From: Clementine Dulieu
Sent: Monday, February 04, 2019 8:59 AM
To: 'David Costello'
Subject: Wayland - IESI January lab report
Attachments: IESI Lab Report_January 2019.pdf; National Development BWSC-123 Form.pdf

Hi David,

Innovative Engineering Solutions, Inc. (IESI) collected groundwater samples from monitoring wells located on National Development property at the former Raytheon Facility located at 430 Boston Post Road in Wayland, MA in January 2019. The analytical results and BWSC-123 form are attached to this email.

These results are being sent for National Development's records.

Please let me know if you have any questions or require any additional information.

Thanks,

Clementine Dulieu
Project Geologist

ERM
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E clementine.dulieu@erm.com | **W** www.erm.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

3 - 13302

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

A. The address of the disposal site related to this Notice and Release Tracking Number (provided above):

1. Street Address: 430 Boston Post Road

City/Town: Wayland Zip Code: 01778

B. This notice is being provided to the following party:

1. Name: National Development
2. Street Address: 2310 Washington Street

City/Town: Newton Lower Falls Zip Code: 02462

C. This notice is being given to inform its recipient (the party listed in Section B):

☑ 1. That environmental sampling will be/has been conducted at property owned by the recipient of this notice.

☑ 2. Of the results of environmental sampling conducted at property owned by the recipient of this notice.

☑ 3. Check to indicate if the analytical results are attached. (If item 2. above is checked, the analytical results from the environmental sampling must be attached to this notice.)

D. Location of the property where the environmental sampling will be/has been conducted:

1. Street Address: 430 Boston Post Road

City/Town: Wayland Zip Code: 01778

2. MCP phase of work during which the sampling will be/has been conducted:

☐ Immediate Response Action
☐ Release Abatement Measure
☐ Utility-related Abatement Measure
☐ Phase I Initial Site Investigation
☐ Phase II Comprehensive Site Assessment
☐ Phase III Feasibility Evaluation
☐ Phase IV Remedy Implementation Plan
☑ Phase V/Remedy Operation Status
☐ Post-Temporary Solution Operation, Maintenance and Monitoring
☐ Other _____ (specify)

3. Description of property where sampling will be/has been conducted:

☐ residential ☑ commercial ☐ industrial ☐ school/playground ☐ Other _____ (specify)

4. Description of the sampling locations and types (e.g., soil, groundwater, indoor air, soil gas) to the extent known at the time of this notice.

Collection of groundwater samples from existing monitoring wells

E. Contact information related to the party providing this notice:

Contact Name: Jonathan Hone, Raytheon Company
Street Address: 366 Lowell Street
City/Town: Andover Zip Code: 01810
Telephone: (978) 474-5753 Email: Jonathan_R_Hone@raytheon.com

Massachusetts Department of Environmental Protection
Bureau of Waste Site Cleanup

BWSC123

This Notice is Related to:
Release Tracking Number

3 - 13302

NOTICE OF ENVIRONMENTAL SAMPLING

As required by 310 CMR 40.1403(10) of the Massachusetts Contingency Plan

MASSACHUSETTS REGULATIONS THAT REQUIRE THIS NOTICE

This notice is being provided pursuant to the Massachusetts Contingency Plan and the notification requirement at 310 CMR 40.1403(10). The Massachusetts Contingency Plan is a state regulation that specifies requirements for parties who are taking actions to address releases of chemicals (oil or hazardous material) to the environment.

THE PERSON(S) PROVIDING THIS NOTICE

This notice has been sent to you by the party who is addressing a release of oil or hazardous material to the environment at the location listed in **Section A** on the reverse side of this form. (The regulations refer to the area where the oil or hazardous material is present as the "disposal site".)

PURPOSE OF THIS NOTICE

When environmental samples are taken as part of an investigation of a release for which a notification to MassDEP has been made under the Massachusetts Contingency Plan (310 CMR 40.0300) on behalf of someone other than the owner of the property, the regulations require that the property owner (listed in **Section B** on the reverse side of this form) be given notice of the environmental sampling. The regulations also require that the property owner subsequently receive the analytical results following the analysis of the environmental samples.

Section C on the reverse side of this form indicates the circumstance under which you are receiving this notice at this time. If you are receiving this notice to inform you of the analytical results following the analysis of the environmental samples, you should also have received, as an attachment, a copy of analytical results. These results should indicate the number and type(s) of samples (e.g., soil, groundwater) analyzed, any chemicals identified, and the measured concentrations of those chemicals.

Section D on the reverse side of this form identifies the property where the environmental sampling will be/has been conducted, provides a description of the sampling locations within the property, and indicates the phase of work under the Massachusetts Contingency Plan regulatory process during which the samples will be/were collected.

FOR MORE INFORMATION

Information about the general process for addressing releases of oil or hazardous material under the Massachusetts Contingency Plan and related public involvement opportunities may be found at http://www.mass.gov/eea/agencies/massdep/cleanup. For more information regarding this notice, you may contact the party listed in **Section E** on the reverse side of this form. Information about the disposal site identified in Section A is also available in files at the Massachusetts Department of Environmental Protection. See http://public.dep.state.ma.us/SearchableSites2/Search.aspx to view site-specific files on-line or http://mass.gov/eea/agencies/massdep/about/contacts/conduct-a-file-review.html if you would like to make an appointment to see these files in person. Please reference the **Release Tracking Number** listed in the upper right hand corner on the reverse side of this form when making file review appointments.

ANALYTICAL REPORT

Lab Number:	L1901283
Client:	Innovative Engineering Solutions, Inc. 37 Pearl Street #1 Braintree, MA 02184
ATTN:	Vicki Pariyar
Phone:	(508) 623-1224
Project Name:	RAYTHEON WAYLAND
Project Number:	RA-008
Report Date:	01/16/19

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1901283-01	MW-267S-20190110	WATER	WAYLAND, MA	01/10/19 09:50	01/10/19
L1901283-02	MW-267M-20190110	WATER	WAYLAND, MA	01/10/19 10:45	01/10/19
L1901283-03	MW-268S-20190110	WATER	WAYLAND, MA	01/10/19 08:10	01/10/19
L1901283-04	MW-268M-20190110	WATER	WAYLAND, MA	01/10/19 09:00	01/10/19
L1901283-05	REW-7-20190110	WATER	WAYLAND, MA	01/10/19 11:50	01/10/19
L1901283-06	REW-8-20190110	WATER	WAYLAND, MA	01/10/19 12:35	01/10/19
L1901283-07	DUP-20190110	WATER	WAYLAND, MA	01/10/19 00:00	01/10/19
L1901283-08	TRIP BLANK	WATER	WAYLAND, MA	01/10/19 00:00	01/10/19

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY
For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283
Project Number: RA-008 **Report Date:** 01/16/19

Case Narrative (continued)

Volatile Organics

L1901283-01 and -03: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Dissolved Gases

L1901283-01 and -03: The sample was collected in a pre-preserved vial; however, the pH of the sample was determined to be greater than two.

Nitrogen, Ammonia

L1901283-04: The sample has an elevated detection limit due to the dilution required by the sample matrix. The WG1197163-4 MS recovery (34%), performed on L1901283-01, is outside the acceptance criteria; however, the associated LCS recovery is within criteria. No further action was taken.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Cristin Walker

Title: Technical Director/Representative Date: 01/16/19

ORGANICS

VOLATILES

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 14:29
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	23600	E	ug/l	1.00	--	1	A
Ethene	6.11		ug/l	0.500	--	1	A
Ethane	1.15		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01 D
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/16/19 15:32
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	15	--	5
1,1-Dichloroethane	ND		ug/l	3.8	--	5
Chloroform	ND		ug/l	3.8	--	5
Carbon tetrachloride	ND		ug/l	2.5	--	5
1,2-Dichloropropane	ND		ug/l	8.8	--	5
Dibromochloromethane	ND		ug/l	2.5	--	5
1,1,2-Trichloroethane	ND		ug/l	3.8	--	5
Tetrachloroethene	ND		ug/l	2.5	--	5
Chlorobenzene	ND		ug/l	2.5	--	5
Trichlorofluoromethane	ND		ug/l	12	--	5
1,2-Dichloroethane	ND		ug/l	2.5	--	5
1,1,1-Trichloroethane	ND		ug/l	2.5	--	5
Bromodichloromethane	ND		ug/l	2.5	--	5
trans-1,3-Dichloropropene	ND		ug/l	2.5	--	5
cis-1,3-Dichloropropene	ND		ug/l	2.5	--	5
1,3-Dichloropropene, Total	ND		ug/l	2.5	--	5
1,1-Dichloropropene	ND		ug/l	12	--	5
Bromoform	ND		ug/l	10	--	5
1,1,2,2-Tetrachloroethane	ND		ug/l	2.5	--	5
Benzene	ND		ug/l	2.5	--	5
Toluene	94		ug/l	3.8	--	5
Ethylbenzene	ND		ug/l	2.5	--	5
Chloromethane	ND		ug/l	12	--	5
Bromomethane	ND		ug/l	5.0	--	5
Vinyl chloride	19		ug/l	5.0	--	5
Chloroethane	ND		ug/l	5.0	--	5
1,1-Dichloroethene	ND		ug/l	2.5	--	5
trans-1,2-Dichloroethene	ND		ug/l	3.8	--	5

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01 D
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	17		ug/l	2.5	--	5
Trichloroethene	ND		ug/l	2.5	--	5
1,2-Dichlorobenzene	ND		ug/l	12	--	5
1,3-Dichlorobenzene	ND		ug/l	12	--	5
1,4-Dichlorobenzene	ND		ug/l	12	--	5
Methyl tert butyl ether	ND		ug/l	5.0	--	5
p/m-Xylene	ND		ug/l	5.0	--	5
o-Xylene	ND		ug/l	5.0	--	5
Xylenes, Total	ND		ug/l	5.0	--	5
cis-1,2-Dichloroethene	17		ug/l	2.5	--	5
Dibromomethane	ND		ug/l	25	--	5
1,4-Dichlorobutane	ND		ug/l	25	--	5
1,2,3-Trichloropropane	ND		ug/l	25	--	5
Styrene	ND		ug/l	5.0	--	5
Dichlorodifluoromethane	ND		ug/l	25	--	5
Acetone	150		ug/l	25	--	5
Carbon disulfide	ND		ug/l	25	--	5
2-Butanone	320		ug/l	25	--	5
Vinyl acetate	ND		ug/l	25	--	5
4-Methyl-2-pentanone	ND		ug/l	25	--	5
2-Hexanone	ND		ug/l	25	--	5
Ethyl methacrylate	ND		ug/l	25	--	5
Acrylonitrile	ND		ug/l	25	--	5
Bromochloromethane	ND		ug/l	12	--	5
Tetrahydrofuran	ND		ug/l	25	--	5
2,2-Dichloropropane	ND		ug/l	12	--	5
1,2-Dibromoethane	ND		ug/l	10	--	5
1,3-Dichloropropane	ND		ug/l	12	--	5
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	--	5
Bromobenzene	ND		ug/l	12	--	5
n-Butylbenzene	ND		ug/l	2.5	--	5
sec-Butylbenzene	ND		ug/l	2.5	--	5
tert-Butylbenzene	ND		ug/l	12	--	5
o-Chlorotoluene	ND		ug/l	12	--	5
p-Chlorotoluene	ND		ug/l	12	--	5
1,2-Dibromo-3-chloropropane	ND		ug/l	12	--	5
Hexachlorobutadiene	ND		ug/l	2.5	--	5

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01 D
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	2.5	--	5
p-Isopropyltoluene	ND		ug/l	2.5	--	5
Naphthalene	ND		ug/l	12	--	5
n-Propylbenzene	ND		ug/l	2.5	--	5
1,2,3-Trichlorobenzene	ND		ug/l	12	--	5
1,2,4-Trichlorobenzene	ND		ug/l	12	--	5
1,3,5-Trimethylbenzene	ND		ug/l	12	--	5
1,2,4-Trimethylbenzene	ND		ug/l	12	--	5
trans-1,4-Dichloro-2-butene	ND		ug/l	12	--	5
Ethyl ether	ND		ug/l	12	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	97		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01 D
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 09:33
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	23100		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02
Client ID: MW-267M-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 10:45
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/14/19 16:14
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02 Date Collected: 01/10/19 10:45

Client ID: MW-267M-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	1.5		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	1.5		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02 Date Collected: 01/10/19 10:45

Client ID: MW-267M-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	110		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02
Client ID: MW-267M-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 10:45
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 14:52
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	36500	E	ug/l	1.00	--	1	A
Ethene	ND		ug/l	0.500	--	1	A
Ethane	5.98		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02 D
Client ID: MW-267M-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 10:45
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 10:09
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	29400		ug/l	10.0	--	10	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03
Client ID: MW-268S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 08:10
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 15:15
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	31200	E	ug/l	1.00	--	1	A
Ethene	4.03		ug/l	0.500	--	1	A
Ethane	8.21		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03 D
Client ID: MW-268S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 08:10
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/16/19 15:54
Analyst: MKS

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	15	--	5
1,1-Dichloroethane	ND		ug/l	3.8	--	5
Chloroform	ND		ug/l	3.8	--	5
Carbon tetrachloride	ND		ug/l	2.5	--	5
1,2-Dichloropropane	ND		ug/l	8.8	--	5
Dibromochloromethane	ND		ug/l	2.5	--	5
1,1,2-Trichloroethane	ND		ug/l	3.8	--	5
Tetrachloroethene	ND		ug/l	2.5	--	5
Chlorobenzene	ND		ug/l	2.5	--	5
Trichlorofluoromethane	ND		ug/l	12	--	5
1,2-Dichloroethane	ND		ug/l	2.5	--	5
1,1,1-Trichloroethane	ND		ug/l	2.5	--	5
Bromodichloromethane	ND		ug/l	2.5	--	5
trans-1,3-Dichloropropene	ND		ug/l	2.5	--	5
cis-1,3-Dichloropropene	ND		ug/l	2.5	--	5
1,3-Dichloropropene, Total	ND		ug/l	2.5	--	5
1,1-Dichloropropene	ND		ug/l	12	--	5
Bromoform	ND		ug/l	10	--	5
1,1,2,2-Tetrachloroethane	ND		ug/l	2.5	--	5
Benzene	ND		ug/l	2.5	--	5
Toluene	320		ug/l	3.8	--	5
Ethylbenzene	ND		ug/l	2.5	--	5
Chloromethane	ND		ug/l	12	--	5
Bromomethane	ND		ug/l	5.0	--	5
Vinyl chloride	ND		ug/l	5.0	--	5
Chloroethane	ND		ug/l	5.0	--	5
1,1-Dichloroethene	ND		ug/l	2.5	--	5
trans-1,2-Dichloroethene	ND		ug/l	3.8	--	5

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03 D Date Collected: 01/10/19 08:10
Client ID: MW-268S-20190110 Date Received: 01/10/19
Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	8.0		ug/l	2.5	--	5
Trichloroethene	42		ug/l	2.5	--	5
1,2-Dichlorobenzene	ND		ug/l	12	--	5
1,3-Dichlorobenzene	ND		ug/l	12	--	5
1,4-Dichlorobenzene	ND		ug/l	12	--	5
Methyl tert butyl ether	ND		ug/l	5.0	--	5
p/m-Xylene	ND		ug/l	5.0	--	5
o-Xylene	ND		ug/l	5.0	--	5
Xylenes, Total	ND		ug/l	5.0	--	5
cis-1,2-Dichloroethene	8.0		ug/l	2.5	--	5
Dibromomethane	ND		ug/l	25	--	5
1,4-Dichlorobutane	ND		ug/l	25	--	5
1,2,3-Trichloropropane	ND		ug/l	25	--	5
Styrene	ND		ug/l	5.0	--	5
Dichlorodifluoromethane	ND		ug/l	25	--	5
Acetone	87		ug/l	25	--	5
Carbon disulfide	ND		ug/l	25	--	5
2-Butanone	200		ug/l	25	--	5
Vinyl acetate	ND		ug/l	25	--	5
4-Methyl-2-pentanone	ND		ug/l	25	--	5
2-Hexanone	ND		ug/l	25	--	5
Ethyl methacrylate	ND		ug/l	25	--	5
Acrylonitrile	ND		ug/l	25	--	5
Bromochloromethane	ND		ug/l	12	--	5
Tetrahydrofuran	ND		ug/l	25	--	5
2,2-Dichloropropane	ND		ug/l	12	--	5
1,2-Dibromoethane	ND		ug/l	10	--	5
1,3-Dichloropropane	ND		ug/l	12	--	5
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	--	5
Bromobenzene	ND		ug/l	12	--	5
n-Butylbenzene	ND		ug/l	2.5	--	5
sec-Butylbenzene	ND		ug/l	2.5	--	5
tert-Butylbenzene	ND		ug/l	12	--	5
o-Chlorotoluene	ND		ug/l	12	--	5
p-Chlorotoluene	ND		ug/l	12	--	5
1,2-Dibromo-3-chloropropane	ND		ug/l	12	--	5
Hexachlorobutadiene	ND		ug/l	2.5	--	5

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03 D Date Collected: 01/10/19 08:10

Client ID: MW-268S-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	2.5	--	5
p-Isopropyltoluene	ND		ug/l	2.5	--	5
Naphthalene	ND		ug/l	12	--	5
n-Propylbenzene	ND		ug/l	2.5	--	5
1,2,3-Trichlorobenzene	ND		ug/l	12	--	5
1,2,4-Trichlorobenzene	ND		ug/l	12	--	5
1,3,5-Trimethylbenzene	ND		ug/l	12	--	5
1,2,4-Trimethylbenzene	ND		ug/l	12	--	5
trans-1,4-Dichloro-2-butene	ND		ug/l	12	--	5
Ethyl ether	ND		ug/l	12	--	5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	88		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	97		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03 D
Client ID: MW-268S-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 08:10
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 09:49
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	26400		ug/l	5.00	--	5	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04
Client ID: MW-268M-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 09:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/14/19 16:40
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	1.4		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	0.58		ug/l	0.50	--	1
Toluene	1.8		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	100		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	0.92		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04 Date Collected: 01/10/19 09:00

Client ID: MW-268M-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	32		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	31		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04 Date Collected: 01/10/19 09:00

Client ID: MW-268M-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	111		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04
Client ID: MW-268M-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 15:37
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	39800	E	ug/l	1.00	--	1	A
Ethene	16.4		ug/l	0.500	--	1	A
Ethane	11.4		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04 D
Client ID: MW-268M-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 09:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 10:25
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	32100		ug/l	10.0	--	10	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05
Client ID: REW-7-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 11:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/14/19 17:06
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05 Date Collected: 01/10/19 11:50

Client ID: REW-7-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05 Date Collected: 01/10/19 11:50

Client ID: REW-7-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	112		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05
Client ID: REW-7-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 11:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 16:00
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	38700	E	ug/l	1.00	--	1	A
Ethene	ND		ug/l	0.500	--	1	A
Ethane	14.0		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05 D
Client ID: REW-7-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 11:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 10:42
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	30900		ug/l	10.0	--	10	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06
Client ID: REW-8-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 12:35
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/14/19 17:31
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06 Date Collected: 01/10/19 12:35

Client ID: REW-8-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06 Date Collected: 01/10/19 12:35

Client ID: REW-8-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	11		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	110		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06
Client ID: REW-8-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 12:35
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/15/19 16:23
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	37700	E	ug/l	1.00	--	1	A
Ethene	ND		ug/l	0.500	--	1	A
Ethane	2.00		ug/l	0.500	--	1	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06 D
Client ID: REW-8-20190110
Sample Location: WAYLAND, MA

Date Collected: 01/10/19 12:35
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 117,-
Analytical Date: 01/16/19 10:59
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Dissolved Gases by GC - Mansfield Lab							
Methane	30400		ug/l	10.0	--	10	A

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-07
Client ID: DUP-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 00:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/14/19 17:56
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-07 Date Collected: 01/10/19 00:00

Client ID: DUP-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-07 Date Collected: 01/10/19 00:00

Client ID: DUP-20190110 Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	11		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-08
Client ID: TRIP BLANK
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 00:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 01/11/19 12:46
Analyst: PK

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	3.0	--	1
1,1-Dichloroethane	ND		ug/l	0.75	--	1
Chloroform	ND		ug/l	0.75	--	1
Carbon tetrachloride	ND		ug/l	0.50	--	1
1,2-Dichloropropane	ND		ug/l	1.8	--	1
Dibromochloromethane	ND		ug/l	0.50	--	1
1,1,2-Trichloroethane	ND		ug/l	0.75	--	1
Tetrachloroethene	ND		ug/l	0.50	--	1
Chlorobenzene	ND		ug/l	0.50	--	1
Trichlorofluoromethane	ND		ug/l	2.5	--	1
1,2-Dichloroethane	ND		ug/l	0.50	--	1
1,1,1-Trichloroethane	ND		ug/l	0.50	--	1
Bromodichloromethane	ND		ug/l	0.50	--	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	--	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	--	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	--	1
1,1-Dichloropropene	ND		ug/l	2.5	--	1
Bromoform	ND		ug/l	2.0	--	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Benzene	ND		ug/l	0.50	--	1
Toluene	ND		ug/l	0.75	--	1
Ethylbenzene	ND		ug/l	0.50	--	1
Chloromethane	ND		ug/l	2.5	--	1
Bromomethane	ND		ug/l	1.0	--	1
Vinyl chloride	ND		ug/l	1.0	--	1
Chloroethane	ND		ug/l	1.0	--	1
1,1-Dichloroethene	ND		ug/l	0.50	--	1
trans-1,2-Dichloroethene	ND		ug/l	0.75	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-08 Date Collected: 01/10/19 00:00

Client ID: TRIP BLANK Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2-Dichloroethene, Total	ND		ug/l	0.50	--	1
Trichloroethene	ND		ug/l	0.50	--	1
1,2-Dichlorobenzene	ND		ug/l	2.5	--	1
1,3-Dichlorobenzene	ND		ug/l	2.5	--	1
1,4-Dichlorobenzene	ND		ug/l	2.5	--	1
Methyl tert butyl ether	ND		ug/l	1.0	--	1
p/m-Xylene	ND		ug/l	1.0	--	1
o-Xylene	ND		ug/l	1.0	--	1
Xylenes, Total	ND		ug/l	1.0	--	1
cis-1,2-Dichloroethene	ND		ug/l	0.50	--	1
Dibromomethane	ND		ug/l	5.0	--	1
1,4-Dichlorobutane	ND		ug/l	5.0	--	1
1,2,3-Trichloropropane	ND		ug/l	5.0	--	1
Styrene	ND		ug/l	1.0	--	1
Dichlorodifluoromethane	ND		ug/l	5.0	--	1
Acetone	ND		ug/l	5.0	--	1
Carbon disulfide	ND		ug/l	5.0	--	1
2-Butanone	ND		ug/l	5.0	--	1
Vinyl acetate	ND		ug/l	5.0	--	1
4-Methyl-2-pentanone	ND		ug/l	5.0	--	1
2-Hexanone	ND		ug/l	5.0	--	1
Ethyl methacrylate	ND		ug/l	5.0	--	1
Acrylonitrile	ND		ug/l	5.0	--	1
Bromochloromethane	ND		ug/l	2.5	--	1
Tetrahydrofuran	ND		ug/l	5.0	--	1
2,2-Dichloropropane	ND		ug/l	2.5	--	1
1,2-Dibromoethane	ND		ug/l	2.0	--	1
1,3-Dichloropropane	ND		ug/l	2.5	--	1
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--	1
Bromobenzene	ND		ug/l	2.5	--	1
n-Butylbenzene	ND		ug/l	0.50	--	1
sec-Butylbenzene	ND		ug/l	0.50	--	1
tert-Butylbenzene	ND		ug/l	2.5	--	1
o-Chlorotoluene	ND		ug/l	2.5	--	1
p-Chlorotoluene	ND		ug/l	2.5	--	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--	1
Hexachlorobutadiene	ND		ug/l	0.50	--	1

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-08 Date Collected: 01/10/19 00:00

Client ID: TRIP BLANK Date Received: 01/10/19

Sample Location: WAYLAND, MA Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Isopropylbenzene	ND		ug/l	0.50	--	1
p-Isopropyltoluene	ND		ug/l	0.50	--	1
Naphthalene	ND		ug/l	2.5	--	1
n-Propylbenzene	ND		ug/l	0.50	--	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--	1
Ethyl ether	ND		ug/l	2.5	--	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	97		70-130

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/11/19 12:21
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1196862-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--
1,2-Dichloroethene, Total	ND		ug/l	0.50	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/11/19 12:21
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1196862-5					
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/11/19 12:21
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 08 Batch: WG1196862-5					
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	95		70-130

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/14/19 09:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04-07 Batch: WG1197590-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/14/19 09:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04-07 Batch: WG1197590-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--
1,3-Dichloropropane	ND		ug/l	2.5	--

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/14/19 09:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04-07 Batch: WG1197590-5					
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--
1,4-Dioxane	ND		ug/l	250	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/14/19 09:29
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04-07 Batch: WG1197590-5					
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	102		70-130

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 117,-
Analytical Date: 01/16/19 08:56
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	
Dissolved Gases by GC - Mansfield Lab for sample(s): 01-06 Batch: WG1197721-10						
Methane	ND		ug/l	1.00	--	A
Ethene	ND		ug/l	0.500	--	A
Ethane	ND		ug/l	0.500	--	A

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 117,-
Analytical Date: 01/15/19 09:14
Analyst: AW

Parameter	Result	Qualifier	Units	RL	MDL	
Dissolved Gases by GC - Mansfield Lab for sample(s): 01-06 Batch: WG1197721-3						
Methane	ND		ug/l	1.00	--	A
Ethene	ND		ug/l	0.500	--	A
Ethane	ND		ug/l	0.500	--	A

Project Name: RAYTHEON WAYLAND **Lab Number:** L1901283

Project Number: RA-008 **Report Date:** 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/16/19 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1198293-5					
Methylene chloride	ND		ug/l	3.0	--
1,1-Dichloroethane	ND		ug/l	0.75	--
Chloroform	ND		ug/l	0.75	--
Carbon tetrachloride	ND		ug/l	0.50	--
1,2-Dichloropropane	ND		ug/l	1.8	--
Dibromochloromethane	ND		ug/l	0.50	--
1,1,2-Trichloroethane	ND		ug/l	0.75	--
2-Chloroethylvinyl ether	ND		ug/l	10	--
Tetrachloroethene	ND		ug/l	0.50	--
Chlorobenzene	ND		ug/l	0.50	--
Trichlorofluoromethane	ND		ug/l	2.5	--
1,2-Dichloroethane	ND		ug/l	0.50	--
1,1,1-Trichloroethane	ND		ug/l	0.50	--
Bromodichloromethane	ND		ug/l	0.50	--
trans-1,3-Dichloropropene	ND		ug/l	0.50	--
cis-1,3-Dichloropropene	ND		ug/l	0.50	--
1,3-Dichloropropene, Total	ND		ug/l	0.50	--
1,1-Dichloropropene	ND		ug/l	2.5	--
Bromoform	ND		ug/l	2.0	--
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	--
Benzene	ND		ug/l	0.50	--
Toluene	ND		ug/l	0.75	--
Ethylbenzene	ND		ug/l	0.50	--
Chloromethane	ND		ug/l	2.5	--
Bromomethane	ND		ug/l	1.0	--
Vinyl chloride	ND		ug/l	1.0	--
Chloroethane	ND		ug/l	1.0	--
1,1-Dichloroethene	ND		ug/l	0.50	--
trans-1,2-Dichloroethene	ND		ug/l	0.75	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/16/19 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1198293-5					
1,2-Dichloroethene, Total	ND		ug/l	0.50	--
Trichloroethene	ND		ug/l	0.50	--
1,2-Dichlorobenzene	ND		ug/l	2.5	--
1,3-Dichlorobenzene	ND		ug/l	2.5	--
1,4-Dichlorobenzene	ND		ug/l	2.5	--
Methyl tert butyl ether	ND		ug/l	1.0	--
p/m-Xylene	ND		ug/l	1.0	--
o-Xylene	ND		ug/l	1.0	--
Xylenes, Total	ND		ug/l	1.0	--
cis-1,2-Dichloroethene	ND		ug/l	0.50	--
Dibromomethane	ND		ug/l	5.0	--
1,4-Dichlorobutane	ND		ug/l	5.0	--
Iodomethane	ND		ug/l	5.0	--
1,2,3-Trichloropropane	ND		ug/l	5.0	--
Styrene	ND		ug/l	1.0	--
Dichlorodifluoromethane	ND		ug/l	5.0	--
Acetone	ND		ug/l	5.0	--
Carbon disulfide	ND		ug/l	5.0	--
2-Butanone	ND		ug/l	5.0	--
Vinyl acetate	ND		ug/l	5.0	--
4-Methyl-2-pentanone	ND		ug/l	5.0	--
2-Hexanone	ND		ug/l	5.0	--
Ethyl methacrylate	ND		ug/l	5.0	--
Acrolein	ND		ug/l	5.0	--
Acrylonitrile	ND		ug/l	5.0	--
Bromochloromethane	ND		ug/l	2.5	--
Tetrahydrofuran	ND		ug/l	5.0	--
2,2-Dichloropropane	ND		ug/l	2.5	--
1,2-Dibromoethane	ND		ug/l	2.0	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/16/19 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1198293-5					
1,3-Dichloropropane	ND		ug/l	2.5	--
1,1,1,2-Tetrachloroethane	ND		ug/l	0.50	--
Bromobenzene	ND		ug/l	2.5	--
n-Butylbenzene	ND		ug/l	0.50	--
sec-Butylbenzene	ND		ug/l	0.50	--
tert-Butylbenzene	ND		ug/l	2.5	--
o-Chlorotoluene	ND		ug/l	2.5	--
p-Chlorotoluene	ND		ug/l	2.5	--
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	--
Hexachlorobutadiene	ND		ug/l	0.50	--
Isopropylbenzene	ND		ug/l	0.50	--
p-Isopropyltoluene	ND		ug/l	0.50	--
Naphthalene	ND		ug/l	2.5	--
n-Propylbenzene	ND		ug/l	0.50	--
1,2,3-Trichlorobenzene	ND		ug/l	2.5	--
1,2,4-Trichlorobenzene	ND		ug/l	2.5	--
1,3,5-Trimethylbenzene	ND		ug/l	2.5	--
1,3,5-Trichlorobenzene	ND		ug/l	2.0	--
1,2,4-Trimethylbenzene	ND		ug/l	2.5	--
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	--
Halothane	ND		ug/l	2.5	--
Ethyl ether	ND		ug/l	2.5	--
Methyl Acetate	ND		ug/l	10	--
Ethyl Acetate	ND		ug/l	10	--
Isopropyl Ether	ND		ug/l	2.0	--
Cyclohexane	ND		ug/l	10	--
Tert-Butyl Alcohol	ND		ug/l	10	--
Ethyl-Tert-Butyl-Ether	ND		ug/l	2.0	--
Tertiary-Amyl Methyl Ether	ND		ug/l	2.0	--

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 01/16/19 08:37
Analyst: NLK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01,03 Batch: WG1198293-5					
1,4-Dioxane	ND		ug/l	250	--
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND		ug/l	10	--
Methyl cyclohexane	ND		ug/l	10	--
p-Diethylbenzene	ND		ug/l	2.0	--
4-Ethyltoluene	ND		ug/l	2.0	--
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	--

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1196862-3 WG1196862-4								
Methylene chloride	100		92		70-130	8		20
1,1-Dichloroethane	110		94		70-130	16		20
Chloroform	98		96		70-130	2		20
Carbon tetrachloride	89		87		63-132	2		20
1,2-Dichloropropane	90		90		70-130	0		20
Dibromochloromethane	95		100		63-130	5		20
1,1,2-Trichloroethane	94		100		70-130	6		20
Tetrachloroethene	85		87		70-130	2		20
Chlorobenzene	99		95		75-130	4		25
Trichlorofluoromethane	74		70		62-150	6		20
1,2-Dichloroethane	94		95		70-130	1		20
1,1,1-Trichloroethane	92		86		67-130	7		20
Bromodichloromethane	110		98		67-130	12		20
trans-1,3-Dichloropropene	96		100		70-130	4		20
cis-1,3-Dichloropropene	110		94		70-130	16		20
1,1-Dichloropropene	81		78		70-130	4		20
Bromoform	110		110		54-136	0		20
1,1,2,2-Tetrachloroethane	96		100		67-130	4		20
Benzene	92		91		70-130	1		25
Toluene	92		98		70-130	6		25
Ethylbenzene	91		90		70-130	1		20
Chloromethane	98		89		64-130	10		20
Bromomethane	39		42		39-139	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1196862-3 WG1196862-4								
Vinyl chloride	58		56		55-140	4		20
Chloroethane	69		72		55-138	4		20
1,1-Dichloroethene	81		79		61-145	3		25
trans-1,2-Dichloroethene	110		86		70-130	**24**	Q	20
Trichloroethene	88		88		70-130	0		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		96		70-130	4		20
1,4-Dichlorobenzene	100		99		70-130	1		20
Methyl tert butyl ether	110		94		63-130	16		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	97		92		70-130	5		20
Dibromomethane	94		95		70-130	1		20
1,4-Dichlorobutane	94		100		70-130	6		20
1,2,3-Trichloropropane	91		100		64-130	9		20
Styrene	90		90		70-130	0		20
Dichlorodifluoromethane	71		66		36-147	7		20
Acetone	88		71		58-148	**21**	Q	20
Carbon disulfide	84		80		51-130	5		20
2-Butanone	78		77		63-138	1		20
Vinyl acetate	100		100		70-130	0		20
4-Methyl-2-pentanone	80		87		59-130	8		20
2-Hexanone	70		75		57-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1196862-3 WG1196862-4								
Ethyl methacrylate	81		88		70-130	8		20
Acrylonitrile	110		89		70-130	**21**	Q	20
Bromochloromethane	98		96		70-130	2		20
Tetrahydrofuran	79		76		58-130	4		20
2,2-Dichloropropane	94		92		63-133	2		20
1,2-Dibromoethane	91		99		70-130	8		20
1,3-Dichloropropane	96		100		70-130	4		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	80		77		53-136	4		20
sec-Butylbenzene	83		80		70-130	4		20
tert-Butylbenzene	86		84		70-130	2		20
o-Chlorotoluene	91		88		70-130	3		20
p-Chlorotoluene	96		95		70-130	1		20
1,2-Dibromo-3-chloropropane	94		91		41-144	3		20
Hexachlorobutadiene	65		66		63-130	2		20
Isopropylbenzene	93		90		70-130	3		20
p-Isopropyltoluene	85		83		70-130	2		20
Naphthalene	90		89		70-130	1		20
n-Propylbenzene	87		90		69-130	3		20
1,2,3-Trichlorobenzene	90		88		70-130	2		20
1,2,4-Trichlorobenzene	93		91		70-130	2		20
1,3,5-Trimethylbenzene	92		92		64-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 08 Batch: WG1196862-3 WG1196862-4								
1,2,4-Trimethylbenzene	94		92		70-130	2		20
trans-1,4-Dichloro-2-butene	94		100		70-130	6		20
Ethyl ether	94		94		59-134	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	92		93		70-130
Toluene-d8	98		106		70-130
4-Bromofluorobenzene	101		104		70-130
Dibromofluoromethane	98		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1197590-3 WG1197590-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	100		100		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		63-132	0		20
1,2-Dichloropropane	91		94		70-130	3		20
Dibromochloromethane	110		120		63-130	9		20
1,1,2-Trichloroethane	100		110		70-130	10		20
2-Chloroethylvinyl ether	**180**	Q	**180**	Q	70-130	0		20
Tetrachloroethene	100		110		70-130	10		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	110		110		62-150	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Bromodichloromethane	110		110		67-130	0		20
trans-1,3-Dichloropropene	100		110		70-130	10		20
cis-1,3-Dichloropropene	100		100		70-130	0		20
1,1-Dichloropropene	98		100		70-130	2		20
Bromoform	120		120		54-136	0		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	98		100		70-130	2		25
Toluene	97		99		70-130	2		25
Ethylbenzene	96		98		70-130	2		20
Chloromethane	110		110		64-130	0		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1197590-3 WG1197590-4								
Bromomethane	56		49		39-139	13		20
Vinyl chloride	110		110		55-140	0		20
Chloroethane	100		100		55-138	0		20
1,1-Dichloroethene	100		110		61-145	10		25
trans-1,2-Dichloroethene	99		100		70-130	1		20
Trichloroethene	98		100		70-130	2		25
1,2-Dichlorobenzene	100		110		70-130	10		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		110		70-130	10		20
Methyl tert butyl ether	100		110		63-130	10		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	99		100		70-130	1		20
Dibromomethane	110		110		70-130	0		20
1,4-Dichlorobutane	93		97		70-130	4		20
1,2,3-Trichloropropane	100		100		64-130	0		20
Styrene	95		100		70-130	5		20
Dichlorodifluoromethane	110		120		36-147	9		20
Acetone	86		93		58-148	8		20
Carbon disulfide	98		100		51-130	2		20
2-Butanone	91		96		63-138	5		20
Vinyl acetate	120		120		70-130	0		20
4-Methyl-2-pentanone	81		85		59-130	5		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1197590-3 WG1197590-4								
2-Hexanone	73		78		57-130	7		20
Ethyl methacrylate	91		93		70-130	2		20
Acrolein	120		120		70-130	0		20
Acrylonitrile	97		99		70-130	2		20
Bromochloromethane	110		110		70-130	0		20
Tetrahydrofuran	89		91		58-130	2		20
2,2-Dichloropropane	110		120		63-133	9		20
1,2-Dibromoethane	100		110		70-130	10		20
1,3-Dichloropropane	100		110		70-130	10		20
1,1,1,2-Tetrachloroethane	110		110		64-130	0		20
Bromobenzene	100		110		70-130	10		20
n-Butylbenzene	90		91		53-136	1		20
sec-Butylbenzene	93		95		70-130	2		20
tert-Butylbenzene	95		96		70-130	1		20
o-Chlorotoluene	89		91		70-130	2		20
p-Chlorotoluene	98		100		70-130	2		20
1,2-Dibromo-3-chloropropane	100		110		41-144	10		20
Hexachlorobutadiene	82		83		63-130	1		20
Isopropylbenzene	96		97		70-130	1		20
p-Isopropyltoluene	95		97		70-130	2		20
Naphthalene	96		99		70-130	3		20
n-Propylbenzene	94		96		69-130	2		20
1,2,3-Trichlorobenzene	97		100		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1197590-3 WG1197590-4								
1,2,4-Trichlorobenzene	97		100		70-130	3		20
1,3,5-Trimethylbenzene	96		99		64-130	3		20
1,3,5-Trichlorobenzene	96		99		70-130	3		20
1,2,4-Trimethylbenzene	95		98		70-130	3		20
trans-1,4-Dichloro-2-butene	110		110		70-130	0		20
Halothane	100		110		70-130	10		20
Ethyl ether	100		110		59-134	10		20
Methyl Acetate	84		88		70-130	5		20
Ethyl Acetate	91		97		70-130	6		20
Isopropyl Ether	86		91		70-130	6		20
Cyclohexane	86		89		70-130	3		20
Tert-Butyl Alcohol	82		90		70-130	9		20
Ethyl-Tert-Butyl-Ether	96		99		70-130	3		20
Tertiary-Amyl Methyl Ether	95		100		66-130	5		20
1,4-Dioxane	**36**	Q	**19**	Q	56-162	**62**	Q	20
1,1,2-Trichloro-1,2,2-Trifluoroethane	110		110		70-130	0		20
Methyl cyclohexane	92		94		70-130	2		20
p-Diethylbenzene	91		92		70-130	1		20
4-Ethyltoluene	96		97		70-130	1		20
1,2,4,5-Tetramethylbenzene	91		95		70-130	4		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04-07 Batch: WG1197590-3 WG1197590-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		100		70-130
Toluene-d8	98		98		70-130
4-Bromofluorobenzene	95		95		70-130
Dibromofluoromethane	103		104		70-130

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Dissolved Gases by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1197721-2									
Methane	97		-		80-120	-		25	A
Ethene	104		-		80-120	-		25	A
Ethane	105		-		80-120	-		25	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Dissolved Gases by GC - Mansfield Lab Associated sample(s): 01-06 Batch: WG1197721-9									
Methane	97		-		80-120	-		25	A
Ethene	103		-		80-120	-		25	A
Ethane	102		-		80-120	-		25	A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1198293-3 WG1198293-4								
Methylene chloride	100		100		70-130	0		20
1,1-Dichloroethane	97		97		70-130	0		20
Chloroform	96		93		70-130	3		20
Carbon tetrachloride	81		81		63-132	0		20
1,2-Dichloropropane	97		95		70-130	2		20
Dibromochloromethane	120		98		63-130	20		20
1,1,2-Trichloroethane	120		100		70-130	18		20
2-Chloroethylvinyl ether	81		83		70-130	2		20
Tetrachloroethene	110		94		70-130	16		20
Chlorobenzene	100		100		75-130	0		25
Trichlorofluoromethane	79		74		62-150	7		20
1,2-Dichloroethane	88		87		70-130	1		20
1,1,1-Trichloroethane	83		82		67-130	1		20
Bromodichloromethane	94		92		67-130	2		20
trans-1,3-Dichloropropene	110		90		70-130	20		20
cis-1,3-Dichloropropene	90		89		70-130	1		20
1,1-Dichloropropene	84		82		70-130	2		20
Bromoform	100		99		54-136	1		20
1,1,2,2-Tetrachloroethane	98		95		67-130	3		20
Benzene	98		96		70-130	2		25
Toluene	120		100		70-130	18		25
Ethylbenzene	97		96		70-130	1		20
Chloromethane	97		96		64-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1198293-3 WG1198293-4								
Bromomethane	93		93		39-139	0		20
Vinyl chloride	90		85		55-140	6		20
Chloroethane	100		110		55-138	10		20
1,1-Dichloroethene	96		94		61-145	2		25
trans-1,2-Dichloroethene	99		97		70-130	2		20
Trichloroethene	84		94		70-130	11		25
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	81		82		63-130	1		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	120		80		70-130	**40**	Q	20
cis-1,2-Dichloroethene	99		97		70-130	2		20
Dibromomethane	94		92		70-130	2		20
1,4-Dichlorobutane	96		94		70-130	2		20
Iodomethane	**44**	Q	**45**	Q	70-130	2		20
1,2,3-Trichloropropane	98		98		64-130	0		20
Styrene	125		85		70-130	**38**	Q	20
Dichlorodifluoromethane	86		81		36-147	6		20
Acetone	72		75		58-148	4		20
Carbon disulfide	110		110		51-130	0		20
2-Butanone	74		75		63-138	1		20
Vinyl acetate	100		110		70-130	10		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1198293-3 WG1198293-4								
4-Methyl-2-pentanone	94		82		59-130	14		20
2-Hexanone	70		66		57-130	6		20
Ethyl methacrylate	94		78		70-130	19		20
Acrolein	130		120		70-130	8		20
Acrylonitrile	93		94		70-130	1		20
Bromochloromethane	100		100		70-130	0		20
Tetrahydrofuran	74		75		58-130	1		20
2,2-Dichloropropane	80		77		63-133	4		20
1,2-Dibromoethane	110		98		70-130	12		20
1,3-Dichloropropane	120		100		70-130	18		20
1,1,1,2-Tetrachloroethane	100		98		64-130	2		20
Bromobenzene	100		95		70-130	5		20
n-Butylbenzene	94		97		53-136	3		20
sec-Butylbenzene	92		92		70-130	0		20
tert-Butylbenzene	81		78		70-130	4		20
o-Chlorotoluene	100		96		70-130	4		20
p-Chlorotoluene	95		97		70-130	2		20
1,2-Dibromo-3-chloropropane	85		100		41-144	16		20
Hexachlorobutadiene	85		100		63-130	16		20
Isopropylbenzene	96		89		70-130	8		20
p-Isopropyltoluene	88		93		70-130	6		20
Naphthalene	78		94		70-130	19		20
n-Propylbenzene	97		93		69-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1198293-3 WG1198293-4								
1,2,3-Trichlorobenzene	88		110		70-130	**22**	Q	20
1,2,4-Trichlorobenzene	80		100		70-130	**22**	Q	20
1,3,5-Trimethylbenzene	98		95		64-130	3		20
1,3,5-Trichlorobenzene	97		110		70-130	13		20
1,2,4-Trimethylbenzene	99		96		70-130	3		20
trans-1,4-Dichloro-2-butene	86		89		70-130	3		20
Halothane	90		92		70-130	2		20
Ethyl ether	100		100		59-134	0		20
Methyl Acetate	74		79		70-130	7		20
Ethyl Acetate	87		81		70-130	7		20
Isopropyl Ether	89		88		70-130	1		20
Cyclohexane	76		75		70-130	1		20
Tert-Butyl Alcohol	**68**	Q	70		70-130	3		20
Ethyl-Tert-Butyl-Ether	83		83		70-130	0		20
Tertiary-Amyl Methyl Ether	77		77		66-130	0		20
1,4-Dioxane	116		114		56-162	2		20
1,1,2-Trichloro-1,2,2-Trifluoroethane	80		79		70-130	1		20
Methyl cyclohexane	71		74		70-130	4		20
p-Diethylbenzene	89		90		70-130	1		20
4-Ethyltoluene	98		92		70-130	6		20
1,2,4,5-Tetramethylbenzene	77		91		70-130	17		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03 Batch: WG1198293-3 WG1198293-4								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	87		87		70-130
Toluene-d8	119		102		70-130
4-Bromofluorobenzene	92		87		70-130
Dibromofluoromethane	97		95		70-130

METALS

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	706		mg/l	0.500	--	10	01/11/19 17:31	01/15/19 01:19	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02
Client ID: MW-267M-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 10:45
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	88.6		mg/l	0.050	--	1	01/11/19 17:31	01/14/19 23:51	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03
Client ID: MW-268S-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 08:10
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	165		mg/l	0.050	--	1	01/11/19 17:31	01/14/19 23:55	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04
Client ID: MW-268M-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 09:00
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	57.8		mg/l	0.050	--	1	01/11/19 17:31	01/14/19 23:59	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05
Client ID: REW-7-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 11:50
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	5.18		mg/l	0.050	--	1	01/11/19 17:31	01/15/19 00:03	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Lab Number: L1901283
Project Number: RA-008
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06
Client ID: REW-8-20190110
Sample Location: WAYLAND, MA
Date Collected: 01/10/19 12:35
Date Received: 01/10/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Iron, Total	7.41		mg/l	0.050	--	1	01/11/19 17:31	01/15/19 00:08	EPA 3005A	1,6010D	AB

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-06 Batch: WG1196886-1										
Iron, Total	ND		mg/l	0.050	--	1	01/11/19 17:31	01/14/19 22:48	1,6010D	AB

Prep Information

Digestion Method: EPA 3005A

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 Batch: WG1196886-2								
Iron, Total	94		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1196886-3 QC Sample: L1900779-39 Client ID: MS Sample												
Iron, Total	ND	1	0.901	90		-	-		75-125	-		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-06 QC Batch ID: WG1196886-4 QC Sample: L1900779-39 Client ID: DUP Sample						
Iron, Total	ND	ND	mg/l	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-01
Client ID: MW-267S-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 09:50
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	960.		mg CaCO3/L	5.00	NA	2.5	-	01/11/19 10:27	121,2320B	BR
Chloride	38.		mg/l	1.0	--	1	-	01/14/19 23:45	1,9251	ML
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/13/19 15:30	01/15/19 20:24	121,4500NH3-BH	AT
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 22:50	121,4500NO3-F	MR
Phosphorus, Orthophosphate	0.020		mg/l	0.005	--	1	-	01/11/19 00:44	121,4500P-E	AS
Sulfate	ND		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	2100		mg/l	200	--	400	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-02
Client ID: MW-267M-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 10:45
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	386.		mg CaCO3/L	2.00	NA	1	-	01/11/19 10:27	121,2320B	BR
Chloride	31.		mg/l	1.0	--	1	-	01/14/19 23:47	1,9251	ML
Nitrogen, Ammonia	0.401		mg/l	0.150	--	2	01/13/19 15:30	01/15/19 20:27	121,4500NH3-BH	AT
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 22:18	121,4500NO3-F	MR
Phosphorus, Orthophosphate	ND		mg/l	0.005	--	1	-	01/11/19 00:45	121,4500P-E	AS
Sulfate	ND		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	4.5		mg/l	1.0	--	2	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-03
Client ID: MW-268S-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 08:10
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	1130		mg CaCO3/L	5.00	NA	2.5	-	01/11/19 10:27	121,2320B	BR
Chloride	46.		mg/l	1.0	--	1	-	01/14/19 23:49	1,9251	ML
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/13/19 15:30	01/15/19 20:28	121,4500NH3-BH	AT
Nitrogen, Nitrate	0.100		mg/l	0.100	--	1	-	01/11/19 22:19	121,4500NO3-F	MR
Phosphorus, Orthophosphate	0.006		mg/l	0.005	--	1	-	01/11/19 00:45	121,4500P-E	AS
Sulfate	ND		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	7000		mg/l	800	--	1600	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-04
Client ID: MW-268M-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 09:00
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	436.		mg CaCO3/L	2.00	NA	1	-	01/11/19 10:27	121,2320B	BR
Chloride	30.		mg/l	1.0	--	1	-	01/14/19 23:50	1,9251	ML
Nitrogen, Ammonia	ND		mg/l	0.150	--	2	01/13/19 15:30	01/15/19 20:32	121,4500NH3-BH	AT
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 22:21	121,4500NO3-F	MR
Phosphorus, Orthophosphate	ND		mg/l	0.005	--	1	-	01/11/19 00:45	121,4500P-E	AS
Sulfate	ND		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	2.5		mg/l	1.0	--	2	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-05
Client ID: REW-7-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 11:50
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	50.0		mg CaCO3/L	2.00	NA	1	-	01/11/19 10:27	121,2320B	BR
Chloride	7.1		mg/l	1.0	--	1	-	01/14/19 23:51	1,9251	ML
Nitrogen, Ammonia	0.508		mg/l	0.075	--	1	01/13/19 15:30	01/15/19 20:33	121,4500NH3-BH	AT
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 19:29	121,4500NO3-F	MR
Phosphorus, Orthophosphate	ND		mg/l	0.005	--	1	-	01/11/19 00:46	121,4500P-E	AS
Sulfate	37.		mg/l	20	--	2	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	0.69		mg/l	0.50	--	1	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

SAMPLE RESULTS

Lab ID: L1901283-06
Client ID: REW-8-20190110
Sample Location: WAYLAND, MA
Sample Depth:
Matrix: Water

Date Collected: 01/10/19 12:35
Date Received: 01/10/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Alkalinity, Total	46.9		mg CaCO3/L	2.00	NA	1	-	01/11/19 10:27	121,2320B	BR
Chloride	4.5		mg/l	1.0	--	1	-	01/14/19 23:52	1,9251	ML
Nitrogen, Ammonia	0.681		mg/l	0.075	--	1	01/13/19 15:30	01/15/19 20:34	121,4500NH3-BH	AT
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 19:30	121,4500NO3-F	MR
Phosphorus, Orthophosphate	ND		mg/l	0.005	--	1	-	01/11/19 00:46	121,4500P-E	AS
Sulfate	27.		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
Total Organic Carbon	0.85		mg/l	0.50	--	1	-	01/11/19 07:29	1,9060A	DW

Project Name: RAYTHEON WAYLAND
Project Number: RA-008
Lab Number: L1901283
Report Date: 01/16/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1196588-1										
Phosphorus, Orthophosphate	ND		mg/l	0.005	--	1	-	01/11/19 00:37	121,4500P-E	AS
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1196665-1										
Total Organic Carbon	ND		mg/l	0.50	--	1	-	01/11/19 07:29	1,9060A	DW
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1196745-1										
Alkalinity, Total	ND		mg CaCO3/L	2.00	NA	1	-	01/11/19 10:27	121,2320B	BR
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1196890-1										
Nitrogen, Nitrate	ND		mg/l	0.100	--	1	-	01/11/19 18:56	121,4500NO3-F	MR
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1197163-1										
Nitrogen, Ammonia	ND		mg/l	0.075	--	1	01/13/19 15:30	01/15/19 20:10	121,4500NH3-BH	AT
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1197261-1										
Sulfate	ND		mg/l	10	--	1	01/13/19 23:30	01/13/19 23:30	1,9038	JR
General Chemistry - Westborough Lab for sample(s): 01-06 Batch: WG1197542-1										
Chloride	ND		mg/l	1.0	--	1	-	01/14/19 22:01	1,9251	ML

Lab Control Sample Analysis

Batch Quality Control

Project Name: RAYTHEON WAYLAND

Project Number: RA-008

Lab Number: L1901283

Report Date: 01/16/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1196588-2								
Phosphorus, Orthophosphate	98		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1196665-2								
Total Organic Carbon	99		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1196745-2								
Alkalinity, Total	105		-		90-110	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1196890-2								
Nitrogen, Nitrate	100		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1197163-2								
Nitrogen, Ammonia	90		-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1197261-2								
Sulfate	95		-		90-110	-		
General Chemistry - Westborough Lab Associated sample(s): 01-06 Batch: WG1197542-2								
Chloride	97		-		90-110	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196588-4 QC Sample: L1901199-10 Client ID: MS Sample												
Phosphorus, Orthophosphate	6.57	50	48.2	83		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196665-4 QC Sample: L1901283-02 Client ID: MW-267M-20190110												
Total Organic Carbon	4.5	16	21	105		-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196745-4 QC Sample: L1901084-04 Client ID: MS Sample												
Alkalinity, Total	334	100	427	93		-	-		86-116	-		10
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196890-4 QC Sample: L1901323-01 Client ID: MS Sample												
Nitrogen, Nitrate	3.05	4	6.88	96		-	-		83-113	-		17
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197163-4 QC Sample: L1901283-01 Client ID: MW-267S-20190110												
Nitrogen, Ammonia	ND	4	1.37	**34**	Q	-	-		80-120	-		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197261-4 QC Sample: L1901338-03 Client ID: MS Sample												
Sulfate	26	40	65	98		-	-		55-147	-		14
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197542-4 QC Sample: L1901283-02 Client ID: MW-267M-20190110												
Chloride	31	20	50	95		-	-		58-140	-		7

Lab Duplicate Analysis
Batch Quality Control

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196588-3 QC Sample: L1901199-10 Client ID: DUP Sample						
Phosphorus, Orthophosphate	6.57	6.36	mg/l	3		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196665-3 QC Sample: L1901283-02 Client ID: MW-267M-20190110						
Total Organic Carbon	4.5	4.7	mg/l	4		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196745-3 QC Sample: L1901084-01 Client ID: DUP Sample						
Alkalinity, Total	351	346	mg CaCO3/L	1		10
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1196890-3 QC Sample: L1901323-01 Client ID: DUP Sample						
Nitrogen, Nitrate	3.05	3.08	mg/l	1		17
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197163-3 QC Sample: L1901283-01 Client ID: MW-267S-20190110						
Nitrogen, Ammonia	ND	ND	mg/l	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197261-3 QC Sample: L1901338-03 Client ID: DUP Sample						
Sulfate	26	26	mg/l	0		14
General Chemistry - Westborough Lab Associated sample(s): 01-06 QC Batch ID: WG1197542-3 QC Sample: L1901283-02 Client ID: MW-267M-20190110						
Chloride	31	30	mg/l	3		7

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1901283-01A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-01B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-01C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-01D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-01E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-01F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-01G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-01H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-01I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-01J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)
L1901283-01K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-01L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-02A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-02B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-02C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-02D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-02E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-02F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-02G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-02H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-02I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-02J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)

*Values in parentheses indicate holding time in days

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1901283-02K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-02L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-03A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-03B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-03C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-03D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-03E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-03F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-03G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-03H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-03I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-03J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)
L1901283-03K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-03L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-04A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-04B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-04C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-04D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-04E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-04F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-04G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-04H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-04I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-04J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)
L1901283-04K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-04L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-05A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-05B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)

*Values in parentheses indicate holding time in days

Project Name: RAYTHEON WAYLAND
Project Number: RA-008

Lab Number: L1901283
Report Date: 01/16/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1901283-05C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-05D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-05E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-05F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-05G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-05H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-05I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-05J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)
L1901283-05K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-05L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-06A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-06B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-06C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-06D	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-06E	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-06F	Vial H2SO4 preserved	A	NA		5.3	Y	Absent		TOC-9060(28)
L1901283-06G	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-06H	20ml Vial HCl preserved	A	NA		5.3	Y	Absent		DISSGAS(14)
L1901283-06I	Plastic 250ml unpreserved/No Headspace	A	NA		5.3	Y	Absent		ALK-T-2320(14)
L1901283-06J	Plastic 250ml unpreserved	A	7	7	5.3	Y	Absent		OPHOS-4500(2),CL-9251(28),SO4-9038(28),NO3-4500(2)
L1901283-06K	Plastic 250ml HNO3 preserved	A	<2	<2	5.3	Y	Absent		FE-TI(180)
L1901283-06L	Plastic 500ml H2SO4 preserved	A	<2	<2	5.3	Y	Absent		NH3-4500(28)
L1901283-07A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-07B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-07C	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-08A	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)
L1901283-08B	Vial HCl preserved	A	NA		5.3	Y	Absent		8260(14)

*Values in parentheses indicate holding time in days

Project Name:	RAYTHEON WAYLAND	**Lab Number:**	L1901283
Project Number:	RA-008	**Report Date:**	01/16/19

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample¿s toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

1	- The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report

Project Name:	RAYTHEON WAYLAND	**Lab Number:**	L1901283
Project Number:	RA-008	**Report Date:**	01/16/19

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

ND - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

117 Technical Guidance for the Natural Attenuation Indicators: Methane, Ethane, and Ethene, EPA-NE, Revision 1, February 21, 2002 and Sample Preparation & Calculations for Dissolved Gas Analysis in Water Samples using a GC Headspace Equilibration Technique, EPA RSKSOP-175, Revision 2, May 2004.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 1/10/19

ALPHA Job #: L1901283

ALPHA ANALYTICAL
8 Walkup Drive, Westboro, MA 01581, Tel: 508-898-9220
320 Forbes Blvd, Mansfield, MA 02048, Tel: 508-822-9300

Project Information
Project Name: Raytheon Wayland
Project Location: Wayland MA
Project #: RA-008
Project Manager: Vicki Pohlmann
ALPHA Quote #:

Report Information - Data Deliverables
☐ ADEx ☒ EMAIL

Billing Information
☐ Same as Client info PO #: RA-008

Client Information
Client: Industrial Engineering Solutions Inc
Address: 37 Pearl St
Braintree MA 02184
Phone: 508-668-0033
Email: vlpohlmann@IESolutions.com

Regulatory Requirements & Project Information Requirements
☐ Yes ☐ No MA MCP Analytical Methods ☐ Yes ☐ No CT RCP Analytical Methods
☐ Yes ☐ No Matrix Spike Required on this SDG? (Required for MCP Inorganics)
☐ Yes ☐ No GW1 Standards (Info Required for Metals & EPH with Targets)
☐ Yes ☐ No NPDES RGP
☒ Other State /Fed Program ____ Criteria GW-3

Additional Project Information:

Turn-Around Time
☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: 5 Days 1/17/19

ANALYSIS
VOC: ☐ 8260 ☐ 624 ☐ 524.2
SVOC: ☐ ABN ☐ PAH
METALS: ☐ MCP 13 ☐ MCP 14 ☐ RCP 15
METALS: ☐ RCRA5 ☐ RCRA8 ☐ PP13
EPH: ☐ Ranges & Targets ☐ Ranges Only
VPH: ☐ Ranges & Targets ☐ Ranges Only
☐ PCB ☐ PEST
TPH: ☐ Quant Only ☐ Fingerprint
Dissolved Cu (Filtered in the field)
Total Iron 6010D
TOC 9060A
NH3 SM4500
Alkalinity 2320
Cl+SO4 300.0 Nitrate 300.0 pH SM4500

SAMPLE INFO
Filtration ☐ Field ☐ Lab to do
Preservation ☐ Lab to do

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler Initials	VOC	SVOC	METALS	METALS	EPH	VPH	PCB	TPH	Dissolved Cu	Total Iron	TOC	NH3	Alkalinity	Cl+SO4	Sample Comments	TOTAL # BOTTLES
L1283-01	MW-267S-20190110	1/10/19	0956 0810	GW	DG	X								X	X	X	X	X	X		12
02	MW-267M-20190110	1/10/19	1045	GW	DG	X								X	X	X	X	X	X		12
03	MW-268S-20190110	1/10/19	0810	GW	DG	X								X	X	X	X	X	X		12
04	MW-268M-20190110	1/10/19	0900	GW	DG	X								X	X	X	X	X	X		12
05	REW-7-20190110	1/10/19	1150	GW	DG	X								X	X	X	X	X	X		12
06	REW-8-20190110	1/10/19	1235	GW	DG	X								X	X	X	X	X	X		12
07	Dup-20190110	1/10/19	—	GW	DG	X															3
08	Trip Blank	—	—	—	—	X															2
	Temp Blank	—	—	—	—																1
	Container Type					V								V	P	V	P	P	P		
	Preservative					B								B	C	D	D	A	A		

Container Type
P= Plastic
A= Amber glass
V= Vial
G= Glass
B= Bacteria cup
C= Cube
O= Other
E= Encore
D= BOD Bottle

Preservative
A= None
B= HCl
C= HNO_3
D= H_2SO_4
E= NaOH
F= MeOH
G= $NaHSO_4$
H = $Na_2S_2O_3$
I= Ascorbic Acid
J = NH_4Cl
K= Zn Acetate
O= Other

Relinquished By:	Date/Time	Received By:	Date/Time
	1/10/19 1410		1/10/19 1410
	01/10/19 1845		1720

All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

FORM NO: 01-01 (rev. 12-Mar-2012)