

**Environmental  
Resources  
Management**

One Beacon Street, 5<sup>th</sup> Floor  
Boston, MA 02108  
(617) 646-7800  
(617) 267-6447 (fax)

<http://www.erm.com>

14 November 2016  
Reference: 0321744

Mr. Brian Monahan  
Conservation Commission  
Wayland Town Hall  
41 Cochituate Road  
Wayland, MA 01778



Re: Transmittal of Groundwater Analytical Data  
Former Raytheon Facility  
430 Boston Post Road, Wayland, Massachusetts

Dear Mr. Monahan:


On behalf of Raytheon Company (Raytheon), Environmental Resources Management (ERM) is submitting the results of groundwater sample analyses for the Former Raytheon Facility located at 430 Boston Post Road in Wayland, Massachusetts (Site). The results are being submitted pursuant to 310 CMR 40.1403(10) of the Massachusetts Contingency Plan.

Innovative Engineering Solutions, Inc. (IESI) collected groundwater samples from one monitoring well located on Town of Wayland Conservation Commission (Conservation Commission) in October 2016. These samples were submitted to TestAmerica Laboratories, Inc. of Buffalo, NY for analysis. All analytical results are attached to this letter.

Raytheon has implemented the Public Involvement Process in accordance with 310 CMR 40.1405. Documents pertaining to the Site can be found at the Board of Health Public Involvement Plan files, or at <http://raytheon.erm.com/home.htm>.

If you have any questions or comments, please contact the undersigned at (617) 646-7800 or Jonathan Hone, Raytheon Company, at (978) 436-8298.

Sincerely,



John C. Drobinski, P.G., LSP  
*Principal-in-Charge*



Lyndsey Colburn, P.G.  
*Principal Consultant*

enclosures: BWSC-123 - Notice of Environmental Sampling  
Laboratory Analytical Reports (CD)

cc: Jonathan Hone, Raytheon Company  
PIP Repositories



**Massachusetts Department of Environmental Protection**  
*Bureau of Waste Site Cleanup*

**BWSC123**

This Notice is Related to:  
Release Tracking Number

**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: \_\_\_\_\_  
City/Town: \_\_\_\_\_ Zip Code: \_\_\_\_\_

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

1. Name: \_\_\_\_\_  
2. Street Address: \_\_\_\_\_  
City/Town: \_\_\_\_\_ Zip Code: \_\_\_\_\_

**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: \_\_\_\_\_  
City/Town: \_\_\_\_\_ Zip Code: \_\_\_\_\_
2. MCP phase of work during which the sampling will be/has been conducted:
- |                                        |                                                               |
|----------------------------------------|---------------------------------------------------------------|
| Immediate Response Action              | Phase III Feasibility Evaluation                              |
| Release Abatement Measure              | Phase IV Remedy Implementation Plan                           |
| Utility-related Abatement Measure      | Phase V/Remedy Operation Status                               |
| Phase I Initial Site Investigation     | Post-Temporary Solution Operation, Maintenance and Monitoring |
| Phase II Comprehensive Site Assessment | Other _____<br>(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.

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

Contact Name: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City/Town: \_\_\_\_\_ Zip Code: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Email: \_\_\_\_\_



**Massachusetts Department of Environmental Protection**  
*Bureau of Waste Site Cleanup*

**BWSC123**

This Notice is Related to:  
Release Tracking Number

	-	
--	---	--

**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.

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Buffalo

10 Hazelwood Drive

Amherst, NY 14228-2298

Tel: (716)691-2600

TestAmerica Job ID: 480-107199-1

Client Project/Site: IDS Wayland

For:

Innovative Engineering Solutions, Inc

25 Spring Street

Walpole, Massachusetts 02081

Attn: Vicki Pariyar



Authorized for release by:

10/10/2016 10:45:48 AM

Denise Giglia, Project Management Assistant II

[denise.giglia@testamericainc.com](mailto:denise.giglia@testamericainc.com)

Designee for

Becky Mason, Project Manager II

(413)572-4000

[becky.mason@testamericainc.com](mailto:becky.mason@testamericainc.com)

### LINKS

Review your project  
results through

TotalAccess

Have a Question?



Visit us at:

[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Detection Summary . . . . .	6
Client Sample Results . . . . .	7
Surrogate Summary . . . . .	11
QC Sample Results . . . . .	12
QC Association Summary . . . . .	17
Lab Chronicle . . . . .	18
Certification Summary . . . . .	19
Method Summary . . . . .	20
Sample Summary . . . . .	21
Receipt Checklists . . . . .	22
Chain of Custody . . . . .	23

# Definitions/Glossary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Job ID: 480-107199-1**

**Laboratory: TestAmerica Buffalo**

## Narrative

### Job Narrative 480-107199-1

#### Receipt

The samples were received on 10/7/2016 2:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.2° C.

#### GC/MS VOA

Method 8260C: With the exception of diluted samples, per question G on the MassDEP Analytical Protocol Certification Form, TestAmerica's routine reporting limits do not achieve the CAM reporting limits specified in this CAM protocol for 1,2-dibromo-3-chloropropane, Carbon Disulfide, Isopropyl Ether, Naphthalene, tert-Amyl Methyl Ether and Tetrahydrofuran.

Method 8260C: The continuing calibration verification (CCV) associated with batch 480-324456 recovered outside MCP control limits but <40% for Tetrahydrofuran, Naphthalene . MCP protocol allows for 20% of the target compounds to be outside the 20% difference but not over 40% difference. The following samples are impacted: DEP-21-20161006 (480-107199-1) and TRIP BLANKS (480-107199-2).

Method 8260C: The laboratory control sample (LCS) for batch 480-324456 recovered outside control limits but were greater than 10% for the following analytes: 1,4-Dioxane . MCP protocol allows for 10% of the target compounds to be outside of the limits provided the recoveries are over 10%. The following samples are impacted: DEP-21-20161006 (480-107199-1) and TRIP BLANKS (480-107199-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



## MassDEP Analytical Protocol Certification Form

Laboratory Name: **TestAmerica Buffalo** Project #: **480-107199**

Project Location: **IDS Wayland** RTN:

**This form provides certifications for the following data set: list Laboratory Sample ID Number(s):**  
**480-107199 [1-2]**

Matrices:  Groundwater/Surface Water  Soil/Sediment  Drinking Water  Air  Other:

**CAM Protocols (check all that apply below):**

8260 VOC CAM II A <input checked="" type="checkbox"/>	7470/7471 Hg CAM III B <input type="checkbox"/>	Mass DEP VPH CAM IV A <input type="checkbox"/>	8081 Pesticides CAM V B <input type="checkbox"/>	7196 Hex Cr CAM VI B <input type="checkbox"/>	Mass DEP APH CAM IX A <input type="checkbox"/>
8270 SVOC CAM II B <input type="checkbox"/>	7010 Metals CAM III C <input type="checkbox"/>	Mass DEP EPH CAM IV B <input type="checkbox"/>	8151 Herbicides CAM V C <input type="checkbox"/>	8330 Explosives CAM VIII A <input type="checkbox"/>	TO-15 VOC CAM IX B <input type="checkbox"/>
6010 Metals CAM III A <input type="checkbox"/>	6020 Metals CAM III D <input type="checkbox"/>	8082 PCB CAM V A <input type="checkbox"/>	9014 Total Cyanide/PAC CAM VI A <input type="checkbox"/>	6860 Perchlorate CAM VIII B <input type="checkbox"/>	

**Affirmative Responses to Questions A through F are required for "Presumptive Certainty" status**

<b>A</b>	Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding time.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>B</b>	Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>C</b>	Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>D</b>	Does the laboratory report comply with all the reporting requirements specified in CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>E</b>	a. VPH, EPH and APH Methods only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). b. APH and TO-15 Methods only: Was the complete analyte list reported for each method?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
<b>F</b>	Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**Responses to Questions G, H and I below are required for "Presumptive Certainty" status**

<b>G</b>	Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocol(s)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
----------	-----------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------

**Data User Note: Data that achieve "Presumptive Certainty" status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WCS-07-350**

<b>H</b>	Were <b>all</b> QC performance standards specified in the CAM protocol(s) achieved?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <sup>1</sup>
<b>I</b>	Were results reported for the complete analyte list specified in the selected CAM protocol(s) ?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <sup>1</sup>

<sup>1</sup> All negative responses must be addressed in an attached laboratory narrative.

**I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, is accurate and complete.**

Signature: Denise L. Giglia Position: Project Manager Assistant II  
 Printed Name: Denise L. Giglia Date: 10/10/16 10:41

# Detection Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: DEP-21-20161006**

**Lab Sample ID: 480-107199-1**

No Detections.

**Client Sample ID: TRIP BLANKS**

**Lab Sample ID: 480-107199-2**

No Detections.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

This Detection Summary does not include radiochemical test results.

TestAmerica Buffalo

# Client Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: DEP-21-20161006**

**Lab Sample ID: 480-107199-1**

**Date Collected: 10/06/16 10:35**

**Matrix: Water**

**Date Received: 10/07/16 02:15**

**Method: 8260C - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/08/16 03:13	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/08/16 03:13	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/08/16 03:13	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/08/16 03:13	1
1,1-Dichloroethane	ND		1.0		ug/L			10/08/16 03:13	1
1,1-Dichloroethene	ND		1.0		ug/L			10/08/16 03:13	1
1,1-Dichloropropene	ND		1.0		ug/L			10/08/16 03:13	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/08/16 03:13	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			10/08/16 03:13	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,2-Dichloroethane	ND		1.0		ug/L			10/08/16 03:13	1
1,2-Dichloropropane	ND		1.0		ug/L			10/08/16 03:13	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,3-Dichloropropane	ND		1.0		ug/L			10/08/16 03:13	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
1,4-Dioxane	ND *		50		ug/L			10/08/16 03:13	1
2,2-Dichloropropane	ND		1.0		ug/L			10/08/16 03:13	1
2-Butanone (MEK)	ND		10		ug/L			10/08/16 03:13	1
2-Chlorotoluene	ND		1.0		ug/L			10/08/16 03:13	1
2-Hexanone	ND		10		ug/L			10/08/16 03:13	1
4-Chlorotoluene	ND		1.0		ug/L			10/08/16 03:13	1
4-Isopropyltoluene	ND		1.0		ug/L			10/08/16 03:13	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/08/16 03:13	1
Acetone	ND		50		ug/L			10/08/16 03:13	1
Benzene	ND		1.0		ug/L			10/08/16 03:13	1
Bromobenzene	ND		1.0		ug/L			10/08/16 03:13	1
Bromoform	ND		1.0		ug/L			10/08/16 03:13	1
Bromomethane	ND		2.0		ug/L			10/08/16 03:13	1
Carbon disulfide	ND		10		ug/L			10/08/16 03:13	1
Carbon tetrachloride	ND		1.0		ug/L			10/08/16 03:13	1
Chlorobenzene	ND		1.0		ug/L			10/08/16 03:13	1
Chlorobromomethane	ND		1.0		ug/L			10/08/16 03:13	1
Chlorodibromomethane	ND		0.50		ug/L			10/08/16 03:13	1
Chloroethane	ND		2.0		ug/L			10/08/16 03:13	1
Chloroform	ND		1.0		ug/L			10/08/16 03:13	1
Chloromethane	ND		2.0		ug/L			10/08/16 03:13	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/08/16 03:13	1
cis-1,3-Dichloropropene	ND		0.40		ug/L			10/08/16 03:13	1
Dichlorobromomethane	ND		0.50		ug/L			10/08/16 03:13	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/08/16 03:13	1
Ethyl ether	ND		1.0		ug/L			10/08/16 03:13	1
Ethylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
Ethylene Dibromide	ND		1.0		ug/L			10/08/16 03:13	1
Hexachlorobutadiene	ND		0.40		ug/L			10/08/16 03:13	1
Isopropyl ether	ND		10		ug/L			10/08/16 03:13	1

TestAmerica Buffalo

# Client Sample Results

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: DEP-21-20161006**

**Lab Sample ID: 480-107199-1**

**Date Collected: 10/06/16 10:35**

**Matrix: Water**

**Date Received: 10/07/16 02:15**

**Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/08/16 03:13	1
Methylene Chloride	ND		1.0		ug/L			10/08/16 03:13	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/08/16 03:13	1
Naphthalene	ND		5.0		ug/L			10/08/16 03:13	1
n-Butylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
N-Propylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
o-Xylene	ND		1.0		ug/L			10/08/16 03:13	1
sec-Butylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
Styrene	ND		1.0		ug/L			10/08/16 03:13	1
Tert-amyl methyl ether	ND		5.0		ug/L			10/08/16 03:13	1
Tert-butyl ethyl ether	ND		5.0		ug/L			10/08/16 03:13	1
tert-Butylbenzene	ND		1.0		ug/L			10/08/16 03:13	1
Tetrachloroethene	ND		1.0		ug/L			10/08/16 03:13	1
Tetrahydrofuran	ND		10		ug/L			10/08/16 03:13	1
Toluene	ND		1.0		ug/L			10/08/16 03:13	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/08/16 03:13	1
trans-1,3-Dichloropropene	ND		0.40		ug/L			10/08/16 03:13	1
Trichloroethene	ND		1.0		ug/L			10/08/16 03:13	1
Trichlorofluoromethane	ND		1.0		ug/L			10/08/16 03:13	1
Vinyl chloride	ND		1.0		ug/L			10/08/16 03:13	1
Dibromomethane	ND		1.0		ug/L			10/08/16 03:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	86		70 - 130		10/08/16 03:13	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		10/08/16 03:13	1
4-Bromofluorobenzene (Surr)	97		70 - 130		10/08/16 03:13	1

**Client Sample ID: TRIP BLANKS**

**Lab Sample ID: 480-107199-2**

**Date Collected: 10/06/16 00:00**

**Matrix: Water**

**Date Received: 10/07/16 02:15**

**Method: 8260C - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/08/16 03:37	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/08/16 03:37	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/08/16 03:37	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/08/16 03:37	1
1,1-Dichloroethane	ND		1.0		ug/L			10/08/16 03:37	1
1,1-Dichloroethene	ND		1.0		ug/L			10/08/16 03:37	1
1,1-Dichloropropene	ND		1.0		ug/L			10/08/16 03:37	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/08/16 03:37	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			10/08/16 03:37	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,2-Dichloroethane	ND		1.0		ug/L			10/08/16 03:37	1
1,2-Dichloropropane	ND		1.0		ug/L			10/08/16 03:37	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/08/16 03:37	1

TestAmerica Buffalo

# Client Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: TRIP BLANKS**

**Lab Sample ID: 480-107199-2**

**Date Collected: 10/06/16 00:00**

**Matrix: Water**

**Date Received: 10/07/16 02:15**

**Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,3-Dichloropropane	ND		1.0		ug/L			10/08/16 03:37	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
1,4-Dioxane	ND	*	50		ug/L			10/08/16 03:37	1
2,2-Dichloropropane	ND		1.0		ug/L			10/08/16 03:37	1
2-Butanone (MEK)	ND		10		ug/L			10/08/16 03:37	1
2-Chlorotoluene	ND		1.0		ug/L			10/08/16 03:37	1
2-Hexanone	ND		10		ug/L			10/08/16 03:37	1
4-Chlorotoluene	ND		1.0		ug/L			10/08/16 03:37	1
4-Isopropyltoluene	ND		1.0		ug/L			10/08/16 03:37	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/08/16 03:37	1
Acetone	ND		50		ug/L			10/08/16 03:37	1
Benzene	ND		1.0		ug/L			10/08/16 03:37	1
Bromobenzene	ND		1.0		ug/L			10/08/16 03:37	1
Bromoform	ND		1.0		ug/L			10/08/16 03:37	1
Bromomethane	ND		2.0		ug/L			10/08/16 03:37	1
Carbon disulfide	ND		10		ug/L			10/08/16 03:37	1
Carbon tetrachloride	ND		1.0		ug/L			10/08/16 03:37	1
Chlorobenzene	ND		1.0		ug/L			10/08/16 03:37	1
Chlorobromomethane	ND		1.0		ug/L			10/08/16 03:37	1
Chlorodibromomethane	ND		0.50		ug/L			10/08/16 03:37	1
Chloroethane	ND		2.0		ug/L			10/08/16 03:37	1
Chloroform	ND		1.0		ug/L			10/08/16 03:37	1
Chloromethane	ND		2.0		ug/L			10/08/16 03:37	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/08/16 03:37	1
cis-1,3-Dichloropropene	ND		0.40		ug/L			10/08/16 03:37	1
Dichlorobromomethane	ND		0.50		ug/L			10/08/16 03:37	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/08/16 03:37	1
Ethyl ether	ND		1.0		ug/L			10/08/16 03:37	1
Ethylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
Ethylene Dibromide	ND		1.0		ug/L			10/08/16 03:37	1
Hexachlorobutadiene	ND		0.40		ug/L			10/08/16 03:37	1
Isopropyl ether	ND		10		ug/L			10/08/16 03:37	1
Isopropylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/08/16 03:37	1
Methylene Chloride	ND		1.0		ug/L			10/08/16 03:37	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/08/16 03:37	1
Naphthalene	ND		5.0		ug/L			10/08/16 03:37	1
n-Butylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
N-Propylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
o-Xylene	ND		1.0		ug/L			10/08/16 03:37	1
sec-Butylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
Styrene	ND		1.0		ug/L			10/08/16 03:37	1
Tert-amyl methyl ether	ND		5.0		ug/L			10/08/16 03:37	1
Tert-butyl ethyl ether	ND		5.0		ug/L			10/08/16 03:37	1
tert-Butylbenzene	ND		1.0		ug/L			10/08/16 03:37	1
Tetrachloroethene	ND		1.0		ug/L			10/08/16 03:37	1
Tetrahydrofuran	ND		10		ug/L			10/08/16 03:37	1
Toluene	ND		1.0		ug/L			10/08/16 03:37	1

TestAmerica Buffalo

# Client Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: TRIP BLANKS**

**Lab Sample ID: 480-107199-2**

**Date Collected: 10/06/16 00:00**

**Matrix: Water**

**Date Received: 10/07/16 02:15**

**Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/08/16 03:37	1
trans-1,3-Dichloropropene	ND		0.40		ug/L			10/08/16 03:37	1
Trichloroethene	ND		1.0		ug/L			10/08/16 03:37	1
Trichlorofluoromethane	ND		1.0		ug/L			10/08/16 03:37	1
Vinyl chloride	ND		1.0		ug/L			10/08/16 03:37	1
Dibromomethane	ND		1.0		ug/L			10/08/16 03:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		70 - 130		10/08/16 03:37	1
1,2-Dichloroethane-d4 (Surr)	88		70 - 130		10/08/16 03:37	1
4-Bromofluorobenzene (Surr)	97		70 - 130		10/08/16 03:37	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

# Surrogate Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TOL (70-130)	12DCE (70-130)	BFB (70-130)
480-107199-1	DEP-21-20161006	86	88	97
480-107199-2	TRIP BLANKS	89	88	97
LCS 480-324456/5	Lab Control Sample	88	82	100
LCSD 480-324456/6	Lab Control Sample Dup	87	82	97
MB 480-324456/8	Method Blank	88	86	96

#### Surrogate Legend

TOL = Toluene-d8 (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

# QC Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 480-324456/8

Matrix: Water

Analysis Batch: 324456

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		1.0		ug/L			10/07/16 22:17	1
1,1,1-Trichloroethane	ND		1.0		ug/L			10/07/16 22:17	1
1,1,2,2-Tetrachloroethane	ND		0.50		ug/L			10/07/16 22:17	1
1,1,2-Trichloroethane	ND		1.0		ug/L			10/07/16 22:17	1
1,1-Dichloroethane	ND		1.0		ug/L			10/07/16 22:17	1
1,1-Dichloroethene	ND		1.0		ug/L			10/07/16 22:17	1
1,1-Dichloropropene	ND		1.0		ug/L			10/07/16 22:17	1
1,2,3-Trichlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,2,3-Trichloropropane	ND		1.0		ug/L			10/07/16 22:17	1
1,2,4-Trichlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,2,4-Trimethylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,2-Dibromo-3-Chloropropane	ND		5.0		ug/L			10/07/16 22:17	1
1,2-Dichlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,2-Dichloroethane	ND		1.0		ug/L			10/07/16 22:17	1
1,2-Dichloropropane	ND		1.0		ug/L			10/07/16 22:17	1
1,3,5-Trimethylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,3-Dichlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,3-Dichloropropane	ND		1.0		ug/L			10/07/16 22:17	1
1,4-Dichlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
1,4-Dioxane	ND		50		ug/L			10/07/16 22:17	1
2,2-Dichloropropane	ND		1.0		ug/L			10/07/16 22:17	1
2-Butanone (MEK)	ND		10		ug/L			10/07/16 22:17	1
2-Chlorotoluene	ND		1.0		ug/L			10/07/16 22:17	1
2-Hexanone	ND		10		ug/L			10/07/16 22:17	1
4-Chlorotoluene	ND		1.0		ug/L			10/07/16 22:17	1
4-Isopropyltoluene	ND		1.0		ug/L			10/07/16 22:17	1
4-Methyl-2-pentanone (MIBK)	ND		10		ug/L			10/07/16 22:17	1
Acetone	ND		50		ug/L			10/07/16 22:17	1
Benzene	ND		1.0		ug/L			10/07/16 22:17	1
Bromobenzene	ND		1.0		ug/L			10/07/16 22:17	1
Bromoform	ND		1.0		ug/L			10/07/16 22:17	1
Bromomethane	ND		2.0		ug/L			10/07/16 22:17	1
Carbon disulfide	ND		10		ug/L			10/07/16 22:17	1
Carbon tetrachloride	ND		1.0		ug/L			10/07/16 22:17	1
Chlorobenzene	ND		1.0		ug/L			10/07/16 22:17	1
Chlorobromomethane	ND		1.0		ug/L			10/07/16 22:17	1
Chlorodibromomethane	ND		0.50		ug/L			10/07/16 22:17	1
Chloroethane	ND		2.0		ug/L			10/07/16 22:17	1
Chloroform	ND		1.0		ug/L			10/07/16 22:17	1
Chloromethane	ND		2.0		ug/L			10/07/16 22:17	1
cis-1,2-Dichloroethene	ND		1.0		ug/L			10/07/16 22:17	1
cis-1,3-Dichloropropene	ND		0.40		ug/L			10/07/16 22:17	1
Dichlorobromomethane	ND		0.50		ug/L			10/07/16 22:17	1
Dichlorodifluoromethane	ND		1.0		ug/L			10/07/16 22:17	1
Ethyl ether	ND		1.0		ug/L			10/07/16 22:17	1
Ethylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
Ethylene Dibromide	ND		1.0		ug/L			10/07/16 22:17	1
Hexachlorobutadiene	ND		0.40		ug/L			10/07/16 22:17	1

TestAmerica Buffalo



# QC Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: MB 480-324456/8**  
**Matrix: Water**  
**Analysis Batch: 324456**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl ether	ND		10		ug/L			10/07/16 22:17	1
Isopropylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
Methyl tert-butyl ether	ND		1.0		ug/L			10/07/16 22:17	1
Methylene Chloride	ND		1.0		ug/L			10/07/16 22:17	1
m-Xylene & p-Xylene	ND		2.0		ug/L			10/07/16 22:17	1
Naphthalene	ND		5.0		ug/L			10/07/16 22:17	1
n-Butylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
N-Propylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
o-Xylene	ND		1.0		ug/L			10/07/16 22:17	1
sec-Butylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
Styrene	ND		1.0		ug/L			10/07/16 22:17	1
Tert-amyl methyl ether	ND		5.0		ug/L			10/07/16 22:17	1
Tert-butyl ethyl ether	ND		5.0		ug/L			10/07/16 22:17	1
tert-Butylbenzene	ND		1.0		ug/L			10/07/16 22:17	1
Tetrachloroethene	ND		1.0		ug/L			10/07/16 22:17	1
Tetrahydrofuran	ND		10		ug/L			10/07/16 22:17	1
Toluene	ND		1.0		ug/L			10/07/16 22:17	1
trans-1,2-Dichloroethene	ND		1.0		ug/L			10/07/16 22:17	1
trans-1,3-Dichloropropene	ND		0.40		ug/L			10/07/16 22:17	1
Trichloroethene	ND		1.0		ug/L			10/07/16 22:17	1
Trichlorofluoromethane	ND		1.0		ug/L			10/07/16 22:17	1
Vinyl chloride	ND		1.0		ug/L			10/07/16 22:17	1
Dibromomethane	ND		1.0		ug/L			10/07/16 22:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	88		70 - 130		10/07/16 22:17	1
1,2-Dichloroethane-d4 (Surr)	86		70 - 130		10/07/16 22:17	1
4-Bromofluorobenzene (Surr)	96		70 - 130		10/07/16 22:17	1

**Lab Sample ID: LCS 480-324456/5**  
**Matrix: Water**  
**Analysis Batch: 324456**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	25.0	23.1		ug/L		92	70 - 130
1,1,1-Trichloroethane	25.0	24.0		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	25.0	20.8		ug/L		83	70 - 130
1,1,2-Trichloroethane	25.0	21.6		ug/L		86	70 - 130
1,1-Dichloroethane	25.0	24.3		ug/L		97	70 - 130
1,1-Dichloroethene	25.0	24.3		ug/L		97	70 - 130
1,1-Dichloropropene	25.0	22.7		ug/L		91	70 - 130
1,2,3-Trichlorobenzene	25.0	20.4		ug/L		82	70 - 130
1,2,3-Trichloropropane	25.0	19.5		ug/L		78	70 - 130
1,2,4-Trichlorobenzene	25.0	21.5		ug/L		86	70 - 130
1,2,4-Trimethylbenzene	25.0	23.0		ug/L		92	70 - 130
1,2-Dibromo-3-Chloropropane	25.0	19.1		ug/L		76	70 - 130
1,2-Dichlorobenzene	25.0	22.5		ug/L		90	70 - 130
1,2-Dichloroethane	25.0	22.0		ug/L		88	70 - 130

TestAmerica Buffalo

# QC Sample Results

Client: Innovative Engineering Solutions, Inc  
 Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 480-324456/5

Matrix: Water

Analysis Batch: 324456

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichloropropane	25.0	23.0		ug/L		92	70 - 130
1,3,5-Trimethylbenzene	25.0	23.4		ug/L		94	70 - 130
1,3-Dichlorobenzene	25.0	22.9		ug/L		91	70 - 130
1,3-Dichloropropane	25.0	20.6		ug/L		82	70 - 130
1,4-Dichlorobenzene	25.0	23.2		ug/L		93	70 - 130
1,4-Dioxane	500	326 *		ug/L		65	70 - 130
2,2-Dichloropropane	25.0	23.3		ug/L		93	70 - 130
2-Butanone (MEK)	125	107		ug/L		86	70 - 130
2-Chlorotoluene	25.0	22.7		ug/L		91	70 - 130
2-Hexanone	125	101		ug/L		80	70 - 130
4-Chlorotoluene	25.0	24.6		ug/L		98	70 - 130
4-Isopropyltoluene	25.0	23.5		ug/L		94	70 - 130
4-Methyl-2-pentanone (MIBK)	125	96.2		ug/L		77	70 - 130
Acetone	125	121		ug/L		97	70 - 130
Benzene	25.0	23.2		ug/L		93	70 - 130
Bromobenzene	25.0	23.3		ug/L		93	70 - 130
Bromoform	25.0	22.1		ug/L		88	70 - 130
Bromomethane	25.0	25.5		ug/L		102	70 - 130
Carbon disulfide	25.0	23.6		ug/L		94	70 - 130
Carbon tetrachloride	25.0	24.3		ug/L		97	70 - 130
Chlorobenzene	25.0	22.5		ug/L		90	70 - 130
Chlorobromomethane	25.0	24.8		ug/L		99	70 - 130
Chlorodibromomethane	25.0	23.2		ug/L		93	70 - 130
Chloroethane	25.0	27.5		ug/L		110	70 - 130
Chloroform	25.0	23.3		ug/L		93	70 - 130
Chloromethane	25.0	26.1		ug/L		104	70 - 130
cis-1,2-Dichloroethene	25.0	24.3		ug/L		97	70 - 130
cis-1,3-Dichloropropene	25.0	24.1		ug/L		96	70 - 130
Dichlorobromomethane	25.0	23.7		ug/L		95	70 - 130
Dichlorodifluoromethane	25.0	26.4		ug/L		106	70 - 130
Ethyl ether	25.0	21.0		ug/L		84	70 - 130
Ethylbenzene	25.0	22.1		ug/L		89	70 - 130
Ethylene Dibromide	25.0	21.2		ug/L		85	70 - 130
Hexachlorobutadiene	25.0	23.2		ug/L		93	70 - 130
Isopropyl ether	25.0	23.2		ug/L		93	70 - 130
Isopropylbenzene	25.0	22.6		ug/L		90	70 - 130
Methyl tert-butyl ether	25.0	21.8		ug/L		87	70 - 130
Methylene Chloride	25.0	25.8		ug/L		103	70 - 130
m-Xylene & p-Xylene	25.0	22.2		ug/L		89	70 - 130
Naphthalene	25.0	19.4		ug/L		77	70 - 130
n-Butylbenzene	25.0	22.9		ug/L		92	70 - 130
N-Propylbenzene	25.0	22.6		ug/L		90	70 - 130
o-Xylene	25.0	22.6		ug/L		90	70 - 130
sec-Butylbenzene	25.0	22.8		ug/L		91	70 - 130
Styrene	25.0	23.7		ug/L		95	70 - 130
Tert-amyl methyl ether	25.0	22.6		ug/L		91	70 - 130
Tert-butyl ethyl ether	25.0	22.8		ug/L		91	70 - 130
tert-Butylbenzene	25.0	22.7		ug/L		91	70 - 130

TestAmerica Buffalo

# QC Sample Results

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

**Lab Sample ID: LCS 480-324456/5**

**Matrix: Water**

**Analysis Batch: 324456**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tetrachloroethene	25.0	24.8		ug/L		99	70 - 130
Tetrahydrofuran	50.0	53.3		ug/L		107	70 - 130
Toluene	25.0	21.8		ug/L		87	70 - 130
trans-1,2-Dichloroethene	25.0	23.5		ug/L		94	70 - 130
trans-1,3-Dichloropropene	25.0	21.7		ug/L		87	70 - 130
Trichloroethene	25.0	23.8		ug/L		95	70 - 130
Trichlorofluoromethane	25.0	29.8		ug/L		119	70 - 130
Vinyl chloride	25.0	25.9		ug/L		104	70 - 130
Dibromomethane	25.0	22.8		ug/L		91	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	88		70 - 130
1,2-Dichloroethane-d4 (Surr)	82		70 - 130
4-Bromofluorobenzene (Surr)	100		70 - 130

**Lab Sample ID: LCSD 480-324456/6**

**Matrix: Water**

**Analysis Batch: 324456**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	25.0	22.9		ug/L		92	70 - 130	1	20
1,1,1-Trichloroethane	25.0	24.0		ug/L		96	70 - 130	0	20
1,1,1,2,2-Tetrachloroethane	25.0	20.9		ug/L		84	70 - 130	1	20
1,1,1,2-Trichloroethane	25.0	21.0		ug/L		84	70 - 130	3	20
1,1-Dichloroethane	25.0	23.7		ug/L		95	70 - 130	2	20
1,1-Dichloroethene	25.0	23.3		ug/L		93	70 - 130	4	20
1,1-Dichloropropene	25.0	23.4		ug/L		94	70 - 130	3	20
1,2,3-Trichlorobenzene	25.0	21.1		ug/L		84	70 - 130	3	20
1,2,3-Trichloropropane	25.0	19.4		ug/L		78	70 - 130	0	20
1,2,4-Trichlorobenzene	25.0	21.7		ug/L		87	70 - 130	1	20
1,2,4-Trimethylbenzene	25.0	23.7		ug/L		95	70 - 130	3	20
1,2-Dibromo-3-Chloropropane	25.0	20.3		ug/L		81	70 - 130	6	20
1,2-Dichlorobenzene	25.0	23.0		ug/L		92	70 - 130	2	20
1,2-Dichloroethane	25.0	21.7		ug/L		87	70 - 130	1	20
1,2-Dichloropropane	25.0	22.9		ug/L		92	70 - 130	0	20
1,3,5-Trimethylbenzene	25.0	23.9		ug/L		96	70 - 130	2	20
1,3-Dichlorobenzene	25.0	23.5		ug/L		94	70 - 130	3	20
1,3-Dichloropropane	25.0	20.1		ug/L		80	70 - 130	3	20
1,4-Dichlorobenzene	25.0	23.4		ug/L		94	70 - 130	1	20
1,4-Dioxane	500	386		ug/L		77	70 - 130	17	20
2,2-Dichloropropane	25.0	23.5		ug/L		94	70 - 130	1	20
2-Butanone (MEK)	125	117		ug/L		94	70 - 130	9	20
2-Chlorotoluene	25.0	23.6		ug/L		94	70 - 130	4	20
2-Hexanone	125	102		ug/L		81	70 - 130	1	20
4-Chlorotoluene	25.0	25.0		ug/L		100	70 - 130	2	20
4-Isopropyltoluene	25.0	24.5		ug/L		98	70 - 130	4	20
4-Methyl-2-pentanone (MIBK)	125	95.9		ug/L		77	70 - 130	0	20
Acetone	125	116		ug/L		93	70 - 130	4	20

TestAmerica Buffalo

# QC Sample Results

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Method: 8260C - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 480-324456/6

Matrix: Water

Analysis Batch: 324456

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	25.0	23.2		ug/L		93	70 - 130	0	20
Bromobenzene	25.0	22.8		ug/L		91	70 - 130	2	20
Bromoform	25.0	21.7		ug/L		87	70 - 130	2	20
Bromomethane	25.0	26.6		ug/L		107	70 - 130	4	20
Carbon disulfide	25.0	24.2		ug/L		97	70 - 130	2	20
Carbon tetrachloride	25.0	24.9		ug/L		99	70 - 130	2	20
Chlorobenzene	25.0	23.1		ug/L		93	70 - 130	3	20
Chlorobromomethane	25.0	24.1		ug/L		97	70 - 130	3	20
Chlorodibromomethane	25.0	23.1		ug/L		92	70 - 130	0	20
Chloroethane	25.0	27.2		ug/L		109	70 - 130	1	20
Chloroform	25.0	22.7		ug/L		91	70 - 130	2	20
Chloromethane	25.0	25.7		ug/L		103	70 - 130	2	20
cis-1,2-Dichloroethene	25.0	23.4		ug/L		93	70 - 130	4	20
cis-1,3-Dichloropropene	25.0	23.5		ug/L		94	70 - 130	2	20
Dichlorobromomethane	25.0	23.6		ug/L		94	70 - 130	0	20
Dichlorodifluoromethane	25.0	26.5		ug/L		106	70 - 130	0	20
Ethyl ether	25.0	21.2		ug/L		85	70 - 130	1	20
Ethylbenzene	25.0	22.8		ug/L		91	70 - 130	3	20
Ethylene Dibromide	25.0	21.3		ug/L		85	70 - 130	1	20
Hexachlorobutadiene	25.0	24.2		ug/L		97	70 - 130	4	20
Isopropyl ether	25.0	22.4		ug/L		90	70 - 130	4	20
Isopropylbenzene	25.0	23.2		ug/L		93	70 - 130	3	20
Methyl tert-butyl ether	25.0	20.6		ug/L		82	70 - 130	6	20
Methylene Chloride	25.0	25.1		ug/L		101	70 - 130	3	20
m-Xylene & p-Xylene	25.0	23.6		ug/L		94	70 - 130	6	20
Naphthalene	25.0	19.9		ug/L		80	70 - 130	3	20
n-Butylbenzene	25.0	23.4		ug/L		94	70 - 130	2	20
N-Propylbenzene	25.0	23.4		ug/L		94	70 - 130	4	20
o-Xylene	25.0	23.5		ug/L		94	70 - 130	4	20
sec-Butylbenzene	25.0	23.9		ug/L		95	70 - 130	4	20
Styrene	25.0	23.7		ug/L		95	70 - 130	0	20
Tert-amyl methyl ether	25.0	21.9		ug/L		87	70 - 130	3	20
Tert-butyl ethyl ether	25.0	22.6		ug/L		90	70 - 130	1	20
tert-Butylbenzene	25.0	23.9		ug/L		96	70 - 130	5	20
Tetrachloroethene	25.0	25.4		ug/L		101	70 - 130	2	20
Tetrahydrofuran	50.0	52.2		ug/L		104	70 - 130	2	20
Toluene	25.0	22.4		ug/L		90	70 - 130	3	20
trans-1,2-Dichloroethene	25.0	23.5		ug/L		94	70 - 130	0	20
trans-1,3-Dichloropropene	25.0	21.2		ug/L		85	70 - 130	3	20
Trichloroethene	25.0	24.3		ug/L		97	70 - 130	2	20
Trichlorofluoromethane	25.0	30.0		ug/L		120	70 - 130	1	20
Vinyl chloride	25.0	26.7		ug/L		107	70 - 130	3	20
Dibromomethane	25.0	22.4		ug/L		89	70 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	87		70 - 130
1,2-Dichloroethane-d4 (Surr)	82		70 - 130
4-Bromofluorobenzene (Surr)	97		70 - 130

TestAmerica Buffalo

# QC Association Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## GC/MS VOA

### Analysis Batch: 324456

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
480-107199-1	DEP-21-20161006	Total/NA	Water	8260C	
480-107199-2	TRIP BLANKS	Total/NA	Water	8260C	
MB 480-324456/8	Method Blank	Total/NA	Water	8260C	
LCS 480-324456/5	Lab Control Sample	Total/NA	Water	8260C	
LCSD 480-324456/6	Lab Control Sample Dup	Total/NA	Water	8260C	

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

# Lab Chronicle

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

**Client Sample ID: DEP-21-20161006**

**Date Collected: 10/06/16 10:35**

**Date Received: 10/07/16 02:15**

**Lab Sample ID: 480-107199-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	324456	10/08/16 03:13	JWG	TAL BUF

**Client Sample ID: TRIP BLANKS**

**Date Collected: 10/06/16 00:00**

**Date Received: 10/07/16 02:15**

**Lab Sample ID: 480-107199-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	324456	10/08/16 03:37	JWG	TAL BUF

## Laboratory References:

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

# Certification Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

## Laboratory: TestAmerica Buffalo

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0686	07-06-17
California	State Program	9	1169CA	09-30-17
Connecticut	State Program	1	PH-0568	09-30-18
Florida	NELAP	4	E87672	06-30-17
Georgia	State Program	4	N/A	03-31-17
Georgia	State Program	4	956	03-31-17
Illinois	NELAP	5	200003	09-30-16 *
Iowa	State Program	7	374	03-01-17
Kansas	NELAP	7	E-10187	10-31-16
Kentucky (DW)	State Program	4	90029	12-31-16
Kentucky (UST)	State Program	4	30	03-31-17
Kentucky (WW)	State Program	4	90029	12-31-16
Louisiana	NELAP	6	02031	06-30-17
Maine	State Program	1	NY00044	12-04-16
Maryland	State Program	3	294	03-31-17
Massachusetts	State Program	1	M-NY044	06-30-17
Michigan	State Program	5	9937	03-31-17
Minnesota	NELAP	5	036-999-337	12-31-16
New Hampshire	NELAP Primary AB	1	2973	09-11-17
New Hampshire	NELAP Secondary AB	1	2337	11-17-16
New Jersey	NELAP	2	NY455	06-30-17
New York	NELAP	2	10026	03-31-17
North Dakota	State Program	8	R-176	03-31-17
Oklahoma	State Program	6	9421	08-31-17
Oregon	NELAP	10	NY200003	06-09-17
Pennsylvania	NELAP	3	68-00281	07-31-17
Rhode Island	State Program	1	LAO00328	12-30-16
Tennessee	State Program	4	TN02970	03-31-17
Texas	NELAP	6	T104704412-15-6	07-31-17
USDA	Federal		P330-11-00386	11-26-17
Virginia	NELAP	3	460185	09-14-17
Washington	State Program	10	C784	02-10-17
West Virginia DEP	State Program	3	252	09-30-16 *
Wisconsin	State Program	5	998310390	08-31-17

\* Certification renewal pending - certification considered valid.

# Method Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

---

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds (GC/MS)	MA DEP	TAL BUF

---

**Protocol References:**

MA DEP = Massachusetts Department Of Environmental Protection

**Laboratory References:**

TAL BUF = TestAmerica Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600





# Sample Summary

Client: Innovative Engineering Solutions, Inc  
Project/Site: IDS Wayland

TestAmerica Job ID: 480-107199-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
480-107199-1	DEP-21-20161006	Water	10/06/16 10:35	10/07/16 02:15
480-107199-2	TRIP BLANKS	Water	10/06/16 00:00	10/07/16 02:15

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

## Login Sample Receipt Checklist

Client: Innovative Engineering Solutions, Inc

Job Number: 480-107199-1

**Login Number: 107199**

**List Number: 1**

**Creator: Williams, Christopher S**

**List Source: TestAmerica Buffalo**

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	IESI
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	N/A	
Chlorine Residual checked.	N/A	

