15	08/21/15 13:33	WB
Chloroform	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Chloromethane	ND		ug/kg dry	4.9	4.9	1	08/21/15	08/21/15 13:33	WB
2-Chlorotoluene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
4-Chlorotoluene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Dibromochloromethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Dibromomethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1-Dichloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2-Dichloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1-Dichloroethene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-5R-9.5

5082018-04 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Dichlorofluoromethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2-Dichloropropane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,3-Dichloropropane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
2,2-Dichloropropane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1-Dichloropropene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Ethylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Hexachlorobutadiene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
2-Hexanone	ND		ug/kg dry	9.8	9.8	1	08/21/15	08/21/15 13:33	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
4-Isopropyltoluene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
4-Methyl-2-pentanone	ND		ug/kg dry	9.8	9.8	1	08/21/15	08/21/15 13:33	WB
Methylene chloride	ND		ug/kg dry	9.8	9.8	1	08/21/15	08/21/15 13:33	WB
Naphthalene	**4.0**	J	ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
n-Propylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Styrene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Tetrachloroethene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Toluene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Trichloroethene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-5R-9.5

5082018-04 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
o-Xylene	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
m- & p-Xylenes	ND		ug/kg dry	4.9	2.0	1	08/21/15	08/21/15 13:33	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*114 %*	*08/21/15*		*08/21/15 13:33*		
Surrogate: Toluene-d8			*85-114*	*95 %*	*08/21/15*		*08/21/15 13:33*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*92 %*	*08/21/15*		*08/21/15 13:33*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.09	0.03	1	08/26/15	08/26/15 02:04	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*08/26/15*		*08/26/15 02:04*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	ND		mg/kg dry	9.5	9.5	1	08/21/15	08/24/15 16:35	CMK
Surrogate: o-Terphenyl			*70-130*	*91 %*	*08/21/15*		*08/24/15 16:35*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**84**		%			1	08/21/15	08/21/15 13:56	AM

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Analytical Results

1500 Caton Center Dr Suite G
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-7-12

5082018-05 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	ND		ug/kg dry	8.9	8.9	1	08/21/15	08/21/15 14:06	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	44.3	44.3	1	08/21/15	08/21/15 14:06	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Benzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Bromobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Bromochloromethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Bromodichloromethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Bromoform	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Bromomethane	ND		ug/kg dry	4.4	4.4	1	08/21/15	08/21/15 14:06	WB
tert-Butanol (TBA)	ND		ug/kg dry	44.3	44.3	1	08/21/15	08/21/15 14:06	WB
2-Butanone (MEK)	ND		ug/kg dry	8.9	8.9	1	08/21/15	08/21/15 14:06	WB
n-Butylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
sec-Butylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
tert-Butylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Carbon disulfide	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Carbon tetrachloride	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Chlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Chloroethane	ND		ug/kg dry	4.4	4.4	1	08/21/15	08/21/15 14:06	WB
Chloroform	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Chloromethane	ND		ug/kg dry	4.4	4.4	1	08/21/15	08/21/15 14:06	WB
2-Chlorotoluene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
4-Chlorotoluene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Dibromochloromethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Dibromomethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1-Dichloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2-Dichloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1-Dichloroethene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-7-12

5082018-05 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Dichlorofluoromethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2-Dichloropropane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,3-Dichloropropane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
2,2-Dichloropropane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1-Dichloropropene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Ethylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Hexachlorobutadiene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
2-Hexanone	ND		ug/kg dry	8.9	8.9	1	08/21/15	08/21/15 14:06	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
4-Isopropyltoluene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
4-Methyl-2-pentanone	ND		ug/kg dry	8.9	8.9	1	08/21/15	08/21/15 14:06	WB
Methylene chloride	ND		ug/kg dry	8.9	8.9	1	08/21/15	08/21/15 14:06	WB
Naphthalene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
n-Propylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Styrene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Tetrachloroethene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Toluene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Trichloroethene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-7-12

5082018-05 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
o-Xylene	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
m- & p-Xylenes	ND		ug/kg dry	4.4	1.8	1	08/21/15	08/21/15 14:06	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*108 %*	*08/21/15*		*08/21/15 14:06*		
Surrogate: Toluene-d8			*85-114*	*97 %*	*08/21/15*		*08/21/15 14:06*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*90 %*	*08/21/15*		*08/21/15 14:06*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.09	0.03	1	08/26/15	08/26/15 02:42	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*08/26/15*		*08/26/15 02:42*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	ND		mg/kg dry	8.5	8.5	1	08/21/15	08/24/15 17:01	CMK
Surrogate: o-Terphenyl			*70-130*	*91 %*	*08/21/15*		*08/24/15 17:01*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**94**		%			1	08/21/15	08/21/15 13:56	AM

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-9-33

5082018-06 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	**222**	E	ug/kg dry	10.9	10.9	1	08/21/15	08/21/15 14:39	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	54.6	54.6	1	08/21/15	08/21/15 14:39	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Benzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Bromobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Bromochloromethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Bromodichloromethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Bromoform	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Bromomethane	ND		ug/kg dry	5.5	5.5	1	08/21/15	08/21/15 14:39	WB
tert-Butanol (TBA)	ND		ug/kg dry	54.6	54.6	1	08/21/15	08/21/15 14:39	WB
2-Butanone (MEK)	**21.5**		ug/kg dry	10.9	10.9	1	08/21/15	08/21/15 14:39	WB
n-Butylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
sec-Butylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
tert-Butylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Carbon disulfide	**16.0**		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Carbon tetrachloride	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Chlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Chloroethane	ND		ug/kg dry	5.5	5.5	1	08/21/15	08/21/15 14:39	WB
Chloroform	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Chloromethane	ND		ug/kg dry	5.5	5.5	1	08/21/15	08/21/15 14:39	WB
2-Chlorotoluene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
4-Chlorotoluene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Dibromochloromethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Dibromomethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2-Dichlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,3-Dichlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,4-Dichlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Dichlorodifluoromethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1-Dichloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2-Dichloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1-Dichloroethene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-9-33

5082018-06 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Dichlorofluoromethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2-Dichloropropane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,3-Dichloropropane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
2,2-Dichloropropane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1-Dichloropropene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Ethylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Hexachlorobutadiene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
2-Hexanone	ND		ug/kg dry	10.9	10.9	1	08/21/15	08/21/15 14:39	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
4-Isopropyltoluene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
4-Methyl-2-pentanone	ND		ug/kg dry	10.9	10.9	1	08/21/15	08/21/15 14:39	WB
Methylene chloride	ND		ug/kg dry	10.9	10.9	1	08/21/15	08/21/15 14:39	WB
Naphthalene	**3.7**	J	ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
n-Propylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Styrene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Tetrachloroethene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Toluene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1,1-Trichloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,1,2-Trichloroethane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Trichloroethene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2,3-Trichloropropane	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB

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Will Brewington, Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-9-33

5082018-06 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
o-Xylene	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
m- & p-Xylenes	ND		ug/kg dry	5.5	2.2	1	08/21/15	08/21/15 14:39	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*108 %*	*08/21/15*		*08/21/15 14:39*		
Surrogate: Toluene-d8			*85-114*	*102 %*	*08/21/15*		*08/21/15 14:39*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*82 %*	*08/21/15*		*08/21/15 14:39*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.10	0.03	1	08/26/15	08/26/15 03:19	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*98 %*	*08/26/15*		*08/26/15 03:19*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	**65.4**		mg/kg dry	21.3	21.3	1	08/21/15	08/24/15 17:28	CMK
Surrogate: o-Terphenyl			*70-130*	*91 %*	*08/21/15*		*08/24/15 17:28*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**75**		%			1	08/21/15	08/21/15 13:56	AM

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Analytical Results

1500 Caton Center Dr Suite G
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www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-8-15

5082018-07 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS)									
Acetone	**10.6**		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 15:12	WB
tert-Amyl alcohol (TAA)	ND		ug/kg dry	45.6	45.6	1	08/21/15	08/21/15 15:12	WB
tert-Amyl methyl ether (TAME)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Benzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Bromobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Bromochloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Bromodichloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Bromoform	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Bromomethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 15:12	WB
tert-Butanol (TBA)	ND		ug/kg dry	45.6	45.6	1	08/21/15	08/21/15 15:12	WB
2-Butanone (MEK)	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 15:12	WB
n-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
sec-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
tert-Butylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Carbon disulfide	**5.4**		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Carbon tetrachloride	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Chlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Chloroethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 15:12	WB
Chloroform	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Chloromethane	ND		ug/kg dry	4.6	4.6	1	08/21/15	08/21/15 15:12	WB
2-Chlorotoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
4-Chlorotoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2-Dibromo-3-chloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Dibromochloromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2-Dibromoethane (EDB)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Dibromomethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,3-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,4-Dichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Dichlorodifluoromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1-Dichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2-Dichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
cis-1,2-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB

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Will Brewington, Staff Chemist

Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-8-15

5082018-07 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Dichlorofluoromethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,3-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
2,2-Dichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
cis-1,3-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
trans-1,3-Dichloropropene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Diisopropyl ether (DIPE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Ethylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Hexachlorobutadiene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
2-Hexanone	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 15:12	WB
Isopropylbenzene (Cumene)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
4-Isopropyltoluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Methyl tert-butyl ether (MTBE)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
4-Methyl-2-pentanone	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 15:12	WB
Methylene chloride	ND		ug/kg dry	9.1	9.1	1	08/21/15	08/21/15 15:12	WB
Naphthalene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
n-Propylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Styrene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1,1,2-Tetrachloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1,2,2-Tetrachloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Tetrachloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Toluene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2,3-Trichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2,4-Trichlorobenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1,1-Trichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,1,2-Trichloroethane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Trichloroethene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Trichlorofluoromethane (Freon 11)	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2,3-Trichloropropane	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,2,4-Trimethylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
1,3,5-Trimethylbenzene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

MW-8-15

5082018-07 (Soil)
Sample Date: 08/20/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 5035/8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
o-Xylene	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
m- & p-Xylenes	ND		ug/kg dry	4.6	1.8	1	08/21/15	08/21/15 15:12	WB
Surrogate: 1,2-Dichloroethane-d4			*89-130*	*114 %*	*08/21/15*		*08/21/15 15:12*		
Surrogate: Toluene-d8			*85-114*	*97 %*	*08/21/15*		*08/21/15 15:12*		
Surrogate: 4-Bromofluorobenzene			*68-113*	*86 %*	*08/21/15*		*08/21/15 15:12*		
GASOLINE RANGE ORGANICS BY EPA 5035/8015B									
Gasoline-Range Organics	ND		mg/kg dry	0.10	0.03	1	08/26/15	08/26/15 03:57	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*08/26/15*		*08/26/15 03:57*		
DIESEL RANGE ORGANICS BY EPA 3540/8015B									
Diesel-Range Organics	**26.5**		mg/kg dry	9.6	9.6	1	08/21/15	08/24/15 17:54	CMK
Surrogate: o-Terphenyl			*70-130*	*96 %*	*08/21/15*		*08/24/15 17:54*		
PERCENT SOLIDS BY ASTM D2216-05									
Percent Solids	**83**		%			1	08/21/15	08/21/15 13:56	AM

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS can provide a certification list upon request.

Maryland spectral Services
Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: James Wolf

Reported:
08/27/15 14:23

Notes and Definitions

S-01	The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference.
J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
E	The concentration indicated for this analyte is an estimated value above the calibration range of the instrument. This value is considered an estimate (CLP E-flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Will Brewington, Staff Chemist

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CHAIN-OF-CUSTODY RECORD

Company Name: AEC
Project Manager: Jeff Stein
Project Name: Royal Farms 001
Project ID: 05-056-RF001
Sampler(s):
P.O. Number: 05-056-RF001

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Matrix Codes: NW (nonpotable water)
PW (potable water)

Preservative: 1+1 HCL, H_2SO_4, Methanol, $Na_2S_2O_3$, $NaHCO_3$

Analysis Requested: VOCs +Oxy + Naph 8260 SGS; TPH GRO 8015 SGS; TPH DRO 8015 SGS

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	VOCs +Oxy + Naph 8260 SGS	TPH GRO 8015 SGS	TPH DRO 8015 SGS	Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank	MSS Lab ID
MW-12-10	9/14/15	10:05		X			X	X	X	5035	508208-01
MW-6-10		10:21									-02
MW-24-14		10:48									-03
MW-5R-9.5		11:13									-04
MW 7-12		12:18									-05
MW-9-33		15:35									-06
MW-8-15		14:44									-07

Relinquished by: (Signature) — Date/Time: 17:02 — Received by: (Signature)
(Printed) — Date/Time: 8/20/15 — (Printed)
Relinquished by: (Signature) — Date/Time: 8/20/15 17:02 — Received by Lab: (Signature) Hannah Rosier
(Printed) — (Printed) Hannah Rosier
Relinquished by: (Signature) — Date/Time — Received by: (Signature)
(Printed) — (Printed)

Delivery Method:
- ☐ Courier
- ☒ Client
- ☐ UPS
- ☐ FedEx
- ☐ USPS
- ☐ Other:

Special Instructions/QC Requirements & Comments:
Report to: jstein@aec-env.com
jwolf@aec-env.com
jsheidy@aec-env.com

Turn Around Time:
- ☒ Normal (7 day)
- ☐ 5 day
- ☐ 4 day
- ☐ 3 day
- ☐ Rush (2 day)
- ☐ Next Day
- ☐ Other:
- ☐ Specific Due Date: ____

Lab Use:
Temp: 11.0 °C
- ☒ Received on Ice
- ☒ Received same day
- ☐ Preservation Appropriate

Sample Disposal:
- ☐ Return to Client
- ☐ Disposal by lab
- ☐ Archive for ____ days

MSS-F001-03/13

Maryland spectral Services

Analytical Chemistry Services

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com
VELAP ID 460040

25 September 2015

Jeffery Stein
Advantage Environmental Consultants, LLC
8610 Baltimore Washington Blvd, Suite 217
Jessup, MD 20794
RE: RF-001

Enclosed are the results of analyses for samples received by the laboratory on 09/16/15 15:55.

A more detailed report format is available upon request, which lists the accreditation status for all analytical methods performed.

Please visit our website at www.mdspectral.com for a complete listing of our accreditations.

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

Sincerely,

Will Brewington
Staff Chemist

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

Client Sample ID	Alternate Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1R		5091612-01	Nonpotable Water	09/16/15 13:15	09/16/15 15:55
MW-2R		5091612-02	Nonpotable Water	09/16/15 13:30	09/16/15 15:55
MW-5R		5091612-03	Nonpotable Water	09/16/15 13:55	09/16/15 15:55
MW-6		5091612-04	Nonpotable Water	09/16/15 14:10	09/16/15 15:55
MW-7		5091612-05	Nonpotable Water	09/16/15 14:30	09/16/15 15:55
MW-8		5091612-06	Nonpotable Water	09/16/15 14:45	09/16/15 15:55
MW-9		5091612-07	Nonpotable Water	09/16/15 15:00	09/16/15 15:55

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Maryland spectral Services
Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-1R

5091612-01 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:22	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 16:22	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:22	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 16:22	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:22	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:22	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:22	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB

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Will Brewington, Staff Chemist

As a NELAP accredited laboratory, MSS can provide a certification list upon request.

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-1R

5091612-01 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:22	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Methyl tert-butyl ether (MTBE)	**8.2**		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:22	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:22	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-1R

5091612-01 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:22	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*91 %*	*09/17/15*		*09/17/15 16:22*		
Surrogate: Toluene-d8			*88-110*	*100 %*	*09/17/15*		*09/17/15 16:22*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*96 %*	*09/17/15*		*09/17/15 16:22*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 17:12	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*101 %*	*09/18/15*		*09/18/15 17:12*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**0.54**		mg/L	0.22	0.22	1	09/23/15	09/24/15 17:01	CMK
Surrogate: o-Terphenyl			*60-120*	*86 %*	*09/23/15*		*09/24/15 17:01*		

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-2R

5091612-02 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:59	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 16:59	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:59	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 16:59	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:59	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:59	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 16:59	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-2R

5091612-02 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:59	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Methyl tert-butyl ether (MTBE)	**4.6**	J	ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:59	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 16:59	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB

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Analytical Results

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-2R

5091612-02 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 16:59	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*93 %*	*09/17/15*		*09/17/15 16:59*		
Surrogate: Toluene-d8			*88-110*	*99 %*	*09/17/15*		*09/17/15 16:59*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*94 %*	*09/17/15*		*09/17/15 16:59*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 17:52	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*101 %*	*09/18/15*		*09/18/15 17:52*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**0.40**		mg/L	0.21	0.21	1	09/23/15	09/24/15 17:27	CMK
Surrogate: o-Terphenyl			*60-120*	*84 %*	*09/23/15*		*09/24/15 17:27*		

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-5R

5091612-03 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 17:32	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 17:32	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 17:32	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 17:32	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 17:32	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 17:32	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 17:32	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-5R

5091612-03 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 17:32	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Methyl tert-butyl ether (MTBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 17:32	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 17:32	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB

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Analytical Results

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-5R

5091612-03 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 17:32	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*94 %*	*09/17/15*		*09/17/15 17:32*		
Surrogate: Toluene-d8			*88-110*	*99 %*	*09/17/15*		*09/17/15 17:32*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*93 %*	*09/17/15*		*09/17/15 17:32*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 18:32	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*09/18/15*		*09/18/15 18:32*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**0.54**		mg/L	0.19	0.19	1	09/23/15	09/24/15 17:53	CMK
Surrogate: o-Terphenyl			*60-120*	*93 %*	*09/23/15*		*09/24/15 17:53*		

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-6

5091612-04 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:05	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 18:05	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:05	WB
tert-Butanol (TBA)	**77.4**		ug/L	15.0	15.0	1	09/17/15	09/17/15 18:05	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:05	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:05	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:05	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB

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Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-6

5091612-04 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:05	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Methyl tert-butyl ether (MTBE)	**2.3**	J	ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:05	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:05	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB

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Will Brewington, Staff Chemist

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Analytical Results

1500 Caton Center Dr Suite G
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-6

5091612-04 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:05	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*93 %*	*09/17/15*		*09/17/15 18:05*		
Surrogate: Toluene-d8			*88-110*	*99 %*	*09/17/15*		*09/17/15 18:05*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*93 %*	*09/17/15*		*09/17/15 18:05*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 19:12	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*09/18/15*		*09/18/15 19:12*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**1.02**		mg/L	0.20	0.20	1	09/23/15	09/24/15 18:20	CMK
Surrogate: o-Terphenyl			*60-120*	*97 %*	*09/23/15*		*09/24/15 18:20*		

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-7

5091612-05 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:39	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 18:39	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:39	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 18:39	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:39	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:39	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 18:39	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
cis-1,2-Dichloroethene	**3.8**	J	ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB

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Analytical Results

1500 Caton Center Dr Suite G
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-7

5091612-05 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:39	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Methyl tert-butyl ether (MTBE)	**15.1**		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:39	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 18:39	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB

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Maryland spectral Services
Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-7

5091612-05 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 18:39	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*94 %*	*09/17/15*		*09/17/15 18:39*		
Surrogate: Toluene-d8			*88-110*	*98 %*	*09/17/15*		*09/17/15 18:39*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*92 %*	*09/17/15*		*09/17/15 18:39*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 21:15	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*09/18/15*		*09/18/15 21:15*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**0.65**		mg/L	0.22	0.22	1	09/23/15	09/24/15 18:46	CMK
Surrogate: o-Terphenyl			*60-120*	*89 %*	*09/23/15*		*09/24/15 18:46*		

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Analytical Results

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-8

5091612-06 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:12	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 19:12	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:12	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 19:12	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:12	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:12	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:12	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB

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Will Brewington, Staff Chemist

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-8

5091612-06 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:12	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Methyl tert-butyl ether (MTBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:12	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:12	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB

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Analytical Results

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Baltimore MD 21227
410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-8

5091612-06 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:12	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*93 %*	*09/17/15*		*09/17/15 19:12*		
Surrogate: Toluene-d8			*88-110*	*99 %*	*09/17/15*		*09/17/15 19:12*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*93 %*	*09/17/15*		*09/17/15 19:12*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 21:56	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*09/18/15*		*09/18/15 21:56*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	**0.26**		mg/L	0.24	0.24	1	09/23/15	09/24/15 19:12	CMK
Surrogate: o-Terphenyl			*60-120*	*93 %*	*09/23/15*		*09/24/15 19:12*		

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Analytical Results

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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-9

5091612-07 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS)									
Acetone	**15.9**		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:45	WB
tert-Amyl alcohol (TAA)	ND		ug/L	20.0	20.0	1	09/17/15	09/17/15 19:45	WB
tert-Amyl methyl ether (TAME)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Benzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Bromobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Bromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Bromodichloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Bromoform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Bromomethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:45	WB
tert-Butanol (TBA)	ND		ug/L	15.0	15.0	1	09/17/15	09/17/15 19:45	WB
2-Butanone (MEK)	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:45	WB
n-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
sec-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
tert-Butylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Carbon disulfide	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Carbon tetrachloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Chlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Chloroethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:45	WB
Chloroform	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Chloromethane	ND		ug/L	5.0	5.0	1	09/17/15	09/17/15 19:45	WB
2-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
4-Chlorotoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Dibromochloromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2-Dibromo-3-chloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2-Dibromoethane (EDB)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Dibromomethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,3-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,4-Dichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Dichlorodifluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2-Dichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
cis-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB

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Will Brewington, Staff Chemist

Analytical Results

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Baltimore MD 21227
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Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-9

5091612-07 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
trans-1,2-Dichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Dichlorofluoromethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,3-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
2,2-Dichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
cis-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
trans-1,3-Dichloropropene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Diisopropyl ether (DIPE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Ethyl tert-butyl ether (ETBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Ethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Hexachlorobutadiene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
2-Hexanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:45	WB
Isopropylbenzene (Cumene)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
4-Isopropyltoluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Methyl tert-butyl ether (MTBE)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
4-Methyl-2-pentanone	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:45	WB
Methylene chloride	ND		ug/L	10.0	10.0	1	09/17/15	09/17/15 19:45	WB
Naphthalene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
n-Propylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Styrene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1,1,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1,2,2-Tetrachloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Tetrachloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Toluene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2,3-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2,4-Trichlorobenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1,1-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,1,2-Trichloroethane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Trichloroethene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Trichlorofluoromethane (Freon 11)	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2,3-Trichloropropane	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,2,4-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
1,3,5-Trimethylbenzene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB

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Maryland spectral Services
Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
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410-247-7600
www.mdspectral.com

Project: RF-001
Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

MW-9

5091612-07 (Nonpotable Water)
Sample Date: 09/16/15

Analyte	Result	Notes	Units	Reporting Limit (MRL)	Quantitation Limit (LOQ)	Dilution	Prepared	Analyzed	Analyst
VOLATILE ORGANICS BY EPA METHOD 8260B (GC/MS) (continued)									
Vinyl chloride	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
o-Xylene	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
m- & p-Xylenes	ND		ug/L	5.0	2.0	1	09/17/15	09/17/15 19:45	WB
Surrogate: 1,2-Dichloroethane-d4			*75-120*	*97 %*	*09/17/15*		*09/17/15 19:45*		
Surrogate: Toluene-d8			*88-110*	*99 %*	*09/17/15*		*09/17/15 19:45*		
Surrogate: 4-Bromofluorobenzene			*80-110*	*93 %*	*09/17/15*		*09/17/15 19:45*		
GASOLINE RANGE ORGANICS BY EPA 8015B									
Gasoline-Range Organics	ND		ug/L	100	100	1	09/18/15	09/18/15 22:37	CMK
Surrogate: a,a,a-Trifluorotoluene			*85-115*	*100 %*	*09/18/15*		*09/18/15 22:37*		
DIESEL RANGE ORGANICS BY EPA 3510/8015B									
Diesel-Range Organics	ND		mg/L	0.21	0.21	1	09/23/15	09/24/15 19:38	CMK
Surrogate: o-Terphenyl			*60-120*	*84 %*	*09/23/15*		*09/24/15 19:38*		

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Maryland spectral Services

Analytical Chemistry Services

Analytical Results

1500 Caton Center Dr Suite G
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410-247-7600
www.mdspectral.com

Project: RF-001

Project Number: 05-056 RF-01
Project Manager: Jeffery Stein

Reported:
09/25/15 13:19

Notes and Definitions

J	Detected but below the reporting limit; therefore, result is an estimated concentration (CLP J-Flag).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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CHAIN-OF-CUSTODY RECORD

Maryland Spectral Services, Inc.
1500 Caton Center Drive, Suite G
Baltimore, MD 21227
410-247-7600 • Fax 410-247-7602
labman@mdspectral.com

Matrix Codes: NW (nonpotable water)
PW (potable water)

Company Name: AEC
Project Manager: Jeff Stein
Project Name: Royal Farms 001
Project ID: 05-056-RF001
Sampler(s): K Pellegrini
P.O. Number: 05-056-RF001

Analysis Requested: VOCs +Oxy + Naph 8260; TPH GRO 8015; TPH DRO 8015

Field Sample ID	Date	Time	Water	Soil	Other	No. of Containers	VOCs +Oxy + Naph 8260	TPH GRO 8015	TPH DRO 8015	Preservative: 1+1 HCL, H_2SO_4, Methanol, $Na_2S_2O_3$, $NaHCO_3$	Field pH, Residual Chlorine, QC Request, Trip Blank, Field Blank	MSS Lab ID
MW-1R	9/14/15	12:15	X			4	✓	✓	✓	HCL		1509116012-01
MW-2R		1330	X			4				HCL		-02
MW-5R		1355	X			4				HCL		-03
MW-6		1410	X			4				HCL		-04
MW-7		1420	X			4				HCL		-05
MW-8		1445	X			4				HCL		-06
MW-9		1500	X			4				HCL		-07

Relinquished by: (Signature) K Pellegrini — Date/Time 9-16-15 15:55 — Received by: (Signature) — Date/Time — Relinquished by: (Signature) — Date/Time — Received by: (Signature) — Date/Time

(Printed) Kevin Pellegrini — (Printed) — Received by Lab: (Signature) Hannah Rosier — (Printed) Hannah Rosier — 9/16 1555

Turn Around Time:
X Normal (7 day)
☐ 5 day
☐ 4 day
☐ 3 day
☐ Rush (2 day)
☐ Next Day
☐ Other:
☐ Specific Due Date: ____

Lab Use:
Temp: 4.2 °C
☐ Received on Ice
☐ Received same day
☐ Preservation Appropriate

Sample Disposal:
☐ Return to Client
☐ Disposal by lab
☐ Archive for ____ days

Delivery Method:
☐ Courier
X Client
☐ UPS
☐ FedEx
☐ USPS
☐ Other: ____

Special Instructions/QC Requirements & Comments:
Report to: jstein@aec-env.com
kpellegrini@aec-env.com
jsheidy@aec-env.com

MSS-F001-03/13