



CERTIFICATE OF ANALYSIS

Mark Dennen
RIDEM - Office of Waste Management
235 Promenade Street
Providence, RI 02908

RE: Portsmouth Town Dump (PLF)
ESS Laboratory Work Order Number: 1409606

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 12:31 pm, Oct 01, 2014

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 NELAC Standards, A2LA 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: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

SAMPLE RECEIPT

The following samples were received on September 29, 2014 for the analyses specified on the enclosed Chain of Custody Record.

The cooler temperature was not within the acceptance limit of <6°C.

<u>Lab Number</u>	<u>Sample Name</u>	<u>Matrix</u>	<u>Analysis</u>
1409606-01	SS-3	Soil	6010C
1409606-02	SS-4	Soil	6010C
1409606-03	SS-5	Soil	6010C
1409606-04	SS-6	Soil	6010C
1409606-05	SS-7	Soil	6010C
1409606-06	SS-8	Soil	6010C
1409606-07	SS-9	Soil	6010C
1409606-08	SS-10	Soil	6010C
1409606-09	SS-11	Soil	6010C



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

PROJECT NARRATIVE

Total Metals

CI43001-BSD1 **Blank Spike recovery is below lower control limit (B-).**
Arsenic (74% @ 80-120%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

- [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: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

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
- 8015D - 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 and Graphite Furnace Digestion
- 3020A - Aqueous 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



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-3
Date Sampled: 09/29/14 10:30
Percent Solids: 93

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-01
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	19.4 (2.7)		6010C		1	KJK	09/30/14 20:25	2.02	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-4
Date Sampled: 09/29/14 10:33
Percent Solids: 93

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-02
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	18.2 (2.4)		6010C		1	KJK	09/30/14 20:30	2.27	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-5
Date Sampled: 09/29/14 10:37
Percent Solids: 93

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-03
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	22.7 (1.9)		6010C		1	KJK	09/30/14 20:36	2.77	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-6
Date Sampled: 09/29/14 10:40
Percent Solids: 92

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-04
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	18.9 (2.3)		6010C		1	KJK	09/30/14 20:41	2.33	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-7
Date Sampled: 09/29/14 10:42
Percent Solids: 94

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-05
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	10.1 (2.5)		6010C		1	KJK	09/30/14 20:47	2.14	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-8
Date Sampled: 09/29/14 10:46
Percent Solids: 94

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-06
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	19.8 (2.4)		6010C		1	KJK	09/30/14 20:52	2.19	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-9
Date Sampled: 09/29/14 10:49
Percent Solids: 93

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-07
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	18.3 (2.5)		6010C		1	KJK	09/30/14 20:57	2.12	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-10
Date Sampled: 09/29/14 10:52
Percent Solids: 95

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-08
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	21.3 (2.5)		6010C		1	KJK	09/30/14 21:03	2.13	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump
Client Sample ID: SS-11
Date Sampled: 09/29/14 10:55
Percent Solids: 93

ESS Laboratory Work Order: 1409606
ESS Laboratory Sample ID: 1409606-09
Sample Matrix: Soil
Units: mg/kg dry

Extraction Method: 3050B

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>
Arsenic	19.5 (2.5)		6010C		1	KJK	09/30/14 21:21	2.2	100	CI43001



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

Quality Control Data

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

Total Metals

Batch C143001 - 3050B

Blank

Arsenic	ND	2.5	mg/kg wet							
---------	----	-----	-----------	--	--	--	--	--	--	--

LCS

Arsenic	124	8.1	mg/kg wet	139.0		89	80-120			
---------	-----	-----	-----------	-------	--	----	--------	--	--	--

LCS Dup

Arsenic	103	7.8	mg/kg wet	139.0		74	80-120	18	20	B-
---------	-----	-----	-----------	-------	--	----	--------	----	----	----



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

Notes and Definitions

- U Analyte included in the analysis, but not detected
- 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



CERTIFICATE OF ANALYSIS

Client Name: RIDEM - Office of Waste Management
Client Project ID: Portsmouth Town Dump

ESS Laboratory Work Order: 1409606

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01

<http://www.a2la.org/scopepdf/2864-01.pdf>

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: RI0002

<http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/documents/AllLabs.xls>

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.depweb.state.pa.us/portal/server.pt/community/labs/13780/laboratory_accreditation_program/590095

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01

Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)

<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141

Lead Paint, Lead in Children's Metals Jewelry

<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

