ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

LIMITED SUBSURFACE INVESTIGATION & GROUNDWATER & LANDFILL GAS MONITORING REPORT THE FORMER PORTSMOUTH LANDFILL PARK AVENUE PORTSMOUTH, RI 02871

ATC PROJECT NO. 3010000238

PREPARED FOR:

AP ENTERPRISE LLC
28 TEAL DRIVE
WAKEFIELD, RHODE ISLAND 02879

PREPARED BY:

ATC GROUP SERVICES LLC
400 RESERVOIR AVENUE, SUITE 2C
PROVIDENCE, RHODE ISLAND 02907

JULY 31, 2017

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Appendices

1.0 INTRODUCTION

ATC Group Services LLC (ATC) was retained by AP Enterprise to install four groundwater monitoring wells and landfill gas monitoring points, and to conduct two years of quarterly groundwater and landfill gas monitoring at the former Portsmouth Landfill located on Park Avenue in Portsmouth, Rhode Island (the Site). The objective this work is to support the Rhode Island Department of Environmental Management (RIDEM) approved Site Monitoring Plan as prepared by Tim O'Connor & Company LLC.

1.1 Site Location and Description

The entrance to the former Portsmouth Landfill is located 500 feet west-northwest of the intersection formed by Boyds Lane and Park Avenue. The property is identified by the Portsmouth Tax Assessor as Plat 20 Lots 1, 2 & 13 and Plat 25 Lot 2. The property encompasses approximately 15.02 acres. The ground surface is generally level, with downward slopes along the landfill margins. Please refer to **Appendix A** for a Site Locus Map and a Site Plan, developed by DiPrete Engineering.

2.0 SCOPE OF WORK

ATC's scope of work consisted of the following tasks:

- Preparing a Health and Safety Plan in accordance with the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120.

- Notifying the Dig-Safe utility locating service prior to drilling activity.

- Advancing four (4) soil borings by Geoprobe to a maximum depth of 20 feet. Collecting and analyzing groundwater samples to assess the potential for releases of oil and/or hazardous materials to the environment.

- Continuous soil sampling and inspection of each soil sample for staining, odors, or other physical evidence of impairment, and screening of the samples for of total organic vapors (TOV) using a photoionization detector (PID).

- Installing four (4) two-inch inside diameter PVC groundwater monitoring wells and well development using a peristaltic pump. Collection of groundwater samples to assess for releases of volatile organic compounds (VOCs) and 15 heavy metals to groundwater.

- Gauging the depth to groundwater, and if present, noting separate phase product in all monitoring wells.

- Determining groundwater elevations to evaluate local groundwater gradient and flow.

- Installation of four (4) soil gas points (SGPs).

- Soil gas monitoring of methane, hydrogen sulfide, oxygen and carbon dioxide using a Landtech Gem 2000 Landfill Gas Analyzer.

- Preparing this report.

3.0 FIELD ACTIVITIES

Prior to implementing the field activities, a utility locator service (DIGSAFE) was contacted and public utility lines were marked. In addition, to minimize the risk of potential exposure to chemical and physical hazards associated with the subsurface investigation activities, a Site specific Health and Safety Plan was prepared.

The following field activities were conducted at the Site to evaluate the potential presence of contamination in soil gas and groundwater as result of the historic storage, use, and releases of oil, gasoline and/or hazardous materials.

3.1 Soil Boring, Screening, and Well Completion

On April 25, 2017, ATC mobilized to the property to observe the installation of four soil borings (B-1 through B-4). TDS Technical Drilling Services (TDS) of Sterling, MA was the drilling company. TDS employed a Geoprobe DT 6610 track-mounted drilling rig. Soil boring locations are described below and depicted on the Site Plan presented as **Figure 2,** in **Appendix A.** Additional soil borings and monitoring wells will be installed in the future.

The soil borings were advanced depths of 15-20 feet below ground surface, groundwater, or refusal, whichever was encountered first. Soil samples were collected continuously from grade in five-foot long acetate-lined steel drilling rods. Soils consisted of fill and stratified sands. No obvious municipal waste, like metal, plastic, or glass was observed. The soil samples were field screened using a PID to confirm the presence of organic vapors. Vapor concentrations were very low and ranged from non-detect (ND) to 0.4 parts per million by volume (ppmv) in B-2.

Groundwater was encountered at depths of less than 10 feet below grade. Geologic and hydrogeologic conditions, as well as PID measurements were recorded on the soil boring logs, which are provided in **Appendix B**.

Groundwater monitoring wells were constructed in each of the four soil borings using two-inch diameter, polyvinyl chloride (PVC) riser and 10 to 15 feet of machine-slotted 0.01 inch well screen. The well screen was placed to intercept the groundwater table. The annulus around the PVC well screen was backfilled with uniform grade, silica sand to approximately two feet above the screen section. Approximately one foot of bentonite was placed around the PVC riser pipe above the silica sand to prevent local surface water runoff and infiltration from directly entering into the wells. The boreholes were backfilled with native soils from the top of the bentonite seal to the surface. A lockable four-inch by five foot water-tight stand pipe with expansion cap was cemented at the ground surface. Monitoring well construction diagrams are presented in **Appendix B**. Subsequent to monitoring well installation, each well was developed to enhance the hydraulic connection between the well screen and the natural formation or fill by removing fine silts. Approximately 10 gallons of water was pumped from each of the wells. The extracted water was allowed to percolate back into the ground.

3.2 Monitoring Well Gauging and Area Groundwater Flow

On May 30, 2017, ATC gauged the groundwater monitoring wells using an ORS electronic oil/water interface probe. ATC gauged the depth to groundwater from the top of the PVC well risers. The depth to groundwater ranged from 7.38 feet in MW-1 to 13.5 feet in MW-3. Non-aqueous phase liquids were not detected on the water surface, or in the bottom of the wells.

On June 15, 2017, DiPrete Engineering completed a well elevation survey of the recently installed monitoring wells. The monitoring wells were surveyed with reference to mean seal level. Based upon the well elevation survey, the depth to groundwater and resulting groundwater gradients indicate the flow is split. The highest groundwater elevation (2.90 feet above mean sea level) was noted at well MW-3. Based upon the groundwater elevation data present at this time, the groundwater gradient is directed radially away from well MW-3. Gradients were directed toward the south on the southern portion of the property, and to the north and east on the northern portion of the property. A Water Level Gauging Sheet is provided in **Appendix A**. A Groundwater Contour Map developed using the Golden Software "Surfer Program" is superimposed on **Figure 2**.

3.3 Groundwater Sampling and Analysis

On May 31, 2017, ATC completed the first quarterly groundwater sampling round. The groundwater samples were obtained using the USEPA's Low Stress Purging and Sampling Procedure (EQA SOP-GW-001). The samples were obtained using a variable speed low-flow peristaltic pump to control the rate of purging and limit the drawdown. Dedicated disposable polyethylene tubing was used at each well. Field parameters were recorded during sampling using a YSI Pro Series with flow-through cell and LaMotte turbidity meter. Field parameters included pH, water temperature, specific conductance and dissolved oxygen. The groundwater samples were collected upon parameter stabilization, and contained in laboratory grade and pre-preserved sample containers. The samples were chilled in a cooler and temporarily kept in ATCs sample cooler until they were transported under Chain of Custody to the ESS Laboratory. ESS analyzed the samples for VOCs using EPA Method 8260, and EPA Methods 6010 and 7010 for the metals.

3.4 Groundwater Analytical Results

VOCs and metals were not reported in excess of the RIDEM GA Groundwater Objectives. Detected analytes included barium in well (MW-1); barium, lead, and zinc in well (MW-2); barium, zinc, 1,4-dichlorobenzene, chlorobenzene, diethyl ether, isopropylbenzene; and barium, cadmium, copper, nickel, and zinc in MW-4. The groundwater data is summarized on **Table 1**. Refer to **Appendix D** for copies of the laboratory analytical reports and **Table 1**.

The initial laboratory report dated June 9, 2017 indicated elevated reporting limits for lead due to sample matrix interference. The samples were re-run on June 27, 2017 using method 7010, and the resulting concentrations are provided on the laboratory report. The laboratory also reports the

The laboratory report also indicated the *"Relative percent difference for duplicate is outside of criteria (D+)"*. For acetone, the laboratory notes also indicated *"the Blank Spike Duplicate, Duplicate and Matrix Spike Duplicate are measures of precision. The Blank Spike Duplicate tests*

the precision of the procedure; the other two test the precision in regards to matrix. If the Duplicate and/or Matrix Spike Duplicate are outside of criteria, while the Blank Spike Duplicate is acceptable, it is assumed that the sample is non-homogeneous. This data would represent a range more than a finite point."

3.5 Soil Gas Point Installation

On April 25, 2017, ATC observed the installation of four permanent SGPs by TDS peripheral to and beyond the landfill solid waste mound, at the locations SG-1, SG-1, SG-1 and SG-4. SGP locations are shown of **Figure 2**. The four peripheral SGPs are positioned to monitor for potential landfill gas migration away from the solid waste mound. These points are positioned between the landfill mound boundary and the nearby habitable structures.

Each SGP was installed in the unsaturated zone, using a Geoprobe brand 21" stainless soil gas implant. The depth of placement was determined by the existing depth to groundwater at each location, which ranged from approximately four to ten feet below grade. Each SGPs was backfilled with uniform grade, silica sand to approximately one foot above the screen section. Approximately one foot of bentonite was placed above the SGP to seal it from surface water intrusion. Each SGP was connected to 3/8" by 1/4" tubing that was brought to the ground surface. At the ground surface, the SGP tubing was protected by a two-inch, by five-foot lockable standpipe cemented at grade.

3.6 Soil Gas Monitoring

The first quarterly round of landfill gas monitoring was conducted on May 30, 2017. The monitoring included recording of landfill gas and meteorological parameters at four points around and within the landfill periphery. Methane, hydrogen sulfide, oxygen and carbon dioxide were field measured using a Landtech Gem 2000 Landfill Gas Analyzer.

Referring to **Figure 2**, the peripheral points were installed between the landfill mound boundary and nearby habitable structures. The four soil gas points SG-1 through SG-4 are used to monitor landfill gas concentrations within the solid waste mound.

Soil gas and ambient methane, hydrogen sulfide, oxygen and carbon dioxide concentrations were measured at each landfill gas monitoring point. The point measurements were collected from the SGP petcocks. Additionally, ambient temperature, barometric pressure, and wind speed and direction were measured and recorded for each point using field instruments. Refer to **Appendix C** for **Table 2**, which summarizes the landfill gas monitoring data.

On May 30, 2017, methane was detected at peripheral monitoring point SG-3 at a concentration of 9.7%, which is within methane's the lower and upper explosive limits of 5% to 15%. The concentration of methane detected in SG-3 exceeds the RIDEM Solid Waste Regulation No. 2, Section 2.3.08 (d), of 25% of the LEL (1.25%) at the Site boundary.

No methane was detected at any other monitoring point. Hydrogen sulfide was not detected at any monitoring point. The recorded carbon dioxide concentrations at the monitoring points ranged from non-detectable up to 12.5% at SG-3. The oxygen concentrations at the peripheral monitoring points ranged from atmospheric (approximately 20.6%) in SG-1, SG-2 and SG-4 down to 1.3% at SG-3.

4.0 CONCLUSIONS

ATC has performed the first quarterly groundwater and landfill gas monitoring at the former Portsmouth town landfill on Park Avenue in Portsmouth, Rhode Island. Based upon the scope of work and sampling activities completed, ATC concludes the following:

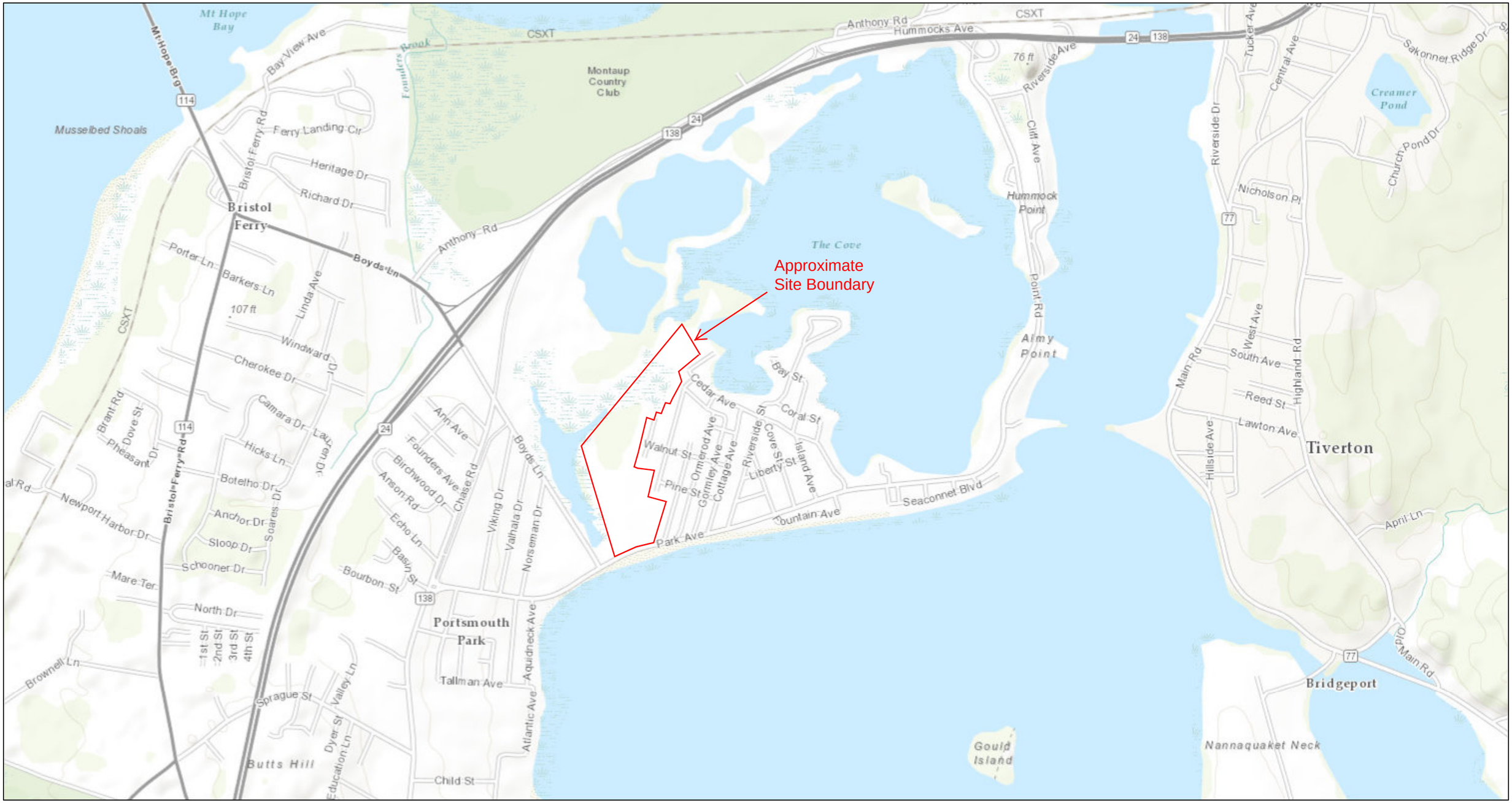
- No VOCs and no metals were reported above applicable GA Groundwater Objectives in the four groundwater samples collected from MW-1 through MW-4 on May 31, 2017.

- In soil gas monitoring point SG-3, the methane concentration was 9.7%, which is within the methane explosive limits of 5% to 15%. The oxygen concentration at SG-3 was 1.3%. The closest building to SG-3 is approximately 200 to the east. ATC does not think current conditions constitute a threat to human health, however conditions will be closely monitored.

- No methane was detected at any other peripheral monitoring point. Hydrogen sulfide was not detected at any peripheral monitoring point. The recorded carbon dioxide concentrations at the peripheral monitoring points ranged from non-detectable up to 12.5% at SG-3. The oxygen concentrations at the peripheral monitoring points ranged from atmospheric in SG-1, SG-2 and SG-4 down to 1.3% at SG-3.

Figures

RIDEM Environmental Resource Map



July 7, 2017

1:18,056

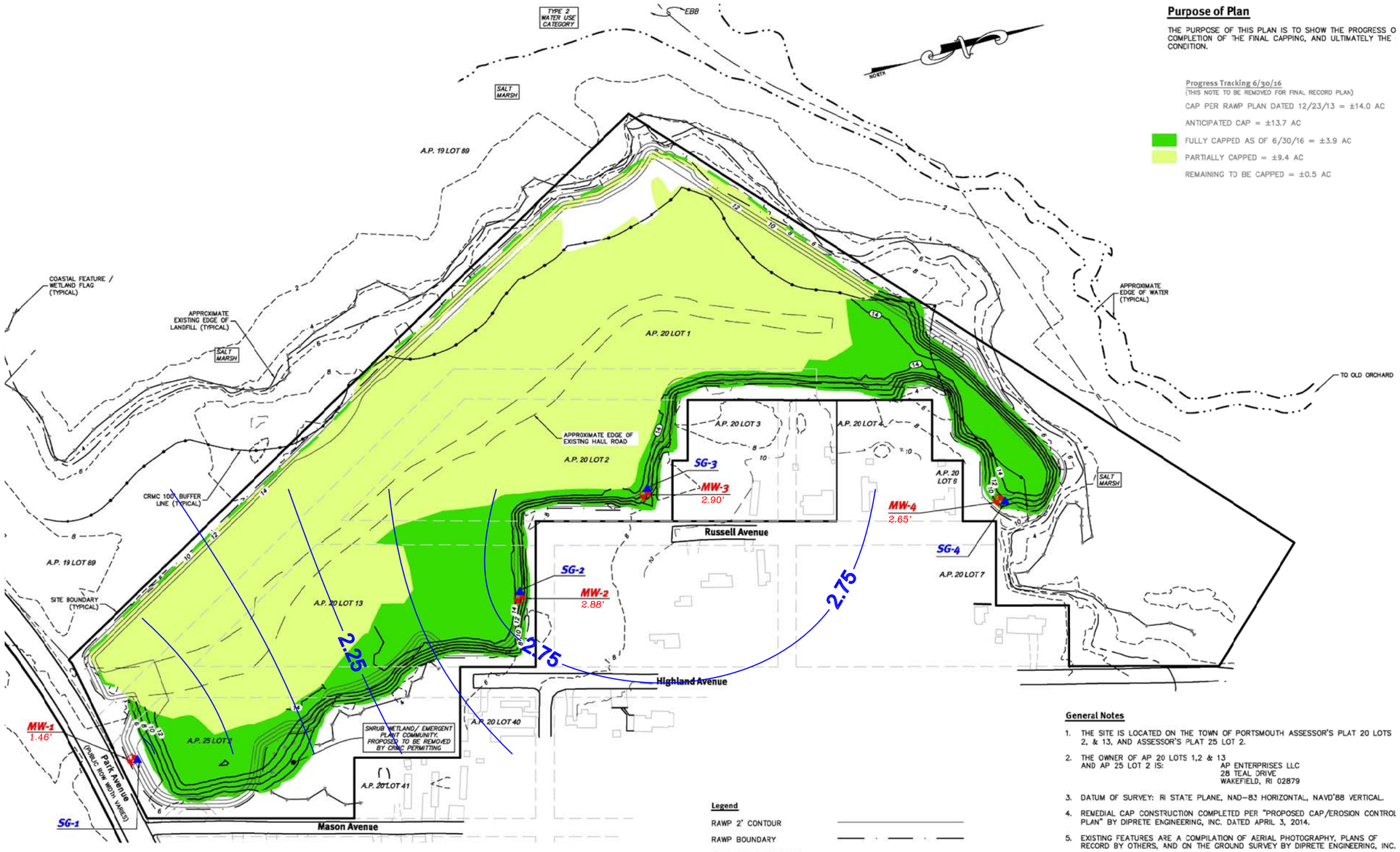
0 0.175 0.35 0.7 mi

0 0.35 0.7 1.4 km

Figure 1: Site Locus Map

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS

Management (RIDEM) | USDA NRCS | U.S. Fish and Wildlife Service, Coastal Barrier Resources Act Program, CBRA@FWS.gov | USDA NRCS Rhode Island State Office, RIGIS, University of Rhode Island Environmental Data Center (URIEDC) | RIGIS, University of Rhode Island Environmental Data Center | RIEMA | Esri, HERE |



Purpose of Plan

THE PURPOSE OF THIS PLAN IS TO SHOW THE PROGRESS O COMPLETION OF THE FINAL CAPPING, AND ULTIMATELY THE CONDITION.

Progress Tracking 6/30/16
(THIS NOTE TO BE REMOVED FOR FINAL RECORD PLAN)

CAP PER RAWP PLAN DATED 12/23/13 = ±14.0 AC

ANTICIPATED CAP = ±13.7 AC

FULLY CAPPED AS OF 6/30/16 = ±3.9 AC

PARTIALLY CAPPED = ±9.4 AC

REMAINING TO BE CAPPED = ±0.5 AC

Legend

RAWP 2' CONTOUR	
RAWP BOUNDARY	
FINAL CAP 2' CONTOUR	
FINAL CAP BOUNDARY	
EXISTING GROUND 10' CONTOUR	
EXISTING GROUND 2' CONTOUR	
PHASE 1 MONITORING WELL	MW-1
PHASE 1 SOIL GAS POINT	SG-1
GROUNDWATER ELEVATION [FEET]	1.47'

General Notes

1. THE SITE IS LOCATED ON THE TOWN OF PORTSMOUTH ASSESSOR'S PLAT 20 LOTS 2, & 13, AND ASSESSOR'S PLAT 25 LOT 2.
2. THE OWNER OF AP 20 LOTS 1,2 & 13 AND AP 25 LOT 2 IS: AP ENTERPRISES LLC, 28 TEAL DRIVE, WAKEFIELD, RI 02879
3. DATUM OF SURVEY: RI STATE PLANE, NAD-83 HORIZONTAL, NAVD'88 VERTICAL.
4. REMEDIAL CAP CONSTRUCTION COMPLETED PER "PROPOSED CAP/EROSION CONTROL PLAN" BY DIPRETE ENGINEERING, INC. DATED APRIL 3, 2014.
5. EXISTING FEATURES ARE A COMPILATION OF AERIAL PHOTOGRAPHY, PLANS OF RECORD BY OTHERS, AND ON THE GROUND SURVEY BY DIPRETE ENGINEERING, INC.
6. THIS PLAN DEPICTS PRE-REMEDIATION TOPOGRAPHY OUTSIDE CAP AREA AS SHOWN ON "BOUNDARY & TOPOGRAPHIC SURVEY PLAN – ISLAND PARK" BY WATERMAN ENGINEERING CO. DATED 05/01/07 AND CONVERTED FROM DATUM NGVD29 TO DATUM NGVD88.
7. COASTAL FEATURE AND WETLANDS FLAGS / LINES SHOWN PER "GRADING PLAN, ISLAND PARK, AP 20 LOTS 1, 2 & 13 – AP 25 LOT 2, PORTSMOUTH, RHODE ISLAND" BY WATERMAN ENGINEERING, DATED 01/04/2010. FLAGGING BY VANASSE HANGEN BRUSTLIN, INC. AND LOCATED BY FIELD SURVEY BY WATERMAN ENGINEERING.

Monitoring Notes

1. PHASE 1 MONITORING WELLS AND SOIL AND GAS POINTS INSTALLED 04/25/2017.

General Notes:

The base map for this figure was developed from a Diprete Engineering plan entitled "Landfill Monitoring Plan, Former Portsmouth Landfill, revised 07-18-2017."

0 Approximate Feet 180

NAME/ADDRESS:

Prepared for
AP Enterprise LLC
28 Teal Drive, Wakefield, RI 02879

DRAWING TITLE:

Former Portsmouth Landfill

ATC
400 Reservoir Avenue, Suite 2C
Providence, RI 0290
(401) 714-0306

DRAWN BY:	KS	FIGURE NO.
CHECKED BY:	TO	
PROJECT NO.	3010000238	2
DATE:	AUGUST 2, 2017	

Tables

Table 1

Groundwater Analytical Results
Former Portsmouth Town Landfill
Park Avenue, Portsmouth, Rhode Island

Well ID	Date	Barium	Cadmium	Copper	Lead	Nickel	Zinc	1,4-Dichlorobenzene	Chlorobenzene	Diethyl Ether	Isopropylbenzene
MW-1	5/31/17	**0.062**	ND (0.0025)	ND (0.010)	ND (0.002)	ND (0.025)	ND (0.025)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
MW-2	5/31/17	**0.084**	ND (0.0025)	ND (0.010)	**0.005**	ND (0.025)	**0.044**	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
MW-3	5/31/17	**0.681**	ND (0.0025)	ND (0.010)	ND (0.002)	ND (0.025)	**0.035**	**0.0011**	**0.0040**	**0.0011**	**0.0240**
MW-4	5/31/17	**0.050**	**0.0043**	**0.057**	ND (0.002)	**0.042**	**1.53**	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0010)
RIDEM GA Groundwater Objectives		**2**	**0.005**	**NS**	**0.015**	**0.1**	**NS**	**0.075**	**0.1**	**NS**	**NS**

Notes: All units in mg/L = milligrams per liter unless otherwise noted
NS = No Standard
NA = Not Available or Not Analyzed
ND = not detected above method detection limit

Date: 5/30/2017

Soil Gas Monitoring Form
Former Portsmouth Landfill
Park Avenue, Portsmouth, RI

	Ambient						Soil Gas					
Location	**Temperature (F^o)**	**Barometric Pressure (inches Hg)**	**Wind Velocity (miles per hour)**	**Wind Direction**	**Ambient Methane (CH4) (%)**	**Ambient Oxygen (O2) (%)**	**Soil Gas Methane (CH4) (%)**	**Soil Gas Oxygen (O2) (%)**	**Soil Gas Hydrogen Sulfide (H_2S) (ppm)**	**Soil Gas LEL (%)**	**C02 (%)**	**Soil Gas VOCs (ppm)**
SG-1	54	30.24	4	SE	0.0	20.5	0	20.5	0	0	0	0.3
SG-2	56	30.22	6	SE	0.0	20.6	0	20.6	0	0	0	0.3
SG-3	56	30.22	6	SE	0.0	20.4	9.7	1.3	0	>100	12.5	0.6
SG-4	56	30.20	8	SE	0.0	20.1	0	19.6	0	0	0.2	1.0

Landfill gases measured using a Landtech Gem 2000 Plus Landfill Gas Monitor
VOCs measured using a MiniRae 2000, (10.6 eV lamp) photoionization meter

Appendix A

ATC Group Services, LLC	MONITOR WELL LOG AND COMPLETION REPORT

					Drilled By: TECHNICAL DRILLING SERVICES	Project #: 3010000238	
					Drilling Method: GEOPROBE 6610	Well Number: **MW-1**	
					Sampling Method: 5-FOOT MACROCORE	Location: Former Portsmouth Town Landfill, Park Ave	
					Screening Instrument: OVM 580B (10.6 Ev)	Portsmouth, RI	
					Depth to Water: 4.17'	Date: 4/25/17	
					Hole Diameter: 3.25"	Logged By: AK	
RISER:	TYPE: PVC			DIAMETER: 2"	LENGTH: 3'	Well Seal: BENTONITE	Total Depth: 15'
SCREEN:	TYPE: PVC	SLOT:0.10"		DIAMETER: 2"	LENGTH: 12'	Sand Pack: #2 SAND	

WELL COMPLETION AND SAMPLE DATA

DEPTH (ft)	SAMPLING ID	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL CONST.	MOISTURE CONTENT	LITHOLOGY (Description of materials)	SCREENING RESULTS		NOTES
1											
2											
3							Dry	0'-5' Brown, Medium to Course SAND, some coarse gravel, Wet at 4' during high tide	ND		
4											
5							Wet				
6											
7								5'-9' Tan to Brown, Fine to Medium SAND, some medium to coarse gravel			
8							Wet		ND		
9								9'-10' Organic Peat Layer			
10											
11											
12								10'-15' Tan, Fine to Coarse SAND, some Pebbles			
13							Wet		ND		
14											
15	EOB							EOB @ 15'			

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

- Concrete
- Bentonite
- Sand Pack
- Unconsolidated Formation
- Screen
- Native Fill

ATC Group Services, LLC	MONITOR WELL LOG AND COMPLETION REPORT

			Drilled By: TECHNICAL DRILLING SERVICES	Project #: 3010000238	
			Drilling Method: GEOPROBE 6610	Well Number: **MW-2**	
			Sampling Method: 5-FOOT MACROCORE	Location: Former Portsmouth Town Landfill, Park Ave	
			Screening Instrument: OVM 580B (10.6 Ev)	Portsmouth, RI	
			Depth to Water: 9.36'	Date: 4/25/17	
			Hole Diameter: 3.25"	Logged By: AK	
RISER:	TYPE: PVC		DIAMETER: 2" LENGTH: 7'	Well Seal: BENTONITE	Total Depth: 17'
SCREEN:	TYPE: PVC	SLOT:0.10"	DIAMETER: 2" LENGTH: 10'	Sand Pack: #2 SAND	

WELL COMPLETION AND SAMPLE DATA

DEPTH (ft)	SAMPLING ID	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL CONST.	MOISTURE CONTENT	LITHOLOGY (Description of materials)	SCREENING RESULTS		NOTES
1											
2											
3							Dry	0'-5' Brown, Medium to Course SAND, some medium to coarse gravel, rock fragments	ND		
4											
5											
6											
7								5'-10' Brown and Gray to Dark Gray, Fine to Course SAND, some gravel			
8							Dry		0.4		
9							Wet				
10											
11								10'-15' Gray to Tan, Fine to Coarse SAND			
12											
13							Wet		ND		
14											
15								EOB @ 17'			
16											
17	EOB										

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

Concrete
Bentonite
Sand Pack
Unconsolidated Formation
Screen
Native Fill

ATC Group Services, LLC	MONITOR WELL LOG AND COMPLETION REPORT

					Drilled By: TECHNICAL DRILLING SERVICES	Project #: 3010000238	
					Drilling Method: GEOPROBE 6610	Well Number: **MW-3**	
					Sampling Method: 5-FOOT MACROCORE	Location: Former Portsmouth Town Landfill, Park Ave	
					Screening Instrument: OVM 580B (10.6 Ev)	Portsmouth, RI	
					Depth to Water: 10.23'	Date: 4/25/17	
					Hole Diameter: 3.25"	Logged By: AK	
RISER:	TYPE: PVC			DIAMETER: 2"	LENGTH: 7'	Well Seal: BENTONITE	Total Depth: 17'
SCREEN:	TYPE: PVC	SLOT:0.10"		DIAMETER: 2"	LENGTH: 10'	Sand Pack: #2 SAND	

WELL COMPLETION AND SAMPLE DATA

DEPTH (ft)	SAMPLING ID	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL CONST.	MOISTURE CONTENT	LITHOLOGY (Description of materials)	SCREENING RESULTS		NOTES
1											
2											
3							Dry	0'-1' No Recovery	ND		
4								1'-4' Fill, Brick, Wood			
5								4'-5' Gray, CLAY layer			
6								5"-7' Brown and Gray, Fine to Medium SAND, some silt			
7								7'-8' Gray, Clay layer			
8							Dry	8'-10' Brown and Gray, Fine SAND	ND		
9											
10							Wet	10'-15' Gray to Tan, Fine to Medium SAND			
11											
12											
13							Wet		ND		
14								EOB @ 17'			
15											
16											
17	EOB										

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

- Concrete
- Bentonite
- Sand Pack
- Unconsolidated Formation
- Screen
- Native Fill

ATC Group Services, LLC	MONITOR WELL LOG AND COMPLETION REPORT

					Drilled By: TECHNICAL DRILLING SERVICES	Project #: 3010000238	
					Drilling Method: GEOPROBE 6610	Well Number: **MW-4**	
					Sampling Method: 5-FOOT MACROCORE	Location: Former Portsmouth Town Landfill, Park Ave	
					Screening Instrument: OVM 580B (10.6 Ev)	Portsmouth, RI	
					Depth to Water: 8.47'	Date: 4/25/17	
					Hole Diameter: 3.25"	Logged By: AK	
RISER:	TYPE: PVC			DIAMETER: 2"	LENGTH: 5'	Well Seal: BENTONITE	Total Depth: 20'
SCREEN:	TYPE: PVC	SLOT:0.10"		DIAMETER: 2"	LENGTH: 15'	Sand Pack: #2 SAND	

WELL COMPLETION AND SAMPLE DATA

DEPTH (ft)	SAMPLING ID	HAMMER BLOWS ON SAMPLER (inches) 0-6	6-12	12-18	18-24	WELL CONST.	MOISTURE CONTENT	LITHOLOGY (Description of materials)	SCREENING RESULTS		NOTES
1											
2											
3							Dry	0'-5' No Recovery	NA		
4											
5											
6								5'-9' No Recovery			
7							Dry				
8							Wet	9'-10' Brown, Fine to Course SAND, some gravel	ND		
9											
10								10'-15' Brown to Tan, Fine to Coarse SAND			
11											
12											
13							Wet		ND		
14											
15								15'-20' Tan, Fine to Medium SAND			
16											
17											
18								EOB @ 20'	ND		
19											
20	EOB										

GENERAL REMARKS: N.D. = None detected above the instrument's detection limit of 0.2 parts per million.

Well Legend

Concrete
Bentonite
Sand Pack
Unconsolidated Formation
Screen
Native Fill

Appendix B

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

WATER LEVEL MEASUREMENTS

Location:	Portsmouth Landfill, Park Ave.	*ATC #*	3010000238
Client:	AP Enterprise LLC	*Date:*	5/30/17
Instrument:	ORS Interface Probe	*Gauged By:*	AK
Checked By:	KS		

WELL #	M.P. ELEVATIONS	DEPTH TO PRODUCT	DEPTH TO WATER	PRODUCT THICKNESS	EQUIVALENT HD ELEV.
MW-1	8.84	0.00	7.38	0.00	1.46
MW-2	16.25	0.00	13.37	0.00	2.88
MW-3	16.40	0.00	13.50	0.00	2.90
MW-4	14.09	0.00	11.44	0.00	2.65

NOTES:

Height of PVC; MW-1: 3.21, MW-2: 4.01, MW-3: 3.27, MW-4: 2.97

Survey completed by DiPrete Enginering (6/15/17)

Appendix C

CERTIFICATE OF ANALYSIS

Keith Sullivan
ATC Group Services
400 Resevoir Ave Ste 2C
Providence, RI 02907

RE: Former Portsmouth Landfill (301.238)
ESS Laboratory Work Order Number: 1706086

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 4:53 pm, Jul 10, 2017

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

SAMPLE RECEIPT

The following samples were received on June 02, 2017 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1, July 10, 2017: This report has been revised to include revised lead results.

Lab Number	Sample Name	Matrix	Analysis
1706086-01	MW-1	Ground Water	6010C, 7010, 8260B
1706086-02	MW-2	Ground Water	6010C, 7010, 8260B
1706086-03	MW-3	Ground Water	6010C, 7010, 8260B
1706086-04	MW-4	Ground Water	6010C, 7010, 8260B
1706086-05	Trip Blank	Aqueous	8260B

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

PROJECT NARRATIVE

8260B Volatile Organic Compounds
CF70602-BSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Acetone (32% @ 25%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH / VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-1
Date Sampled: 05/31/17 10:15
Percent Solids: N/A

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-01
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.025)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Arsenic	ND (0.002)		7010		1	KJK	06/07/17 3:16	50	25	CF70542
Barium	**0.062** (0.025)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Beryllium	ND (0.0005)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Cadmium	ND (0.0025)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Chromium	ND (0.010)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Cobalt	ND (0.010)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Copper	ND (0.010)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Lead	ND (0.002)		7010		1	MJV	06/27/17 7:30	50	25	CF70542
Nickel	ND (0.025)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Selenium	ND (0.005)		7010		1	KJK	06/07/17 8:37	50	25	CF70542
Silver	ND (0.005)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Thallium	ND (0.002)		7010		1	KJK	06/07/17 1:15	50	25	CF70542
Vanadium	ND (0.010)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542
Zinc	ND (0.025)		6010C		1	KJK	06/05/17 23:17	50	25	CF70542

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-1
Date Sampled: 05/31/17 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,1-Dichloropropene	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2-Dibromoethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,3-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1,4-Dioxane - Screen	ND (0.500)		8260B		1	06/05/17 18:22	C7F0073	CF70602
1-Chlorohexane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
2,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
2-Butanone	ND (0.0100)		8260B		1	06/05/17 18:22	C7F0073	CF70602
2-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
2-Hexanone	ND (0.0100)		8260B		1	06/05/17 18:22	C7F0073	CF70602
4-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
4-Isopropyltoluene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Acetone	ND (0.0100)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Benzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Bromobenzene	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-1
Date Sampled: 05/31/17 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Bromodichloromethane	ND (0.0006)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Bromoform	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Bromomethane	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Carbon Disulfide	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Carbon Tetrachloride	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Chlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Chloroethane	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Chloroform	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Chloromethane	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Dibromochloromethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Dibromomethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Dichlorodifluoromethane	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Diethyl Ether	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Di-isopropyl ether	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Ethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Hexachlorobutadiene	ND (0.0006)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Hexachloroethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Isopropylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Methylene Chloride	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Naphthalene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
n-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
n-Propylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
sec-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Styrene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
tert-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Tetrachloroethene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-1
Date Sampled: 05/31/17 10:15
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Toluene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Trichloroethene	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Trichlorofluoromethane	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Vinyl Acetate	ND (0.0050)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Vinyl Chloride	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Xylene O	ND (0.0010)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Xylene P,M	ND (0.0020)		8260B		1	06/05/17 18:22	C7F0073	CF70602
Xylenes (Total)	ND (0.0020)		8260B		1	06/05/17 18:22		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*90 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*92 %*		*70-130*
Surrogate: Dibromofluoromethane	*89 %*		*70-130*
Surrogate: Toluene-d8	*87 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 05/31/17 10:55
Percent Solids: N/A

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-02
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.025)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Arsenic	ND (0.002)		7010		1	KJK	06/07/17 3:22	50	25	CF70542
Barium	**0.084** (0.025)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Beryllium	ND (0.0005)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Cadmium	ND (0.0025)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Chromium	ND (0.010)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Cobalt	ND (0.010)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Copper	ND (0.010)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Lead	**0.005** (0.002)		7010		1	MJV	06/27/17 7:36	50	25	CF70542
Nickel	ND (0.025)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Selenium	ND (0.005)		7010		1	KJK	06/07/17 8:43	50	25	CF70542
Silver	ND (0.005)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Thallium	ND (0.002)		7010		1	KJK	06/07/17 1:21	50	25	CF70542
Vanadium	ND (0.010)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542
Zinc	**0.044** (0.025)		6010C		1	KJK	06/05/17 23:21	50	25	CF70542

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 05/31/17 10:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,1-Dichloropropene	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2-Dibromoethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,3-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1,4-Dioxane - Screen	ND (0.500)		8260B		1	06/05/17 18:48	C7F0073	CF70602
1-Chlorohexane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
2,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
2-Butanone	ND (0.0100)		8260B		1	06/05/17 18:48	C7F0073	CF70602
2-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
2-Hexanone	ND (0.0100)		8260B		1	06/05/17 18:48	C7F0073	CF70602
4-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
4-Isopropyltoluene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Acetone	ND (0.0100)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Benzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Bromobenzene	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 05/31/17 10:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Bromodichloromethane	ND (0.0006)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Bromoform	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Bromomethane	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Carbon Disulfide	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Carbon Tetrachloride	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Chlorobenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Chloroethane	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Chloroform	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Chloromethane	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Dibromochloromethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Dibromomethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Dichlorodifluoromethane	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Diethyl Ether	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Di-isopropyl ether	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Ethylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Hexachlorobutadiene	ND (0.0006)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Hexachloroethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Isopropylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Methylene Chloride	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Naphthalene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
n-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
n-Propylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
sec-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Styrene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
tert-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Tetrachloroethene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 05/31/17 10:55
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Toluene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Trichloroethene	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Trichlorofluoromethane	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Vinyl Acetate	ND (0.0050)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Vinyl Chloride	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Xylene O	ND (0.0010)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Xylene P,M	ND (0.0020)		8260B		1	06/05/17 18:48	C7F0073	CF70602
Xylenes (Total)	ND (0.0020)		8260B		1	06/05/17 18:48		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*92 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*88 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 05/31/17 11:50
Percent Solids: N/A

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-03
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.025)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Arsenic	ND (0.002)		7010		1	KJK	06/07/17 3:28	50	25	CF70542
Barium	**0.681** (0.025)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Beryllium	ND (0.0005)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Cadmium	ND (0.0025)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Chromium	ND (0.010)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Cobalt	ND (0.010)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Copper	ND (0.010)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Lead	ND (0.002)		7010		1	MJV	06/27/17 7:42	50	25	CF70542
Nickel	ND (0.025)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Selenium	ND (0.005)		7010		1	KJK	06/07/17 9:12	50	25	CF70542
Silver	ND (0.005)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Thallium	ND (0.002)		7010		1	KJK	06/07/17 1:27	50	25	CF70542
Vanadium	ND (0.010)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542
Zinc	**0.035** (0.025)		6010C		1	KJK	06/05/17 23:25	50	25	CF70542

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 05/31/17 11:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,1-Dichloropropene	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2-Dibromoethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,3-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,4-Dichlorobenzene	**0.0011** (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1,4-Dioxane - Screen	ND (0.500)		8260B		1	06/05/17 19:14	C7F0073	CF70602
1-Chlorohexane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
2,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
2-Butanone	ND (0.0100)		8260B		1	06/05/17 19:14	C7F0073	CF70602
2-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
2-Hexanone	ND (0.0100)		8260B		1	06/05/17 19:14	C7F0073	CF70602
4-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
4-Isopropyltoluene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Acetone	ND (0.0100)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Benzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Bromobenzene	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 05/31/17 11:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Bromodichloromethane	ND (0.0006)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Bromoform	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Bromomethane	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Carbon Disulfide	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Carbon Tetrachloride	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Chlorobenzene	**0.0040** (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Chloroethane	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Chloroform	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Chloromethane	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Dibromochloromethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Dibromomethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Dichlorodifluoromethane	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Diethyl Ether	**0.0011** (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Di-isopropyl ether	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Ethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Hexachlorobutadiene	ND (0.0006)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Hexachloroethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Isopropylbenzene	**0.0240** (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Methylene Chloride	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Naphthalene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
n-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
n-Propylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
sec-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Styrene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
tert-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Tetrachloroethene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 05/31/17 11:50
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Toluene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Trichloroethene	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Trichlorofluoromethane	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Vinyl Acetate	ND (0.0050)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Vinyl Chloride	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Xylene O	ND (0.0010)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Xylene P,M	ND (0.0020)		8260B		1	06/05/17 19:14	C7F0073	CF70602
Xylenes (Total)	ND (0.0020)		8260B		1	06/05/17 19:14		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*93 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*100 %*		*70-130*
Surrogate: Dibromofluoromethane	*94 %*		*70-130*
Surrogate: Toluene-d8	*89 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 05/31/17 13:00
Percent Solids: N/A

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-04
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A

Total Metals

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyst	Analyzed	I/V	F/V	Batch
Antimony	ND (0.025)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Arsenic	ND (0.002)		7010		1	KJK	06/07/17 3:33	50	25	CF70542
Barium	**0.050** (0.025)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Beryllium	ND (0.0005)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Cadmium	**0.0043** (0.0025)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Chromium	ND (0.010)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Cobalt	ND (0.010)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Copper	**0.057** (0.010)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Lead	ND (0.002)		7010		1	MJV	06/27/17 7:47	50	25	CF70542
Nickel	**0.042** (0.025)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Selenium	ND (0.005)		7010		1	KJK	06/07/17 9:18	50	25	CF70542
Silver	ND (0.005)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Thallium	ND (0.002)		7010		1	KJK	06/07/17 1:33	50	25	CF70542
Vanadium	ND (0.010)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542
Zinc	**1.53** (0.025)		6010C		1	KJK	06/05/17 23:31	50	25	CF70542

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 05/31/17 13:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,1-Dichloropropene	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2-Dibromoethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,3-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1,4-Dioxane - Screen	ND (0.500)		8260B		1	06/05/17 19:40	C7F0073	CF70602
1-Chlorohexane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
2,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
2-Butanone	ND (0.0100)		8260B		1	06/05/17 19:40	C7F0073	CF70602
2-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
2-Hexanone	ND (0.0100)		8260B		1	06/05/17 19:40	C7F0073	CF70602
4-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
4-Isopropyltoluene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Acetone	ND (0.0100)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Benzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Bromobenzene	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 05/31/17 13:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Bromodichloromethane	ND (0.0006)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Bromoform	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Bromomethane	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Carbon Disulfide	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Carbon Tetrachloride	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Chlorobenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Chloroethane	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Chloroform	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Chloromethane	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Dibromochloromethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Dibromomethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Dichlorodifluoromethane	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Diethyl Ether	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Di-isopropyl ether	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Ethylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Hexachlorobutadiene	ND (0.0006)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Hexachloroethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Isopropylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Methylene Chloride	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Naphthalene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
n-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
n-Propylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
sec-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Styrene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
tert-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Tetrachloroethene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 05/31/17 13:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Toluene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Trichloroethene	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Trichlorofluoromethane	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Vinyl Acetate	ND (0.0050)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Vinyl Chloride	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Xylene O	ND (0.0010)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Xylene P,M	ND (0.0020)		8260B		1	06/05/17 19:40	C7F0073	CF70602
Xylenes (Total)	ND (0.0020)		8260B		1	06/05/17 19:40		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*90 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*94 %*		*70-130*
Surrogate: Dibromofluoromethane	*90 %*		*70-130*
Surrogate: Toluene-d8	*90 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: Trip Blank
Date Sampled: 05/31/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-05
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,1-Dichloropropene	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2-Dibromoethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2-Dichloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,3-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1,4-Dioxane - Screen	ND (0.500)		8260B		1	06/05/17 12:17	C7F0073	CF70602
1-Chlorohexane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
2,2-Dichloropropane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
2-Butanone	ND (0.0100)		8260B		1	06/05/17 12:17	C7F0073	CF70602
2-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
2-Hexanone	ND (0.0100)		8260B		1	06/05/17 12:17	C7F0073	CF70602
4-Chlorotoluene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
4-Isopropyltoluene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Acetone	ND (0.0100)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Benzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Bromobenzene	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: Trip Blank
Date Sampled: 05/31/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-05
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Bromodichloromethane	ND (0.0006)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Bromoform	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Bromomethane	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Carbon Disulfide	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Carbon Tetrachloride	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Chlorobenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Chloroethane	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Chloroform	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Chloromethane	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Dibromochloromethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Dibromomethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Dichlorodifluoromethane	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Diethyl Ether	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Di-isopropyl ether	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Ethylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Hexachlorobutadiene	ND (0.0006)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Hexachloroethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Isopropylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Methylene Chloride	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Naphthalene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
n-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
n-Propylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
sec-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Styrene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
tert-Butylbenzene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Tetrachloroethene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: Trip Blank
Date Sampled: 05/31/17 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1706086
ESS Laboratory Sample ID: 1706086-05
Sample Matrix: Aqueous
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Tetrahydrofuran	ND (0.0050)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Toluene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Trichloroethene	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Trichlorofluoromethane	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Vinyl Acetate	ND (0.0050)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Vinyl Chloride	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Xylene O	ND (0.0010)		8260B		1	06/05/17 12:17	C7F0073	CF70602
Xylene P,M	ND (0.0020)		8260B		1	06/05/17 12:17	C7F0073	CF70602

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*88 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*95 %*		*70-130*
Surrogate: Dibromofluoromethane	*91 %*		*70-130*
Surrogate: Toluene-d8	*93 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CF70542 - 3005A										
Blank										
Antimony	ND	0.025	mg/L							
Arsenic	ND	0.002	mg/L							
Barium	ND	0.025	mg/L							
Beryllium	ND	0.0005	mg/L							
Cadmium	ND	0.0025	mg/L							
Chromium	ND	0.010	mg/L							
Cobalt	ND	0.010	mg/L							
Copper	ND	0.010	mg/L							
Lead	ND	0.002	mg/L							
Nickel	ND	0.025	mg/L							
Selenium	ND	0.005	mg/L							
Silver	ND	0.005	mg/L							
Thallium	ND	0.002	mg/L							
Vanadium	ND	0.010	mg/L							
Zinc	ND	0.025	mg/L							
LCS										
Antimony	0.254	0.025	mg/L	0.2500		102	80-120			
Arsenic	0.264	0.062	mg/L	0.2500		105	80-120			
Barium	0.252	0.025	mg/L	0.2500		101	80-120			
Beryllium	0.0240	0.0005	mg/L	0.02500		96	80-120			
Cadmium	0.114	0.0025	mg/L	0.1250		92	80-120			
Chromium	0.248	0.010	mg/L	0.2500		99	80-120			
Cobalt	0.240	0.010	mg/L	0.2500		96	80-120			
Copper	0.249	0.010	mg/L	0.2500		100	80-120			
Lead	0.268	0.062	mg/L	0.2500		107	80-120			
Nickel	0.250	0.025	mg/L	0.2500		100	80-120			
Selenium	0.531	0.125	mg/L	0.5000		106	80-120			
Silver	0.114	0.005	mg/L	0.1250		91	80-120			
Thallium	0.279	0.062	mg/L	0.2500		112	80-120			
Vanadium	0.245	0.010	mg/L	0.2500		98	80-120			
Zinc	0.241	0.025	mg/L	0.2500		96	80-120			
LCS Dup										
Antimony	0.260	0.025	mg/L	0.2500		104	80-120	2	20	
Arsenic	0.273	0.062	mg/L	0.2500		109	80-120	4	20	
Barium	0.255	0.025	mg/L	0.2500		102	80-120	1	20	
Beryllium	0.0243	0.0005	mg/L	0.02500		97	80-120	1	20	
Cadmium	0.117	0.0025	mg/L	0.1250		94	80-120	2	20	
Chromium	0.250	0.010	mg/L	0.2500		100	80-120	0.8	20	
Cobalt	0.255	0.010	mg/L	0.2500		102	80-120	6	20	
Copper	0.253	0.010	mg/L	0.2500		101	80-120	2	20	
Lead	0.267	0.062	mg/L	0.2500		107	80-120	0.6	20	
Nickel	0.255	0.025	mg/L	0.2500		102	80-120	2	20	
Selenium	0.562	0.125	mg/L	0.5000		112	80-120	6	20	
Silver	0.116	0.005	mg/L	0.1250		93	80-120	2	20	

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Total Metals										
Batch CF70542 - 3005A										
Thallium	0.293	0.062	mg/L	0.2500		117	80-120	5	20	
Vanadium	0.248	0.010	mg/L	0.2500		99	80-120	1	20	
Zinc	0.243	0.025	mg/L	0.2500		97	80-120	0.9	20	
8260B Volatile Organic Compounds										
Batch CF70602 - 5030B										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0010	mg/L							
1,1,1-Trichloroethane	ND	0.0010	mg/L							
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L							
1,1,2-Trichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethane	ND	0.0010	mg/L							
1,1-Dichloroethene	ND	0.0010	mg/L							
1,1-Dichloropropene	ND	0.0020	mg/L							
1,2,3-Trichlorobenzene	ND	0.0010	mg/L							
1,2,3-Trichloropropane	ND	0.0010	mg/L							
1,2,4-Trichlorobenzene	ND	0.0010	mg/L							
1,2,4-Trimethylbenzene	ND	0.0010	mg/L							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/L							
1,2-Dibromoethane	ND	0.0010	mg/L							
1,2-Dichlorobenzene	ND	0.0010	mg/L							
1,2-Dichloroethane	ND	0.0010	mg/L							
1,2-Dichloropropane	ND	0.0010	mg/L							
1,3,5-Trimethylbenzene	ND	0.0010	mg/L							
1,3-Dichlorobenzene	ND	0.0010	mg/L							
1,3-Dichloropropane	ND	0.0010	mg/L							
1,4-Dichlorobenzene	ND	0.0010	mg/L							
1,4-Dioxane - Screen	ND	0.500	mg/L							
1-Chlorohexane	ND	0.0010	mg/L							
2,2-Dichloropropane	ND	0.0010	mg/L							
2-Butanone	ND	0.0100	mg/L							
2-Chlorotoluene	ND	0.0010	mg/L							
2-Hexanone	ND	0.0100	mg/L							
4-Chlorotoluene	ND	0.0010	mg/L							
4-Isopropyltoluene	ND	0.0010	mg/L							
4-Methyl-2-Pentanone	ND	0.0250	mg/L							
Acetone	ND	0.0100	mg/L							
Benzene	ND	0.0010	mg/L							
Bromobenzene	ND	0.0020	mg/L							
Bromochloromethane	ND	0.0010	mg/L							
Bromodichloromethane	ND	0.0006	mg/L							
Bromoform	ND	0.0010	mg/L							
Bromomethane	ND	0.0020	mg/L							
Carbon Disulfide	ND	0.0010	mg/L							
Carbon Tetrachloride	ND	0.0010	mg/L							

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CF70602 - 5030B										
Chlorobenzene	ND	0.0010	mg/L							
Chloroethane	ND	0.0020	mg/L							
Chloroform	ND	0.0010	mg/L							
Chloromethane	ND	0.0020	mg/L							
cis-1,2-Dichloroethene	ND	0.0010	mg/L							
cis-1,3-Dichloropropene	ND	0.0004	mg/L							
Dibromochloromethane	ND	0.0010	mg/L							
Dibromomethane	ND	0.0010	mg/L							
Dichlorodifluoromethane	ND	0.0020	mg/L							
Diethyl Ether	ND	0.0010	mg/L							
Di-isopropyl ether	ND	0.0010	mg/L							
Ethyl tertiary-butyl ether	ND	0.0010	mg/L							
Ethylbenzene	ND	0.0010	mg/L							
Hexachlorobutadiene	ND	0.0006	mg/L							
Hexachloroethane	ND	0.0010	mg/L							
Isopropylbenzene	ND	0.0010	mg/L							
Methyl tert-Butyl Ether	ND	0.0010	mg/L							
Methylene Chloride	ND	0.0020	mg/L							
Naphthalene	ND	0.0010	mg/L							
n-Butylbenzene	ND	0.0010	mg/L							
n-Propylbenzene	ND	0.0010	mg/L							
sec-Butylbenzene	ND	0.0010	mg/L							
Styrene	ND	0.0010	mg/L							
tert-Butylbenzene	ND	0.0010	mg/L							
Tertiary-amyl methyl ether	ND	0.0010	mg/L							
Tetrachloroethene	ND	0.0010	mg/L							
Tetrahydrofuran	ND	0.0050	mg/L							
Toluene	ND	0.0010	mg/L							
trans-1,2-Dichloroethene	ND	0.0010	mg/L							
trans-1,3-Dichloropropene	ND	0.0004	mg/L							
Trichloroethene	ND	0.0010	mg/L							
Trichlorofluoromethane	ND	0.0010	mg/L							
Vinyl Acetate	ND	0.0050	mg/L							
Vinyl Chloride	ND	0.0010	mg/L							
Xylene O	ND	0.0010	mg/L							
Xylene P,M	ND	0.0020	mg/L							
Xylenes (Total)	ND	0.0020	mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0222*		mg/L	*0.02500*		*89*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0231*		mg/L	*0.02500*		*92*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0220*		mg/L	*0.02500*		*88*	*70-130*			
Surrogate: Toluene-d8	*0.0228*		mg/L	*0.02500*		*91*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	9.74		ug/L	10.00		97	70-130			
1,1,1-Trichloroethane	10.5		ug/L	10.00		105	70-130			
1,1,2,2-Tetrachloroethane	9.98		ug/L	10.00		100	70-130			

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

8260B Volatile Organic Compounds

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
Batch CF70602 - 5030B										
1,1,2-Trichloroethane	9.73		ug/L	10.00		97	70-130			
1,1-Dichloroethane	10.2		ug/L	10.00		102	70-130			
1,1-Dichloroethene	9.25		ug/L	10.00		92	70-130			
1,1-Dichloropropene	10.4		ug/L	10.00		104	70-130			
1,2,3-Trichlorobenzene	12.3		ug/L	10.00		123	70-130			
1,2,3-Trichloropropane	9.59		ug/L	10.00		96	70-130			
1,2,4-Trichlorobenzene	11.6		ug/L	10.00		116	70-130			
1,2,4-Trimethylbenzene	10.9		ug/L	10.00		109	70-130			
1,2-Dibromo-3-Chloropropane	11.6		ug/L	10.00		116	70-130			
1,2-Dibromoethane	10.0		ug/L	10.00		100	70-130			
1,2-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,2-Dichloroethane	10.2		ug/L	10.00		102	70-130			
1,2-Dichloropropane	9.73		ug/L	10.00		97	70-130			
1,3,5-Trimethylbenzene	11.0		ug/L	10.00		110	70-130			
1,3-Dichlorobenzene	10.8		ug/L	10.00		108	70-130			
1,3-Dichloropropane	10.6		ug/L	10.00		106	70-130			
1,4-Dichlorobenzene	10.5		ug/L	10.00		105	70-130			
1,4-Dioxane - Screen	190		ug/L	200.0		95	0-332			
1-Chlorohexane	9.52		ug/L	10.00		95	70-130			
2,2-Dichloropropane	10.2		ug/L	10.00		102	70-130			
2-Butanone	43.6		ug/L	50.00		87	70-130			
2-Chlorotoluene	10.5		ug/L	10.00		105	70-130			
2-Hexanone	48.3		ug/L	50.00		97	70-130			
4-Chlorotoluene	11.0		ug/L	10.00		110	70-130			
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130			
4-Methyl-2-Pentanone	45.8		ug/L	50.00		92	70-130			
Acetone	42.8		ug/L	50.00		86	70-130			
Benzene	9.75		ug/L	10.00		98	70-130			
Bromobenzene	10.8		ug/L	10.00		108	70-130			
Bromochloromethane	10.3		ug/L	10.00		103	70-130			
Bromodichloromethane	10.0		ug/L	10.00		100	70-130			
Bromoform	10.2		ug/L	10.00		102	70-130			
Bromomethane	11.0		ug/L	10.00		110	70-130			
Carbon Disulfide	9.94		ug/L	10.00		99	70-130			
Carbon Tetrachloride	10.6		ug/L	10.00		106	70-130			
Chlorobenzene	10.5		ug/L	10.00		105	70-130			
Chloroethane	10.1		ug/L	10.00		101	70-130			
Chloroform	10.3		ug/L	10.00		103	70-130			
Chloromethane	10.5		ug/L	10.00		105	70-130			
cis-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130			
cis-1,3-Dichloropropene	10.1		ug/L	10.00		101	70-130			
Dibromochloromethane	10.5		ug/L	10.00		105	70-130			
Dibromomethane	9.55		ug/L	10.00		96	70-130			
Dichlorodifluoromethane	8.90		ug/L	10.00		89	70-130			
Diethyl Ether	8.13		ug/L	10.00		81	70-130			

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CF70602 - 5030B										
Di-isopropyl ether	9.09		ug/L	10.00		91	70-130			
Ethyl tertiary-butyl ether	9.30		ug/L	10.00		93	70-130			
Ethylbenzene	10.3		ug/L	10.00		103	70-130			
Hexachlorobutadiene	12.3		ug/L	10.00		123	70-130			
Hexachloroethane	11.9		ug/L	10.00		119	70-130			
Isopropylbenzene	10.3		ug/L	10.00		103	70-130			
Methyl tert-Butyl Ether	9.92		ug/L	10.00		99	70-130			
Methylene Chloride	10.0		ug/L	10.00		100	70-130			
Naphthalene	11.1		ug/L	10.00		111	70-130			
n-Butylbenzene	11.3		ug/L	10.00		113	70-130			
n-Propylbenzene	10.6		ug/L	10.00		106	70-130			
sec-Butylbenzene	10.8		ug/L	10.00		108	70-130			
Styrene	10.2		ug/L	10.00		102	70-130			
tert-Butylbenzene	11.2		ug/L	10.00		112	70-130			
Tertiary-amyl methyl ether	9.02		ug/L	10.00		90	70-130			
Tetrachloroethene	9.31		ug/L	10.00		93	70-130			
Tetrahydrofuran	9.89		ug/L	10.00		99	70-130			
Toluene	10.3		ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	10.9		ug/L	10.00		109	70-130			
trans-1,3-Dichloropropene	8.34		ug/L	10.00		83	70-130			
Trichloroethene	10.1		ug/L	10.00		101	70-130			
Trichlorofluoromethane	9.26		ug/L	10.00		93	70-130			
Vinyl Acetate	9.12		ug/L	10.00		91	70-130			
Vinyl Chloride	9.32		ug/L	10.00		93	70-130			
Xylene O	10.6		ug/L	10.00		106	70-130			
Xylene P,M	20.8		ug/L	20.00		104	70-130			
Xylenes (Total)	31.5		mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0254*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0272*		mg/L	*0.02500*		*109*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0251*		mg/L	*0.02500*		*101*	*70-130*			
Surrogate: Toluene-d8	*0.0270*		mg/L	*0.02500*		*108*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	9.86		ug/L	10.00		99	70-130	1	25	
1,1,1-Trichloroethane	10.1		ug/L	10.00		101	70-130	4	25	
1,1,2,2-Tetrachloroethane	9.85		ug/L	10.00		98	70-130	1	25	
1,1,2-Trichloroethane	9.60		ug/L	10.00		96	70-130	1	25	
1,1-Dichloroethane	9.86		ug/L	10.00		99	70-130	4	25	
1,1-Dichloroethene	9.27		ug/L	10.00		93	70-130	0.2	25	
1,1-Dichloropropene	10.3		ug/L	10.00		103	70-130	1	25	
1,2,3-Trichlorobenzene	10.8		ug/L	10.00		108	70-130	13	25	
1,2,3-Trichloropropane	9.95		ug/L	10.00		100	70-130	4	25	
1,2,4-Trichlorobenzene	10.1		ug/L	10.00		101	70-130	14	25	
1,2,4-Trimethylbenzene	10.2		ug/L	10.00		102	70-130	6	25	
1,2-Dibromo-3-Chloropropane	10.6		ug/L	10.00		106	70-130	10	25	
1,2-Dibromoethane	9.80		ug/L	10.00		98	70-130	2	25	

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CF70602 - 5030B										
1,2-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	6	25	
1,2-Dichloroethane	9.98		ug/L	10.00		100	70-130	2	25	
1,2-Dichloropropane	9.49		ug/L	10.00		95	70-130	2	25	
1,3,5-Trimethylbenzene	10.3		ug/L	10.00		103	70-130	7	25	
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130	6	25	
1,3-Dichloropropane	10.1		ug/L	10.00		101	70-130	5	25	
1,4-Dichlorobenzene	9.84		ug/L	10.00		98	70-130	7	25	
1,4-Dioxane - Screen	193		ug/L	200.0		96	0-332	1	200	
1-Chlorohexane	9.10		ug/L	10.00		91	70-130	5	25	
2,2-Dichloropropane	10.3		ug/L	10.00		103	70-130	1	25	
2-Butanone	47.3		ug/L	50.00		95	70-130	8	25	
2-Chlorotoluene	9.79		ug/L	10.00		98	70-130	7	25	
2-Hexanone	56.5		ug/L	50.00		113	70-130	16	25	
4-Chlorotoluene	10.0		ug/L	10.00		100	70-130	10	25	
4-Isopropyltoluene	10.1		ug/L	10.00		101	70-130	7	25	
4-Methyl-2-Pentanone	48.3		ug/L	50.00		97	70-130	5	25	
Acetone	59.2		ug/L	50.00		118	70-130	32	25	D+
Benzene	9.57		ug/L	10.00		96	70-130	2	25	
Bromobenzene	10.4		ug/L	10.00		104	70-130	3	25	
Bromochloromethane	9.85		ug/L	10.00		98	70-130	5	25	
Bromodichloromethane	9.70		ug/L	10.00		97	70-130	3	25	
Bromoform	9.68		ug/L	10.00		97	70-130	5	25	
Bromomethane	10.5		ug/L	10.00		105	70-130	5	25	
Carbon Disulfide	9.63		ug/L	10.00		96	70-130	3	25	
Carbon Tetrachloride	10.4		ug/L	10.00		104	70-130	1	25	
Chlorobenzene	9.66		ug/L	10.00		97	70-130	8	25	
Chloroethane	8.31		ug/L	10.00		83	70-130	20	25	
Chloroform	10.0		ug/L	10.00		100	70-130	3	25	
Chloromethane	9.88		ug/L	10.00		99	70-130	6	25	
cis-1,2-Dichloroethene	9.40		ug/L	10.00		94	70-130	6	25	
cis-1,3-Dichloropropene	10.3		ug/L	10.00		103	70-130	1	25	
Dibromochloromethane	10.4		ug/L	10.00		104	70-130	0.2	25	
Dibromomethane	9.86		ug/L	10.00		99	70-130	3	25	
Dichlorodifluoromethane	8.73		ug/L	10.00		87	70-130	2	25	
Diethyl Ether	8.53		ug/L	10.00		85	70-130	5	25	
Di-isopropyl ether	8.88		ug/L	10.00		89	70-130	2	25	
Ethyl tertiary-butyl ether	9.34		ug/L	10.00		93	70-130	0.4	25	
Ethylbenzene	9.52		ug/L	10.00		95	70-130	8	25	
Hexachlorobutadiene	10.9		ug/L	10.00		109	70-130	12	25	
Hexachloroethane	10.7		ug/L	10.00		107	70-130	10	25	
Isopropylbenzene	9.34		ug/L	10.00		93	70-130	10	25	
Methyl tert-Butyl Ether	9.78		ug/L	10.00		98	70-130	1	25	
Methylene Chloride	9.21		ug/L	10.00		92	70-130	8	25	
Naphthalene	10.2		ug/L	10.00		102	70-130	8	25	
n-Butylbenzene	10.0		ug/L	10.00		100	70-130	12	25	

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8260B Volatile Organic Compounds										
Batch CF70602 - 5030B										
n-Propylbenzene	10.0		ug/L	10.00		100	70-130	6	25	
sec-Butylbenzene	10.1		ug/L	10.00		101	70-130	7	25	
Styrene	9.20		ug/L	10.00		92	70-130	10	25	
tert-Butylbenzene	10.2		ug/L	10.00		102	70-130	9	25	
Tertiary-amyl methyl ether	9.28		ug/L	10.00		93	70-130	3	25	
Tetrachloroethene	8.94		ug/L	10.00		89	70-130	4	25	
Tetrahydrofuran	8.62		ug/L	10.00		86	70-130	14	25	
Toluene	9.84		ug/L	10.00		98	70-130	5	25	
trans-1,2-Dichloroethene	10.8		ug/L	10.00		108	70-130	0.8	25	
trans-1,3-Dichloropropene	8.27		ug/L	10.00		83	70-130	0.8	25	
Trichloroethene	9.60		ug/L	10.00		96	70-130	5	25	
Trichlorofluoromethane	9.14		ug/L	10.00		91	70-130	1	25	
Vinyl Acetate	9.75		ug/L	10.00		98	70-130	7	25	
Vinyl Chloride	8.88		ug/L	10.00		89	70-130	5	25	
Xylene O	9.66		ug/L	10.00		97	70-130	9	25	
Xylene P,M	19.6		ug/L	20.00		98	70-130	6	25	
Xylenes (Total)	29.3		mg/L							
Surrogate: 1,2-Dichloroethane-d4	*0.0260*		mg/L	*0.02500*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0256*		mg/L	*0.02500*		*102*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0248*		mg/L	*0.02500*		*99*	*70-130*			
Surrogate: Toluene-d8	*0.0261*		mg/L	*0.02500*		*105*	*70-130*			

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill ESS Laboratory Work Order: 1706086

Notes and Definitions

U	Analyte included in the analysis, but not detected
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1706086

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: ATC Group Services - KPB/HDM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1706086
Date Received: 6/2/2017
Project Due Date: 6/9/2017
Days for Project: 5 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 0.5 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / (NA)
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? (Yes) / No
    a. Air bubbles in aqueous VOAs? Yes / (No)
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:
Added Trip Blank @ 6/2/17
Trip Blank Dated 5/9/17

14. Was there a need to contact Project Manager? Yes / (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	138024	Yes	No	Yes	VOA Vial - HCl	HCl	
01	138025	Yes	No	Yes	VOA Vial - HCl	HCl	
01	138026	Yes	No	Yes	VOA Vial - HCl	HCl	
01	138030	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
02	138021	Yes	No	Yes	VOA Vial - HCl	HCl	
02	138022	Yes	No	Yes	VOA Vial - HCl	HCl	
02	138023	Yes	No	Yes	VOA Vial - HCl	HCl	
02	138029	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	138018	Yes	No	Yes	VOA Vial - HCl	HCl	
03	138019	Yes	No	Yes	VOA Vial - HCl	HCl	
03	138020	Yes	No	Yes	VOA Vial - HCl	HCl	
03	138028	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
04	138015	Yes	No	Yes	VOA Vial - HCl	HCl	
04	138016	Yes	No	Yes	VOA Vial - HCl	HCl	
04	138017	Yes	No	Yes	VOA Vial - HCl	HCl	
04	138027	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
05	138049	Yes	No	Yes	VOA Vial - HCl	HCl	

2nd Review
Are barcode labels on correct containers? (Yes) / No

Completed By: [signature]

Date & Time: 6/2/17 1546

ESS Laboratory Sample and Cooler Receipt Checklist

Client: ATC Group Services - KPB/HDM

ESS Project ID: 1706086

Date Received: 6/2/2017

Reviewed By: [signature]

Date & Time: 6/2/17 1802

Delivered By: [signature]

6/2/17 1802

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1706086

Turn Time: 5-Day Rush
Regulatory State: RI GA GW objectives
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP
Reporting Limits: GA GW.
Electonic Deliverables: ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: ATC
Contact Person: Keith Sullivan
Project #: 301.238
Project Name: Former Portsmouth Landfill
Address: 400 Reservoir Ave. unit 2C
City: Providence
State: RI
Zip Code: 02907
PO #:
Telephone Number: 401-714-0306
FAX Number:
Email Address: Keith.Sullivan@ATCAssociates.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: 8260	Sb, As, Ba	Be, Cd, Cr	Co, Cu, Pb	Ni, Se, Ag	Tl, V, Zn
1	5/31/17	10:15	G	GW	MW-1	X	X	X	X	X	X
2		10:55			MW-2						
3		11:50			MW-3						
4		1:00			MW-4						
5					Trip Blank 6/2/17						

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — V P P P P P
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 7 3 → 2 4 → 3 1 →
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Other*
Number of Containers per Sample:

Laboratory Use Only
Cooler Present: ✓
Seals Intact:
Cooler Temperature: 0.5°C Ice

Sampled by :
Comments: GA limits
Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
5/31/17 4:50	5/31/4:50	1600 6/2/17	6/2/17 16:00
6/2/17 16:32	6/2/17 1731		

1706086

CONSTITUENTS FOR DETECTION MONITORING (1)

Common name (2)	CAS RN (3)
Inorganic Constituents:	
(1) Antimony	(Total)
(2) Arsenic	(Total)
(3) Barium	(Total)
(4) Beryllium	(Total)
(5) Cadmium	(Total)
(6) Chromium	(Total)
(7) Cobalt	(Total)
(8) Copper	(Total)
(9) Lead	(Total)
(10) Nickel	(Total)
(11) Selenium	(Total)
(12) Silver	(Total)
(13) Thallium	(Total)
(14) Vanadium	(Total)
(15) Zinc	(Total)

+ 8260