



**ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING**

**GROUNDWATER & LANDFILL GAS MONITORING REPORT No. 4
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

MAY 10, 2018

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 Site Location and Description.....	1
2.0 FIELD ACTIVITIES	1
2.1 Monitoring Well Gauging and Area Groundwater Flow.....	1
2.2 Groundwater Sampling and Analysis	2
2.3 Groundwater Analytical Results	2
2.4 Soil Gas Point Installation	2
2.5 Soil Gas Monitoring.....	3
3.0 CONCLUSIONS	3

Appendices

Appendix A	Figure 1 Site Locus Map
Appendix B	Figure 2 Site Plan and Groundwater Contour Map
Appendix C	Water Level Measurements Data
Appendix D	Summary of Groundwater Analytical Results
Appendix E	Groundwater Laboratory Analytical Results
Appendix F	Summary of Soil Gas Monitoring Data

1.0 INTRODUCTION

ATC Group Services LLC (ATC) was retained by AP Enterprise to install four (4) groundwater monitoring wells and a total of eleven (11) 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 of 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. This is the fourth quarterly report prepared by ATC.

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 Site). The Site encompasses approximately 15.02 acres. The ground surface is generally level, with downward slopes along the landfill margins. Please refer to **Appendix A** for Figure 1 the Site Locus Map and **Appendix B** for Site Plan, Figure 2, which was developed by DiPrete Engineering.

2.0 FIELD ACTIVITIES

The following activities were conducted evaluate the potential presence of contamination in soil gas and groundwater as a result of historic landfill activities.

2.1 Monitoring Well Gauging and Area Groundwater Flow

On April 25, 2017, four soil borings completed as groundwater monitoring wells (MW-1, MW-2, MW-3 and MW-4) were installed at the Site by TDS Technical Drilling Services (TDS) of Sterling, MA. Groundwater monitoring well locations are depicted on the Site Plan, Figure 2.

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.

On June 15, 2017, DiPrete Engineering completed a well elevation survey of the 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 directed radially away from well MW-3. The highest groundwater elevation (2.90 feet above mean sea level) was noted at well MW-3.

On April 13, 2018, ATC gauged the depth to groundwater in the monitoring wells using a Solinst 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 7.60 feet in MW-1 to 13.61 feet in MW-3. Non-aqueous phase liquids were not detected on the water surface, or in the bottom of the wells. Based upon the groundwater elevation data, the groundwater gradient is directed toward the south on the southern portion of the Site, to the north on the northern portion of the Site and to the east on the eastern portion. A Water Level Gauging Sheet is provided in **Appendix C**. A Groundwater Contour Map developed using the Golden Software "Surfer Program" is superimposed on Figure 2.

2.2 Groundwater Sampling and Analysis

On April 13, 2018, ATC completed the fourth quarterly groundwater sampling round. The groundwater samples were obtained using the USEPA's Low Stress Purging and Sampling Procedure (EQA SOP-GW-001). ATC used a variable speed low-flow peristaltic pump to control the rate of purging and limit the drawdown. 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, oxidation reduction potential (ORP) 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 transported under Chain of Custody to the ESS Laboratory. ESS analyzed the samples for volatile organic compounds (VOCs) via EPA Method 8260, and metals via EPA Methods 6010 and 7010.

2.3 Groundwater Analytical Results

No metals or VOCs were reported in excess of the RIDEM GA Groundwater Objectives. Detected analytes included barium in MW-1; barium, copper and zinc in MW-2; barium, selenium, 1,4-dichlorobenzene, chlorobenzene, dichlorodifluoromethane and isopropylbenzene in MW-3; and antimony, barium, cadmium, copper, nickel, and zinc in MW-4. The groundwater analytical data is summarized in **Appendix D** on Table 1. Refer to **Appendix E** for copies of the laboratory analytical reports.

2.4 Soil Gas Point Installation

At the request of RIDEM, AP Enterprise directed ATC to install additional permanent soil gas points (SGPs) along the property boundary, near monitoring point SG-3. SG-3 is the only SGP to have exceeded methane's lower explosive limit (LEL) of 5% and the RIDEM limit of 25% of the LEL (1.25%). On April 13, 2018 an ATC crew mobilized to the property. Seven (7) peripheral SGPs (SG-5, SG-6, SG-7, SG-8, SG-9, SG-10 and SG-11) were installed linearly every 50 feet along the edge of the Property boundary near SG-3. The seven (7) SGPs were installed in the vadose zone to a depth of 2.5 feet below grade using a slam bar and ¼ inch OD polyethylene tubing terminating with an AMS slotted stainless steel soil gas point. The SGP were secured at grade with a small concrete pad.

TDS installed the original four permanent SGPs (SG-1, SG-2, SG-3 and SG-4) in April of 2017. Each of the original SGPs were 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 SGP 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.

The eleven (11) 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. SGP locations are shown on Figure 2.

2.5 Soil Gas Monitoring

On April 13, 2018, ATC conducted the fourth quarterly round of landfill gas monitoring. Landfill gas and meteorological parameters were at each SGP. Soil gas methane, hydrogen sulfide, oxygen and carbon dioxide concentrations were measured at each monitoring point using a Landtech Gem 5000 Landfill Gas Analyzer. Additionally, ambient temperature, barometric pressure, wind speed and wind direction were measured and recorded. SGPs are depicted on Figure 2. The soil gas monitoring results are summarized in **Appendix F** on Table 2.

On April 13, 2018, methane was detected at peripheral monitoring point SG-3 at a concentration of 1.2%, which is below methane's LEL of 5%. All 10 of the other monitoring points were "non-detect" for methane. The concentration of methane detected in SG-3 did not exceed the RIDEM Solid Waste Regulation No. 2, Section 2.3.08 (d), of 25% of the LEL (1.25%) at the Site boundary. Hydrogen sulfide was not detected at any monitoring point. The carbon dioxide concentrations at the monitoring points ranged from non-detectable up to 5.4% at SG-9. The oxygen concentrations ranged from atmospheric (approximately 21.6%) down to 14.0% at SG-3. Table 2 summarizes the monitoring results.

3.0 CONCLUSIONS

ATC has performed the fourth 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 metals and no VOCs were reported above applicable GA Groundwater Objectives in the four groundwater samples collected on April 13, 2017.
- On April 13, 2018, ATC installed seven (7) additional SGPs (SG-5, SG-6, SG-7, SG-8, SG-9, SG-10 and SG-11). The seven (7) peripheral SGPs are positioned linearly every 50 feet along the edge of the Property boundary, near SG-3, between the landfill boundary and the nearby habitable structures.
- The methane concentration measured during this quarter at SG-3 (1.2%) decreased since the last quarter and the other 10 monitoring points were "non-detect" for methane. During this sampling event, the methane concentration at SGP SG-3 was detected at 1.2%, which is below the methane LEL of 5%. The concentration of methane detected in SG-3 did not exceed the RIDEM Solid Waste Regulation No. 2, Section 2.3.08 (d), of 25% of the LEL (1.25%) at the Site boundary.
- The closest building to SG-3 is approximately 200 feet to the east. In ATC's opinion, current conditions do not constitute a threat, 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 5.4% at SG-9. The oxygen concentrations at the peripheral monitoring points ranged from atmospheric down to 14% at SG-3.

Appendix A



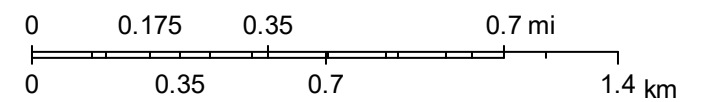
RIDEM Environmental Resource Map



July 7, 2017

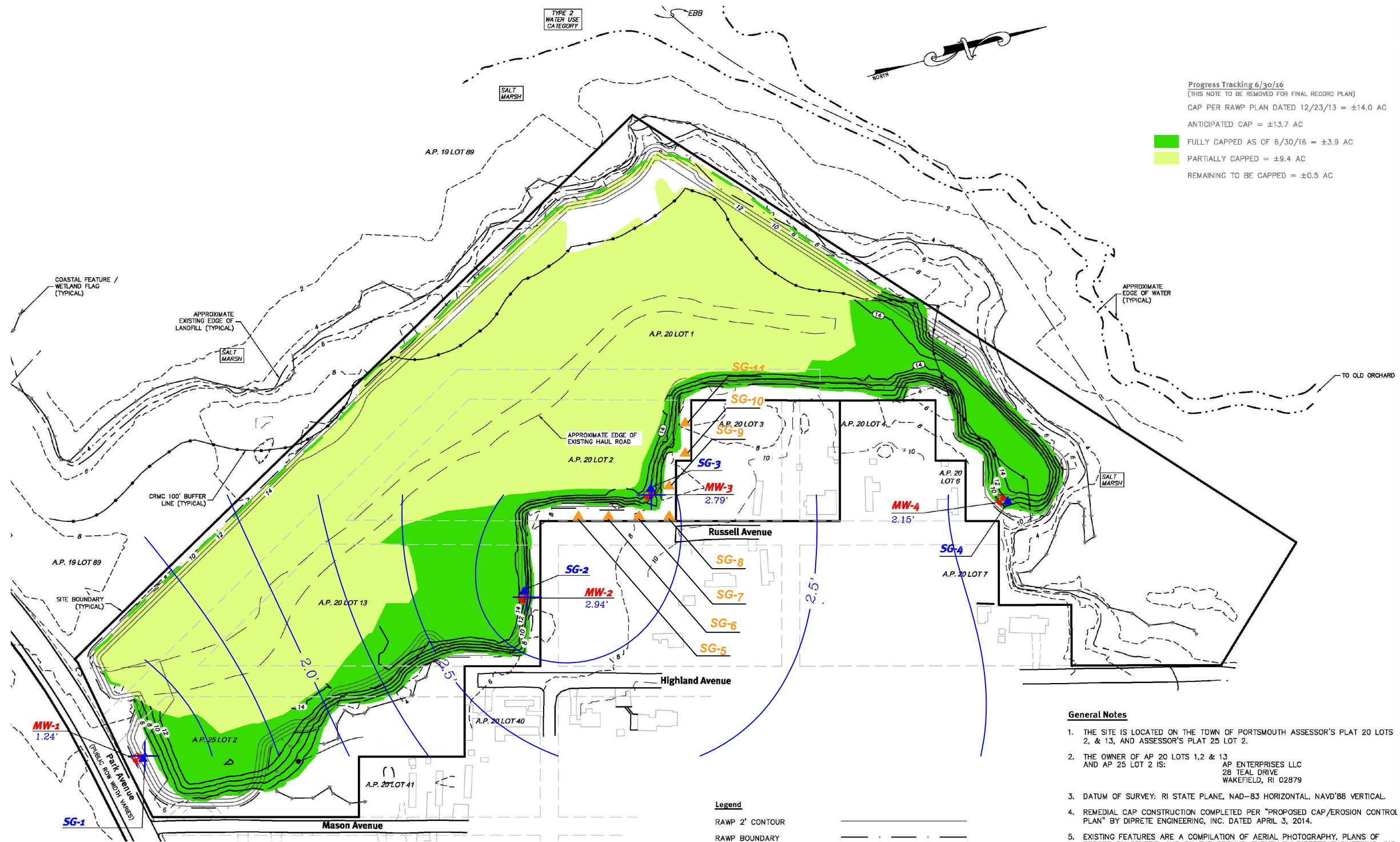
Figure 1: Site Locus Map

1:18,056



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

Appendix B



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

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

General Notes

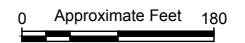
1. THE SITE IS LOCATED ON THE TOWN OF PORTSMOUTH ASSESSOR'S PLAT 20 LOTS 2, & 13, AND ASSESSOR'S PLAT 25 LOT 2.
2. THE OWNER OF AP 20 LOTS 1, 2 & 13 AND AP 25 LOT 2 IS:
 AP ENTERPRISES LLC
 28 TEAL DRIVE
 WAKEFIELD, RI 02879
3. DATUM OF SURVEY: RI STATE PLANE, NAD-83 HORIZONTAL, NAVD'88 VERTICAL.
4. 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-REMEDIAL 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.
2. SUPPLEMENTAL SOIL GAS POINTS INSTALLED ON 04/13/2018
3. WATER TABLE ELEVATIONS OBTAINED 04/13/2018

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
- SUPPLEMENTAL SOIL GAS POINT ▲ SG-5
- GROUNDWATER ELEVATION [FEET] 1.80'



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	2
PROJECT NO.	3010000238	
DATE:	May 7, 2018	

Appendix C

WATER LEVEL MEASUREMENTS

<i>Location:</i>	Portsmouth Landfill, Park Ave.	<i>ATC #:</i>	3010000238
<i>Client:</i>	AP Enterprise LLC	<i>Date:</i>	4/13/18
<i>Instrument:</i>	ORS Interface Probe	<i>Gauged By:</i>	JC
<i>Checked By:</i>	KS		

WELL #	M.P. ELEVATIONS	DEPTH TO PRODUCT	DEPTH TO WATER	PRODUCT THICKNESS	EQUIVALENT HD ELEV.
MW-1	8.84	0.00	7.60	0.00	1.24
MW-2	16.25	0.00	13.31	0.00	2.94
MW-3	16.40	0.00	13.61	0.00	2.79
MW-4	14.09	0.00	11.94	0.00	2.15

NOTES:

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

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

Appendix D

Table 1															
Groundwater Analytical Results Former Portsmouth Town Landfill Park Avenue, Portsmouth, Rhode Island															
Well ID	Date	Antimony	Barium	Cadmium	Copper	Lead	Nickel	Selenium	Zinc	1,4-Dichlorobenzene	Chlorobenzene	Chloroform	Dichlorodifluoromethane	Diethyl Ether	Isopropylbenzene
MW-1	5/31/17	ND (0.025)	0.062	ND (0.0025)	ND (0.010)	ND (0.002)	ND (0.025)	ND (0.005)	ND (0.025)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	9/8/17	ND (0.002)	0.068	ND (0.0025)	ND (0.010)	ND (0.002)	ND (0.025)	ND (0.005)	ND (0.025)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	12/21/17	ND (0.002)	0.101	ND (0.0025)	ND (0.010)	ND (0.010)	ND (0.025)	ND (0.025)	0.034	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	4/13/18	ND (0.0005)	0.050	ND (0.0025)	ND (0.010)	ND (0.010)	ND (0.025)	ND (0.025)	ND (0.025)	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
MW-2	5/31/17	ND (0.025)	0.084	ND (0.0025)	ND (0.010)	0.005	ND (0.025)	ND (0.005)	0.044	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	9/8/17	ND (0.002)	0.177	ND (0.0025)	ND (0.010)	ND (0.010)	ND (0.025)	ND (0.005)	ND (0.025)	ND (0.0010)	0.0012	ND (0.0010)	ND (0.0020)	ND (0.0010)	0.0034
	12/21/17	ND (0.002)	0.187	ND (0.0025)	ND (0.010)	0.014	ND (0.025)	ND (0.025)	0.089	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	4/13/18	ND (0.0005)	0.094	ND (0.0025)	0.017	ND (0.010)	ND (0.025)	ND (0.025)	0.051	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
MW-3	5/31/17	ND (0.025)	0.681	ND (0.0025)	ND (0.010)	ND (0.002)	ND (0.025)	ND (0.005)	0.035	0.0011	0.0040	ND (0.0010)	ND (0.0020)	0.0011	0.0240
	9/8/17	ND (0.002)	0.606	ND (0.0025)	ND (0.010)	0.027	ND (0.025)	ND (0.005)	ND (0.025)	ND (0.0010)	0.0026	ND (0.0010)	ND (0.0020)	0.0014	0.0025
	12/21/17	ND (0.002)	1.01	ND (0.0025)	ND (0.010)	0.025	ND (0.025)	ND (0.025)	ND (0.025)	0.0010	0.0029	ND (0.0010)	0.0073	0.0017	0.0191
	4/13/18	ND (0.0005)	0.460	ND (0.0025)	ND (0.010)	ND (0.010)	ND (0.025)	0.029	ND (0.025)	0.0012	0.0082	ND (0.0010)	0.0051	ND (0.0010)	0.0117
MW-4	5/31/17	ND (0.025)	0.050	0.0043	0.057	ND (0.002)	0.042	ND (0.005)	1.53	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	9/8/2017	ND (0.002)	0.030	0.0025	0.021	ND (0.002)	ND (0.025)	ND (0.005)	0.562	ND (0.0010)	ND (0.0010)	0.0014	ND (0.0020)	ND (0.0010)	ND (0.0010)
	12/21/2017	ND (0.002)	0.040	ND (0.0025)	0.017	ND (0.010)	ND (0.025)	ND (0.025)	0.264	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
	4/13/2018	0.0005	0.049	0.0036	0.043	ND (0.010)	0.055	ND (0.025)	1.90	ND (0.0010)	ND (0.0010)	ND (0.0010)	ND (0.0020)	ND (0.0010)	ND (0.0010)
RIDEM GA Groundwater Objectives		0.006	2	0.005	NS	0.015	0.1	0.05	NS	0.075	0.1	NS	NS	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

Highlighted = RIDEM GA Groundwater exceedance

Appendix E

CERTIFICATE OF ANALYSIS

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

RE: Former Portsmouth Landfill (301.238)
ESS Laboratory Work Order Number: 1804410

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 2:10 pm, Apr 26, 2018****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: 1804410

SAMPLE RECEIPT

The following samples were received on April 16, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1804410-01	MW-1	Ground Water	6010C, 6020A, 8260B
1804410-02	MW-2	Ground Water	6010C, 6020A, 8260B
1804410-03	MW-3	Ground Water	6010C, 6020A, 8260B
1804410-04	MW-4	Ground Water	6010C, 6020A, 8260B
1804410-05	Trip Blank	Aqueous	8260B



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CD81730-BSD1 [Blank Spike recovery is below lower control limit \(B-\).](#)

Tetrahydrofuran (60% @ 70-130%)

CD81730-BSD1 [Relative percent difference for duplicate is outside of criteria \(D+\).](#)

Tetrahydrofuran (52% @ 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: 1804410

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: 04/13/18 13:35
Percent Solids: N/A

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-01
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.0005)		6020A		1	NAR	04/19/18 19:29	50	25	CD81636
Arsenic	ND (0.005)		6010C		1	KJK	04/24/18 12:02	100	10	CD82339
Barium	0.050 (0.025)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Beryllium	ND (0.0005)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Cadmium	ND (0.0025)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Chromium	ND (0.010)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Cobalt	ND (0.010)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Copper	ND (0.010)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Lead	ND (0.010)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Nickel	ND (0.025)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Selenium	ND (0.025)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Silver	ND (0.005)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Thallium	ND (0.0005)		6020A		1	NAR	04/19/18 19:29	50	25	CD81636
Vanadium	ND (0.010)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636
Zinc	ND (0.025)		6010C		1	KJK	04/18/18 10:46	50	25	CD81636



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: MW-1
 Date Sampled: 04/13/18 13:35
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-01
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,1-Dichloropropene	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2-Dibromoethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,3-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1,4-Dioxane - Screen	ND (0.500)		8260B		1	04/17/18 17:38	C8D0288	CD81730
1-Chlorohexane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
2,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
2-Butanone	ND (0.0100)		8260B		1	04/17/18 17:38	C8D0288	CD81730
2-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
2-Hexanone	ND (0.0100)		8260B		1	04/17/18 17:38	C8D0288	CD81730
4-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
4-Isopropyltoluene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Acetone	ND (0.0100)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Benzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Bromobenzene	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: MW-1
 Date Sampled: 04/13/18 13:35
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-01
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Bromodichloromethane	ND (0.0006)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Bromoform	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Bromomethane	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Carbon Disulfide	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Carbon Tetrachloride	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Chlorobenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Chloroethane	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Chloroform	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Chloromethane	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Dibromochloromethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Dibromomethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Dichlorodifluoromethane	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Diethyl Ether	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Di-isopropyl ether	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Ethylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Hexachlorobutadiene	ND (0.0006)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Hexachloroethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Isopropylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Methylene Chloride	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Naphthalene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
n-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
n-Propylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
sec-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Styrene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
tert-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Tetrachloroethene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-1
Date Sampled: 04/13/18 13:35
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-01
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Toluene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Trichloroethene	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Trichlorofluoromethane	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Vinyl Acetate	ND (0.0050)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Vinyl Chloride	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Xylene O	ND (0.0010)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Xylene P,M	ND (0.0020)		8260B		1	04/17/18 17:38	C8D0288	CD81730
Xylenes (Total)	ND (0.0020)		8260B		1	04/17/18 17:38		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 04/13/18 12:20
Percent Solids: N/A

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-02
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.0005)		6020A		1	NAR	04/19/18 19:45	50	25	CD81636
Arsenic	ND (0.005)		6010C		1	KJK	04/25/18 13:25	100	10	CD82440
Barium	0.091 (0.025)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Beryllium	ND (0.0005)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Cadmium	ND (0.0025)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Chromium	ND (0.010)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Cobalt	ND (0.010)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Copper	0.017 (0.010)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Lead	ND (0.010)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Nickel	ND (0.025)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Selenium	ND (0.025)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Silver	ND (0.005)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Thallium	ND (0.0005)		6020A		1	NAR	04/19/18 19:45	50	25	CD81636
Vanadium	ND (0.010)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636
Zinc	0.051 (0.025)		6010C		1	KJK	04/18/18 11:03	50	25	CD81636



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 04/13/18 12:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,1-Dichloropropene	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2-Dibromoethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,3-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1,4-Dioxane - Screen	ND (0.500)		8260B		1	04/17/18 18:04	C8D0288	CD81730
1-Chlorohexane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
2,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
2-Butanone	ND (0.0100)		8260B		1	04/17/18 18:04	C8D0288	CD81730
2-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
2-Hexanone	ND (0.0100)		8260B		1	04/17/18 18:04	C8D0288	CD81730
4-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
4-Isopropyltoluene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Acetone	ND (0.0100)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Benzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Bromobenzene	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: MW-2
 Date Sampled: 04/13/18 12:20
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-02
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Bromodichloromethane	ND (0.0006)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Bromoform	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Bromomethane	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Carbon Disulfide	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Carbon Tetrachloride	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Chlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Chloroethane	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Chloroform	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Chloromethane	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Dibromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Dibromomethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Dichlorodifluoromethane	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Diethyl Ether	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Di-isopropyl ether	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Ethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Hexachlorobutadiene	ND (0.0006)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Hexachloroethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Isopropylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Methylene Chloride	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Naphthalene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
n-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
n-Propylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
sec-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Styrene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
tert-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Tetrachloroethene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-2
Date Sampled: 04/13/18 12:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-02
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Toluene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Trichloroethene	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Trichlorofluoromethane	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Vinyl Acetate	ND (0.0050)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Vinyl Chloride	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Xylene O	ND (0.0010)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Xylene P,M	ND (0.0020)		8260B		1	04/17/18 18:04	C8D0288	CD81730
Xylenes (Total)	ND (0.0020)		8260B		1	04/17/18 18:04		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>97 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 04/13/18 11:20
Percent Solids: N/A

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-03
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	ND (0.0005)		6020A		1	NAR	04/19/18 19:50	50	25	CD81636
Arsenic	ND (0.006)		6010C		3	KJK	04/25/18 15:15	100	10	CD82440
Barium	0.460 (0.025)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Beryllium	ND (0.0005)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Cadmium	ND (0.0025)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Chromium	ND (0.010)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Cobalt	ND (0.010)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Copper	ND (0.010)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Lead	ND (0.010)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Nickel	ND (0.025)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Selenium	0.029 (0.025)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Silver	ND (0.005)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Thallium	ND (0.0005)		6020A		1	NAR	04/19/18 19:50	50	25	CD81636
Vanadium	ND (0.010)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636
Zinc	ND (0.025)		6010C		1	KJK	04/18/18 11:07	50	25	CD81636



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: MW-3
 Date Sampled: 04/13/18 11:20
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-03
 Sample Matrix: Ground Water
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,1-Dichloropropene	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2-Dibromoethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,3-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,4-Dichlorobenzene	0.0012 (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1,4-Dioxane - Screen	ND (0.500)		8260B		1	04/17/18 18:31	C8D0288	CD81730
1-Chlorohexane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
2,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
2-Butanone	ND (0.0100)		8260B		1	04/17/18 18:31	C8D0288	CD81730
2-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
2-Hexanone	ND (0.0100)		8260B		1	04/17/18 18:31	C8D0288	CD81730
4-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
4-Isopropyltoluene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Acetone	ND (0.0100)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Benzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Bromobenzene	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 04/13/18 11:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Bromodichloromethane	ND (0.0006)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Bromoform	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Bromomethane	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Carbon Disulfide	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Carbon Tetrachloride	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Chlorobenzene	0.0082 (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Chloroethane	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Chloroform	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Chloromethane	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Dibromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Dibromomethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Dichlorodifluoromethane	0.0051 (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Diethyl Ether	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Di-isopropyl ether	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Ethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Hexachlorobutadiene	ND (0.0006)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Hexachloroethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Isopropylbenzene	0.0117 (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Methylene Chloride	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Naphthalene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
n-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
n-Propylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
sec-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Styrene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
tert-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Tetrachloroethene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-3
Date Sampled: 04/13/18 11:20
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-03
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Toluene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Trichloroethene	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Trichlorofluoromethane	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Vinyl Acetate	ND (0.0050)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Vinyl Chloride	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Xylene O	ND (0.0010)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Xylene P,M	ND (0.0020)		8260B		1	04/17/18 18:31	C8D0288	CD81730
Xylenes (Total)	ND (0.0020)		8260B		1	04/17/18 18:31		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>96 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 04/13/18 09:45
Percent Solids: N/A

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-04
Sample Matrix: Ground Water
Units: mg/L

Extraction Method: 3005A/200.7

Total Metals

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyst</u>	<u>Analyzed</u>	<u>I/V</u>	<u>F/V</u>	<u>Batch</u>
Antimony	0.0005 (0.0005)		6020A		1	NAR	04/19/18 19:56	50	25	CD81636
Arsenic	ND (0.005)		6010C		1	KJK	04/25/18 13:48	100	10	CD82440
Barium	0.049 (0.025)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Beryllium	ND (0.0005)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Cadmium	0.0036 (0.0025)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Chromium	ND (0.010)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Cobalt	ND (0.010)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Copper	0.043 (0.010)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Lead	ND (0.010)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Nickel	0.055 (0.025)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Selenium	ND (0.025)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Silver	ND (0.005)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Thallium	ND (0.0005)		6020A		1	NAR	04/19/18 19:56	50	25	CD81636
Vanadium	ND (0.010)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636
Zinc	1.90 (0.025)		6010C		1	KJK	04/18/18 11:13	50	25	CD81636



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 04/13/18 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,1-Dichloropropene	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2-Dibromoethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,3-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1,4-Dioxane - Screen	ND (0.500)		8260B		1	04/17/18 18:57	C8D0288	CD81730
1-Chlorohexane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
2,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
2-Butanone	ND (0.0100)		8260B		1	04/17/18 18:57	C8D0288	CD81730
2-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
2-Hexanone	ND (0.0100)		8260B		1	04/17/18 18:57	C8D0288	CD81730
4-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
4-Isopropyltoluene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Acetone	ND (0.0100)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Benzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Bromobenzene	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 04/13/18 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Bromodichloromethane	ND (0.0006)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Bromoform	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Bromomethane	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Carbon Disulfide	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Carbon Tetrachloride	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Chlorobenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Chloroethane	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Chloroform	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Chloromethane	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Dibromochloromethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Dibromomethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Dichlorodifluoromethane	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Diethyl Ether	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Di-isopropyl ether	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Ethylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Hexachlorobutadiene	ND (0.0006)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Hexachloroethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Isopropylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Methylene Chloride	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Naphthalene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
n-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
n-Propylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
sec-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Styrene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
tert-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Tetrachloroethene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
Client Project ID: Former Portsmouth Landfill
Client Sample ID: MW-4
Date Sampled: 04/13/18 09:45
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
ESS Laboratory Sample ID: 1804410-04
Sample Matrix: Ground Water
Units: mg/L
Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Toluene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Trichloroethene	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Trichlorofluoromethane	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Vinyl Acetate	ND (0.0050)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Vinyl Chloride	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Xylene O	ND (0.0010)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Xylene P,M	ND (0.0020)		8260B		1	04/17/18 18:57	C8D0288	CD81730
Xylenes (Total)	ND (0.0020)		8260B		1	04/17/18 18:57		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>95 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: Trip Blank
 Date Sampled: 04/13/18 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-05
 Sample Matrix: Aqueous
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1,1-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1,2,2-Tetrachloroethane	ND (0.0005)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1,2-Trichloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,1-Dichloropropene	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2,3-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2,3-Trichloropropane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2,4-Trichlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2,4-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2-Dibromoethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2-Dichloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,3,5-Trimethylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,3-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,3-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,4-Dichlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1,4-Dioxane - Screen	ND (0.500)		8260B		1	04/17/18 12:45	C8D0288	CD81730
1-Chlorohexane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
2,2-Dichloropropane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
2-Butanone	ND (0.0100)		8260B		1	04/17/18 12:45	C8D0288	CD81730
2-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
2-Hexanone	ND (0.0100)		8260B		1	04/17/18 12:45	C8D0288	CD81730
4-Chlorotoluene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
4-Isopropyltoluene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
4-Methyl-2-Pentanone	ND (0.0250)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Acetone	ND (0.0100)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Benzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Bromobenzene	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: Trip Blank
 Date Sampled: 04/13/18 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-05
 Sample Matrix: Aqueous
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Bromodichloromethane	ND (0.0006)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Bromoform	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Bromomethane	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Carbon Disulfide	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Carbon Tetrachloride	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Chlorobenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Chloroethane	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Chloroform	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Chloromethane	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
cis-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
cis-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Dibromochloromethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Dibromomethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Dichlorodifluoromethane	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Diethyl Ether	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Di-isopropyl ether	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Ethyl tertiary-butyl ether	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Ethylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Hexachlorobutadiene	ND (0.0006)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Hexachloroethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Isopropylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Methyl tert-Butyl Ether	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Methylene Chloride	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Naphthalene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
n-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
n-Propylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
sec-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Styrene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
tert-Butylbenzene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Tertiary-amyl methyl ether	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Tetrachloroethene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services
 Client Project ID: Former Portsmouth Landfill
 Client Sample ID: Trip Blank
 Date Sampled: 04/13/18 00:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1804410
 ESS Laboratory Sample ID: 1804410-05
 Sample Matrix: Aqueous
 Units: mg/L
 Analyst: MD

8260B Volatile Organic Compounds

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrahydrofuran	ND (0.0050)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Toluene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
trans-1,2-Dichloroethene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
trans-1,3-Dichloropropene	ND (0.0004)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Trichloroethene	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Trichlorofluoromethane	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Vinyl Acetate	ND (0.0050)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Vinyl Chloride	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Xylene O	ND (0.0010)		8260B		1	04/17/18 12:45	C8D0288	CD81730
Xylene P,M	ND (0.0020)		8260B		1	04/17/18 12:45	C8D0288	CD81730

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	97 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	107 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	96 %		70-130
<i>Surrogate: Toluene-d8</i>	105 %		70-130



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Total Metals

Batch CD81636 - 3005A/200.7

Blank

Antimony	ND	0.0005	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	0.010	mg/L
Nickel	ND	0.025	mg/L
Selenium	ND	0.025	mg/L
Silver	ND	0.005	mg/L
Thallium	ND	0.0005	mg/L
Vanadium	ND	0.010	mg/L
Zinc	ND	0.025	mg/L

LCS

Antimony	0.260	0.005	mg/L	0.2500	104	80-120
Barium	0.252	0.025	mg/L	0.2500	101	80-120
Beryllium	0.0247	0.0005	mg/L	0.02500	99	80-120
Cadmium	0.123	0.0025	mg/L	0.1250	98	80-120
Chromium	0.250	0.010	mg/L	0.2500	100	80-120
Cobalt	0.251	0.010	mg/L	0.2500	100	80-120
Copper	0.257	0.010	mg/L	0.2500	103	80-120
Lead	0.258	0.010	mg/L	0.2500	103	80-120
Nickel	0.250	0.025	mg/L	0.2500	100	80-120
Selenium	0.496	0.025	mg/L	0.5000	99	80-120
Silver	0.129	0.005	mg/L	0.1250	103	80-120
Thallium	0.253	0.005	mg/L	0.2500	101	80-120
Vanadium	0.251	0.010	mg/L	0.2500	100	80-120
Zinc	0.245	0.025	mg/L	0.2500	98	80-120

LCS Dup

Antimony	0.250	0.005	mg/L	0.2500	100	80-120	4	20
Barium	0.250	0.025	mg/L	0.2500	100	80-120	0.7	20
Beryllium	0.0245	0.0005	mg/L	0.02500	98	80-120	0.5	20
Cadmium	0.122	0.0025	mg/L	0.1250	97	80-120	0.8	20
Chromium	0.249	0.010	mg/L	0.2500	99	80-120	0.5	20
Cobalt	0.248	0.010	mg/L	0.2500	99	80-120	1	20
Copper	0.256	0.010	mg/L	0.2500	102	80-120	0.4	20
Lead	0.255	0.010	mg/L	0.2500	102	80-120	1	20
Nickel	0.249	0.025	mg/L	0.2500	100	80-120	0.04	20
Selenium	0.494	0.025	mg/L	0.5000	99	80-120	0.5	20
Silver	0.128	0.005	mg/L	0.1250	103	80-120	0.6	20
Thallium	0.241	0.005	mg/L	0.2500	97	80-120	5	20
Vanadium	0.251	0.010	mg/L	0.2500	100	80-120	0.05	20
Zinc	0.244	0.025	mg/L	0.2500	98	80-120	0.2	20



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

Total Metals

Batch CD82339 - 245.1/7470A

Blank										
Arsenic	ND	0.005	mg/L							
LCS										
Arsenic	0.045	0.005	mg/L	0.05000		90	80-120			
LCS Dup										
Arsenic	0.048	0.005	mg/L	0.05000		95	80-120	5	20	

Batch CD82440 - 3005A/200.7

Blank										
Arsenic	ND	0.005	mg/L							
LCS										
Arsenic	0.052	0.005	mg/L	0.05000		103	80-120			
LCS Dup										
Arsenic	0.047	0.005	mg/L	0.05000		94	80-120	10	20	

8260B Volatile Organic Compounds

Batch CD81730 - 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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

8260B Volatile Organic Compounds

Batch CD81730 - 5030B

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							
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							



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

8260B Volatile Organic Compounds

Batch CD81730 - 5030B

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	0.0242		mg/L	0.02500		97	70-130			
Surrogate: 4-Bromofluorobenzene	0.0267		mg/L	0.02500		107	70-130			
Surrogate: Dibromofluoromethane	0.0241		mg/L	0.02500		96	70-130			
Surrogate: Toluene-d8	0.0261		mg/L	0.02500		104	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.29		ug/L	10.00		93	70-130			
1,1,1-Trichloroethane	10.2		ug/L	10.00		102	70-130			
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130			
1,1,2-Trichloroethane	10.1		ug/L	10.00		101	70-130			
1,1-Dichloroethane	10.4		ug/L	10.00		104	70-130			
1,1-Dichloroethene	10.2		ug/L	10.00		102	70-130			
1,1-Dichloropropene	11.0		ug/L	10.00		110	70-130			
1,2,3-Trichlorobenzene	9.74		ug/L	10.00		97	70-130			
1,2,3-Trichloropropane	10.2		ug/L	10.00		102	70-130			
1,2,4-Trichlorobenzene	9.94		ug/L	10.00		99	70-130			
1,2,4-Trimethylbenzene	10.8		ug/L	10.00		108	70-130			
1,2-Dibromo-3-Chloropropane	10.3		ug/L	10.00		103	70-130			
1,2-Dibromoethane	9.55		ug/L	10.00		96	70-130			
1,2-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,2-Dichloroethane	10.7		ug/L	10.00		107	70-130			
1,2-Dichloropropane	10.8		ug/L	10.00		108	70-130			
1,3,5-Trimethylbenzene	10.9		ug/L	10.00		109	70-130			
1,3-Dichlorobenzene	10.1		ug/L	10.00		101	70-130			
1,3-Dichloropropane	10.5		ug/L	10.00		105	70-130			
1,4-Dichlorobenzene	10.4		ug/L	10.00		104	70-130			
1,4-Dioxane - Screen	295		ug/L	200.0		148	0-332			
1-Chlorohexane	9.64		ug/L	10.00		96	70-130			
2,2-Dichloropropane	10.0		ug/L	10.00		100	70-130			
2-Butanone	47.9		ug/L	50.00		96	70-130			
2-Chlorotoluene	10.7		ug/L	10.00		107	70-130			
2-Hexanone	45.4		ug/L	50.00		91	70-130			
4-Chlorotoluene	10.8		ug/L	10.00		108	70-130			
4-Isopropyltoluene	10.4		ug/L	10.00		104	70-130			
4-Methyl-2-Pentanone	51.7		ug/L	50.00		103	70-130			
Acetone	41.8		ug/L	50.00		84	70-130			
Benzene	10.2		ug/L	10.00		102	70-130			
Bromobenzene	10.2		ug/L	10.00		102	70-130			
Bromochloromethane	10.1		ug/L	10.00		101	70-130			
Bromodichloromethane	9.74		ug/L	10.00		97	70-130			
Bromoform	8.75		ug/L	10.00		88	70-130			
Bromomethane	11.7		ug/L	10.00		117	70-130			



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

8260B Volatile Organic Compounds

Batch CD81730 - 5030B

Carbon Disulfide	11.4		ug/L	10.00		114	70-130			
Carbon Tetrachloride	9.32		ug/L	10.00		93	70-130			
Chlorobenzene	10.0		ug/L	10.00		100	70-130			
Chloroethane	10.2		ug/L	10.00		102	70-130			
Chloroform	10.4		ug/L	10.00		104	70-130			
Chloromethane	9.65		ug/L	10.00		96	70-130			
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
cis-1,3-Dichloropropene	10.6		ug/L	10.00		106	70-130			
Dibromochloromethane	7.24		ug/L	10.00		72	70-130			
Dibromomethane	9.40		ug/L	10.00		94	70-130			
Dichlorodifluoromethane	8.98		ug/L	10.00		90	70-130			
Diethyl Ether	10.4		ug/L	10.00		104	70-130			
Di-isopropyl ether	10.5		ug/L	10.00		105	70-130			
Ethyl tertiary-butyl ether	10.8		ug/L	10.00		108	70-130			
Ethylbenzene	10.3		ug/L	10.00		103	70-130			
Hexachlorobutadiene	10.1		ug/L	10.00		101	70-130			
Hexachloroethane	8.91		ug/L	10.00		89	70-130			
Isopropylbenzene	10.3		ug/L	10.00		103	70-130			
Methyl tert-Butyl Ether	10.5		ug/L	10.00		105	70-130			
Methylene Chloride	10.0		ug/L	10.00		100	70-130			
Naphthalene	9.09		ug/L	10.00		91	70-130			
n-Butylbenzene	10.8		ug/L	10.00		108	70-130			
n-Propylbenzene	11.4		ug/L	10.00		114	70-130			
sec-Butylbenzene	11.1		ug/L	10.00		111	70-130			
Styrene	9.82		ug/L	10.00		98	70-130			
tert-Butylbenzene	11.1		ug/L	10.00		111	70-130			
Tertiary-amyl methyl ether	9.81		ug/L	10.00		98	70-130			
Tetrachloroethene	7.89		ug/L	10.00		79	70-130			
Tetrahydrofuran	10.3		ug/L	10.00		103	70-130			
Toluene	10.5		ug/L	10.00		105	70-130			
trans-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130			
trans-1,3-Dichloropropene	10.3		ug/L	10.00		103	70-130			
Trichloroethene	9.93		ug/L	10.00		99	70-130			
Trichlorofluoromethane	9.61		ug/L	10.00		96	70-130			
Vinyl Acetate	9.47		ug/L	10.00		95	70-130			
Vinyl Chloride	10.5		ug/L	10.00		105	70-130			
Xylene O	9.98		ug/L	10.00		100	70-130			
Xylene P,M	20.4		ug/L	20.00		102	70-130			
Xylenes (Total)	30.4		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0268		mg/L	0.02500		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.0264		mg/L	0.02500		106	70-130			
Surrogate: Dibromofluoromethane	0.0272		mg/L	0.02500		109	70-130			
Surrogate: Toluene-d8	0.0266		mg/L	0.02500		106	70-130			

LCS Dup

1,1,1,2-Tetrachloroethane	8.68		ug/L	10.00		87	70-130	7	25	
---------------------------	------	--	------	-------	--	----	--------	---	----	--



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

8260B Volatile Organic Compounds

Batch CD81730 - 5030B

1,1,1-Trichloroethane	9.84		ug/L	10.00		98	70-130	3	25	
1,1,2,2-Tetrachloroethane	9.61		ug/L	10.00		96	70-130	10	25	
1,1,2-Trichloroethane	9.63		ug/L	10.00		96	70-130	5	25	
1,1-Dichloroethane	9.69		ug/L	10.00		97	70-130	7	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	1	25	
1,1-Dichloropropene	10.6		ug/L	10.00		106	70-130	4	25	
1,2,3-Trichlorobenzene	8.48		ug/L	10.00		85	70-130	14	25	
1,2,3-Trichloropropane	9.36		ug/L	10.00		94	70-130	9	25	
1,2,4-Trichlorobenzene	8.62		ug/L	10.00		86	70-130	14	25	
1,2,4-Trimethylbenzene	10.3		ug/L	10.00		103	70-130	5	25	
1,2-Dibromo-3-Chloropropane	9.52		ug/L	10.00		95	70-130	8	25	
1,2-Dibromoethane	9.27		ug/L	10.00		93	70-130	3	25	
1,2-Dichlorobenzene	9.88		ug/L	10.00		99	70-130	5	25	
1,2-Dichloroethane	10.1		ug/L	10.00		101	70-130	6	25	
1,2-Dichloropropane	10.0		ug/L	10.00		100	70-130	8	25	
1,3,5-Trimethylbenzene	10.0		ug/L	10.00		100	70-130	8	25	
1,3-Dichlorobenzene	9.75		ug/L	10.00		98	70-130	4	25	
1,3-Dichloropropane	10.2		ug/L	10.00		102	70-130	2	25	
1,4-Dichlorobenzene	9.67		ug/L	10.00		97	70-130	7	25	
1,4-Dioxane - Screen	246		ug/L	200.0		123	0-332	18	200	
1-Chlorohexane	9.58		ug/L	10.00		96	70-130	0.6	25	
2,2-Dichloropropane	9.30		ug/L	10.00		93	70-130	7	25	
2-Butanone	46.5		ug/L	50.00		93	70-130	3	25	
2-Chlorotoluene	10.1		ug/L	10.00		101	70-130	6	25	
2-Hexanone	44.7		ug/L	50.00		89	70-130	1	25	
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130	6	25	
4-Isopropyltoluene	9.86		ug/L	10.00		99	70-130	5	25	
4-Methyl-2-Pentanone	51.3		ug/L	50.00		103	70-130	0.8	25	
Acetone	39.7		ug/L	50.00		79	70-130	5	25	
Benzene	9.97		ug/L	10.00		100	70-130	2	25	
Bromobenzene	10.0		ug/L	10.00		100	70-130	2	25	
Bromochloromethane	9.45		ug/L	10.00		94	70-130	7	25	
Bromodichloromethane	9.19		ug/L	10.00		92	70-130	6	25	
Bromoform	8.60		ug/L	10.00		86	70-130	2	25	
Bromomethane	10.9		ug/L	10.00		109	70-130	7	25	
Carbon Disulfide	10.9		ug/L	10.00		109	70-130	5	25	
Carbon Tetrachloride	9.32		ug/L	10.00		93	70-130	0	25	
Chlorobenzene	9.79		ug/L	10.00		98	70-130	2	25	
Chloroethane	10.4		ug/L	10.00		104	70-130	2	25	
Chloroform	9.95		ug/L	10.00		100	70-130	4	25	
Chloromethane	9.27		ug/L	10.00		93	70-130	4	25	
cis-1,2-Dichloroethene	9.66		ug/L	10.00		97	70-130	6	25	
cis-1,3-Dichloropropene	10.2		ug/L	10.00		102	70-130	3	25	
Dibromochloromethane	7.04		ug/L	10.00		70	70-130	3	25	
Dibromomethane	9.52		ug/L	10.00		95	70-130	1	25	



CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1804410

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
---------	--------	-----	-------	-------------	---------------	------	-------------	-----	-----------	-----------

8260B Volatile Organic Compounds

Batch CD81730 - 5030B

Dichlorodifluoromethane	8.93		ug/L	10.00		89	70-130	0.6	25	
Diethyl Ether	9.85		ug/L	10.00		98	70-130	5	25	
Di-isopropyl ether	10.1		ug/L	10.00		101	70-130	4	25	
Ethyl tertiary-butyl ether	10.1		ug/L	10.00		101	70-130	7	25	
Ethylbenzene	9.93		ug/L	10.00		99	70-130	4	25	
Hexachlorobutadiene	8.63		ug/L	10.00		86	70-130	15	25	
Hexachloroethane	8.35		ug/L	10.00		84	70-130	6	25	
Isopropylbenzene	10.1		ug/L	10.00		101	70-130	3	25	
Methyl tert-Butyl Ether	9.82		ug/L	10.00		98	70-130	7	25	
Methylene Chloride	9.62		ug/L	10.00		96	70-130	4	25	
Naphthalene	8.38		ug/L	10.00		84	70-130	8	25	
n-Butylbenzene	10.1		ug/L	10.00		101	70-130	7	25	
n-Propylbenzene	10.6		ug/L	10.00		106	70-130	7	25	
sec-Butylbenzene	10.2		ug/L	10.00		102	70-130	9	25	
Styrene	9.49		ug/L	10.00		95	70-130	3	25	
tert-Butylbenzene	9.93		ug/L	10.00		99	70-130	11	25	
Tertiary-amyl methyl ether	9.39		ug/L	10.00		94	70-130	4	25	
Tetrachloroethene	7.73		ug/L	10.00		77	70-130	2	25	
Tetrahydrofuran	6.05		ug/L	10.00		60	70-130	52	25	B-, D+
Toluene	10.3		ug/L	10.00		103	70-130	3	25	
trans-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130	2	25	
trans-1,3-Dichloropropene	9.28		ug/L	10.00		93	70-130	10	25	
Trichloroethene	9.52		ug/L	10.00		95	70-130	4	25	
Trichlorofluoromethane	9.13		ug/L	10.00		91	70-130	5	25	
Vinyl Acetate	9.58		ug/L	10.00		96	70-130	1	25	
Vinyl Chloride	10.0		ug/L	10.00		100	70-130	4	25	
Xylene O	9.95		ug/L	10.00		100	70-130	0.3	25	
Xylene P,M	19.0		ug/L	20.00		95	70-130	7	25	
Xylenes (Total)	28.9		mg/L							
Surrogate: 1,2-Dichloroethane-d4	0.0270		mg/L	0.02500		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.0257		mg/L	0.02500		103	70-130			
Surrogate: Dibromofluoromethane	0.0264		mg/L	0.02500		106	70-130			
Surrogate: Toluene-d8	0.0266		mg/L	0.02500		106	70-130			



CERTIFICATE OF ANALYSIS

Client Name: ATC Group Services

Client Project ID: Former Portsmouth Landfill

ESS Laboratory Work Order: 1804410

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.
- B- Blank Spike recovery is below lower control limit (B-).
- 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: 1804410

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 - KP/B/HDM

ESS Project ID: 1804410

Date Received: 4/16/2018

Shipped/Delivered Via: ESS Courier

Project Due Date: 4/23/2018

Days for Project: 5 Day

1. Air bill manifest present? No
Air No.: NA

6. Does COC match bottles? Yes

2. Were custody seals present? No

7. Is COC complete and correct? Yes

3. Is radiation count <100 CPM? Yes

8. Were samples received intact? Yes

4. Is a Cooler Present? Yes
Temp: 2.8 Iced with: Ice

9. Were labs informed about short holds & rushes? Yes / No NA

5. Was COC signed and dated by client? Yes

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:

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	218538	Yes	No	Yes	VOA Vial - HCl	HCl	
01	218539	Yes	No	Yes	VOA Vial - HCl	HCl	
01	218540	Yes	No	Yes	VOA Vial - HCl	HCl	
01	218544	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
02	218535	Yes	No	Yes	VOA Vial - HCl	HCl	
02	218536	Yes	No	Yes	VOA Vial - HCl	HCl	
02	218537	Yes	No	Yes	VOA Vial - HCl	HCl	
02	218543	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
03	218532	Yes	No	Yes	VOA Vial - HCl	HCl	
03	218533	Yes	No	Yes	VOA Vial - HCl	HCl	
03	218534	Yes	No	Yes	VOA Vial - HCl	HCl	
03	218542	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
04	218529	Yes	No	Yes	VOA Vial - HCl	HCl	
04	218530	Yes	No	Yes	VOA Vial - HCl	HCl	
04	218531	Yes	No	Yes	VOA Vial - HCl	HCl	
04	218541	Yes	NA	Yes	250 mL Poly - HNO3	HNO3	
05	218527	Yes	No	Yes	VOA Vial - HCl	HCl	
05	218528	Yes	No	Yes	VOA Vial - HCl	HCl	

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

Completed

ESS Laboratory Sample and Cooler Receipt Checklist

Client: ATC Group Services - KPB/HDM ESS Project ID: 1804410
By: [Signature] Date & Time: 4/16/18 17:30
Reviewed By: [Signature] Date & Time: 04-16-18 18:08
Delivered By: [Signature] 4/16/18 18:00

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 # 1804410

Reporting Limits GA GW OBJECTIVES

Electronic Deliverables Limit Checker Other (Please Specify →) PDA Standard Excel

Company Name ATC Project # 301.238 Project Name Fmr. Portsmouth Landfill

Contact Person KEITH SULLIVAN Address 400 RESERVOIR AVE., SUITE 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
1	4/13	1335	LOW-FLOW	GW	MW-1
2	↓	1220	↓	↓	MW-2
3	↓	1120	↓	↓	MW-3
4	↓	0945	↓	↓	MW-4
5					TRIP BLANK

Analysis	Analysis															
	VOC (8260)	SO	AS	BA	BE	CD	CU	CO	CU	PB	NI	SE	AG	TI	V	ZN
	X	X	X	X	X	X	X	X	X	X	X	X	X			
	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			

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

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 →

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* 2 4 4 4 4

Number of Containers per Sample: 3 1 →

Laboratory Use Only

Cooler Present:

Seals Intact:

Cooler Temperature: 2.8 °C ICE PC

Sampled by:

Comments: METAL LIST IS ATTACHED / NEED GA GROUNDWATER LIMITS

Please specify "Other" preservative and containers types in this space

Relinquished by: (Signature, Date & Time) <u>[Signature]</u> 4/16/0900	Received By: (Signature, Date & Time) <u>[Signature]</u> 4/16/18 900	Relinquished By: (Signature, Date & Time) <u>[Signature]</u> 4/16/18 1507	Received By: (Signature, Date & Time) <u>[Signature]</u> 4/16/18 1710
---	---	--	--

Appendix F

**Soil Gas Monitoring Data
Former Portsmouth Landfill
Park Avenue, Portsmouth, RI**

Location	Date	Ambient						Soil Gas				
		Temperature (F°)	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 ₂ S) (ppm)	Soil Gas LEL (%)	CO2 (%)
SG-1	5/30/2017	54	30.24	4	SE	0.0	20.5	0	20.5	0	0	0
	9/8/2017	72	30.03	5	S	0.0	19.2	0	19.1	0	0	0
	12/21/2017	32	30.24	8	NW	0.2	21.6	0	21.2	0	0	0
	12/21/2017	32	30.24	8	NW	0.2	21.6	0	21.2	0	0	0
	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	21.6	0	0	0
SG-2	5/30/2017	56	30.22	6	SE	0.0	20.6	0	20.6	0	0	0
	9/8/2017	72	30.03	8	S	0.0	19.4	0	19.3	0	0	0
	12/21/2017	32	30.24	10	NW	0.0	21.6	0	21.4	0	0	0
	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	21.6	0	0	0.1
SG-3	5/30/2017	56	30.22	6	SE	0.0	20.4	9.7	1.3	0	>100	12.5
	9/8/2017	73	30.04	4	SE	0.0	19.7	4.1	11.7	0	87	5.0
	12/21/2017	32	30.24	10	NW	0.0	21.6	4.6	7.8	0	90	9.0
	4/13/2018	45	29.92	6	SSW	0.0	21.9	1.2	14.0	0	24	3.9
SG-4	5/30/2017	56	30.20	8	SE	0.0	20.1	0	19.6	0	0	0.2
	9/8/2017	73	30.05	6	SE	0.0	19.2	0	18.5	0	0	0.4
	12/21/2017	32	30.24	6	NW	0.0	21.6	0	21.0	0	0	0.5
	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	20.8	0	0	0.2
SG-5	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	20.1	0	0	0.7
SG-6	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	18.2	0	0	2.6
SG-7	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	17.6	0	0	3.3
SG-8	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	20.7	0	0	0.8
SG-9	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	14.9	0	0	5.4
SG-10	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	19.4	0	0	2.2
SG-11	4/13/2018	45	29.92	6	SSW	0.0	21.9	0	20.1	0	0	1.4

Lower explosive limit (LEL) of methane (CH4) is 5%

Landfill gases measured using a Landtech Gem 2000 Plus Landfill Gas Monitor