



October 13, 2015

Mr. Matt Cutshall
Environmental Compliance Manager
Sheetz, Inc.
5700 Sixth Avenue
Altoona, PA 16602

RE: **Limited Phase 2 Environmental Site Assessment Report**
Proposed Sheetz Location
North Graham Hopedale Road and North Church Street, Burlington, NC

Dear Mr. Cutshall:

Groundwater & Environmental Services, Inc. (GES) is pleased to provide the following *Limited Phase 2 Environmental Site Assessment (ESA) Report* to Sheetz, Inc. (Sheetz). This investigation was conducted in order to provide an additional assessment of potential impacts to soil and groundwater at the above referenced property identified by Sheetz for potential development of a Sheetz retail petroleum facility.

1.0 ENVIRONMENTAL SITE ASSESSMENT

The location of the Subject Property and surrounding area is illustrated on the Site Location Map presented on the U.S. Geological Survey (USGS) 7.5-Minute Topographic Map for Burlington, North Carolina (1981) as **Figure 1**. The Subject Property is located in a mixed industrial, commercial, and residential area of Burlington, North Carolina. There are commercial properties located to the south and west, government properties to the north, residential properties to the east and a large former industrial facility to the northwest, as shown in the Local Area Map, **Figure 2**. The Subject Property consists primarily of impermeable pavement which is bisected by an old section of railroad track running northwest to southeast. The Subject Property is illustrated on the Site Map presented as **Figure 3**.

On September 25, 2015, GES supervised the advancement of six soil borings (SB-1 through SB-6) on the Subject Property. The soil borings were advanced to investigate the extent of existing contamination from previous uses of the Subject Property or the migration of contaminants from surrounding properties. SB-1 was advanced in the northwest corner of the Subject Property to investigate the possible migration of contaminant plumes known to be located below the former industrial facility to the northwest. SB-2 was located adjacent to the existing underground storage tank (UST) field from the active retail petroleum facility directly across North Graham Hopedale Road. SB-3 was located in the southwest corner to investigate dissolved phase hydrocarbon contamination detected during previous investigations. The remaining three soil borings (SB-4 through SB-6) were located throughout the Subject Property to ensure no other contamination exists. The six soil borings were advanced via direct-push technology and advanced to a depth of 25 feet below ground surface (bgs). The soil boring locations are shown on **Figure 4**. The soil boring logs are provided in **Attachment A** and photo documentation of the investigation activities are provided in **Attachment B**. Following soil boring completion, a temporary well was placed into each borehole in an attempt to collect a water sample. Each temporary well was

comprised of a PVC one-inch diameter well screen and allowed to collect water for a minimum of one hour. Water samples were collected from all six temporary wells, and named MW-1 through MW-6.

1.1 Soil Sampling and Results

One soil sample was collected from each of the borings at the interval corresponding to the highest value detected with a photo-ionization detector (PID). If no PID response was observed, the soil sample was collected directly above the observed water table. Following the collection of each sample, the sample was split into two parts. One part of the sample was placed into a zip-lock bag for field screening. The zip-lock bags of soil were screened with a PID to measure the concentration of volatile organic compounds (VOCs) within the headspace. The PID values from the soil samples collected from the soil borings are presented on the boring logs, **Attachment A**. The second part of the sample was placed into the laboratory supplied soil sampling bottle/ware, immediately labeled, and placed on ice in a cooler in preparation for laboratory analysis.

The soil samples were submitted to Air Water & Soil Laboratories (AWS) located at 1941 Reymet Road, Richmond, VA for analysis of the site specific constituents of concern (COCs) including: benzene, toluene, ethylbenzene, and xylenes (BTEX), methyl tertiary butyl ether (MTBE), and naphthalene via USEPA Method SW8021B, total petroleum hydrocarbons - gasoline range organics (TPH-GRO) and total petroleum range hydrocarbons - diesel range organics (TPH-DRO) via USEPA Method 8015B and RCRA 8 metals via Method SW6010C and Method SW7471B.

The analytical results from the soil samples were screened against the North Carolina Department of Natural Resources (NCDENR) soil to groundwater Maximum Soil Contaminant Concentrations (MSCC) and are presented in **Table 1**. The complete laboratory analytical report is included in **Attachment B**. A summary of the results of the soil sample analysis is listed below.

Exceedances of MSCC:

- **SB-3:** Naphthalene at 0.295 milligrams per kilogram (mg/kg) (MSCC - 0.16 mg/kg).

Detections above the reporting limit and below the MSCC:

- **SB-1:** Barium at 54.8 mg/kg (MSCC – 290 mg/kg), Cadmium at 0.460 mg/kg (MSCC – not available), and Chromium at 3.5 mg/kg (MSCC – 5.4 mg/kg);
- **SB-2:** Barium at 59.0 mg/kg (MSCC – 290 mg/kg), Cadmium at 0.526 mg/kg (MSCC – not available), and Chromium at 0.776 mg/kg (MSCC - 5.4 mg/kg);
- **SB-3:** Toluene at 0.030 mg/kg (MSCC – 4 mg/kg), Ethylbenzene at 0.142 mg/kg (MSCC – 5 mg/kg), Total Xylenes at 0.506 mg/kg (MSCC – 5 mg/kg). TPH-GRO concentrations at 11.1 mg/kg (MSCC - not available) and TPH-DRO at 16.8 mg/kg (MSCC – not available); and
- **SB-4:** Mercury at 0.011 mg/kg (MSCC – not available).

1.2 Groundwater Sampling and Analysis

On September 25, 2015, following the installation of the temporary wells within the soil borings, groundwater samples were collected from all six temporary wells (MW-1 through MW-6). Groundwater depths ranged from 13.43 feet bgs in MW-6 to 21.33 feet bgs in MW-5 during the investigation. Groundwater samples were collected from each temporary well using a peristaltic pump and each well



had dedicated polyethylene tubing. Each sample was placed in the proper bottleware and immediately placed in a cooler containing packaged ice.

The groundwater samples and associated chain-of-custody form were submitted to AWS for analysis of the site specific COCs including; BTEX, MTBE, and naphthalene via USEPA Method SW8021B, TPH-GRO and TPH-DRO via USEPA Method 8015B and RCRA 8 metals via Method SW6010C and Method SW7471B. The groundwater analytical results were screened against the NCDENR 2L Groundwater (GW) Standards and are presented in **Table 2**. The complete analytical laboratory report is included in **Attachment B**. A summary of the groundwater analytical results is listed below.

Exceedances of 2L GW Standard:

- **MW-2:** Chromium at 19.5 micrograms per Liter (ug/L) (2L GW Standard – 10 ug/L)
- **MW-3:** Benzene at 212 ug/L (2L GW Standard – 1 ug/L), and Naphthalene at 29.6 ug/L (2L GW Standard – 6 ug/L),
- **MW-5:** Chromium at 349 ug/L (2L GW Standard – 10 ug/L); and
- **MW-6:** Barium at 2,640 ug/L (2L GW Standard – 700 mg/L), Cadmium at 7.7 ug/L (2L GW Standard – 2 ug/L), Chromium at 182 ug/L (2L GW Standard – 10 ug/L), and Lead at 74.5 ug/L (2L GW Standard – 15 ug/L).

Detections above the reporting limit and below the 2L GW Standard:

- **MW-1:** Barium at 226 ug/L (2L GW Standard – 700 ug/L),
- **MW-2:** Barium at 212 ug/L (2L GW Standard – 700 ug/L),
- **MW-3:** Toluene at 7.21 ug/L (2L GW Standard – 600 ug/L), Ethylbenzene at 6.64 ug/L (2L GW Standard – 600 ug/L), Total Xylenes at 12.4 ug/L (2L GW Standard – 500 ug/L), and Barium at 350 ug/L (2L GW Standard – 700 ug/L), and TPH-GRO at 0.66 milligrams per Liter (mg/L) (2L GW Standard – not available),
- **MW-4:** Barium at 172 ug/L (2L GW Standard – 700 ug/L); and
- **MW-5:** Barium at 506 ug/L (2L GW Standard – 700 ug/L).

2.0 SITE ASSESSMENT SUMMARY

The following is a summary of the analytical results collected during the Limited Phase 2 ESA:

- The analytical results indicate that target compounds in all soil samples were either not detected or detected below the MSCC, with the exception of naphthalene detected above the MSCC in SB-3.
- The analytical results indicate that target compounds in all groundwater samples were either not detected or detected below the NCDENR 2L Groundwater Standards, with the exception of chromium in MW-2, benzene and naphthalene in MW-3, chromium in MW-5, and barium, cadmium, chromium, and lead in MW-6.
- Groundwater at the Subject Property ranged from 13.43 feet bgs in MW-6 to 21.33 feet bgs in MW-5 during the investigation.

Mr. Matt Cutshall
Limited Phase 2 Environmental Assessment Report
Proposed Sheetz Location
October 13, 2015



Please do not hesitate to contact our office at (866) 222-7786 with any questions and/or comments.

Respectfully submitted,
GROUNDWATER & ENVIRONMENTAL SERVICES, INC.

Prepared by:

A handwritten signature in black ink that reads 'Nick Braun'.

Nick Braun
Staff Environmental Scientist

Reviewed by:

A handwritten signature in black ink that reads 'Daniel Breckenridge'.

Daniel Breckenridge
Project Manager

Figures:

- Figure 1 – Site Location Map
- Figure 2 – Local Area Map
- Figure 3 – Site Map
- Figure 4 – Soil Boring Location Map

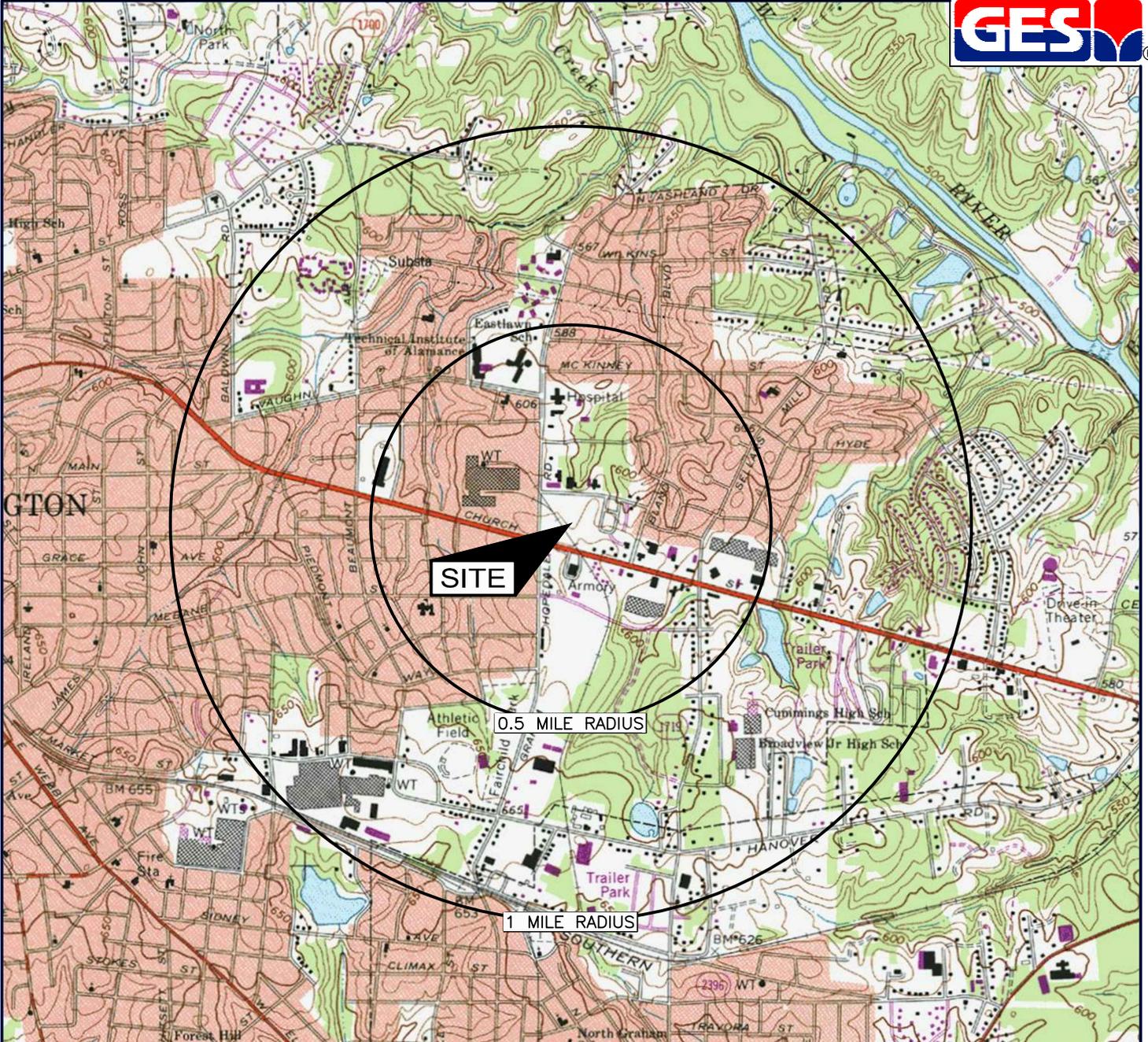
Tables:

- Table 1 – Soil Quality Data Summary
- Table 2 – Groundwater Quality Data Summary

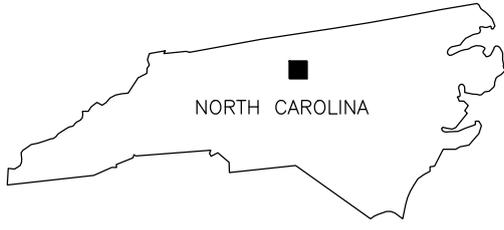
Attachments:

- Attachment A – Boring Logs
- Attachment B – Photo Essay
- Attachment C – Laboratory Analytical Report

FIGURES



SOURCE: USGS 7.5 MINUTE SERIES
 TOPOGRAPHIC QUADRANGLE 1981
 BURLINGTON, NORTH CAROLINA
 CONTOUR INTERVAL = 10'



QUADRANGLE LOCATION
 LAT. 036° 05' 48.36" N
 LONG. 079° 24' 17.46" W
 (APPROXIMATE SITE COORDINATES)

DRAFTED BY: W.A.W. (N.J.)	SITE LOCATION MAP	
CHECKED BY: N.B.		
REVIEWED BY: D.B.		
NORTH 	SHEETZ INCORPORATED INTERSECTION OF N GRAHAM HOPEDALE RD & N CHURCH STREET BURLINGTON, NORTH CAROLINA	
	Groundwater & Environmental Services, Inc. 3701 SAUNDERS AVENUE, RICHMOND, VIRGINIA 23227	
SCALE IN FEET 	DATE 10-1-15	FIGURE 1



LEGEND

--- APPROXIMATE PROPERTY BOUNDARY



DRAFTED BY: W.A.W. (N.J.)	LOCAL AREA MAP	
CHECKED BY: N.B.	SHEETZ INCORPORATED INTERSECTION OF N GRAHAM HOPEDALE RD & N CHURCH STREET	
REVIEWED BY: D.B.	BURLINGTON, NORTH CAROLINA	
NORTH 	Groundwater & Environmental Services, Inc. 3701 SAUNDERS AVENUE, RICHMOND, VIRGINIA 23227	
	SCALE IN FEET 	DATE 10-1-15

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LEGEND

--- APPROXIMATE PROPERTY BOUNDARY

DRAFTED BY: W.A.W. (N.J.)	SITE MAP		
CHECKED BY: N.B.	SHEETZ INCORPORATED INTERSECTION OF N GRAHAM HOPEDALE RD & N CHURCH STREET BURLINGTON, NORTH CAROLINA		
REVIEWED BY: D.B.	Groundwater & Environmental Services, Inc. 23 SOUTH 13TH STREET, SUITE 103, RICHMOND, VA 23219		
NORTH 	SCALE IN FEET (APPROXIMATE) 	DATE 10-1-15	FIGURE 3



LEGEND

- - - APPROXIMATE PROPERTY BOUNDARY
- ⊕ SOIL BORING LOCATION

DRAFTED BY: W.A.W. (N.J.)	SOIL BORING LOCATION MAP		
CHECKED BY: N.B.	SHEETZ INCORPORATED INTERSECTION OF N GRAHAM HOPEDALE RD & N CHURCH STREET BURLINGTON, NORTH CAROLINA		
REVIEWED BY: D.B.	Groundwater & Environmental Services, Inc. 3701 SAUNDERS AVENUE, RICHMOND, VIRGINIA 23227		
NORTH 	SCALE IN FEET (APPROXIMATE)	DATE	FIGURE
		10-1-15	4

TABLES

Table 1

SOIL QUALITY DATA SUMMARY

Proposed Sheetz Location
 N Graham Hopedale Road and N Church Street
 Burlington, North Carolina

Sample ID	Units	Soil-to-GW MSCC	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6
Sample Depth (ft bgs)			16-18	16-18	13-15	13-15	16-18	18-20
Date Sampled			9/25/2015	9/25/2015	9/25/2015	9/25/2015	9/25/2015	9/25/2015
Volatile Organic Compounds (VOCs)								
Methyl-t-butyl ether (MTBE)	mg/kg	0.091	ND	ND	ND	ND	ND	ND
Benzene	mg/kg	0.0056	ND	ND	ND	ND	ND	ND
Toluene	mg/kg	4	ND	ND	0.030	ND	ND	ND
Ethylbenzene	mg/kg	5	ND	ND	0.142	ND	ND	ND
Total Xylenes	mg/kg	5	ND	ND	0.506	ND	ND	ND
Naphthalene	mg/kg	0.16	ND	ND	0.295	ND	ND	ND
TPH-GRO								
GRO	mg/kg	~	ND	ND	11.1	ND	ND	ND
TPH-DRO								
DRO	mg/kg	~	ND	ND	16.8	ND	ND	ND
RCRA 8 Metals								
Silver	mg/kg	0.25	ND	ND	ND	ND	ND	ND
Arsenic	mg/kg	~	ND	ND	ND	ND	ND	ND
Barium	mg/kg	290	54.8	59.0	ND	ND	ND	ND
Cadmium	mg/kg	~	0.460	0.526	ND	ND	ND	ND
Chromium	mg/kg	5.4	3.5	0.776	ND	ND	ND	ND
Mercury	mg/kg	~	ND	ND	ND	0.011	ND	ND
Lead	mg/kg	270	ND	2.23	ND	ND	ND	ND
Selenium	mg/kg	~	ND	ND	ND	ND	ND	ND

Notes:

MSCC- Maximum Soil Contaminant Concentration (from North Carolina Department of Environment and Natural Resources)

~ - No MSCC available

mg/kg - milligrams per kilograms

ND- Non Detect

ft bgs - feet below ground surface

TPH-GRO Total Petroleum Hydrocarbons Gasoline Range Organics

TPH-DRO Total Petroleum Hydrocarbons Diesel Range Organics

Table 2

GROUNDWATER QUALITY DATA SUMMARY

Proposed Sheetz Location
N Graham Hopedale Road and N Church Street
Burlington, North Carolina

Sample ID	Units	2L Groundwater Standard	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
Date Sampled			9/25/2015	9/25/2015	9/25/2015	9/25/2015	9/25/2015	9/25/2015
Depth to Water (ft bgs)			16.07	19.06	17.50	17.71	21.33	13.43
Volatile Organic Compounds (VOCs)								
Methyl-t-butyl ether (MTBE)	ug/L	20	ND	ND	ND	ND	ND	ND
Benzene	ug/L	1	ND	ND	212	ND	ND	ND
Toluene	ug/L	600	ND	ND	7.21	ND	ND	ND
Ethylbenzene	ug/L	600	ND	ND	6.64	ND	ND	ND
Total Xylenes	ug/L	500	ND	ND	12.4	ND	ND	ND
Naphthalene	ug/L	6	ND	ND	29.6	ND	ND	ND
TPH-GRO								
GRO	mg/L	~	ND	ND	0.66	ND	ND	ND
TPH-DRO								
DRO	mg/L	~	ND	ND	ND	ND	ND	ND
RCRA 8 Metals								
Silver	ug/L	20	ND	ND	ND	ND	ND	ND
Arsenic	ug/L	10	ND	ND	ND	ND	ND	ND
Barium	ug/L	700	226	212	350	172	506	2,640
Cadmium	ug/L	2	ND	ND	ND	ND	ND	7.7
Chromium	ug/L	10	ND	19.5	ND	ND	349	182
Mercury	ug/L	1	ND	ND	ND	ND	ND	ND
Lead	ug/L	15	ND	ND	ND	ND	ND	74.5
Selenium	ug/L	20	ND	ND	19.5	ND	ND	ND

Notes:

~ - NCDENR 2L Groundwater Standard not available

ug/L -micrograms per Liter

mg/L - milligrams per Liter

ND-Non Detect

DTW - Depth to water

ft bgs - feet below ground surface

TPH-GRO Total Petroleum Hydrocarbons Gasoline Range Organics

TPH-DRO Total Petroleum Hydrocarbons Diesel Range Organics



ATTACHMENT A

Boring Logs

PROJECT INFORMATION

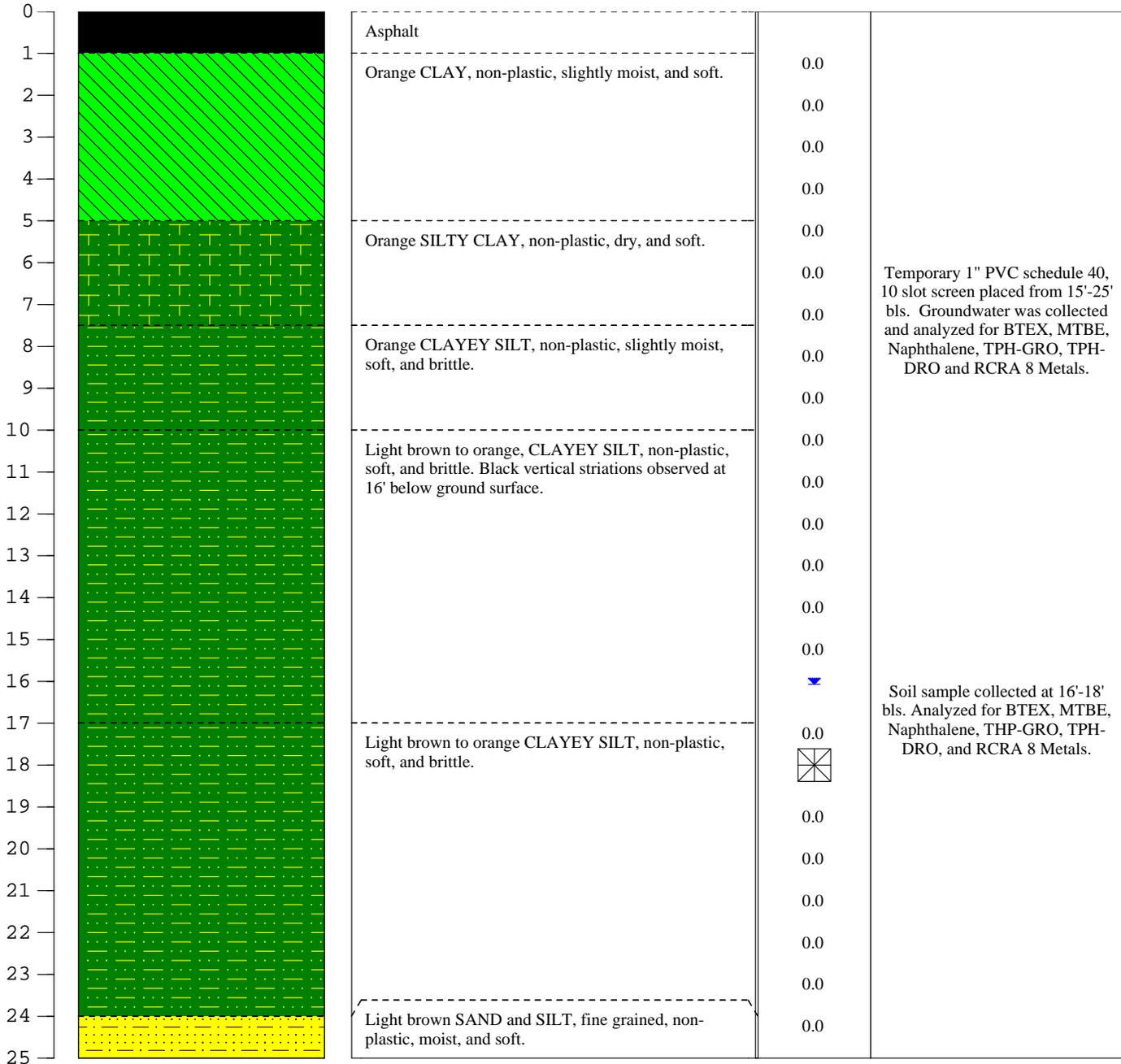
DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-1/MW-1		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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PROJECT INFORMATION

DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-2/MW-2		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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0		Asphalt and gravel		
1		Orange CLAY, non-plastic, slightly moist, and soft.	0.0	
2			0.0	
3			0.0	
4			0.0	
5		Orange SANDY CLAY, fine grained, slightly plastic, slightly moist.	0.0	
6			0.0	
7			0.0	
8			0.0	
9			0.0	
10			0.0	
11		Tan CLAY with fine SAND, with black vertical striations.	0.0	
12			0.0	
13		Tan SANDY CLAY, fine grained, dry, and brittle.	0.0	
14			0.0	
15			0.0	
16		Tan SANDY CLAY, fine grained, slightly plastic, and moist.	0.0	
17			0.0	
18			0.0	Soil sample collected at 16'-18' bls. Analyzed for BTEX, MTBE, Naphthalene, THP-GRO, TPH-DRO, and RCRA 8 Metals.
19			0.0	
20			0.0	
21			0.0	
22			0.0	
23			0.0	
24			0.0	
25			0.0	



PROJECT INFORMATION

DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-3/MW-3		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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0		Asphalt and gravel		
1		Orange SILTY CLAY, non-plastic, dry, and brittle.	0.0	
2			0.0	
3			0.0	
4			0.0	
5			0.0	
6		Orange SANDY CLAY, fine grained, slightly plastic, slightly moist, and dry.	0.2	
7		Tan SILT non-plastic, slightly moist, white mottling, and slight odor.	0.3	
8			0.6	
9			3.2	
10		Tan, SANDY SILT, fine grained, non-plastic, soft, strong odor.	711	
11			23.4	
12			15.1	
13			12.7	
14			273	
15			375	
16		Tan SANDY SILT, fine grained, non-plastic, soft, and brittle.	⊠	
17			4.4	
18			3.3	
19			4.1	
20			3.0	
21		Brown SILTY CLAY, rounded pebbles, non-plastic, and moist.	0.5	
22			0.7	
23			0.3	
24		White to tan SILT, non-plastic, wet, and loose.	2.0	
25			3.0	

Temporary 1" PVC schedule 40, 10 slot screen placed from 15'-25' bls. Groundwater was collected and analyzed for BTEX, MTBE, Naphthalene, TPH-GRO, TPH-DRO and RCRA 8 Metals.

Soil sample collected at 13'-15' bls. Analyzed for BTEX, MTBE, Naphthalene, THP-GRO, TPH-DRO, and RCRA 8 Metals.



PROJECT INFORMATION

DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-4/MW-4		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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0		Asphalt and gravel		
1		Orange SILTY CLAY, non-plastic, dry, and brittle.	0.0	
2			0.0	
3			0.0	
4			0.0	
5		Orange SANDY CLAY, fine grained, slightly plastic, slightly moist, and strong.	0.0	Temporary 1" PVC schedule 40, 10 slot screen placed from 15'-25' bls. Groundwater was collected and analyzed for BTEX, MTBE, Naphthalene, TPH-GRO, TPH-DRO and RCRA 8 Metals.
6			0.0	
7			0.0	
8			0.0	
9			0.0	
10			0.0	
11		Brown to tan CLAYEY SILT, slightly moist, brittle, and loose. Black striations observed at 15' bgs.	0.0	Soil sample collected at 13'-15' bls. Analyzed for BTEX, MTBE, Naphthalene, THP-GRO, TPH-DRO, and RCRA 8 Metals.
12			0.0	
13			0.0	
14			0.0	
15		Brown to tan SILT, non-plastic, and black vertical striations.	0.0	
16			⊠	
17			0.0	
18			▼	
19			0.0	
20			0.0	
21			0.0	
22			0.0	
23			0.0	
24			0.0	
25		0.0		



PROJECT INFORMATION

DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-5/MW-5		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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0		Asphalt and gravel		
1		Tan SILTY CLAY, non-plastic, dry, and soft.	0.0	Temporary 1" PVC schedule 40, 10 slot screen placed from 15'-25' bls. Groundwater was collected and analyzed for BTEX, MTBE, Naphthalene, TPH-GRO, TPH-DRO and RCRA 8 Metals.
2			0.0	
3			0.0	
4			0.0	
5			0.0	
6			0.0	
7			0.0	
8			0.0	
9			0.0	
10			0.0	
11		Tan SILTY CLAY, slightly plastic, slightly moist. Black vertical striations.	0.0	Soil sample collected at 16'-18' bls. Analyzed for BTEX, MTBE, Naphthalene, THP-GRO, TPH-DRO, and RCRA 8 Metals.
12		0.0		
13		0.0		
14		0.0		
15		0.0		
16		0.0		
17		0.0		
18		0.0		
19		0.0		
20		0.0		
21		Tan SILTY CLAY, slightly plastic, slightly moist. Black vertical striations. Appeared wet and saturated at 18' bgs.	0.0	
22		0.0		
23		0.0		
24		0.0		
25		0.0		



PROJECT INFORMATION

DRILLING INFORMATION

PROJECT:	Proposed Sheetz - N. Graham Hopedale Road	DRILLER:	Corey Gamwell
SITE LOCATION:	Burlington, North Carolina	BORING DEPTH:	25 feet
JOB NAME:	1202193	DRILLING CO.:	Ground Zero
LOGGED BY:	Nick Braun	RIG TYPE:	6620DT Geoprobe
PROJECT MANAGER:	Danny Breckenridge	DRILLING METHOD:	Geoprobe
DATES DRILLED:	9/25/2015	SAMPLING METHODS:	DT22 Continuous Dual Tube
Soil Boring ID	SB-6/MW-6		

▼ Water Level

⊠ Soil Sample Location

DEPTH	SOIL SYMBOLS	SOIL DESCRIPTION	PID (ppm)	NOTES
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0		Asphalt and gravel		
1		Tan SILTY CLAY, non-plastic, dry, and soft.	0.0	Temporary 1" PVC schedule 40, 10 slot screen placed from 15'-25' bls. Groundwater was collected and analyzed for BTEX, MTBE, Naphthalene, TPH-GRO, TPH-DRO and RCRA 8 Metals.
2			0.0	
3			0.0	
4			0.0	
5		Green to Blue CLAYEY SILT, non-plastic, and soft.	0.0	
6			0.0	
7		Brown CLAYEY SILT, non-plastic, and soft.	0.0	
8			0.0	
9			0.0	
10		Tan SILT, non-plastic, slightly moist. Silt becomes a white SILT at 10' bgs.	0.0	
11			0.0	
12			0.0	
13			0.0	
14			0.0	
15		Tan to white SILTY CLAY, non-plastic, and soft.	0.0	Soil sample collected at 14'-16' bls. Analyzed for BTEX, MTBE, Naphthalene, THP-GRO, TPH-DRO, and RCRA 8 Metals.
16			0.0	
17			0.0	
18			0.0	
19			0.0	
20			0.0	
21		Light grey to tan SILT with black vertical striations.	0.0	
22			0.0	
23			0.0	
24			0.0	
25			0.0	



ATTACHMENT B

Photo Essay

**Groundwater & Environmental Services
PHOTOGRAPHIC RECORD
PHOTO NO. 1 & 2**

CLIENT: Sheetz, Inc.

SITE NAME:

Proposed Sheetz N Graham Hopedale Rd,
Burlington, North Carolina

SITE LOCATION:

N Graham Hopedale Rd and N Church St.
Burlington, North Carolina, 27217

PHOTOGRAPHER:

Nick Braun

DATE:

September 25, 2015

DIRECTION:

South

COMMENTS:

On September 25, 2015 GES and Ground Zero performed subsurface drilling activities on the Subject Property. Ground Zero utilized a 6620DT Geoprobe rig to collect soil and temporary groundwater samples. The drill rig in this photograph was set up on boring location SB-1/MW-1 on the northwest corner of the property adjacent to the former industrial facility.



PHOTOGRAPHER:

Nick Braun

DATE:

September 25, 2015

DIRECTION:

South

COMMENTS:

Boring location SB-2/MW-2 was located downgradient across N Graham Hopedale adjacent to the UST tank field of the active retail petroleum facility.



**Groundwater & Environmental Services
PHOTOGRAPHIC RECORD
PHOTO NO. 3 & 4**

CLIENT: Sheetz, Inc.

SITE NAME:

Proposed Sheetz N Graham Hopedale Rd,
Burlington, North Carolina

SITE LOCATION:

N Graham Hopedale Rd and N Church St.
Burlington, North Carolina, 27217

PHOTOGRAPHER:

Nick Braun

DATE:

September 25, 2015

DIRECTION:

West

COMMENTS:

Boring location SB-3/MW-3 was located on the southwest corner of the Subject Property. Ground Zero utilized the DT22 continuous dual-tube sampling method.



PHOTOGRAPHER:

Nick Braun

DATE:

September 25, 2015

DIRECTION:

East

COMMENTS:

Once the boring was completed to 25-feet below ground surface, Ground Zero installed a 1-inch diameter PVC 10-slot screen and riser inside the borehole. GES collected groundwater six groundwater samples from each temporary well (MW-1 through MW-6).





ATTACHMENT C

Laboratory Analytical Report



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name: Groundwater Environmental Services, Inc.-R
3701 Saunders Ave.
Richmond, VA 23227

Date Received: September 28, 2015 8:35

Date Issued: October 5, 2015 16:49

Project Number: [none]

Submitted To: Nick Braun

Purchase Order:

Client Site I.D.: Sheetz - Hopedale and Church Rd.

Enclosed are the results of analyses for samples received by the laboratory on 09/28/2015 08:35. If you have any questions concerning this report, please feel free to contact the laboratory.

Sincerely,

A handwritten signature in black ink that reads "Ted Soyars".

Ted Soyars
Laboratory Manager

End Notes:

The test results listed in this report relate only to the samples submitted to the laboratory and as received by the Laboratory.

Unless otherwise noted, the test results for solid materials are calculated on a wet weight basis. Analyses for pH, dissolved oxygen, temperature, residual chlorine and sulfite that are performed in the laboratory do not meet NELAC requirements due to extremely short holding times. These analyses should be performed in the field. The results of field analyses performed by the Sampler included in the Certificate of Analysis are done so at the client's request and are not included in the laboratory's fields of certification nor have they been audited for adherence to a reference method or procedure.

The signature on the final report certifies that these results conform to all applicable NELAC standards unless otherwise specified. For a complete list of the Laboratory's NELAC certified parameters please contact customer service.

This report shall not be reproduced except in full without the expressed and written approval of an authorized representative of Air Water & Soil Laboratories, Inc.





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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SB-1 (16-18')	1510632-01	Solids	09/25/2015 10:50	09/28/2015 08:35
SB-2 (16-18')	1510632-02	Solids	09/25/2015 12:10	09/28/2015 08:35
SB-3 (13-15)	1510632-03	Solids	09/25/2015 13:30	09/28/2015 08:35
SB-4 (13-15)	1510632-04	Solids	09/25/2015 14:40	09/28/2015 08:35
SB-5 (16-18)	1510632-05	Solids	09/25/2015 15:30	09/28/2015 08:35
SB-6 (14-16)	1510632-06	Solids	09/25/2015 17:00	09/28/2015 08:35
Trip Blank	1510632-07	Ground Water	09/15/2015 15:30	09/28/2015 08:35
MW-1	1510632-08	Ground Water	09/25/2015 14:15	09/28/2015 08:35
MW-2	1510632-09	Ground Water	09/25/2015 14:50	09/28/2015 08:35
MW-3	1510632-10	Ground Water	09/25/2015 15:45	09/28/2015 08:35
MW-4	1510632-11	Ground Water	09/25/2015 16:35	09/28/2015 08:35
MW-5	1510632-12	Ground Water	09/25/2015 17:10	09/28/2015 08:35
MW-6	1510632-13	Ground Water	09/25/2015 17:45	09/28/2015 08:35
Trip Blank	1510632-14	Ground Water	09/15/2015 15:30	09/28/2015 08:35



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID:							
SB-1 (16-18')			1510632-01							
Date/Time Sampled:	09/25/2015 10:50									
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst	
Metals (Total) by EPA 6000/7000 Series Methods										
Silver	01	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:03	KEW	
Arsenic	01	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:03	KEW	
Barium	01	SW6010C	54.8 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:03	KEW	
Cadmium	01	SW6010C	0.460 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:03	KEW	
Chromium	01	SW6010C	3.49 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:03	KEW	
Mercury	01	SW7471B	<0.008 mg/kg		0.008	1	09/29/15 11:00	09/29/15 13:57	AA	
Lead	01	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:03	KEW	
Selenium	01	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:03	KEW	
Volatile Organic Compounds by GC										
Methyl-t-butyl ether (MTBE)	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
Benzene	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
Toluene	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
Ethylbenzene	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
m+p-Xylenes	01	SW8021B	<10.0 ug/kg		10.0	1	09/30/15 15:33	09/30/15 15:33	CL	
o-Xylene	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
Xylenes, Total	01	SW8021B	<15.0 ug/kg		15.0	1	09/30/15 15:33	09/30/15 15:33	CL	
Naphthalene	01	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:33	09/30/15 15:33	CL	
<i>Surr: 2,5-Dibromotoluene</i>	<i>01</i>	<i>SW8021B</i>	<i>86.3 %</i>		<i>80-120</i>		<i>09/30/15 15:33</i>	<i>09/30/15 15:33</i>	<i>CL</i>	
Volatile Hydrocarbons by GC										
TPH-Volatiles (GRO)	01	SW8015C	<0.10 mg/kg		0.10	1	09/30/15 15:33	09/30/15 15:33	CL	
Semivolatile Hydrocarbons by GC										
TPH-Semi-Volatiles (DRO)	01	SW8015C	<10.0 mg/kg		10.0	1	09/29/15 15:11	09/30/15 17:48	JHV	
<i>Surr: Pentacosane</i>	<i>01</i>	<i>SW8015C</i>	<i>79.3 %</i>		<i>40-160</i>		<i>09/29/15 15:11</i>	<i>09/30/15 17:48</i>	<i>JHV</i>	



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID:							
SB-2 (16-18')			1510632-02							
Date/Time Sampled:	09/25/2015 12:10									
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst	
Metals (Total) by EPA 6000/7000 Series Methods										
Silver	02	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:08	KEW	
Arsenic	02	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:08	KEW	
Barium	02	SW6010C	59.0 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:08	KEW	
Cadmium	02	SW6010C	0.526 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:08	KEW	
Chromium	02	SW6010C	0.776 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:08	KEW	
Mercury	02	SW7471B	<0.008 mg/kg		0.008	1	09/29/15 11:00	09/29/15 14:05	AA	
Lead	02	SW6010C	3.23 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:08	KEW	
Selenium	02	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:08	KEW	
Volatile Organic Compounds by GC										
Methyl-t-butyl ether (MTBE)	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
Benzene	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
Toluene	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
Ethylbenzene	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
m+p-Xylenes	02	SW8021B	<10.0 ug/kg		10.0	1	09/30/15 15:56	09/30/15 15:56	CL	
o-Xylene	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
Xylenes, Total	02	SW8021B	<15.0 ug/kg		15.0	1	09/30/15 15:56	09/30/15 15:56	CL	
Naphthalene	02	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 15:56	09/30/15 15:56	CL	
<i>Surr: 2,5-Dibromotoluene</i>	02	SW8021B	85.8 %		80-120		09/30/15 15:56	09/30/15 15:56	CL	
Volatile Hydrocarbons by GC										
TPH-Volatiles (GRO)	02	SW8015C	<0.10 mg/kg		0.10	1	09/30/15 15:56	09/30/15 15:56	CL	
Semivolatile Hydrocarbons by GC										
TPH-Semi-Volatiles (DRO)	02	SW8015C	<10.0 mg/kg		10.0	1	09/29/15 15:11	09/30/15 18:15	JHV	
<i>Surr: Pentacosane</i>	02	SW8015C	66.0 %		40-160		09/29/15 15:11	09/30/15 18:15	JHV	



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID:							
SB-3 (13-15)			1510632-03							
Date/Time Sampled:	09/25/2015 13:30									
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst	
Metals (Total) by EPA 6000/7000 Series Methods										
Silver	03	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:31	KEW	
Arsenic	03	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:32	KEW	
Barium	03	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:32	KEW	
Cadmium	03	SW6010C	<0.200 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:32	KEW	
Chromium	03	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:32	KEW	
Mercury	03	SW7471B	<0.008 mg/kg		0.008	1	09/29/15 11:00	09/29/15 14:07	AA	
Lead	03	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:32	KEW	
Selenium	03	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:32	KEW	
Volatile Organic Compounds by GC										
Methyl-t-butyl ether (MTBE)	03	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
Benzene	03	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
Toluene	03	SW8021B	30.7 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
Ethylbenzene	03	SW8021B	142 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
m+p-Xylenes	03	SW8021B	316 ug/kg		10.0	1	10/01/15 00:55	10/01/15 00:55	CL	
o-Xylene	03	SW8021B	190 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
Xylenes, Total	03	SW8021B	506 ug/kg		15.0	1	10/01/15 00:55	10/01/15 00:55	CL	
Naphthalene	03	SW8021B	295 ug/kg		5.00	1	10/01/15 00:55	10/01/15 00:55	CL	
<i>Surr: 2,5-Dibromotoluene</i>	03	SW8021B	102 %		80-120		10/01/15 00:55	10/01/15 00:55	CL	
Volatile Hydrocarbons by GC										
TPH-Volatiles (GRO)	03	SW8015C	11.1 mg/kg		0.41	1	10/01/15 00:55	10/01/15 00:55	CL	
Semivolatile Hydrocarbons by GC										
TPH-Semi-Volatiles (DRO)	03	SW8015C	16.8 mg/kg		10.0	1	09/29/15 15:11	09/30/15 18:41	JHV	
<i>Surr: Pentacosane</i>	03	SW8015C	78.0 %		40-160		09/29/15 15:11	09/30/15 18:41	JHV	



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Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID:							
SB-4 (13-15)			1510632-04							
Date/Time Sampled:	09/25/2015 14:40									
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst	
Metals (Total) by EPA 6000/7000 Series Methods										
Silver	04	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:36	KEW	
Arsenic	04	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:37	KEW	
Barium	04	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:37	KEW	
Cadmium	04	SW6010C	<0.200 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:37	KEW	
Chromium	04	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:37	KEW	
Mercury	04	SW7471B	0.011 mg/kg		0.008	1	09/29/15 11:00	09/29/15 14:09	AA	
Lead	04	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:37	KEW	
Selenium	04	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:37	KEW	
Volatile Organic Compounds by GC										
Methyl-t-butyl ether (MTBE)	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
Benzene	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
Toluene	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
Ethylbenzene	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
m+p-Xylenes	04	SW8021B	<10.0 ug/kg		10.0	1	09/30/15 23:24	09/30/15 23:24	CL	
o-Xylene	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
Xylenes, Total	04	SW8021B	<15.0 ug/kg		15.0	1	09/30/15 23:24	09/30/15 23:24	CL	
Naphthalene	04	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:24	09/30/15 23:24	CL	
<i>Surr: 2,5-Dibromotoluene</i>	<i>04</i>	<i>SW8021B</i>	<i>93.4 %</i>		<i>80-120</i>		<i>09/30/15 23:24</i>	<i>09/30/15 23:24</i>	<i>CL</i>	
Volatile Hydrocarbons by GC										
TPH-Volatiles (GRO)	04	SW8015C	<0.10 mg/kg		0.10	1	09/30/15 23:24	09/30/15 23:24	CL	
Semivolatile Hydrocarbons by GC										
TPH-Semi-Volatiles (DRO)	04	SW8015C	<10.0 mg/kg		10.0	1	09/29/15 15:11	09/30/15 19:08	JHV	
<i>Surr: Pentacosane</i>	<i>04</i>	<i>SW8015C</i>	<i>70.4 %</i>		<i>40-160</i>		<i>09/29/15 15:11</i>	<i>09/30/15 19:08</i>	<i>JHV</i>	



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.	SB-5 (16-18)	Laboratory Sample ID:	1510632-05					
Date/Time Sampled:	09/25/2015 15:30			Reporting	Sample Prep	Analysis		
Parameter	Samp ID	Method	Result	Qual	Limit	D.F.	Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods								
Silver	05	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:41 KEW
Arsenic	05	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:41 KEW
Barium	05	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:41 KEW
Cadmium	05	SW6010C	<0.200 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:41 KEW
Chromium	05	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:41 KEW
Mercury	05	SW7471B	<0.008 mg/kg		0.008	1	09/29/15 11:00	09/29/15 14:16 AA
Lead	05	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:41 KEW
Selenium	05	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:41 KEW
Volatile Organic Compounds by GC								
Methyl-t-butyl ether (MTBE)	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
Benzene	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
Toluene	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
Ethylbenzene	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
m+p-Xylenes	05	SW8021B	<10.0 ug/kg		10.0	1	09/30/15 23:47	09/30/15 23:47 CL
o-Xylene	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
Xylenes, Total	05	SW8021B	<15.0 ug/kg		15.0	1	09/30/15 23:47	09/30/15 23:47 CL
Naphthalene	05	SW8021B	<5.00 ug/kg		5.00	1	09/30/15 23:47	09/30/15 23:47 CL
<i>Surr: 2,5-Dibromotoluene</i>	05	SW8021B	94.8 %		80-120		09/30/15 23:47	09/30/15 23:47 CL
Volatile Hydrocarbons by GC								
TPH-Volatiles (GRO)	05	SW8015C	<0.10 mg/kg		0.10	1	09/30/15 23:47	09/30/15 23:47 CL
Semivolatile Hydrocarbons by GC								
TPH-Semi-Volatiles (DRO)	05	SW8015C	<10.0 mg/kg		10.0	1	09/29/15 15:11	09/30/15 19:35 JHV
<i>Surr: Pentacosane</i>	05	SW8015C	70.8 %		40-160		09/29/15 15:11	09/30/15 19:35 JHV



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.	SB-6 (14-16)	Laboratory Sample ID:	1510632-06						
Date/Time Sampled:	09/25/2015 17:00		Reporting	Sample Prep	Analysis				
Parameter	Samp ID	Method	Result	Qual	Limit	D.F.	Date/Time	Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	06	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:46	KEW
Arsenic	06	SW6010C	<1.00 mg/kg		1.00	1	09/29/15 11:30	10/02/15 18:46	KEW
Barium	06	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:46	KEW
Cadmium	06	SW6010C	<0.200 mg/kg		0.200	1	09/29/15 11:30	10/02/15 18:46	KEW
Chromium	06	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:46	KEW
Mercury	06	SW7471B	<0.008 mg/kg		0.008	1	09/29/15 11:00	09/29/15 14:18	AA
Lead	06	SW6010C	<0.500 mg/kg		0.500	1	09/29/15 11:30	10/02/15 18:46	KEW
Selenium	06	SW6010C	<2.50 mg/kg		2.50	1	09/29/15 11:30	10/02/15 18:46	KEW
Volatile Organic Compounds by GC									
Methyl-t-butyl ether (MTBE)	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
Benzene	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
Toluene	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
Ethylbenzene	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
m+p-Xylenes	06	SW8021B	<10.0 ug/kg		10.0	1	10/01/15 00:09	10/01/15 00:09	CL
o-Xylene	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
Xylenes, Total	06	SW8021B	<15.0 ug/kg		15.0	1	10/01/15 00:09	10/01/15 00:09	CL
Naphthalene	06	SW8021B	<5.00 ug/kg		5.00	1	10/01/15 00:09	10/01/15 00:09	CL
<i>Surr: 2,5-Dibromotoluene</i>	06	SW8021B	89.7 %		80-120		10/01/15 00:09	10/01/15 00:09	CL
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	06	SW8015C	<0.10 mg/kg		0.10	1	10/01/15 00:09	10/01/15 00:09	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	06	SW8015C	<10.0 mg/kg		10.0	1	09/29/15 15:11	09/30/15 20:01	JHV
<i>Surr: Pentacosane</i>	06	SW8015C	75.2 %		40-160		09/29/15 15:11	09/30/15 20:01	JHV



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID:							
Trip Blank			1510632-07							
Date/Time Sampled:										
09/15/2015 15:30										
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst	
Volatile Organic Compounds by GC										
Methyl-t-butyl ether (MTBE)	07	SW8021B	<5.00 ug/L		5.00	1	09/30/15 14:01	09/30/15 14:01	CL	
Benzene	07	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:01	09/30/15 14:01	CL	
Toluene	07	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:01	09/30/15 14:01	CL	
Ethylbenzene	07	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:01	09/30/15 14:01	CL	
m+p-Xylenes	07	SW8021B	<4.00 ug/L		4.00	1	09/30/15 14:01	09/30/15 14:01	CL	
o-Xylene	07	SW8021B	<2.00 ug/L		2.00	1	09/30/15 14:01	09/30/15 14:01	CL	
Xylenes, Total	07	SW8021B	<6.00 ug/L		6.00	1	09/30/15 14:01	09/30/15 14:01	CL	
Naphthalene	07	SW8021B	<6.00 ug/L		6.00	1	09/30/15 14:01	09/30/15 14:01	CL	
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	07	SW8021B	87.8 %		80-120		09/30/15 14:01	09/30/15 14:01	CL	
Volatile Hydrocarbons by GC										
TPH-Volatiles (GRO)	07	SW8015C	<0.10 mg/L		0.10	1	09/30/15 14:01	09/30/15 14:01	CL	



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-08						
MW-1									
Date/Time Sampled:	09/25/2015 14:15		Reporting	Sample Prep	Analysis				
Parameter	Samp ID	Method	Result	Qual	Limit	D.F.	Date/Time	Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	08	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 18:56	KEW
Arsenic	08	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:16	KEW
Barium	08	SW6010C	0.226 mg/L		0.0100	1	09/28/15 16:50	10/01/15 18:56	KEW
Cadmium	08	SW6010C	<0.0050 mg/L		0.0050	1	09/28/15 16:50	10/01/15 18:56	KEW
Chromium	08	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 18:56	KEW
Mercury	08	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 11:42	MWL
Lead	08	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:16	KEW
Selenium	08	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 18:56	KEW
Volatile Organic Compounds by GC									
CI									
Methyl-t-butyl ether (MTBE)	08	SW8021B	<5.00 ug/L		5.00	1	10/01/15 03:13	10/01/15 03:13	CL
Benzene	08	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:13	10/01/15 03:13	CL
Toluene	08	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:13	10/01/15 03:13	CL
Ethylbenzene	08	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:13	10/01/15 03:13	CL
m+p-Xylenes	08	SW8021B	<4.00 ug/L		4.00	1	10/01/15 03:13	10/01/15 03:13	CL
o-Xylene	08	SW8021B	<2.00 ug/L		2.00	1	10/01/15 03:13	10/01/15 03:13	CL
Xylenes, Total	08	SW8021B	<6.00 ug/L		6.00	1	10/01/15 03:13	10/01/15 03:13	CL
Naphthalene	08	SW8021B	<6.00 ug/L		6.00	1	10/01/15 03:13	10/01/15 03:13	CL
<i>Surr: 2,5-Dibromotoluene</i>	<i>08</i>	<i>SW8021B</i>	<i>89.6 %</i>		<i>80-120</i>		<i>10/01/15 03:13</i>	<i>10/01/15 03:13</i>	<i>CL</i>
Volatile Hydrocarbons by GC									
CI									
TPH-Volatiles (GRO)	08	SW8015C	<0.10 mg/L		0.10	1	10/01/15 03:13	10/01/15 03:13	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	08	SW8015C	<0.50 mg/L		0.50	1	09/30/15 11:15	09/30/15 23:34	JHV
<i>Surr: Pentacosane</i>	<i>08</i>	<i>SW8015C</i>	<i>63.1 %</i>		<i>40-160</i>		<i>09/30/15 11:15</i>	<i>09/30/15 23:34</i>	<i>JHV</i>



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-09						
Date/Time Sampled:	09/25/2015 14:50								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	09	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:01	KEW
Arsenic	09	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:20	KEW
Barium	09	SW6010C	0.212 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:01	KEW
Cadmium	09	SW6010C	<0.0050 mg/L		0.0050	1	09/28/15 16:50	10/01/15 19:01	KEW
Chromium	09	SW6010C	0.0195 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:01	KEW
Mercury	09	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 11:44	MWL
Lead	09	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:20	KEW
Selenium	09	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 19:01	KEW
Volatile Organic Compounds by GC									
Methyl-t-butyl ether (MTBE)	09	SW8021B	<5.00 ug/L		5.00	1	10/01/15 03:35	10/01/15 03:35	CL
Benzene	09	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:35	10/01/15 03:35	CL
Toluene	09	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:35	10/01/15 03:35	CL
Ethylbenzene	09	SW8021B	<1.00 ug/L		1.00	1	10/01/15 03:35	10/01/15 03:35	CL
m+p-Xylenes	09	SW8021B	<4.00 ug/L		4.00	1	10/01/15 03:35	10/01/15 03:35	CL
o-Xylene	09	SW8021B	<2.00 ug/L		2.00	1	10/01/15 03:35	10/01/15 03:35	CL
Xylenes, Total	09	SW8021B	<6.00 ug/L		6.00	1	10/01/15 03:35	10/01/15 03:35	CL
Naphthalene	09	SW8021B	<6.00 ug/L		6.00	1	10/01/15 03:35	10/01/15 03:35	CL
<i>Surr: 2,5-Dibromotoluene</i>	<i>09</i>	<i>SW8021B</i>	<i>90.2 %</i>		<i>80-120</i>		<i>10/01/15 03:35</i>	<i>10/01/15 03:35</i>	<i>CL</i>
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	09	SW8015C	<0.10 mg/L		0.10	1	10/01/15 03:35	10/01/15 03:35	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	09	SW8015C	<0.50 mg/L		0.50	1	09/30/15 11:15	10/01/15 00:00	JHV
<i>Surr: Pentacosane</i>	<i>09</i>	<i>SW8015C</i>	<i>67.9 %</i>		<i>40-160</i>		<i>09/30/15 11:15</i>	<i>10/01/15 00:00</i>	<i>JHV</i>



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-10						
Date/Time Sampled:	09/25/2015 15:45								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	10	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:06	KEW
Arsenic	10	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:25	KEW
Barium	10	SW6010C	0.350 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:06	KEW
Cadmium	10	SW6010C	<0.0050 mg/L		0.0050	1	09/28/15 16:50	10/01/15 19:06	KEW
Chromium	10	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:06	KEW
Mercury	10	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 11:46	MWL
Lead	10	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:25	KEW
Selenium	10	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 19:06	KEW
Volatile Organic Compounds by GC									
Methyl-t-butyl ether (MTBE)	10	SW8021B	<5.00 ug/L		5.00	1	10/01/15 03:58	10/01/15 03:58	CL
Benzene	10	SW8021B	212 ug/L		1.00	1	10/01/15 03:58	10/01/15 03:58	CL
Toluene	10	SW8021B	7.21 ug/L		1.00	1	10/01/15 03:58	10/01/15 03:58	CL
Ethylbenzene	10	SW8021B	6.64 ug/L		1.00	1	10/01/15 03:58	10/01/15 03:58	CL
m+p-Xylenes	10	SW8021B	10.9 ug/L		4.00	1	10/01/15 03:58	10/01/15 03:58	CL
o-Xylene	10	SW8021B	<2.00 ug/L		2.00	1	10/01/15 03:58	10/01/15 03:58	CL
Xylenes, Total	10	SW8021B	12.4 ug/L		6.00	1	10/01/15 03:58	10/01/15 03:58	CL
Naphthalene	10	SW8021B	29.6 ug/L		6.00	1	10/01/15 03:58	10/01/15 03:58	CL
<i>Surr: 2,5-Dibromotoluene</i>	<i>10</i>	<i>SW8021B</i>	<i>93.3 %</i>		<i>80-120</i>		<i>10/01/15 03:58</i>	<i>10/01/15 03:58</i>	<i>CL</i>
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	10	SW8015C	0.66 mg/L		0.10	1	10/01/15 03:58	10/01/15 03:58	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	10	SW8015C	<0.50 mg/L		0.50	1	09/30/15 11:15	10/01/15 00:27	JHV
<i>Surr: Pentacosane</i>	<i>10</i>	<i>SW8015C</i>	<i>75.3 %</i>		<i>40-160</i>		<i>09/30/15 11:15</i>	<i>10/01/15 00:27</i>	<i>JHV</i>



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-11						
Date/Time Sampled:	09/25/2015 16:35								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	11	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:11	KEW
Arsenic	11	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:30	KEW
Barium	11	SW6010C	0.172 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:11	KEW
Cadmium	11	SW6010C	<0.0050 mg/L		0.0050	1	09/28/15 16:50	10/01/15 19:11	KEW
Chromium	11	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:11	KEW
Mercury	11	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 11:48	MWL
Lead	11	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:30	KEW
Selenium	11	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 19:11	KEW
Volatile Organic Compounds by GC									
CI									
Methyl-t-butyl ether (MTBE)	11	SW8021B	<5.00 ug/L		5.00	1	10/01/15 04:21	10/01/15 04:21	CL
Benzene	11	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:21	10/01/15 04:21	CL
Toluene	11	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:21	10/01/15 04:21	CL
Ethylbenzene	11	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:21	10/01/15 04:21	CL
m+p-Xylenes	11	SW8021B	<4.00 ug/L		4.00	1	10/01/15 04:21	10/01/15 04:21	CL
o-Xylene	11	SW8021B	<2.00 ug/L		2.00	1	10/01/15 04:21	10/01/15 04:21	CL
Xylenes, Total	11	SW8021B	<6.00 ug/L		6.00	1	10/01/15 04:21	10/01/15 04:21	CL
Naphthalene	11	SW8021B	<6.00 ug/L		6.00	1	10/01/15 04:21	10/01/15 04:21	CL
<i>Surr: 2,5-Dibromotoluene</i>	<i>11</i>	<i>SW8021B</i>	<i>89.7 %</i>		<i>80-120</i>		<i>10/01/15 04:21</i>	<i>10/01/15 04:21</i>	<i>CL</i>
Volatile Hydrocarbons by GC									
CI									
TPH-Volatiles (GRO)	11	SW8015C	<0.10 mg/L		0.10	1	10/01/15 04:21	10/01/15 04:21	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	11	SW8015C	<0.50 mg/L		0.50	1	09/30/15 14:23	10/02/15 01:35	JHV
<i>Surr: Pentacosane</i>	<i>11</i>	<i>SW8015C</i>	<i>75.5 %</i>		<i>40-160</i>		<i>09/30/15 14:23</i>	<i>10/02/15 01:35</i>	<i>JHV</i>



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-12						
MW-5									
Date/Time Sampled:	09/25/2015 17:10								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	12	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:16	KEW
Arsenic	12	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:35	KEW
Barium	12	SW6010C	0.506 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:16	KEW
Cadmium	12	SW6010C	<0.0050 mg/L		0.0050	1	09/28/15 16:50	10/01/15 19:16	KEW
Chromium	12	SW6010C	0.349 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:16	KEW
Mercury	12	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 12:01	MWL
Lead	12	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:35	KEW
Selenium	12	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 19:16	KEW
Volatile Organic Compounds by GC									
CI									
Methyl-t-butyl ether (MTBE)	12	SW8021B	<5.00 ug/L		5.00	1	10/01/15 04:44	10/01/15 04:44	CL
Benzene	12	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:44	10/01/15 04:44	CL
Toluene	12	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:44	10/01/15 04:44	CL
Ethylbenzene	12	SW8021B	<1.00 ug/L		1.00	1	10/01/15 04:44	10/01/15 04:44	CL
m+p-Xylenes	12	SW8021B	<4.00 ug/L		4.00	1	10/01/15 04:44	10/01/15 04:44	CL
o-Xylene	12	SW8021B	<2.00 ug/L		2.00	1	10/01/15 04:44	10/01/15 04:44	CL
Xylenes, Total	12	SW8021B	<6.00 ug/L		6.00	1	10/01/15 04:44	10/01/15 04:44	CL
Naphthalene	12	SW8021B	<6.00 ug/L		6.00	1	10/01/15 04:44	10/01/15 04:44	CL
<i>Surr: 2,5-Dibromotoluene</i>	12	SW8021B	90.7 %		80-120		10/01/15 04:44	10/01/15 04:44	CL
Volatile Hydrocarbons by GC									
CI									
TPH-Volatiles (GRO)	12	SW8015C	<0.10 mg/L		0.10	1	10/01/15 04:44	10/01/15 04:44	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	12	SW8015C	<0.50 mg/L		0.50	1	09/30/15 14:23	10/02/15 02:01	JHV
<i>Surr: Pentacosane</i>	12	SW8015C	74.7 %		40-160		09/30/15 14:23	10/02/15 02:01	JHV



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Certificate of Analysis

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Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-13						
MW-6									
Date/Time Sampled:	09/25/2015 17:45								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Metals (Total) by EPA 6000/7000 Series Methods									
Silver	13	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:21	KEW
Arsenic	13	SW6010C	<0.0100 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:40	KEW
Barium	13	SW6010C	2.64 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:21	KEW
Cadmium	13	SW6010C	0.0077 mg/L		0.0050	1	09/28/15 16:50	10/01/15 19:21	KEW
Chromium	13	SW6010C	0.182 mg/L		0.0100	1	09/28/15 16:50	10/01/15 19:21	KEW
Mercury	13	SW7470A	<0.00020 mg/L		0.00020	1	09/30/15 12:45	10/01/15 12:03	MWL
Lead	13	SW6010C	0.0745 mg/L		0.0100	1	09/28/15 16:50	10/05/15 15:40	KEW
Selenium	13	SW6010C	<0.0500 mg/L		0.0500	1	09/28/15 16:50	10/01/15 19:21	KEW
Volatile Organic Compounds by GC									
CI									
Methyl-t-butyl ether (MTBE)	13	SW8021B	<5.00 ug/L		5.00	1	10/01/15 05:07	10/01/15 05:07	CL
Benzene	13	SW8021B	<1.00 ug/L		1.00	1	10/01/15 05:07	10/01/15 05:07	CL
Toluene	13	SW8021B	<1.00 ug/L		1.00	1	10/01/15 05:07	10/01/15 05:07	CL
Ethylbenzene	13	SW8021B	<1.00 ug/L		1.00	1	10/01/15 05:07	10/01/15 05:07	CL
m+p-Xylenes	13	SW8021B	<4.00 ug/L		4.00	1	10/01/15 05:07	10/01/15 05:07	CL
o-Xylene	13	SW8021B	<2.00 ug/L		2.00	1	10/01/15 05:07	10/01/15 05:07	CL
Xylenes, Total	13	SW8021B	<6.00 ug/L		6.00	1	10/01/15 05:07	10/01/15 05:07	CL
Naphthalene	13	SW8021B	<6.00 ug/L		6.00	1	10/01/15 05:07	10/01/15 05:07	CL
<i>Surr: 2,5-Dibromotoluene</i>	13	SW8021B	92.0 %		80-120		10/01/15 05:07	10/01/15 05:07	CL
Volatile Hydrocarbons by GC									
CI									
TPH-Volatiles (GRO)	13	SW8015C	<0.10 mg/L		0.10	1	10/01/15 05:07	10/01/15 05:07	CL
Semivolatile Hydrocarbons by GC									
TPH-Semi-Volatiles (DRO)	13	SW8015C	<0.50 mg/L		0.50	1	09/30/15 14:23	10/02/15 02:28	JHV
<i>Surr: Pentacosane</i>	13	SW8015C	75.4 %		40-160		09/30/15 14:23	10/02/15 02:28	JHV



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Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Analytical Results

Sample I.D.			Laboratory Sample ID: 1510632-14						
Trip Blank									
Date/Time Sampled:	09/15/2015 15:30								
Parameter	Samp ID	Method	Result	Qual	Reporting Limit	D.F.	Sample Prep Date/Time	Analysis Date/Time	Analyst
Volatile Organic Compounds by GC									
Methyl-t-butyl ether (MTBE)	14	SW8021B	<5.00 ug/L		5.00	1	09/30/15 14:24	09/30/15 14:24	CL
Benzene	14	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:24	09/30/15 14:24	CL
Toluene	14	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:24	09/30/15 14:24	CL
Ethylbenzene	14	SW8021B	<1.00 ug/L		1.00	1	09/30/15 14:24	09/30/15 14:24	CL
m+p-Xylenes	14	SW8021B	<4.00 ug/L		4.00	1	09/30/15 14:24	09/30/15 14:24	CL
o-Xylene	14	SW8021B	<2.00 ug/L		2.00	1	09/30/15 14:24	09/30/15 14:24	CL
Xylenes, Total	14	SW8021B	<6.00 ug/L		6.00	1	09/30/15 14:24	09/30/15 14:24	CL
Naphthalene	14	SW8021B	<6.00 ug/L		6.00	1	09/30/15 14:24	09/30/15 14:24	CL
<hr style="border-top: 1px dashed black;"/>									
Surr: 2,5-Dibromotoluene	14	SW8021B	86.1 %		80-120		09/30/15 14:24	09/30/15 14:24	CL
Volatile Hydrocarbons by GC									
TPH-Volatiles (GRO)	14	SW8015C	<0.10 mg/L		0.10	1	09/30/15 14:24	09/30/15 14:24	CL



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Analytical Summary

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			Preparation Method: EPA200.2/R2.8		
1510632-08	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-08	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
1510632-09	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-09	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
1510632-10	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-10	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
1510632-11	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-11	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
1510632-12	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-12	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
1510632-13	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0055	AJ50004
1510632-13	50.0 mL / 50.0 mL	SW6010C	BY10624	SYJ0120	AJ50012
Metals (Total) by EPA 6000/7000 Series Methods			Preparation Method: SW3050B		
1510632-01	1.05 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
1510632-02	1.01 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
1510632-03	1.06 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
1510632-04	1.01 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
1510632-05	1.04 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
1510632-06	1.01 g / 50.0 mL	SW6010C	BY10660	SYJ0096	AJ50012
Volatile Hydrocarbons by GC			Preparation Method: SW5030B		
1510632-01	5.11 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-02	5.22 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-03	1.22 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-04	5.20 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-05	5.01 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-06	5.13 g / 5.00 mL	SW8015C	BY10669	SYI0812	AI50076
1510632-01	5.11 g / 5.00 mL	SW8021B	BY10669	SYI0812	AI50076



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Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Volatile Organic Compounds by GC			Preparation Method:	SW5030B	
1510632-02	5.22 g / 5.00 mL	SW8021B	BY10669	SY10812	AI50076
1510632-03	1.22 g / 5.00 mL	SW8021B	BY10669	SY10812	AI50076
1510632-04	5.20 g / 5.00 mL	SW8021B	BY10669	SY10812	AI50076
1510632-05	5.01 g / 5.00 mL	SW8021B	BY10669	SY10812	AI50076
1510632-06	5.13 g / 5.00 mL	SW8021B	BY10669	SY10812	AI50076
1510632-07	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-08	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-09	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-10	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-11	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-12	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-13	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-14	5.00 mL / 5.00 mL	SW8015C	BY10676	SY10809	AI50076
1510632-07	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-08	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-09	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-10	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-11	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-12	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-13	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076
1510632-14	5.00 mL / 5.00 mL	SW8021B	BY10676	SY10809	AI50076

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			Preparation Method:	SW7470A	
1510632-08	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001
1510632-09	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001
1510632-10	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001
1510632-11	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001
1510632-12	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001
1510632-13	20.0 mL / 20.0 mL	SW7470A	BYJ0006	SYJ0015	AJ50001

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			Preparation Method:	SW7471A	
1510632-01	0.502 g / 20.0 mL	SW7471B	BY10645	SY10783	AI50124



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Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Metals (Total) by EPA 6000/7000 Series Methods			Preparation Method:	SW7471A	
1510632-02	0.526 g / 20.0 mL	SW7471B	BY10645	SY10783	A150124
1510632-03	0.509 g / 20.0 mL	SW7471B	BY10645	SY10783	A150124
1510632-04	0.500 g / 20.0 mL	SW7471B	BY10645	SY10783	A150124
1510632-05	0.527 g / 20.0 mL	SW7471B	BY10645	SY10783	A150124
1510632-06	0.517 g / 20.0 mL	SW7471B	BY10645	SY10783	A150124

Sample ID	Preparation Factors Initial / Final	Method	Batch ID	Sequence ID	Calibration ID
Semivolatile Hydrocarbons by GC			Preparation Method:	SW8100	
1510632-01	50.4 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-02	50.5 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-03	50.5 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-04	50.7 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-05	52.1 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-06	51.6 g / 1.00 mL	SW8015C	BY10665	SYJ0005	AH50153
1510632-08	1000 mL / 1.00 mL	SW8015C	BY10670	SYJ0007	AA50037
1510632-09	910 mL / 1.00 mL	SW8015C	BY10670	SYJ0007	AA50037
1510632-10	830 mL / 1.00 mL	SW8015C	BY10670	SYJ0007	AA50037
1510632-11	940 mL / 1.00 mL	SW8015C	BY10675	SYJ0064	AA50037
1510632-12	940 mL / 1.00 mL	SW8015C	BY10675	SYJ0064	AA50037
1510632-13	620 mL / 1.00 mL	SW8015C	BY10675	SYJ0064	AA50037



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Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10624 - EPA200.2/R2.8

Blank (BY10624-BLK1)

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	<0.0100 mg/L	0.0100	mg/L							
Barium	<0.0100 mg/L	0.0100	mg/L							
Cadmium	<0.0050 mg/L	0.0050	mg/L							
Chromium	<0.0100 mg/L	0.0100	mg/L							
Lead	<0.0100 mg/L	0.0100	mg/L							
Selenium	<0.0500 mg/L	0.0500	mg/L							
Silver	<0.0100 mg/L	0.0100	mg/L							

Blank (BY10624-BLK2)

Prepared: 09/28/2015 Analyzed: 10/01/2015

Arsenic	<0.0100 mg/L	0.0100	mg/L							
Barium	<0.0100 mg/L	0.0100	mg/L							
Cadmium	<0.0050 mg/L	0.0050	mg/L							
Chromium	<0.0100 mg/L	0.0100	mg/L							
Lead	<0.0100 mg/L	0.0100	mg/L							
Selenium	<0.0500 mg/L	0.0500	mg/L							
Silver	<0.0100 mg/L	0.0100	mg/L							

LCS (BY10624-BS1)

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	0.471 mg/L	0.0100	mg/L	0.500	94.1	80-120
Barium	0.507 mg/L	0.0100	mg/L	0.500	101	80-120
Cadmium	0.491 mg/L	0.0050	mg/L	0.500	98.3	80-120
Chromium	0.498 mg/L	0.0100	mg/L	0.500	99.5	80-120
Lead	0.492 mg/L	0.0100	mg/L	0.500	98.4	80-120
Selenium	0.483 mg/L	0.0500	mg/L	0.500	96.7	80-120
Silver	0.103 mg/L	0.0100	mg/L	0.100	103	80-120

LCS (BY10624-BS2)

Prepared: 09/28/2015 Analyzed: 10/01/2015

Arsenic	0.449 mg/L	0.0100	mg/L	0.500	89.8	80-120
Barium	0.472 mg/L	0.0100	mg/L	0.500	94.3	80-120
Cadmium	0.477 mg/L	0.0050	mg/L	0.500	95.4	80-120
Chromium	0.480 mg/L	0.0100	mg/L	0.500	95.9	80-120
Lead	0.455 mg/L	0.0100	mg/L	0.500	91.1	80-120
Selenium	0.487 mg/L	0.0500	mg/L	0.500	97.3	80-120



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Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10624 - EPA200.2/R2.8

LCS (BY10624-BS2)

Prepared: 09/28/2015 Analyzed: 10/01/2015

Silver	0.0972 mg/L	0.0100	mg/L	0.100		97.2	80-120		
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LCS Dup (BY10624-BSD1)

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	0.471 mg/L	0.0100	mg/L	0.500		94.3	80-120	0.190	20
Barium	0.506 mg/L	0.0100	mg/L	0.500		101	80-120	0.131	20
Cadmium	0.489 mg/L	0.0050	mg/L	0.500		97.8	80-120	0.502	20
Chromium	0.496 mg/L	0.0100	mg/L	0.500		99.2	80-120	0.354	20
Lead	0.495 mg/L	0.0100	mg/L	0.500		99.0	80-120	0.649	20
Selenium	0.488 mg/L	0.0500	mg/L	0.500		97.5	80-120	0.886	20
Silver	0.104 mg/L	0.0100	mg/L	0.100		104	80-120	1.06	20

LCS Dup (BY10624-BSD2)

Prepared: 09/28/2015 Analyzed: 10/01/2015

Arsenic	0.450 mg/L	0.0100	mg/L	0.500		90.1	80-120	0.317	20
Barium	0.471 mg/L	0.0100	mg/L	0.500		94.2	80-120	0.0956	20
Cadmium	0.476 mg/L	0.0050	mg/L	0.500		95.3	80-120	0.125	20
Chromium	0.479 mg/L	0.0100	mg/L	0.500		95.9	80-120	0.0695	20
Lead	0.458 mg/L	0.0100	mg/L	0.500		91.7	80-120	0.662	20
Selenium	0.489 mg/L	0.0500	mg/L	0.500		97.8	80-120	0.462	20
Silver	0.0978 mg/L	0.0100	mg/L	0.100		97.8	80-120	0.585	20

Matrix Spike (BY10624-MS1)

Source: 1510617-04

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	0.503 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	101	75-125
Barium	0.567 mg/L	0.0100	mg/L	0.500	0.0504 mg/L	103	75-125
Cadmium	0.511 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	102	75-125
Chromium	0.532 mg/L	0.0100	mg/L	0.500	0.0191 mg/L	103	75-125
Lead	0.510 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	102	75-125
Selenium	0.518 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	104	75-125
Silver	0.111 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	103	75-125



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10624 - EPA200.2/R2.8

Matrix Spike (BY10624-MS2)

Source: 1510621-01

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	0.500 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	100	75-125			
Barium	0.530 mg/L	0.0100	mg/L	0.500	0.0168 mg/L	103	75-125			
Cadmium	0.501 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	100	75-125			
Chromium	0.507 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	101	75-125			
Lead	0.500 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	99.9	75-125			
Selenium	0.516 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	103	75-125			
Silver	0.104 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	104	75-125			

Matrix Spike (BY10624-MS3)

Source: 1510617-04

Prepared: 09/28/2015 Analyzed: 10/01/2015

Arsenic	0.465 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	93.0	75-125			
Barium	0.518 mg/L	0.0100	mg/L	0.500	0.0504 mg/L	93.6	75-125			
Cadmium	0.480 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	96.0	75-125			
Chromium	0.504 mg/L	0.0100	mg/L	0.500	0.0191 mg/L	97.0	75-125			
Lead	0.457 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	91.5	75-125			
Selenium	0.504 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	101	75-125			
Silver	0.105 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	97.6	75-125			

Matrix Spike (BY10624-MS4)

Source: 1510621-01

Prepared: 09/28/2015 Analyzed: 10/01/2015

Arsenic	0.467 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	93.4	75-125			
Barium	0.486 mg/L	0.0100	mg/L	0.500	0.0168 mg/L	93.8	75-125			
Cadmium	0.477 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	95.4	75-125			
Chromium	0.483 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	96.7	75-125			
Lead	0.455 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	91.1	75-125			
Selenium	0.503 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	101	75-125			
Silver	0.0988 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	98.8	75-125			

Matrix Spike Dup (BY10624-MSD1)

Source: 1510617-04

Prepared: 09/28/2015 Analyzed: 09/29/2015

Arsenic	<0.0100 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L		75-125		20	M
Barium	<0.0100 mg/L	0.0100	mg/L	0.500	0.0504 mg/L	-10.1	75-125		20	M
Cadmium	<0.0050 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L		75-125		20	M
Chromium	<0.0100 mg/L	0.0100	mg/L	0.500	0.0191 mg/L	-3.82	75-125		20	M
Lead	<0.0100 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L		75-125		20	M
Selenium	<0.0500 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L		75-125		20	M



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10624 - EPA200.2/R2.8

Matrix Spike Dup (BY10624-MSD1)	Source: 1510617-04	Prepared: 09/28/2015	Analyzed: 09/29/2015
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Silver	<0.0100 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	-7.31	75-125	20	M
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Matrix Spike Dup (BY10624-MSD2)	Source: 1510621-01	Prepared: 09/28/2015	Analyzed: 09/29/2015
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Arsenic	0.501 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	100	75-125	0.255	20
Barium	0.526 mg/L	0.0100	mg/L	0.500	0.0168 mg/L	102	75-125	0.707	20
Cadmium	0.500 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	100	75-125	0.189	20
Chromium	0.508 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	102	75-125	0.170	20
Lead	0.500 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	100	75-125	0.165	20
Selenium	0.514 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	103	75-125	0.416	20
Silver	0.104 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	104	75-125	0.518	20

Matrix Spike Dup (BY10624-MSD3)	Source: 1510617-04	Prepared: 09/28/2015	Analyzed: 10/01/2015
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Arsenic	0.466 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	93.3	75-125	0.294	20
Barium	0.517 mg/L	0.0100	mg/L	0.500	0.0504 mg/L	93.4	75-125	0.204	20
Cadmium	0.479 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	95.8	75-125	0.256	20
Chromium	0.503 mg/L	0.0100	mg/L	0.500	0.0191 mg/L	96.9	75-125	0.160	20
Lead	0.457 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	91.3	75-125	0.121	20
Selenium	0.500 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	100	75-125	0.762	20
Silver	0.105 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	97.3	75-125	0.274	20

Matrix Spike Dup (BY10624-MSD4)	Source: 1510621-01	Prepared: 09/28/2015	Analyzed: 10/01/2015
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Arsenic	0.470 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	94.0	75-125	0.657	20
Barium	0.486 mg/L	0.0100	mg/L	0.500	0.0168 mg/L	93.8	75-125	0.00657	20
Cadmium	0.481 mg/L	0.0050	mg/L	0.500	<0.0050 mg/L	96.2	75-125	0.853	20
Chromium	0.487 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	97.4	75-125	0.784	20
Lead	0.458 mg/L	0.0100	mg/L	0.500	<0.0100 mg/L	91.7	75-125	0.654	20
Selenium	0.507 mg/L	0.0500	mg/L	0.500	<0.0500 mg/L	101	75-125	0.934	20
Silver	0.0985 mg/L	0.0100	mg/L	0.100	<0.0100 mg/L	98.5	75-125	0.274	20



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Certificate of Analysis

Final Report

Laboratory Order ID 15I0632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BYI0645 - SW7471A

Blank (BYI0645-BLK1)											Prepared & Analyzed: 09/29/2015	
Mercury	<0.008 mg/kg	0.008	mg/kg									
LCS (BYI0645-BS1)											Prepared & Analyzed: 09/29/2015	
Mercury	0.093 mg/kg	0.008	mg/kg	0.0980		94.4	80-120					
LCS Dup (BYI0645-BSD1)											Prepared & Analyzed: 09/29/2015	
Mercury	0.089 mg/kg	0.008	mg/kg	0.0951		94.1	80-120	3.40	20			
Matrix Spike (BYI0645-MS1)											Prepared & Analyzed: 09/29/2015	
Source: 15I0632-01												
Mercury	0.086 mg/kg	0.008	mg/kg	0.0952	<0.008 mg/kg	90.6	80-120					
Matrix Spike Dup (BYI0645-MSD1)											Prepared & Analyzed: 09/29/2015	
Source: 15I0632-01												
Mercury	0.104 mg/kg	0.008	mg/kg	0.0982	<0.008 mg/kg	106	80-120	18.5	20			

Batch BYJ0006 - SW7470A

Blank (BYJ0006-BLK1)											Prepared & Analyzed: 10/01/2015	
Mercury	<0.00020 mg/L	0.00020	mg/L									
LCS (BYJ0006-BS1)											Prepared & Analyzed: 10/01/2015	
Mercury	0.00257 mg/L	0.00020	mg/L	0.00250		103	80-120					
LCS Dup (BYJ0006-BSD1)											Prepared & Analyzed: 10/01/2015	
Mercury	0.00256 mg/L	0.00020	mg/L	0.00250		103	80-120	0.117	20			
Matrix Spike (BYJ0006-MS1)											Prepared & Analyzed: 10/01/2015	
Source: 15I0632-11												
Mercury	0.00248 mg/L	0.00020	mg/L	0.00250	<0.00020 mg/L	99.4	80-120					



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		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Metals (Total) by EPA 6000/7000 Series Methods - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BYJ0006 - SW7470A

Matrix Spike Dup (BYJ0006-MSD1)	Source: 1510632-11	Prepared & Analyzed: 10/01/2015
Mercury	0.00250 mg/L	0.00020 mg/L
		0.00250 < 0.00020 mg/L
		99.9
		80-120
		0.503
		20



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Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10669 - SW5030B

Blank (BY10669-BLK1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	<5.00 ug/kg	5.00	ug/kg							
Benzene	<5.00 ug/kg	5.00	ug/kg							
Toluene	<5.00 ug/kg	5.00	ug/kg							
Ethylbenzene	<5.00 ug/kg	5.00	ug/kg							
m+p-Xylenes	<10.0 ug/kg	10.0	ug/kg							
o-Xylene	<5.00 ug/kg	5.00	ug/kg							
Xylenes, Total	<15.0 ug/kg	15.0	ug/kg							
Naphthalene	<5.00 ug/kg	5.00	ug/kg							
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	89.4		ug/L	100		89.4	80-120			

LCS (BY10669-BS1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	97.1 ug/kg	5.00	ug/kg	99.0		98.1	70-130			
Benzene	97.8 ug/kg	5.00	ug/kg	99.0		98.7	70-130			
Toluene	103 ug/kg	5.00	ug/kg	99.0		104	70-130			
Ethylbenzene	102 ug/kg	5.00	ug/kg	99.0		103	70-130			
m+p-Xylenes	208 ug/kg	10.0	ug/kg	198		105	70-130			
o-Xylene	111 ug/kg	5.00	ug/kg	99.0		112	70-130			
Xylenes, Total	319 ug/kg	15.0	ug/kg				0-200			
Naphthalene	107 ug/kg	5.00	ug/kg	99.0		108	70-130			
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	90.9		ug/L	100		90.9	80-120			

LCS Dup (BY10669-BSD1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	96.2 ug/kg	5.00	ug/kg	100		96.2	70-130	0.929	20	
Benzene	98.1 ug/kg	5.00	ug/kg	100		98.1	70-130	0.294	20	
Toluene	103 ug/kg	5.00	ug/kg	100		103	70-130	0.327	20	
Ethylbenzene	102 ug/kg	5.00	ug/kg	100		102	70-130	0.0971	20	
m+p-Xylenes	207 ug/kg	10.0	ug/kg	200		104	70-130	0.460	20	
o-Xylene	111 ug/kg	5.00	ug/kg	100		111	70-130	0.289	20	
Xylenes, Total	318 ug/kg	15.0	ug/kg				0-200	0.401	20	
Naphthalene	103 ug/kg	5.00	ug/kg	100		103	70-130	3.52	20	
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	93.5		ug/L	100		93.5	80-120			



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Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10669 - SW5030B

Matrix Spike (BY10669-MS1)

Source: 1510632-02

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	100 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	101	70-130			
Benzene	96.9 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	97.8	70-130			
Toluene	101 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	102	70-130			
Ethylbenzene	99.8 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	101	70-130			
m+p-Xylenes	205 ug/kg	10.0	ug/kg	198	<10.0 ug/kg	103	70-130			
o-Xylene	110 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	111	70-130			
Xylenes, Total	314 ug/kg	15.0	ug/kg		<15.0 ug/kg		70-130			
Naphthalene	106 ug/kg	5.00	ug/kg	99.0	<5.00 ug/kg	107	70-130			
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	100		ug/L	100		100	80-120			

Matrix Spike Dup (BY10669-MSD1)

Source: 1510632-02

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	61.1 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	62.0	70-130	48.5	20	M, P
Benzene	64.5 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	65.4	70-130	40.2	20	M, P
Toluene	68.3 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	69.3	70-130	38.9	20	M, P
Ethylbenzene	67.6 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	68.6	70-130	38.5	20	M, P
m+p-Xylenes	139 ug/kg	10.0	ug/kg	197	<10.0 ug/kg	70.4	70-130	38.3	20	P
o-Xylene	73.5 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	74.6	70-130	39.4	20	P
Xylenes, Total	212 ug/kg	15.0	ug/kg		<15.0 ug/kg		70-130	38.7	20	M
Naphthalene	66.9 ug/kg	5.00	ug/kg	98.6	<5.00 ug/kg	67.8	70-130	45.6	20	M, P
<hr style="border-top: 1px dashed black;"/>										
Surr: 2,5-Dibromotoluene	96.0		ug/L	100		96.0	80-120			

Batch BY10676 - SW5030B

Blank (BY10676-BLK1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	<5.00 ug/L	5.00	ug/L							
Benzene	<1.00 ug/L	1.00	ug/L							
Toluene	<1.00 ug/L	1.00	ug/L							
Ethylbenzene	<1.00 ug/L	1.00	ug/L							
m+p-Xylenes	<4.00 ug/L	4.00	ug/L							
o-Xylene	<2.00 ug/L	2.00	ug/L							
Xylenes, Total	<6.00 ug/L	6.00	ug/L							



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Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10676 - SW5030B

Blank (BY10676-BLK1)

Prepared & Analyzed: 09/30/2015

Naphthalene	<6.00 ug/L	6.00	ug/L							J
<i>Surr: 2,5-Dibromotoluene</i>	85.9		ug/L	100		85.9	80-120			

LCS (BY10676-BS1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	92.8 ug/L	5.00	ug/L	100		92.8	70-130			
Benzene	97.1 ug/L	1.00	ug/L	100		97.1	70-130			
Toluene	102 ug/L	1.00	ug/L	100		102	70-130			
Ethylbenzene	102 ug/L	1.00	ug/L	100		102	70-130			
m+p-Xylenes	209 ug/L	4.00	ug/L	200		104	70-130			
o-Xylene	111 ug/L	2.00	ug/L	100		111	70-130			
Xylenes, Total	319 ug/L	6.00	ug/L				0-200			
Naphthalene	97.8 ug/L	6.00	ug/L	100		97.8	70-130			
<i>Surr: 2,5-Dibromotoluene</i>	87.2		ug/L	100		87.2	80-120			

LCS Dup (BY10676-BSD1)

Prepared & Analyzed: 09/30/2015

Methyl-t-butyl ether (MTBE)	95.6 ug/L	5.00	ug/L	100		95.6	70-130	2.94	20	
Benzene	98.6 ug/L	1.00	ug/L	100		98.6	70-130	1.47	20	
Toluene	104 ug/L	1.00	ug/L	100		104	70-130	1.04	20	
Ethylbenzene	103 ug/L	1.00	ug/L	100		103	70-130	0.890	20	
m+p-Xylenes	210 ug/L	4.00	ug/L	200		105	70-130	0.678	20	
o-Xylene	112 ug/L	2.00	ug/L	100		112	70-130	0.765	20	
Xylenes, Total	322 ug/L	6.00	ug/L				0-200	0.708	20	
Naphthalene	103 ug/L	6.00	ug/L	100		103	70-130	5.01	20	
<i>Surr: 2,5-Dibromotoluene</i>	90.9		ug/L	100		90.9	80-120			

Duplicate (BY10676-DUP1)

Source: 1510615-01

Prepared & Analyzed: 10/01/2015

Methyl-t-butyl ether (MTBE)	<5.00 ug/L	5.00	ug/L		<5.00 ug/L			NA	30	J
Benzene	<1.00 ug/L	1.00	ug/L		<1.00 ug/L			NA	30	
Toluene	<1.00 ug/L	1.00	ug/L		<1.00 ug/L			NA	30	
Ethylbenzene	<1.00 ug/L	1.00	ug/L		<1.00 ug/L			NA	30	
m+p-Xylenes	<4.00 ug/L	4.00	ug/L		<4.00 ug/L			NA	30	
o-Xylene	<2.00 ug/L	2.00	ug/L		<2.00 ug/L			NA	30	



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Organic Compounds by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10676 - SW5030B

Duplicate (BY10676-DUP1)	Source: 1510615-01			Prepared & Analyzed: 10/01/2015						
Xylenes, Total	<6.00 ug/L	6.00	ug/L	100	<6.00 ug/L	95.7	70-130	NA	30	
Naphthalene	<6.00 ug/L	6.00	ug/L	100	<6.00 ug/L	104	70-130	NA	30	J
<hr style="border-top: 1px dashed black;"/>										
<i>Surr: 2,5-Dibromotoluene</i>	97.4		ug/L	100		97.4	80-120			

Matrix Spike (BY10676-MS1)	Source: 1510591-13RE1			Prepared & Analyzed: 09/30/2015						
Methyl-t-butyl ether (MTBE)	95.7 ug/L	5.00	ug/L	100	<5.00 ug/L	95.7	70-130			
Benzene	100 ug/L	1.00	ug/L	100	1.34 ug/L	99.1	70-130			
Toluene	104 ug/L	1.00	ug/L	100	<1.00 ug/L	104	70-130			
Ethylbenzene	103 ug/L	1.00	ug/L	100	<1.00 ug/L	103	70-130			
m+p-Xylenes	210 ug/L	4.00	ug/L	200	<4.00 ug/L	104	70-130			
o-Xylene	112 ug/L	2.00	ug/L	100	<2.00 ug/L	112	70-130			
Xylenes, Total	321 ug/L	6.00	ug/L	100	<6.00 ug/L	104	70-130			
Naphthalene	111 ug/L	6.00	ug/L	100	6.29 ug/L	104	70-130			
<hr style="border-top: 1px dashed black;"/>										
<i>Surr: 2,5-Dibromotoluene</i>	97.6		ug/L	100		97.6	80-120			

Matrix Spike Dup (BY10676-MSD1)	Source: 1510591-13RE1			Prepared & Analyzed: 09/30/2015						
Methyl-t-butyl ether (MTBE)	96.9 ug/L	5.00	ug/L	100	<5.00 ug/L	96.9	70-130	1.23	20	
Benzene	100 ug/L	1.00	ug/L	100	1.34 ug/L	98.9	70-130	0.249	20	
Toluene	104 ug/L	1.00	ug/L	100	<1.00 ug/L	103	70-130	0.702	20	
Ethylbenzene	102 ug/L	1.00	ug/L	100	<1.00 ug/L	102	70-130	0.710	20	
m+p-Xylenes	208 ug/L	4.00	ug/L	200	<4.00 ug/L	104	70-130	0.550	20	
o-Xylene	111 ug/L	2.00	ug/L	100	<2.00 ug/L	111	70-130	0.475	20	
Xylenes, Total	320 ug/L	6.00	ug/L	100	<6.00 ug/L	104	70-130	0.524	20	
Naphthalene	116 ug/L	6.00	ug/L	100	6.29 ug/L	110	70-130	5.05	20	
<hr style="border-top: 1px dashed black;"/>										
<i>Surr: 2,5-Dibromotoluene</i>	97.0		ug/L	100		97.0	80-120			



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Certificate of Analysis

Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Hydrocarbons by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10669 - SW5030B

Blank (BY10669-BLK1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	<0.10 mg/kg	0.10	mg/kg									
LCS (BY10669-BS1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	1.10 mg/kg	0.10	mg/kg	0.990		111	70-130					
LCS Dup (BY10669-BSD1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	1.10 mg/kg	0.10	mg/kg	1.00		110	70-130	0.256	20			
Matrix Spike (BY10669-MS1)											Prepared & Analyzed: 09/30/2015	
Source: 1510632-02												
TPH-Volatiles (GRO)	1.07 mg/kg	0.10	mg/kg	0.990	<0.10 mg/kg	108	70-130					
Matrix Spike Dup (BY10669-MSD1)											Prepared & Analyzed: 09/30/2015	
Source: 1510632-02												
TPH-Volatiles (GRO)	0.71 mg/kg	0.10	mg/kg	0.986	<0.10 mg/kg	72.2	70-130	40.5	20	M		

Batch BY10676 - SW5030B

Blank (BY10676-BLK1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	<0.10 mg/L	0.10	mg/L									
LCS (BY10676-BS1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	1.10 mg/L	0.10	mg/L	1.00		110	70-130					
LCS Dup (BY10676-BSD1)											Prepared & Analyzed: 09/30/2015	
TPH-Volatiles (GRO)	1.11 mg/L	0.10	mg/L	1.00		111	70-130	0.910	20			
Duplicate (BY10676-DUP1)											Prepared & Analyzed: 10/01/2015	
Source: 1510615-01												
TPH-Volatiles (GRO)	<0.10 mg/L	0.10	mg/L		<0.10 mg/L			NA	20			



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Volatile Hydrocarbons by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10676 - SW5030B

Matrix Spike (BY10676-MS1)		Source: 1510591-13RE1		Prepared & Analyzed: 09/30/2015						
TPH-Volatiles (GRO)	1.89 mg/L	0.10	mg/L	1.00	0.74 mg/L	114	70-130			
Matrix Spike Dup (BY10676-MSD1)		Source: 1510591-13RE1		Prepared & Analyzed: 09/30/2015						
TPH-Volatiles (GRO)	1.89 mg/L	0.10	mg/L	1.00	0.74 mg/L	115	70-130	0.279	20	



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		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Semivolatile Hydrocarbons by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10665 - SW8100

Blank (BY10665-BLK1)

Prepared: 09/29/2015 Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	<10.0 mg/kg	10.0	mg/kg							
Surr: Pentacosane	3.39		mg/kg	4.84		69.9	40-160			

LCS (BY10665-BS1)

Prepared: 09/29/2015 Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	66.7 mg/kg	10.0	mg/kg	100		66.7	40-160			
Surr: Pentacosane	3.25		mg/kg	5.00		65.1	40-160			

Matrix Spike (BY10665-MS1)

Source: 1510627-01

Prepared: 09/29/2015 Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	74.6 mg/kg	10.0	mg/kg	96.9	12.1 mg/kg	64.5	40-160			
Surr: Pentacosane	3.69		mg/kg	4.84		76.1	40-160			

Matrix Spike Dup (BY10665-MSD1)

Source: 1510627-01

Prepared: 09/29/2015 Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	80.7 mg/kg	10.0	mg/kg	98.8	12.1 mg/kg	69.4	40-160	7.90	20	
Surr: Pentacosane	5.09		mg/kg	4.94		103	40-160			

Batch BY10670 - SW8100

Blank (BY10670-BLK1)

Prepared & Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	<0.50 mg/L	0.50	mg/L							
Surr: Pentacosane	0.102		mg/L	0.250		40.8	40-160			

LCS (BY10670-BS1)

Prepared & Analyzed: 09/30/2015

TPH-Semi-Volatiles (DRO)	3.7 mg/L	0.50	mg/L	5.00		74.7	40-160			
Surr: Pentacosane	0.151		mg/L	0.250		60.4	40-160			

Matrix Spike (BY10670-MS1)

Source: 1510645-01

Prepared: 09/30/2015 Analyzed: 10/01/2015

TPH-Semi-Volatiles (DRO)	3.6 mg/L	0.50	mg/L	5.15	<0.50 mg/L	70.6	40-160			
Surr: Pentacosane	0.182		mg/L	0.258		70.5	40-160			



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Final Report

Laboratory Order ID 1510632

Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Semivolatile Hydrocarbons by GC - Quality Control

Air Water and Soil Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
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Batch BY10670 - SW8100

Matrix Spike Dup (BY10670-MSD1)		Source: 1510645-01		Prepared: 09/30/2015		Analyzed: 10/01/2015				
TPH-Semi-Volatiles (DRO)	3.4 mg/L	0.50	mg/L	5.05	<0.50 mg/L	68.0	40-160	5.88	20	
<i>Surr: Pentacosane</i>	0.241		mg/L	0.253		95.4	40-160			

Batch BY10675 - SW8100

Blank (BY10675-BLK1)				Prepared: 09/30/2015		Analyzed: 10/02/2015				
TPH-Semi-Volatiles (DRO)	<0.50 mg/L	0.50	mg/L							
<i>Surr: Pentacosane</i>	0.189		mg/L	0.250		75.5	40-160			

LCS (BY10675-BS1)				Prepared: 09/30/2015		Analyzed: 10/02/2015				
TPH-Semi-Volatiles (DRO)	3.9 mg/L	0.50	mg/L	5.00		78.9	40-160			
<i>Surr: Pentacosane</i>	0.236		mg/L	0.250		94.2	40-160			

Matrix Spike (BY10675-MS1)		Source: 1510653-03		Prepared: 09/30/2015		Analyzed: 10/02/2015				
TPH-Semi-Volatiles (DRO)	4.2 mg/L	0.50	mg/L	5.26	<0.50 mg/L	79.5	40-160			
<i>Surr: Pentacosane</i>	0.202		mg/L	0.263		76.8	40-160			

Matrix Spike Dup (BY10675-MSD1)		Source: 1510653-03		Prepared: 09/30/2015		Analyzed: 10/02/2015				
TPH-Semi-Volatiles (DRO)	1.7 mg/L	0.50	mg/L	5.32	<0.50 mg/L	32.8	40-160	82.3	20	M, P
<i>Surr: Pentacosane</i>	0.0493		mg/L	0.266		18.5	40-160			S



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Client Name:	Groundwater Environmental Services, Inc.-R 3701 Saunders Ave. Richmond VA, 23227	Date Received:	September 28, 2015 8:35
		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
SW6010C in Non-Potable Water	
Arsenic	VELAP,NC,WVDEP
Barium	VELAP,NC,WVDEP
Cadmium	VELAP,NC,WVDEP
Chromium	VELAP,NC,WVDEP
Lead	VELAP,NC,WVDEP
Selenium	VELAP,NC,WVDEP
Silver	VELAP,NC
SW6010C in Organic	
Arsenic	VELAP
Barium	VELAP
Silver	VELAP
SW7470A in Non-Potable Water	
Mercury	VELAP,NC,WVDEP
SW7471B in Solids	
Mercury	VELAP,WVDEP
SW8015C in Non-Potable Water	
TPH-Semi-Volatiles (DRO)	VELAP,NC,WVDEP
TPH-Volatiles (GRO)	VELAP,NC,WVDEP
SW8015C in Solids	
TPH-Semi-Volatiles (DRO)	VELAP,NC,WVDEP
TPH-Volatiles (GRO)	VELAP,NC,WVDEP
SW8021B in Non-Potable Water	
Methyl-t-butyl ether (MTBE)	VELAP,NC,WVDEP
Benzene	VELAP,NC,WVDEP
Toluene	VELAP,NC,WVDEP
Ethylbenzene	VELAP,NC,WVDEP
m+p-Xylenes	VELAP,NC,WVDEP
o-Xylene	VELAP,NC,WVDEP
Xylenes, Total	VELAP,NC,WVDEP
Naphthalene	VELAP,NC,WVDEP
SW8021B in Solids	
Methyl-t-butyl ether (MTBE)	VELAP,NC,WVDEP
Benzene	VELAP,NC,WVDEP
Toluene	VELAP,NC,WVDEP
Ethylbenzene	VELAP,NC,WVDEP



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		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Certified Analyses included in this Report

Analyte	Certifications
m+p-Xylenes	VELAP,NC,WVDEP
o-Xylene	VELAP,NC,WVDEP
Xylenes, Total	VELAP,NC,WVDEP
Naphthalene	VELAP,NC,WVDEP

Code	Description	Lab Number	Expires
MdDOE	Maryland DE Drinking Water	341	12/31/2015
NC	North Carolina DENR	495	12/31/2015
PADEP	NELAC-Pennsylvania	001	10/31/2015
VELAP	NELAC-Virginia Certificate #8074	460021	06/15/2016
WVDEP	West Virginia DEP	350	11/30/2015



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		Date Issued:	October 5, 2015 16:49
Submitted To:	Nick Braun	Project Number:	[none]
Client Site I.D.:	Sheetz - Hopedale and Church Rd.	Purchase Order:	

Summary of Data Qualifiers

CI Residual Chlorine or other oxidizing agent was detected in the container used to analyze this sample.

M Matrix spike recovery is outside established acceptance limits

P Duplicate analysis does not meet the acceptance criteria for precision

S Surrogate recovery was outside acceptance criteria

RPD Relative Percent Difference

Qual Qualifiers

-RE Denotes sample was re-analyzed

D.F. Dilution Factor. Please also see the Preparation Factor in the Analysis Summary section.

TIC Tentatively Identified Compounds are compounds that are identified by comparing the analyte mass spectral pattern with the NIST spectral library. A TIC spectral match is reported when the pattern is at least 75% consistent with the published pattern. Compound concentrations are estimated and are calculated using an internal standard response factor of 1.



1941 REYMET ROAD
 RICHMOND, VIRGINIA 23237
 (804) 358-8295 PHONE
 (804)358-8297 FAX

Chain of Custody
 Form #: D1331
 Rev. 1.0
 Effective: Feb 14, 2014

CHAIN OF CUSTODY

PAGE 1 OF 2

COMPANY NAME: <u>GES</u>	INVOICE TO:	PROJECT NAME/Quote #:
CONTACT: <u>Nick Braun</u>	INVOICE CONTACT:	SITE NAME: <u>Sheetz - Hopedale and Church</u>
ADDRESS: <u>3701 Sanders Ave</u>	INVOICE ADDRESS:	PROJECT NUMBER:
PHONE #: <u>866-222-7786</u>	INVOICE PHONE #:	P.O. #:
FAX #:	EMAIL:	Pretreatment Program:

Is sample for compliance reporting? YES NO Is sample from a chlorinated supply? YES NO PWS I.D. #:

SAMPLER NAME (PRINT): Nick Braun SAMPLER SIGNATURE: Nick Braun Turn Around Time: 5 Day(s)

Matrix Codes: WW=Waste Water/Storm Water GW=Ground Water DW=Drinking Water S=Soil/Solids OR=Organic A=Air WP=Wipe OT=Other

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	ANALYSIS / (PRESERVATIVE)				COMMENTS
											8021	BTEx, MTBE, Naphthalene	TPH-GRO	TPH-DRO	
1) SB-1 (16-18')	X	X				9/25/15	10:50		S	4	X	X	X	X	* Sheetz Job PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
2) SB-2 (16-18')	X					9/25/15	12:10		S	4	X	X	X	X	
3) SB-3 (13-15')	X					9/25/15	13:30		S	4	X	X	X	X	
4) SB-4 (13-15')	X					9/25/15	14:40		S	4	X	X	X	X	
5) SB-5 (16-18')	X					9/25/15	15:30		S	4	X	X	X	X	
6) SB-6 (14-16')	X					9/25/15	17:00		S	4	X	X	X	X	
7) Trip Blank	-					9/15/15	15:30		-	2	X				
8)															
9)															
10)															

RELINQUISHED: <u>Nick Braun</u> DATE / TIME: <u>9/25/15 8:30</u>	RECEIVED: <u>Cam</u> DATE / TIME: <u>9/28/15 8:35</u>	QC Data Package	LAB USE ONLY	COOLER TEMP: <u>6.0</u> °C
RELINQUISHED: DATE / TIME	RECEIVED: DATE / TIME	Level I <input type="checkbox"/>	GES-R Sheetz - Hopedale and Church Rd. Recd: 09/28/2015 Due: 10/05/2015	1510632
RELINQUISHED: DATE / TIME	RECEIVED: DATE / TIME	Level II <input type="checkbox"/>		
RELINQUISHED: DATE / TIME	RECEIVED: DATE / TIME	Level III <input type="checkbox"/>		
RELINQUISHED: DATE / TIME	RECEIVED: DATE / TIME	Level IV <input type="checkbox"/>		



1941 REYMET ROAD
 RICHMOND, VIRGINIA 23237
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Chain of Custody
 Form #: D1331
 Rev. 1.0
 Effective: Feb 14, 2014

CHAIN OF CUSTODY

PAGE 2 OF 2

COMPANY NAME: <u>GES</u>	INVOICE TO:	PROJECT NAME/Quote #:
CONTACT: <u>Nick Braun</u>	INVOICE CONTACT:	SITE NAME: <u>Sheetz Hopedale & Church Rd.</u>
ADDRESS: <u>3701 Saunders Ave</u>	INVOICE ADDRESS:	PROJECT NUMBER:
PHONE #: <u>866-222-7786</u>	INVOICE PHONE #:	P.O. #:
FAX #:	EMAIL:	Pretreatment Program:
Is sample for compliance reporting? YES <input checked="" type="radio"/> NO <input type="radio"/>	Is sample from a chlorinated supply? YES <input checked="" type="radio"/> NO <input type="radio"/>	PWS I.D. #:
SAMPLER NAME (PRINT): <u>Nick Braun</u>	SAMPLER SIGNATURE: <u>Nick Braun</u>	Turn Around Time: <u>5 Day(s)</u>

CLIENT SAMPLE I.D.	Grab	Composite	Field Filtered (Dissolved Metals)	Composite Start Date	Composite Start Time	Grab Date or Composite Stop Date	Grab Time or Composite Stop Time	Time Preserved	Matrix (See Codes)	Number of Containers	ANALYSIS / (PRESERVATIVE)								COMMENTS	
											8021 BTEX MTBE, Naphthalene	TPH - GRO	TPH - DRO	RLRA 8 metals by ICP						
1) MW-1	X					9/25/15	14:15		GW	6	X	X	X	X						Preservative Codes: N=Nitric Acid C=Hydrochloric Acid S=Sulfuric Acid H=Sodium Hydroxide A=Ascorbic Acid Z=Zinc Acetate T=Sodium Thiosulfate M=Methanol Any Label w/ "SB" shield Be ² mw" (ie) SB-1/mw-1 PLEASE NOTE PRESERVATIVE(S), INTERFERENCE CHECKS or PUMP RATE (L/min)
2) MW-2	X					9/25/15	14:50		GW	6	X	X	X	X						
3) MW-3	X					9/25/15	15:45		GW	6	X	X	X	X						
4) MW-4	X					9/25/15	16:35		GW	6	X	X	X	X						
5) MW-5	X					9/25/15	17:10		GW	6	X	X	X	X						
6) MW-6	X					9/25/15	17:45		GW	6	X	X	X	X						
7) Trip Blank						9/15/15	15:30		GW	2	X	X								
8)																				
9)																				
10)																				

RELINQUISHED: <u>Nick Braun</u>	DATE / TIME: <u>9/25/15 8:30</u>	RECEIVED: <u>SCM</u>	DATE / TIME: <u>9/28/15 8:35</u>	QC Data Package	LAB USE ONLY	COOLER TEMP <u>6.0</u> °C
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level I <input type="checkbox"/>	GES-R Sheetz - Hopedale and Church Rd. Recd: 09/28/2015 Due: 10/05/2015	1510632
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level II <input type="checkbox"/>		
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level III <input type="checkbox"/>		
RELINQUISHED:	DATE / TIME:	RECEIVED:	DATE / TIME:	Level IV <input type="checkbox"/>		



1941 Reymet Road • Richmond, Virginia 23237 • Tel : (804) 358-8295 Fax: (804) 358-8297

Sample Conditions Checklist

Opened by: (Initials) BR Lab ID No.: 1510632
 Date Cooler Opened: 9/28/15

- | | | YES | NO | N/A |
|-----|--|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. | How were samples received?
Fed Ex <input type="checkbox"/>
UPS <input type="checkbox"/>
Courier <input type="checkbox"/>
Walk In <input checked="" type="checkbox"/> | | | |
| 2. | Were custody seals used? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. | If yes, are custody seals unbroken and intact at the date and time of arrival? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Are the custody papers filled out completely and correctly? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Do all bottle labels agree with custody papers? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 7. | Is the temperature blank or representative sample within acceptable limits?
(above freezing to 6°C) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. | If NO, are the samples just taken and received on ice? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9. | Are all samples within holding time for requested laboratory tests? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. | Is a sufficient amount of sample provided to perform the tests indicated? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. | Are all samples in proper containers for the analyses requested? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. | Are all samples appropriately preserved for the analyses requested? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 13. | Are all volatile organic containers free of headspace? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. | Are all TOX containers free of headspace? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 15. | Is Trip blank provided with each VOC sample set? Circle applicable method:
(Document if trip blank is not received with the sample set) | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

EPA 8011 EPA 504 EPA 8260 EPA 624
 RSK-175 EPA 8015 (GRO) EPA 8021
 EPA 524 *GRO Wisconsin DNR (water and/or methanol trip blank must be provided)

* See preservation log for Wisconsin soil DRO.

COMMENTS

Client contacted regarding: unlabeled metals bottle packaged with MW-2 samples; and a second metals bottle labeled MW-5 with sample dates and times matching those of MW-6. BR 9/28/15

Per Matthew Ridgway: Unlabeled container with for mw-2 samples
FOR LAB USE ONLY: is metals container for MW-2 and container labeled

CrVI preserved date/time: _____ MW-5 is sample for MW-6 KLC 9-29-15

Buffer Sol'n ID: _____ Analyst initials: _____

1N NaOH ID: _____ or 5N NaOH ID: _____

THIS DOCUMENT IS UNCONTROLLED WHEN PRINTED
 F1302 Sample Condition 6_0.xls

