

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
4101 Shuffel Street NW
North Canton, OH 44720
Tel: (330)497-9396

TestAmerica Job ID: 240-99739-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:
8/24/2018 10:45:47 AM

Michael DelMonico, Project Manager I
(330)497-9396
michael.delmonico@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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



Table of Contents

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	23
QC Sample Results	24
QC Association Summary	36
Lab Chronicle	37
Certification Summary	39
Chain of Custody	40

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Job ID: 240-99739-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-99739-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

RECEIPT

The samples were received on 8/10/2018 8:45 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 1.8° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-65-080818 (240-99739-1), PW-16-02-080818 (240-99739-2), MW-66-080819 (240-99739-3), MW-71-080918 (240-99739-4), MW-45-080918 (240-99739-5), MW-70-080918 (240-99739-6) and MW-46-080918 (240-99739-7) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/21/2018 and 08/22/2018.

Samples PW-16-02-080818 (240-99739-2)[2X], MW-45-080918 (240-99739-5)[33.33X] and MW-70-080918 (240-99739-6)[12.5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-65-080818 (240-99739-1), PW-16-02-080818 (240-99739-2), MW-66-080819 (240-99739-3), MW-71-080918 (240-99739-4), MW-45-080918 (240-99739-5), MW-70-080918 (240-99739-6) and MW-46-080918 (240-99739-7) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/17/2018.

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Job ID: 240-99739-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

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

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

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
8260B SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL CAN
5030B	Purge and Trap	SW846	TAL CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-99739-1	MW-65-080818	Water	08/08/18 10:30	08/10/18 08:45
240-99739-2	PW-16-02-080818	Water	08/08/18 13:55	08/10/18 08:45
240-99739-3	MW-66-080819	Water	08/08/18 16:50	08/10/18 08:45
240-99739-4	MW-71-080918	Water	08/09/18 09:10	08/10/18 08:45
240-99739-5	MW-45-080918	Water	08/09/18 10:10	08/10/18 08:45
240-99739-6	MW-70-080918	Water	08/09/18 11:15	08/10/18 08:45
240-99739-7	MW-46-080918	Water	08/09/18 12:30	08/10/18 08:45

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-65-080818

Lab Sample ID: 240-99739-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.8	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	6.2		1.0	0.16	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.35	J	1.0	0.17	ug/L	1		8260B	Total/NA
Vinyl chloride	35		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: PW-16-02-080818

Lab Sample ID: 240-99739-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.5	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	71		2.0	0.40	ug/L	2		8260B	Total/NA

Client Sample ID: MW-66-080819

Lab Sample ID: 240-99739-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	3.2		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-71-080918

Lab Sample ID: 240-99739-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.95	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.34	J	1.0	0.16	ug/L	1		8260B	Total/NA

Client Sample ID: MW-45-080918

Lab Sample ID: 240-99739-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	1000		33	5.3	ug/L	33.33		8260B	Total/NA
Vinyl chloride	800		33	6.7	ug/L	33.33		8260B	Total/NA

Client Sample ID: MW-70-080918

Lab Sample ID: 240-99739-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	200		13	2.0	ug/L	12.5		8260B	Total/NA
trans-1,2-Dichloroethene	3.3	J	13	2.4	ug/L	12.5		8260B	Total/NA
Vinyl chloride	190		13	2.5	ug/L	12.5		8260B	Total/NA

Client Sample ID: MW-46-080918

Lab Sample ID: 240-99739-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	8.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.16	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	1.3		1.0	0.17	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	0.57	J	1.0	0.21	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.2		1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	66		1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-65-080818

Lab Sample ID: 240-99739-1

Date Collected: 08/08/18 10:30

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.8	J	2.0	0.86	ug/L			08/17/18 16:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125					08/17/18 16:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 15:25	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 15:25	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 15:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 15:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 15:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 15:25	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 15:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 15:25	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 15:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 15:25	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 15:25	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 15:25	1
cis-1,2-Dichloroethene	6.2		1.0	0.16	ug/L			08/21/18 15:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 15:25	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 15:25	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 15:25	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 15:25	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 15:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 15:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 15:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 15:25	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 15:25	1
1,1-Dichloroethane	0.35	J	1.0	0.17	ug/L			08/21/18 15:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 15:25	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 15:25	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 15:25	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 15:25	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 15:25	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 15:25	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 15:25	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 15:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 15:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 15:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 15:25	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 15:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 15:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 15:25	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 15:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 15:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 15:25	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 15:25	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 15:25	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 15:25	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-65-080818

Lab Sample ID: 240-99739-1

Date Collected: 08/08/18 10:30

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 15:25	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 15:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 15:25	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 15:25	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 15:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 15:25	1
Vinyl chloride	35		1.0	0.20	ug/L			08/21/18 15:25	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 15:25	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 15:25	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 15:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120		08/21/18 15:25	1
Dibromofluoromethane (Surr)	86		69 - 124		08/21/18 15:25	1
1,2-Dichloroethane-d4 (Surr)	80		61 - 138		08/21/18 15:25	1
Toluene-d8 (Surr)	86		73 - 120		08/21/18 15:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: PW-16-02-080818

Lab Sample ID: 240-99739-2

Date Collected: 08/08/18 13:55

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.5	J	2.0	0.86	ug/L			08/17/18 17:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					08/17/18 17:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 15:48	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 15:48	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 15:48	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 15:48	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 15:48	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 15:48	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 15:48	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 15:48	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 15:48	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 15:48	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 15:48	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 15:48	1
cis-1,2-Dichloroethene	11		1.0	0.16	ug/L			08/21/18 15:48	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 15:48	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 15:48	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 15:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 15:48	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 15:48	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 15:48	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 15:48	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 15:48	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 15:48	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 15:48	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 15:48	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 15:48	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 15:48	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 15:48	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 15:48	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 15:48	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 15:48	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 15:48	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 15:48	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 15:48	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 15:48	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 15:48	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 15:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 15:48	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 15:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 15:48	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 15:48	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 15:48	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 15:48	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 15:48	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: PW-16-02-080818

Lab Sample ID: 240-99739-2

Date Collected: 08/08/18 13:55

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 15:48	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 15:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 15:48	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 15:48	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 15:48	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 15:48	1
Vinyl chloride	71		2.0	0.40	ug/L			08/22/18 15:15	2
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 15:48	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 15:48	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 15:48	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		69 - 120		08/21/18 15:48	1
4-Bromofluorobenzene (Surr)	87		69 - 120		08/22/18 15:15	2
Dibromofluoromethane (Surr)	87		69 - 124		08/21/18 15:48	1
Dibromofluoromethane (Surr)	82		69 - 124		08/22/18 15:15	2
1,2-Dichloroethane-d4 (Surr)	82		61 - 138		08/21/18 15:48	1
1,2-Dichloroethane-d4 (Surr)	76		61 - 138		08/22/18 15:15	2
Toluene-d8 (Surr)	88		73 - 120		08/21/18 15:48	1
Toluene-d8 (Surr)	82		73 - 120		08/22/18 15:15	2

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-66-080819

Lab Sample ID: 240-99739-3

Date Collected: 08/08/18 16:50

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/17/18 17:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					08/17/18 17:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 16:12	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 16:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 16:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 16:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 16:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 16:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 16:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 16:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 16:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 16:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 16:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 16:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 16:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 16:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 16:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 16:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 16:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 16:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 16:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 16:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 16:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 16:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 16:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 16:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 16:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 16:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 16:12	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 16:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 16:12	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 16:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 16:12	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 16:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 16:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 16:12	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 16:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 16:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 16:12	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 16:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 16:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 16:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 16:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 16:12	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-66-080819

Lab Sample ID: 240-99739-3

Date Collected: 08/08/18 16:50

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 16:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 16:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 16:12	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 16:12	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 16:12	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 16:12	1
Vinyl chloride	3.2		1.0	0.20	ug/L			08/21/18 16:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 16:12	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 16:12	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 16:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		69 - 120		08/21/18 16:12	1
Dibromofluoromethane (Surr)	88		69 - 124		08/21/18 16:12	1
1,2-Dichloroethane-d4 (Surr)	81		61 - 138		08/21/18 16:12	1
Toluene-d8 (Surr)	86		73 - 120		08/21/18 16:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-71-080918

Lab Sample ID: 240-99739-4

Date Collected: 08/09/18 09:10

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.95	J	2.0	0.86	ug/L			08/17/18 17:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					08/17/18 17:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 16:36	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 16:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 16:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 16:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 16:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 16:36	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 16:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 16:36	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 16:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 16:36	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 16:36	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 16:36	1
cis-1,2-Dichloroethene	0.34	J	1.0	0.16	ug/L			08/21/18 16:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 16:36	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 16:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 16:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 16:36	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 16:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 16:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 16:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 16:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 16:36	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 16:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 16:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 16:36	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 16:36	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 16:36	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 16:36	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 16:36	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 16:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 16:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 16:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 16:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 16:36	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 16:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 16:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 16:36	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 16:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 16:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 16:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 16:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 16:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 16:36	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-71-080918

Lab Sample ID: 240-99739-4

Date Collected: 08/09/18 09:10

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 16:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 16:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 16:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 16:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 16:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 16:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 16:36	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 16:36	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 16:36	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 16:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		69 - 120		08/21/18 16:36	1
Dibromofluoromethane (Surr)	85		69 - 124		08/21/18 16:36	1
1,2-Dichloroethane-d4 (Surr)	80		61 - 138		08/21/18 16:36	1
Toluene-d8 (Surr)	83		73 - 120		08/21/18 16:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-45-080918

Lab Sample ID: 240-99739-5

Date Collected: 08/09/18 10:10

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.0	J	2.0	0.86	ug/L			08/17/18 18:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		63 - 125					08/17/18 18:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	330	U	330	180	ug/L			08/21/18 17:00	33.33
Benzene	33	U	33	4.3	ug/L			08/21/18 17:00	33.33
Bromodichloromethane	33	U	33	5.7	ug/L			08/21/18 17:00	33.33
Bromoform	33	U	33	25	ug/L			08/21/18 17:00	33.33
Bromomethane	33	U	33	14	ug/L			08/21/18 17:00	33.33
2-Butanone (MEK)	330	U	330	39	ug/L			08/21/18 17:00	33.33
Carbon disulfide	170	U	170	9.3	ug/L			08/21/18 17:00	33.33
Carbon tetrachloride	33	U	33	8.7	ug/L			08/21/18 17:00	33.33
Chlorobenzene	33	U	33	4.7	ug/L			08/21/18 17:00	33.33
Chloroethane	33	U	33	28	ug/L			08/21/18 17:00	33.33
Chloroform	33	U	33	4.3	ug/L			08/21/18 17:00	33.33
Chloromethane	33	U	33	6.7	ug/L			08/21/18 17:00	33.33
cis-1,2-Dichloroethene	1000		33	5.3	ug/L			08/21/18 17:00	33.33
cis-1,3-Dichloropropene	33	U	33	20	ug/L			08/21/18 17:00	33.33
Cyclohexane	33	U	33	8.0	ug/L			08/21/18 17:00	33.33
Dibromochloromethane	33	U	33	13	ug/L			08/21/18 17:00	33.33
1,2-Dibromo-3-Chloropropane	33	U	33	30	ug/L			08/21/18 17:00	33.33
1,2-Dibromoethane	33	U	33	4.0	ug/L			08/21/18 17:00	33.33
1,2-Dichlorobenzene	33	U	33	5.0	ug/L			08/21/18 17:00	33.33
1,3-Dichlorobenzene	33	U	33	5.0	ug/L			08/21/18 17:00	33.33
1,4-Dichlorobenzene	33	U	33	5.3	ug/L			08/21/18 17:00	33.33
Dichlorodifluoromethane	33	U	33	12	ug/L			08/21/18 17:00	33.33
1,1-Dichloroethane	33	U	33	5.7	ug/L			08/21/18 17:00	33.33
1,2-Dichloroethane	33	U	33	7.0	ug/L			08/21/18 17:00	33.33
1,1-Dichloroethene	33	U	33	6.3	ug/L			08/21/18 17:00	33.33
1,2-Dichloropropane	33	U	33	5.0	ug/L			08/21/18 17:00	33.33
Ethylbenzene	33	U	33	3.7	ug/L			08/21/18 17:00	33.33
2-Hexanone	330	U	330	18	ug/L			08/21/18 17:00	33.33
Isopropylbenzene	33	U	33	3.0	ug/L			08/21/18 17:00	33.33
Methyl acetate	330	U	330	57	ug/L			08/21/18 17:00	33.33
Methylcyclohexane	33	U	33	11	ug/L			08/21/18 17:00	33.33
Methylene Chloride	170	U	170	87	ug/L			08/21/18 17:00	33.33
4-Methyl-2-pentanone (MIBK)	330	U	330	14	ug/L			08/21/18 17:00	33.33
Methyl tert-butyl ether	33	U	33	2.3	ug/L			08/21/18 17:00	33.33
Styrene	33	U	33	3.3	ug/L			08/21/18 17:00	33.33
1,1,2,2-Tetrachloroethane	33	U	33	4.3	ug/L			08/21/18 17:00	33.33
Tetrachloroethene	33	U	33	5.0	ug/L			08/21/18 17:00	33.33
Toluene	33	U	33	4.7	ug/L			08/21/18 17:00	33.33
trans-1,2-Dichloroethene	33	U	33	6.3	ug/L			08/21/18 17:00	33.33
trans-1,3-Dichloropropene	33	U	33	22	ug/L			08/21/18 17:00	33.33
1,2,4-Trichlorobenzene	33	U	33	8.7	ug/L			08/21/18 17:00	33.33
1,1,1-Trichloroethane	33	U	33	8.0	ug/L			08/21/18 17:00	33.33
1,1,2-Trichloroethane	33	U	33	3.0	ug/L			08/21/18 17:00	33.33

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-45-080918

Lab Sample ID: 240-99739-5

Date Collected: 08/09/18 10:10

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	33	U	33	3.3	ug/L			08/21/18 17:00	33.33
Trichlorofluoromethane	33	U	33	15	ug/L			08/21/18 17:00	33.33
1,1,2-Trichloro-1,2,2-trifluoroethane	33	U	33	14	ug/L			08/21/18 17:00	33.33
1,2,3-Trimethylbenzene	170	U	170	4.7	ug/L			08/21/18 17:00	33.33
1,2,4-Trimethylbenzene	33	U	33	2.3	ug/L			08/21/18 17:00	33.33
1,3,5-Trimethylbenzene	33	U	33	4.0	ug/L			08/21/18 17:00	33.33
Vinyl chloride	800		33	6.7	ug/L			08/21/18 17:00	33.33
Xylenes, Total	67	U	67	5.0	ug/L			08/21/18 17:00	33.33
1,4-Dioxane	1700	U	1700	420	ug/L			08/21/18 17:00	33.33
Diethyl ether	67	U	67	6.3	ug/L			08/21/18 17:00	33.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		69 - 120		08/21/18 17:00	33.33
Dibromofluoromethane (Surr)	84		69 - 124		08/21/18 17:00	33.33
1,2-Dichloroethane-d4 (Surr)	79		61 - 138		08/21/18 17:00	33.33
Toluene-d8 (Surr)	84		73 - 120		08/21/18 17:00	33.33

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-70-080918

Lab Sample ID: 240-99739-6

Date Collected: 08/09/18 11:15

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			08/17/18 18:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					08/17/18 18:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	130	U	130	68	ug/L			08/21/18 17:23	12.5
Benzene	13	U	13	1.6	ug/L			08/21/18 17:23	12.5
Bromodichloromethane	13	U	13	2.1	ug/L			08/21/18 17:23	12.5
Bromoform	13	U	13	9.5	ug/L			08/21/18 17:23	12.5
Bromomethane	13	U	13	5.3	ug/L			08/21/18 17:23	12.5
2-Butanone (MEK)	130	U	130	15	ug/L			08/21/18 17:23	12.5
Carbon disulfide	63	U	63	3.5	ug/L			08/21/18 17:23	12.5
Carbon tetrachloride	13	U	13	3.3	ug/L			08/21/18 17:23	12.5
Chlorobenzene	13	U	13	1.8	ug/L			08/21/18 17:23	12.5
Chloroethane	13	U	13	10	ug/L			08/21/18 17:23	12.5
Chloroform	13	U	13	1.6	ug/L			08/21/18 17:23	12.5
Chloromethane	13	U	13	2.5	ug/L			08/21/18 17:23	12.5
cis-1,2-Dichloroethene	200		13	2.0	ug/L			08/21/18 17:23	12.5
cis-1,3-Dichloropropene	13	U	13	7.6	ug/L			08/21/18 17:23	12.5
Cyclohexane	13	U	13	3.0	ug/L			08/21/18 17:23	12.5
Dibromochloromethane	13	U	13	4.9	ug/L			08/21/18 17:23	12.5
1,2-Dibromo-3-Chloropropane	13	U	13	11	ug/L			08/21/18 17:23	12.5
1,2-Dibromoethane	13	U	13	1.5	ug/L			08/21/18 17:23	12.5
1,2-Dichlorobenzene	13	U	13	1.9	ug/L			08/21/18 17:23	12.5
1,3-Dichlorobenzene	13	U	13	1.9	ug/L			08/21/18 17:23	12.5
1,4-Dichlorobenzene	13	U	13	2.0	ug/L			08/21/18 17:23	12.5
Dichlorodifluoromethane	13	U	13	4.4	ug/L			08/21/18 17:23	12.5
1,1-Dichloroethane	13	U	13	2.1	ug/L			08/21/18 17:23	12.5
1,2-Dichloroethane	13	U	13	2.6	ug/L			08/21/18 17:23	12.5
1,1-Dichloroethene	13	U	13	2.4	ug/L			08/21/18 17:23	12.5
1,2-Dichloropropane	13	U	13	1.9	ug/L			08/21/18 17:23	12.5
Ethylbenzene	13	U	13	1.4	ug/L			08/21/18 17:23	12.5
2-Hexanone	130	U	130	6.8	ug/L			08/21/18 17:23	12.5
Isopropylbenzene	13	U	13	1.1	ug/L			08/21/18 17:23	12.5
Methyl acetate	130	U	130	22	ug/L			08/21/18 17:23	12.5
Methylcyclohexane	13	U	13	4.1	ug/L			08/21/18 17:23	12.5
Methylene Chloride	63	U	63	33	ug/L			08/21/18 17:23	12.5
4-Methyl-2-pentanone (MIBK)	130	U	130	5.3	ug/L			08/21/18 17:23	12.5
Methyl tert-butyl ether	13	U	13	0.88	ug/L			08/21/18 17:23	12.5
Styrene	13	U	13	1.3	ug/L			08/21/18 17:23	12.5
1,1,2,2-Tetrachloroethane	13	U	13	1.6	ug/L			08/21/18 17:23	12.5
Tetrachloroethene	13	U	13	1.9	ug/L			08/21/18 17:23	12.5
Toluene	13	U	13	1.8	ug/L			08/21/18 17:23	12.5
trans-1,2-Dichloroethene	3.3	J	13	2.4	ug/L			08/21/18 17:23	12.5
trans-1,3-Dichloropropene	13	U	13	8.4	ug/L			08/21/18 17:23	12.5
1,2,4-Trichlorobenzene	13	U	13	3.3	ug/L			08/21/18 17:23	12.5
1,1,1-Trichloroethane	13	U	13	3.0	ug/L			08/21/18 17:23	12.5
1,1,2-Trichloroethane	13	U	13	1.1	ug/L			08/21/18 17:23	12.5

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-70-080918

Lab Sample ID: 240-99739-6

Date Collected: 08/09/18 11:15

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	13	U	13	1.3	ug/L			08/21/18 17:23	12.5
Trichlorofluoromethane	13	U	13	5.6	ug/L			08/21/18 17:23	12.5
1,1,2-Trichloro-1,2,2-trifluoroethane	13	U	13	5.1	ug/L			08/21/18 17:23	12.5
1,2,3-Trimethylbenzene	63	U	63	1.8	ug/L			08/21/18 17:23	12.5
1,2,4-Trimethylbenzene	13	U	13	0.88	ug/L			08/21/18 17:23	12.5
1,3,5-Trimethylbenzene	13	U	13	1.5	ug/L			08/21/18 17:23	12.5
Vinyl chloride	190		13	2.5	ug/L			08/21/18 17:23	12.5
Xylenes, Total	25	U	25	1.9	ug/L			08/21/18 17:23	12.5
1,4-Dioxane	630	U	630	160	ug/L			08/21/18 17:23	12.5
Diethyl ether	25	U	25	2.4	ug/L			08/21/18 17:23	12.5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		69 - 120		08/21/18 17:23	12.5
Dibromofluoromethane (Surr)	87		69 - 124		08/21/18 17:23	12.5
1,2-Dichloroethane-d4 (Surr)	81		61 - 138		08/21/18 17:23	12.5
Toluene-d8 (Surr)	85		73 - 120		08/21/18 17:23	12.5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-46-080918

Lab Sample ID: 240-99739-7

Date Collected: 08/09/18 12:30

Matrix: Water

Date Received: 08/10/18 08:45

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.5		2.0	0.86	ug/L			08/17/18 19:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		63 - 125					08/17/18 19:11	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 17:47	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 17:47	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 17:47	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 17:47	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 17:47	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 17:47	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 17:47	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 17:47	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 17:47	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 17:47	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 17:47	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 17:47	1
cis-1,2-Dichloroethene	11		1.0	0.16	ug/L			08/21/18 17:47	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 17:47	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 17:47	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 17:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 17:47	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 17:47	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 17:47	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 17:47	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 17:47	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 17:47	1
1,1-Dichloroethane	1.3		1.0	0.17	ug/L			08/21/18 17:47	1
1,2-Dichloroethane	0.57	J	1.0	0.21	ug/L			08/21/18 17:47	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 17:47	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 17:47	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 17:47	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 17:47	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 17:47	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 17:47	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 17:47	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 17:47	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 17:47	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 17:47	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 17:47	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 17:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 17:47	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 17:47	1
trans-1,2-Dichloroethene	1.2		1.0	0.19	ug/L			08/21/18 17:47	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 17:47	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 17:47	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 17:47	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 17:47	1

TestAmerica Canton

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-46-080918

Lab Sample ID: 240-99739-7

Date Collected: 08/09/18 12:30

Matrix: Water

Date Received: 08/10/18 08:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 17:47	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 17:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 17:47	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 17:47	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 17:47	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 17:47	1
Vinyl chloride	66		1.0	0.20	ug/L			08/21/18 17:47	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 17:47	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 17:47	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 17:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		69 - 120		08/21/18 17:47	1
Dibromofluoromethane (Surr)	81		69 - 124		08/21/18 17:47	1
1,2-Dichloroethane-d4 (Surr)	77		61 - 138		08/21/18 17:47	1
Toluene-d8 (Surr)	83		73 - 120		08/21/18 17:47	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (69-120)	DBFM (69-124)	DCA (61-138)	TOL (73-120)
240-99739-1	MW-65-080818	90	86	80	86
240-99739-2	PW-16-02-080818	92	87	82	88
240-99739-2	PW-16-02-080818	87	82	76	82
240-99739-3	MW-66-080819	91	88	81	86
240-99739-4	MW-71-080918	89	85	80	83
240-99739-5	MW-45-080918	90	84	79	84
240-99739-6	MW-70-080918	91	87	81	85
240-99739-6 MS	MW-70-080918	91	84	80	87
240-99739-6 MSD	MW-70-080918	90	86	81	86
240-99739-7	MW-46-080918	87	81	77	83
240-99856-B-1 MS	Matrix Spike	90	85	79	83
240-99856-B-1 MSD	Matrix Spike Duplicate	88	85	82	83
LCS 240-341763/5	Lab Control Sample	90	83	79	86
LCS 240-342020/5	Lab Control Sample	97	92	86	91
MB 240-341763/8	Method Blank	88	81	77	85
MB 240-342020/8	Method Blank	87	82	78	82

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

DCA = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (63-125)
240-99739-1	MW-65-080818	99
240-99739-2	PW-16-02-080818	100
240-99739-3	MW-66-080819	105
240-99739-4	MW-71-080918	102
240-99739-5	MW-45-080918	95
240-99739-6	MW-70-080918	100
240-99739-7	MW-46-080918	110
240-99796-C-5 MS	Matrix Spike	110
240-99796-C-5 MSD	Matrix Spike Duplicate	99
LCS 240-341391/4	Lab Control Sample	101
MB 240-341391/5	Method Blank	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: MB 240-341763/8

Matrix: Water

Analysis Batch: 341763

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/21/18 09:31	1
Benzene	1.0	U	1.0	0.13	ug/L			08/21/18 09:31	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/21/18 09:31	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/21/18 09:31	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/21/18 09:31	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/21/18 09:31	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/21/18 09:31	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/21/18 09:31	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/21/18 09:31	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/21/18 09:31	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/21/18 09:31	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/21/18 09:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/21/18 09:31	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/21/18 09:31	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/21/18 09:31	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/21/18 09:31	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/21/18 09:31	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/21/18 09:31	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 09:31	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/21/18 09:31	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/21/18 09:31	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/21/18 09:31	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/21/18 09:31	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/21/18 09:31	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 09:31	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/21/18 09:31	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/21/18 09:31	1
2-Hexanone	10	U	10	0.54	ug/L			08/21/18 09:31	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/21/18 09:31	1
Methyl acetate	10	U	10	1.7	ug/L			08/21/18 09:31	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/21/18 09:31	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/21/18 09:31	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/21/18 09:31	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/21/18 09:31	1
Styrene	1.0	U	1.0	0.10	ug/L			08/21/18 09:31	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/21/18 09:31	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/21/18 09:31	1
Toluene	1.0	U	1.0	0.14	ug/L			08/21/18 09:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/21/18 09:31	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/21/18 09:31	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/21/18 09:31	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/21/18 09:31	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/21/18 09:31	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/21/18 09:31	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/21/18 09:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/21/18 09:31	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/21/18 09:31	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/21/18 09:31	1

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: MB 240-341763/8
Matrix: Water
Analysis Batch: 341763

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/21/18 09:31	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/21/18 09:31	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/21/18 09:31	1
1,4-Dioxane	50	U	50	13	ug/L			08/21/18 09:31	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/21/18 09:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		69 - 120		08/21/18 09:31	1
Dibromofluoromethane (Surr)	81		69 - 124		08/21/18 09:31	1
1,2-Dichloroethane-d4 (Surr)	77		61 - 138		08/21/18 09:31	1
Toluene-d8 (Surr)	85		73 - 120		08/21/18 09:31	1

Lab Sample ID: LCS 240-341763/5
Matrix: Water
Analysis Batch: 341763

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	40.0	35.5		ug/L		89	35 - 131
Benzene	20.0	19.6		ug/L		98	79 - 120
Bromodichloromethane	20.0	19.7		ug/L		98	79 - 125
Bromoform	20.0	19.2		ug/L		96	55 - 145
Bromomethane	20.0	18.7		ug/L		94	17 - 158
2-Butanone (MEK)	40.0	37.4		ug/L		94	43 - 149
Carbon disulfide	20.0	14.3		ug/L		71	49 - 141
Carbon tetrachloride	20.0	20.4		ug/L		102	55 - 171
Chlorobenzene	20.0	18.9		ug/L		95	80 - 120
Chloroethane	20.0	19.1		ug/L		96	10 - 149
Chloroform	20.0	19.7		ug/L		98	80 - 120
Chloromethane	20.0	19.7		ug/L		99	59 - 124
cis-1,2-Dichloroethene	20.0	19.5		ug/L		97	77 - 120
cis-1,3-Dichloropropene	20.0	20.6		ug/L		103	75 - 120
Cyclohexane	20.0	18.5		ug/L		92	66 - 135
Dibromochloromethane	20.0	19.8		ug/L		99	64 - 129
1,2-Dibromo-3-Chloropropane	20.0	16.8		ug/L		84	50 - 130
1,2-Dibromoethane	20.0	19.6		ug/L		98	80 - 120
1,2-Dichlorobenzene	20.0	18.5		ug/L		93	80 - 120
1,3-Dichlorobenzene	20.0	18.1		ug/L		90	80 - 120
1,4-Dichlorobenzene	20.0	18.3		ug/L		91	80 - 120
Dichlorodifluoromethane	20.0	19.2		ug/L		96	42 - 141
1,1-Dichloroethane	20.0	19.1		ug/L		95	74 - 120
1,2-Dichloroethane	20.0	19.2		ug/L		96	68 - 133
1,1-Dichloroethene	20.0	20.5		ug/L		102	65 - 127
1,2-Dichloropropane	20.0	20.5		ug/L		102	78 - 127
Ethylbenzene	20.0	18.2		ug/L		91	80 - 120
2-Hexanone	40.0	36.3		ug/L		91	28 - 169
Isopropylbenzene	20.0	18.2		ug/L		91	80 - 128
Methyl acetate	40.0	38.8		ug/L		97	63 - 137
Methylcyclohexane	20.0	17.5		ug/L		87	63 - 141

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: LCS 240-341763/5

Matrix: Water

Analysis Batch: 341763

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	20.0	18.6		ug/L		93	64 - 140
4-Methyl-2-pentanone (MIBK)	40.0	39.3		ug/L		98	53 - 144
Methyl tert-butyl ether	20.0	19.0		ug/L		95	73 - 120
Styrene	20.0	18.6		ug/L		93	80 - 121
1,1,2,2-Tetrachloroethane	20.0	18.4		ug/L		92	58 - 122
Tetrachloroethene	20.0	18.9		ug/L		95	80 - 122
Toluene	20.0	18.8		ug/L		94	78 - 120
trans-1,2-Dichloroethene	20.0	20.5		ug/L		103	74 - 124
trans-1,3-Dichloropropene	20.0	17.9		ug/L		89	67 - 120
1,2,4-Trichlorobenzene	20.0	18.1		ug/L		91	34 - 141
1,1,1-Trichloroethane	20.0	19.8		ug/L		99	64 - 147
1,1,2-Trichloroethane	20.0	20.1		ug/L		100	76 - 121
Trichloroethene	20.0	20.3		ug/L		101	76 - 124
Trichlorofluoromethane	20.0	20.3		ug/L		102	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	21.2		ug/L		106	65 - 144
1,2,4-Trimethylbenzene	20.0	17.4		ug/L		87	80 - 120
1,3,5-Trimethylbenzene	20.0	17.6		ug/L		88	79 - 120
Vinyl chloride	20.0	18.9		ug/L		94	65 - 124
Xylenes, Total	40.0	36.1		ug/L		90	80 - 120
1,4-Dioxane	400	361		ug/L		90	35 - 134
Diethyl ether	20.0	20.8		ug/L		104	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	90		69 - 120
Dibromofluoromethane (Surr)	83		69 - 124
1,2-Dichloroethane-d4 (Surr)	79		61 - 138
Toluene-d8 (Surr)	86		73 - 120

Lab Sample ID: 240-99739-6 MS

Matrix: Water

Analysis Batch: 341763

Client Sample ID: MW-70-080918

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	130	U	500	450		ug/L		90	19 - 133
Benzene	13	U	250	244		ug/L		98	69 - 127
Bromodichloromethane	13	U	250	234		ug/L		94	75 - 128
Bromoform	13	U	250	227		ug/L		91	61 - 135
Bromomethane	13	U	250	223		ug/L		89	10 - 148
2-Butanone (MEK)	130	U	500	481		ug/L		96	34 - 153
Carbon disulfide	63	U	250	209		ug/L		84	46 - 143
Carbon tetrachloride	13	U	250	247		ug/L		99	53 - 175
Chlorobenzene	13	U	250	238		ug/L		95	76 - 120
Chloroethane	13	U	250	232		ug/L		93	10 - 141
Chloroform	13	U	250	246		ug/L		98	74 - 125
Chloromethane	13	U	250	242		ug/L		97	34 - 127
cis-1,2-Dichloroethene	200		250	444		ug/L		97	69 - 127
cis-1,3-Dichloropropene	13	U	250	242		ug/L		97	68 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99739-6 MS

Matrix: Water

Analysis Batch: 341763

Client Sample ID: MW-70-080918

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Cyclohexane	13	U	250	222		ug/L		89	56 - 135
Dibromochloromethane	13	U	250	244		ug/L		98	62 - 131
1,2-Dibromo-3-Chloropropane	13	U	250	203		ug/L		81	48 - 130
1,2-Dibromoethane	13	U	250	241		ug/L		96	73 - 121
1,2-Dichlorobenzene	13	U	250	220		ug/L		88	70 - 120
1,3-Dichlorobenzene	13	U	250	217		ug/L		87	71 - 120
1,4-Dichlorobenzene	13	U	250	217		ug/L		87	72 - 120
Dichlorodifluoromethane	13	U	250	219		ug/L		88	45 - 130
1,1-Dichloroethane	13	U	250	241		ug/L		97	69 - 122
1,2-Dichloroethane	13	U	250	244		ug/L		98	64 - 138
1,1-Dichloroethene	13	U	250	254		ug/L		102	62 - 127
1,2-Dichloropropane	13	U	250	251		ug/L		100	72 - 131
Ethylbenzene	13	U	250	227		ug/L		91	72 - 121
2-Hexanone	130	U	500	441		ug/L		88	21 - 184
Isopropylbenzene	13	U	250	228		ug/L		91	70 - 132
Methyl acetate	130	U	500	469		ug/L		94	52 - 139
Methylcyclohexane	13	U	250	208		ug/L		83	46 - 139
Methylene Chloride	63	U	250	244		ug/L		98	52 - 137
4-Methyl-2-pentanone (MIBK)	130	U	500	473		ug/L		95	53 - 147
Methyl tert-butyl ether	13	U	250	241		ug/L		96	67 - 125
Styrene	13	U	250	233		ug/L		93	74 - 125
1,1,2,2-Tetrachloroethane	13	U	250	220		ug/L		88	51 - 123
Tetrachloroethene	13	U	250	238		ug/L		95	69 - 126
Toluene	13	U	250	237		ug/L		95	69 - 125
trans-1,2-Dichloroethene	3.3	J	250	264		ug/L		104	66 - 131
trans-1,3-Dichloropropene	13	U	250	210		ug/L		84	59 - 120
1,2,4-Trichlorobenzene	13	U	250	204		ug/L		82	26 - 138
1,1,1-Trichloroethane	13	U	250	248		ug/L		99	57 - 156
1,1,2-Trichloroethane	13	U	250	250		ug/L		100	68 - 127
Trichloroethene	13	U	250	258		ug/L		103	68 - 129
Trichlorofluoromethane	13	U	250	246		ug/L		99	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	13	U	250	255		ug/L		102	58 - 137
1,2,4-Trimethylbenzene	13	U	250	208		ug/L		83	64 - 120
1,3,5-Trimethylbenzene	13	U	250	208		ug/L		83	67 - 120
Vinyl chloride	190		250	420		ug/L		93	55 - 123
Xylenes, Total	25	U	500	458		ug/L		92	71 - 122
1,4-Dioxane	630	U	5000	5060		ug/L		101	13 - 155
Diethyl ether	25	U	250	254		ug/L		102	65 - 124

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	91		69 - 120
Dibromofluoromethane (Surr)	84		69 - 124
1,2-Dichloroethane-d4 (Surr)	80		61 - 138
Toluene-d8 (Surr)	87		73 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99739-6 MSD

Matrix: Water

Analysis Batch: 341763

Client Sample ID: MW-70-080918

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
Acetone	130	U	500	417		ug/L		83	19 - 133	8	35
Benzene	13	U	250	245		ug/L		98	69 - 127	0	10
Bromodichloromethane	13	U	250	245		ug/L		98	75 - 128	4	13
Bromoform	13	U	250	231		ug/L		93	61 - 135	2	13
Bromomethane	13	U	250	224		ug/L		89	10 - 148	0	35
2-Butanone (MEK)	130	U	500	494		ug/L		99	34 - 153	3	23
Carbon disulfide	63	U	250	189		ug/L		76	46 - 143	10	18
Carbon tetrachloride	13	U	250	260		ug/L		104	53 - 175	5	17
Chlorobenzene	13	U	250	238		ug/L		95	76 - 120	0	12
Chloroethane	13	U	250	230		ug/L		92	10 - 141	1	35
Chloroform	13	U	250	249		ug/L		100	74 - 125	1	11
Chloromethane	13	U	250	238		ug/L		95	34 - 127	1	25
cis-1,2-Dichloroethene	200		250	455		ug/L		101	69 - 127	3	11
cis-1,3-Dichloropropene	13	U	250	248		ug/L		99	68 - 120	3	13
Cyclohexane	13	U	250	233		ug/L		93	56 - 135	5	35
Dibromochloromethane	13	U	250	243		ug/L		97	62 - 131	1	15
1,2-Dibromo-3-Chloropropane	13	U	250	199		ug/L		80	48 - 130	2	31
1,2-Dibromoethane	13	U	250	238		ug/L		95	73 - 121	1	12
1,2-Dichlorobenzene	13	U	250	224		ug/L		90	70 - 120	2	19
1,3-Dichlorobenzene	13	U	250	221		ug/L		88	71 - 120	2	18
1,4-Dichlorobenzene	13	U	250	222		ug/L		89	72 - 120	2	17
Dichlorodifluoromethane	13	U	250	235		ug/L		94	45 - 130	7	34
1,1-Dichloroethane	13	U	250	243		ug/L		97	69 - 122	1	11
1,2-Dichloroethane	13	U	250	245		ug/L		98	64 - 138	1	11
1,1-Dichloroethene	13	U	250	265		ug/L		106	62 - 127	4	14
1,2-Dichloropropane	13	U	250	252		ug/L		101	72 - 131	0	12
Ethylbenzene	13	U	250	225		ug/L		90	72 - 121	1	15
2-Hexanone	130	U	500	436		ug/L		87	21 - 184	1	12
Isopropylbenzene	13	U	250	227		ug/L		91	70 - 132	0	16
Methyl acetate	130	U	500	466		ug/L		93	52 - 139	1	14
Methylcyclohexane	13	U	250	219		ug/L		88	46 - 139	5	35
Methylene Chloride	63	U	250	245		ug/L		98	52 - 137	0	12
4-Methyl-2-pentanone (MIBK)	130	U	500	470		ug/L		94	53 - 147	1	16
Methyl tert-butyl ether	13	U	250	238		ug/L		95	67 - 125	1	12
Styrene	13	U	250	232		ug/L		93	74 - 125	1	14
1,1,2,2-Tetrachloroethane	13	U	250	216		ug/L		87	51 - 123	2	17
Tetrachloroethene	13	U	250	240		ug/L		96	69 - 126	1	18
Toluene	13	U	250	232		ug/L		93	69 - 125	2	14
trans-1,2-Dichloroethene	3.3	J	250	264		ug/L		104	66 - 131	0	11
trans-1,3-Dichloropropene	13	U	250	212		ug/L		85	59 - 120	1	14
1,2,4-Trichlorobenzene	13	U	250	217		ug/L		87	26 - 138	6	35
1,1,1-Trichloroethane	13	U	250	249		ug/L		100	57 - 156	0	13
1,1,2-Trichloroethane	13	U	250	241		ug/L		96	68 - 127	4	11
Trichloroethene	13	U	250	253		ug/L		101	68 - 129	2	12
Trichlorofluoromethane	13	U	250	244		ug/L		98	28 - 172	1	26
1,1,2-Trichloro-1,2,2-trifluoroethane	13	U	250	276		ug/L		110	58 - 137	8	35
1,2,4-Trimethylbenzene	13	U	250	212		ug/L		85	64 - 120	2	22

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99739-6 MSD
Matrix: Water
Analysis Batch: 341763

Client Sample ID: MW-70-080918
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	13	U	250	212		ug/L		85	67 - 120	2	25
Vinyl chloride	190		250	440		ug/L		102	55 - 123	5	12
Xylenes, Total	25	U	500	452		ug/L		90	71 - 122	1	14
1,4-Dioxane	630	U	5000	4270		ug/L		85	13 - 155	17	35
Diethyl ether	25	U	250	245		ug/L		98	65 - 124	4	11

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	90		69 - 120
Dibromofluoromethane (Surr)	86		69 - 124
1,2-Dichloroethane-d4 (Surr)	81		61 - 138
Toluene-d8 (Surr)	86		73 - 120

Lab Sample ID: MB 240-342020/8
Matrix: Water
Analysis Batch: 342020

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			08/22/18 13:49	1
Benzene	1.0	U	1.0	0.13	ug/L			08/22/18 13:49	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			08/22/18 13:49	1
Bromoform	1.0	U	1.0	0.76	ug/L			08/22/18 13:49	1
Bromomethane	1.0	U	1.0	0.42	ug/L			08/22/18 13:49	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			08/22/18 13:49	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			08/22/18 13:49	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			08/22/18 13:49	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			08/22/18 13:49	1
Chloroethane	1.0	U	1.0	0.83	ug/L			08/22/18 13:49	1
Chloroform	1.0	U	1.0	0.13	ug/L			08/22/18 13:49	1
Chloromethane	1.0	U	1.0	0.20	ug/L			08/22/18 13:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/22/18 13:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			08/22/18 13:49	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			08/22/18 13:49	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			08/22/18 13:49	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			08/22/18 13:49	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			08/22/18 13:49	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/22/18 13:49	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			08/22/18 13:49	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			08/22/18 13:49	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			08/22/18 13:49	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			08/22/18 13:49	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			08/22/18 13:49	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/22/18 13:49	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			08/22/18 13:49	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			08/22/18 13:49	1
2-Hexanone	10	U	10	0.54	ug/L			08/22/18 13:49	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			08/22/18 13:49	1
Methyl acetate	10	U	10	1.7	ug/L			08/22/18 13:49	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			08/22/18 13:49	1

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: MB 240-342020/8
Matrix: Water
Analysis Batch: 342020

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Methylene Chloride	5.0	U	5.0	2.6	ug/L			08/22/18 13:49	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			08/22/18 13:49	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			08/22/18 13:49	1
Styrene	1.0	U	1.0	0.10	ug/L			08/22/18 13:49	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			08/22/18 13:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/22/18 13:49	1
Toluene	1.0	U	1.0	0.14	ug/L			08/22/18 13:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/22/18 13:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			08/22/18 13:49	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			08/22/18 13:49	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			08/22/18 13:49	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			08/22/18 13:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/22/18 13:49	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			08/22/18 13:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			08/22/18 13:49	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			08/22/18 13:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			08/22/18 13:49	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			08/22/18 13:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/22/18 13:49	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			08/22/18 13:49	1
1,4-Dioxane	50	U	50	13	ug/L			08/22/18 13:49	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			08/22/18 13:49	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	87		69 - 120		08/22/18 13:49	1
Dibromofluoromethane (Surr)	82		69 - 124		08/22/18 13:49	1
1,2-Dichloroethane-d4 (Surr)	78		61 - 138		08/22/18 13:49	1
Toluene-d8 (Surr)	82		73 - 120		08/22/18 13:49	1

Lab Sample ID: LCS 240-342020/5
Matrix: Water
Analysis Batch: 342020

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	21.6		ug/L		108	79 - 120
Bromodichloromethane	20.0	21.8		ug/L		109	79 - 125
Bromoform	20.0	21.2		ug/L		106	55 - 145
Bromomethane	20.0	21.1		ug/L		105	17 - 158
2-Butanone (MEK)	40.0	42.5		ug/L		106	43 - 149
Carbon disulfide	20.0	18.7		ug/L		94	49 - 141
Carbon tetrachloride	20.0	22.8		ug/L		114	55 - 171
Chlorobenzene	20.0	21.5		ug/L		107	80 - 120
Chloroethane	20.0	20.4		ug/L		102	10 - 149
Chloroform	20.0	22.5		ug/L		112	80 - 120
Chloromethane	20.0	21.3		ug/L		106	59 - 124
cis-1,2-Dichloroethene	20.0	21.6		ug/L		108	77 - 120
cis-1,3-Dichloropropene	20.0	22.1		ug/L		111	75 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: LCS 240-342020/5

Matrix: Water

Analysis Batch: 342020

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyclohexane	20.0	20.1		ug/L		101	66 - 135
Dibromochloromethane	20.0	22.0		ug/L		110	64 - 129
1,2-Dibromo-3-Chloropropane	20.0	19.4		ug/L		97	50 - 130
1,2-Dibromoethane	20.0	21.3		ug/L		106	80 - 120
1,2-Dichlorobenzene	20.0	19.9		ug/L		100	80 - 120
1,3-Dichlorobenzene	20.0	19.5		ug/L		98	80 - 120
1,4-Dichlorobenzene	20.0	19.5		ug/L		98	80 - 120
Dichlorodifluoromethane	20.0	20.9		ug/L		105	42 - 141
1,1-Dichloroethane	20.0	21.3		ug/L		107	74 - 120
1,2-Dichloroethane	20.0	21.4		ug/L		107	68 - 133
1,1-Dichloroethene	20.0	22.6		ug/L		113	65 - 127
1,2-Dichloropropane	20.0	22.7		ug/L		114	78 - 127
Ethylbenzene	20.0	20.0		ug/L		100	80 - 120
2-Hexanone	40.0	39.5		ug/L		99	28 - 169
Isopropylbenzene	20.0	20.4		ug/L		102	80 - 128
Methyl acetate	40.0	42.8		ug/L		107	63 - 137
Methylcyclohexane	20.0	18.8		ug/L		94	63 - 141
Methylene Chloride	20.0	21.2		ug/L		106	64 - 140
4-Methyl-2-pentanone (MIBK)	40.0	43.1		ug/L		108	53 - 144
Methyl tert-butyl ether	20.0	21.3		ug/L		106	73 - 120
Styrene	20.0	20.7		ug/L		103	80 - 121
1,1,2,2-Tetrachloroethane	20.0	19.6		ug/L		98	58 - 122
Tetrachloroethene	20.0	21.2		ug/L		106	80 - 122
Toluene	20.0	21.0		ug/L		105	78 - 120
trans-1,2-Dichloroethene	20.0	22.3		ug/L		112	74 - 124
trans-1,3-Dichloropropene	20.0	19.5		ug/L		97	67 - 120
1,2,4-Trichlorobenzene	20.0	19.8		ug/L		99	34 - 141
1,1,1-Trichloroethane	20.0	22.1		ug/L		110	64 - 147
1,1,2-Trichloroethane	20.0	21.6		ug/L		108	76 - 121
Trichloroethene	20.0	22.6		ug/L		113	76 - 124
Trichlorofluoromethane	20.0	22.5		ug/L		112	27 - 176
1,1,2-Trichloro-1,2,2-trifluoroethane	20.0	22.7		ug/L		114	65 - 144
1,2,4-Trimethylbenzene	20.0	18.9		ug/L		95	80 - 120
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	79 - 120
Vinyl chloride	20.0	21.1		ug/L		105	65 - 124
Xylenes, Total	40.0	40.7		ug/L		102	80 - 120
1,4-Dioxane	400	430		ug/L		108	35 - 134
Diethyl ether	20.0	22.3		ug/L		111	72 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		69 - 120
Dibromofluoromethane (Surr)	92		69 - 124
1,2-Dichloroethane-d4 (Surr)	86		61 - 138
Toluene-d8 (Surr)	91		73 - 120

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99856-B-1 MS

Matrix: Water

Analysis Batch: 342020

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Acetone	63	U	250	219		ug/L		87	19 - 133
Benzene	4.1	J	125	126		ug/L		98	69 - 127
Bromodichloromethane	6.3	U	125	121		ug/L		97	75 - 128
Bromoform	6.3	U	125	111		ug/L		89	61 - 135
Bromomethane	6.3	U	125	119		ug/L		95	10 - 148
2-Butanone (MEK)	63	U	250	236		ug/L		94	34 - 153
Carbon disulfide	31	U	125	109		ug/L		87	46 - 143
Carbon tetrachloride	6.3	U	125	127		ug/L		102	53 - 175
Chlorobenzene	6.3	U	125	115		ug/L		92	76 - 120
Chloroethane	6.3	U	125	113		ug/L		90	10 - 141
Chloroform	6.3	U	125	125		ug/L		100	74 - 125
Chloromethane	6.3	U	125	99.5		ug/L		80	34 - 127
cis-1,2-Dichloroethene	6.3	U	125	124		ug/L		99	69 - 127
cis-1,3-Dichloropropene	6.3	U	125	123		ug/L		98	68 - 120
Cyclohexane	5.0	J	125	124		ug/L		95	56 - 135
Dibromochloromethane	6.3	U	125	119		ug/L		95	62 - 131
1,2-Dibromo-3-Chloropropane	6.3	U	125	97.8		ug/L		78	48 - 130
1,2-Dibromoethane	6.3	U	125	117		ug/L		94	73 - 121
1,2-Dichlorobenzene	6.3	U	125	114		ug/L		91	70 - 120
1,3-Dichlorobenzene	6.3	U	125	110		ug/L		88	71 - 120
1,4-Dichlorobenzene	6.3	U	125	111		ug/L		89	72 - 120
Dichlorodifluoromethane	6.3	U	125	110		ug/L		88	45 - 130
1,1-Dichloroethane	6.3	U	125	119		ug/L		95	69 - 122
1,2-Dichloroethane	6.3	U	125	121		ug/L		97	64 - 138
1,1-Dichloroethene	6.3	U	125	127		ug/L		101	62 - 127
1,2-Dichloropropane	6.3	U	125	125		ug/L		100	72 - 131
Ethylbenzene	250		125	368		ug/L		92	72 - 121
2-Hexanone	63	U	250	218		ug/L		87	21 - 184
Isopropylbenzene	23		125	137		ug/L		91	70 - 132
Methyl acetate	63	U	250	233		ug/L		93	52 - 139
Methylcyclohexane	6.3	U	125	110		ug/L		88	46 - 139
Methylene Chloride	31	U	125	121		ug/L		97	52 - 137
4-Methyl-2-pentanone (MIBK)	63	U	250	237		ug/L		95	53 - 147
Methyl tert-butyl ether	0.77	J	125	121		ug/L		96	67 - 125
Styrene	6.3	U	125	115		ug/L		92	74 - 125
1,1,2,2-Tetrachloroethane	6.3	U	125	111		ug/L		89	51 - 123
Tetrachloroethene	6.3	U	125	120		ug/L		96	69 - 126
Toluene	6.3	U	125	117		ug/L		94	69 - 125
trans-1,2-Dichloroethene	6.3	U	125	130		ug/L		104	66 - 131
trans-1,3-Dichloropropene	6.3	U	125	104		ug/L		83	59 - 120
1,2,4-Trichlorobenzene	6.3	U	125	107		ug/L		85	26 - 138
1,1,1-Trichloroethane	6.3	U	125	127		ug/L		101	57 - 156
1,1,2-Trichloroethane	6.3	U	125	119		ug/L		95	68 - 127
Trichloroethene	6.3	U	125	131		ug/L		104	68 - 129
Trichlorofluoromethane	6.3	U	125	123		ug/L		98	28 - 172
1,1,2-Trichloro-1,2,2-trifluoroethane	6.3	U	125	131		ug/L		105	58 - 137
Vinyl chloride	6.3	U	125	116		ug/L		93	55 - 123

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99856-B-1 MS

Matrix: Water

Analysis Batch: 342020

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Xylenes, Total	170		250	399		ug/L		91	71 - 122
Surrogate	%Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	90		69 - 120						
Dibromofluoromethane (Surr)	85		69 - 124						
1,2-Dichloroethane-d4 (Surr)	79		61 - 138						
Toluene-d8 (Surr)	83		73 - 120						

Lab Sample ID: 240-99856-B-1 MSD

Matrix: Water

Analysis Batch: 342020

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	63	U	250	220		ug/L		88	19 - 133	1	35
Benzene	4.1	J	125	124		ug/L		96	69 - 127	2	10
Bromodichloromethane	6.3	U	125	118		ug/L		95	75 - 128	2	13
Bromoform	6.3	U	125	112		ug/L		90	61 - 135	1	13
Bromomethane	6.3	U	125	118		ug/L		94	10 - 148	1	35
2-Butanone (MEK)	63	U	250	229		ug/L		92	34 - 153	3	23
Carbon disulfide	31	U	125	105		ug/L		84	46 - 143	4	18
Carbon tetrachloride	6.3	U	125	125		ug/L		100	53 - 175	2	17
Chlorobenzene	6.3	U	125	116		ug/L		93	76 - 120	1	12
Chloroethane	6.3	U	125	119		ug/L		95	10 - 141	5	35
Chloroform	6.3	U	125	121		ug/L		97	74 - 125	4	11
Chloromethane	6.3	U	125	110		ug/L		88	34 - 127	10	25
cis-1,2-Dichloroethene	6.3	U	125	122		ug/L		97	69 - 127	2	11
cis-1,3-Dichloropropene	6.3	U	125	121		ug/L		97	68 - 120	1	13
Cyclohexane	5.0	J	125	121		ug/L		93	56 - 135	3	35
Dibromochloromethane	6.3	U	125	116		ug/L		93	62 - 131	2	15
1,2-Dibromo-3-Chloropropane	6.3	U	125	106		ug/L		84	48 - 130	8	31
1,2-Dibromoethane	6.3	U	125	118		ug/L		94	73 - 121	0	12
1,2-Dichlorobenzene	6.3	U	125	112		ug/L		89	70 - 120	2	19
1,3-Dichlorobenzene	6.3	U	125	111		ug/L		89	71 - 120	1	18
1,4-Dichlorobenzene	6.3	U	125	112		ug/L		89	72 - 120	0	17
Dichlorodifluoromethane	6.3	U	125	120		ug/L		96	45 - 130	9	34
1,1-Dichloroethane	6.3	U	125	117		ug/L		94	69 - 122	2	11
1,2-Dichloroethane	6.3	U	125	120		ug/L		96	64 - 138	1	11
1,1-Dichloroethene	6.3	U	125	127		ug/L		102	62 - 127	0	14
1,2-Dichloropropane	6.3	U	125	121		ug/L		97	72 - 131	3	12
Ethylbenzene	250		125	368		ug/L		92	72 - 121	0	15
2-Hexanone	63	U	250	216		ug/L		86	21 - 184	1	12
Isopropylbenzene	23		125	138		ug/L		91	70 - 132	0	16
Methyl acetate	63	U	250	242		ug/L		97	52 - 139	4	14
Methylcyclohexane	6.3	U	125	109		ug/L		87	46 - 139	1	35
Methylene Chloride	31	U	125	116		ug/L		93	52 - 137	5	12
4-Methyl-2-pentanone (MIBK)	63	U	250	240		ug/L		96	53 - 147	1	16
Methyl tert-butyl ether	0.77	J	125	119		ug/L		95	67 - 125	2	12
Styrene	6.3	U	125	116		ug/L		93	74 - 125	1	14

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

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

Lab Sample ID: 240-99856-B-1 MSD
Matrix: Water
Analysis Batch: 342020

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	6.3	U	125	111		ug/L		89	51 - 123	0	17
Tetrachloroethene	6.3	U	125	116		ug/L		93	69 - 126	4	18
Toluene	6.3	U	125	116		ug/L		93	69 - 125	1	14
trans-1,2-Dichloroethene	6.3	U	125	127		ug/L		101	66 - 131	3	11
trans-1,3-Dichloropropene	6.3	U	125	106		ug/L		85	59 - 120	2	14
1,2,4-Trichlorobenzene	6.3	U	125	112		ug/L		90	26 - 138	5	35
1,1,1-Trichloroethane	6.3	U	125	123		ug/L		98	57 - 156	3	13
1,1,2-Trichloroethane	6.3	U	125	121		ug/L		97	68 - 127	2	11
Trichloroethene	6.3	U	125	126		ug/L		101	68 - 129	4	12
Trichlorofluoromethane	6.3	U	125	128		ug/L		103	28 - 172	4	26
1,1,2-Trichloro-1,2,2-trifluoroethane	6.3	U	125	133		ug/L		107	58 - 137	2	35
Vinyl chloride	6.3	U	125	120		ug/L		96	55 - 123	3	12
Xylenes, Total	170		250	394		ug/L		89	71 - 122	1	14

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	88		69 - 120
Dibromofluoromethane (Surr)	85		69 - 124
1,2-Dichloroethane-d4 (Surr)	82		61 - 138
Toluene-d8 (Surr)	83		73 - 120

Method: 8260B SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 240-341391/5
Matrix: Water
Analysis Batch: 341391

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/17/18 12:35	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		63 - 125		08/17/18 12:35	1

Lab Sample ID: LCS 240-341391/4
Matrix: Water
Analysis Batch: 341391

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	9.94		ug/L		99	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
1,2-Dichloroethane-d4 (Surr)	101		63 - 125

TestAmerica Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Method: 8260B SIM - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 240-99796-C-5 MS
Matrix: Water
Analysis Batch: 341391

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	52 - 129
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	110		63 - 125						

Lab Sample ID: 240-99796-C-5 MSD
Matrix: Water
Analysis Batch: 341391

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.56		ug/L		96	52 - 129	8	13
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	99		63 - 125								

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

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

GC/MS VOA

Analysis Batch: 341391

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99739-1	MW-65-080818	Total/NA	Water	8260B SIM	
240-99739-2	PW-16-02-080818	Total/NA	Water	8260B SIM	
240-99739-3	MW-66-080819	Total/NA	Water	8260B SIM	
240-99739-4	MW-71-080918	Total/NA	Water	8260B SIM	
240-99739-5	MW-45-080918	Total/NA	Water	8260B SIM	
240-99739-6	MW-70-080918	Total/NA	Water	8260B SIM	
240-99739-7	MW-46-080918	Total/NA	Water	8260B SIM	
MB 240-341391/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-341391/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-99796-C-5 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-99796-C-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 341763

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99739-1	MW-65-080818	Total/NA	Water	8260B	
240-99739-2	PW-16-02-080818	Total/NA	Water	8260B	
240-99739-3	MW-66-080819	Total/NA	Water	8260B	
240-99739-4	MW-71-080918	Total/NA	Water	8260B	
240-99739-5	MW-45-080918	Total/NA	Water	8260B	
240-99739-6	MW-70-080918	Total/NA	Water	8260B	
240-99739-7	MW-46-080918	Total/NA	Water	8260B	
MB 240-341763/8	Method Blank	Total/NA	Water	8260B	
LCS 240-341763/5	Lab Control Sample	Total/NA	Water	8260B	
240-99739-6 MS	MW-70-080918	Total/NA	Water	8260B	
240-99739-6 MSD	MW-70-080918	Total/NA	Water	8260B	

Analysis Batch: 342020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99739-2	PW-16-02-080818	Total/NA	Water	8260B	
MB 240-342020/8	Method Blank	Total/NA	Water	8260B	
LCS 240-342020/5	Lab Control Sample	Total/NA	Water	8260B	
240-99856-B-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-99856-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-65-080818

Date Collected: 08/08/18 10:30

Date Received: 08/10/18 08:45

Lab Sample ID: 240-99739-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341763	08/21/18 15:25	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 16:43	SAM	TAL CAN

Client Sample ID: PW-16-02-080818

Date Collected: 08/08/18 13:55

Date Received: 08/10/18 08:45

Lab Sample ID: 240-99739-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341763	08/21/18 15:48	HMB	TAL CAN
Total/NA	Analysis	8260B		2	342020	08/22/18 15:15	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 17:07	SAM	TAL CAN

Client Sample ID: MW-66-080819

Date Collected: 08/08/18 16:50

Date Received: 08/10/18 08:45

Lab Sample ID: 240-99739-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341763	08/21/18 16:12	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 17:32	SAM	TAL CAN

Client Sample ID: MW-71-080918

Date Collected: 08/09/18 09:10

Date Received: 08/10/18 08:45

Lab Sample ID: 240-99739-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341763	08/21/18 16:36	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 17:56	SAM	TAL CAN

Client Sample ID: MW-45-080918

Date Collected: 08/09/18 10:10

Date Received: 08/10/18 08:45

Lab Sample ID: 240-99739-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		33.33	341763	08/21/18 17:00	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 18:21	SAM	TAL CAN

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Client Sample ID: MW-70-080918

Lab Sample ID: 240-99739-6

Date Collected: 08/09/18 11:15

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		12.5	341763	08/21/18 17:23	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 18:46	SAM	TAL CAN

Client Sample ID: MW-46-080918

Lab Sample ID: 240-99739-7

Date Collected: 08/09/18 12:30

Matrix: Water

Date Received: 08/10/18 08:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341763	08/21/18 17:47	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	341391	08/17/18 19:11	SAM	TAL CAN

Laboratory References:

TAL CAN = TestAmerica Canton, 4101 Shuffel Street NW, North Canton, OH 44720, TEL (330)497-9396

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP Livonia MI - E203728

TestAmerica Job ID: 240-99739-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-19
Connecticut	State Program	1	PH-0590	12-31-19
Florida	NELAP	4	E87225	06-30-19
Illinois	NELAP	5	200004	07-31-18 *
Kansas	NELAP	7	E-10336	01-31-19
Kentucky (UST)	State Program	4	58	02-23-19
Kentucky (WW)	State Program	4	98016	12-31-18
Minnesota	NELAP	5	039-999-348	12-31-18
Minnesota (Petrofund)	State Program	1	3506	07-31-19
Nevada	State Program	9	OH00048	07-31-19
New Jersey	NELAP	2	OH001	06-30-19
New York	NELAP	2	10975	03-31-19
Ohio VAP	State Program	5	CL0024	09-06-19
Oregon	NELAP	10	4062	02-23-19
Pennsylvania	NELAP	3	68-00340	08-31-19 *
Texas	NELAP	6	T104704517-17-9	08-31-18 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18 *
Washington	State Program	10	C971	01-12-19
West Virginia DEP	State Program	3	210	12-31-18

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



MICHIGAN
190

1.8/C1.5
1.4/C1.4

Chain of Custody Record

TestAmerica Laboratory location: Brighton — 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763


TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact		Regulatory program:		TestAmerica Laboratories, Inc.												
Company Name: Arcadis		<input type="checkbox"/> DW	<input type="checkbox"/> NPDES	<input type="checkbox"/> RCRA	<input type="checkbox"/> Other											
Address: 28550 Cabot Drive, Suite 500	Client Project Manager: Kris Hinskey	Site Contact: Angela DeGrandis		Lab Contact: Mike DeMonico	COC No:											
City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 734-320-0065		Telephone: 330-497-9396	For lab use only											
Phone: 248-994-2240	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time		COCs												
Project Name: Ford LTP		TAT if different from below		Walk-in client												
Project Number: MI001454.0004.00001		10 day		Lab sampling												
PO # MI001454.0004.00001		Method of Shipment/Carrier:		Job/SDG No:												
		Shipping/Tracking No:		Sample Specific Notes / Special Instructions:												
Sample Identification	Sample Date	Sample Time	Matrix						Filtered Sample (Y/N)	Composite C/Grab-G	VOCs 8260B	1,4-Dioxane 8260B SIM	240-99739 Chain of Custody			
			Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives								
MW-65-080818	8-8-18	10:30														
PW-16-02-080818	8-8-18	13:55														
MW-66-080818	8-8-18	16:50														
MW-71-080918	8-9-18	9:10														
MW-45-080918	8-9-18	10:10														
MW-70-080918	8-9-18	11:15														
MW-46-080918	8-9-18	12:30														
Possible Hazard Identification													Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input checked="" type="checkbox"/> Non-Hazard													<input type="checkbox"/> Return to Client		<input type="checkbox"/> Archive For _____ Months	
<input type="checkbox"/> Irritable													<input type="checkbox"/> Disposal By Lab			
<input type="checkbox"/> Inflammable													<input type="checkbox"/> Unknown			
<input type="checkbox"/> Poison B																
Special Instructions/QC Requirements & Comments:																
Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728																
Level IV Reporting.																
Relinquished by: <i>Erin Jorben</i>		Company: Arcadis		Date/Time: 8/9/18 / 12:45		Received by: <i>[Signature]</i>		Company: <i>ARC</i>		Date/Time: 8/2/18 / 13:24						
Relinquished by: <i>[Signature]</i>		Company: <i>ARC</i>		Date/Time: 8/9/18 / 14:27		Received by: <i>[Signature]</i>		Company: <i>ARC</i>		Date/Time: 8/10/18 / 8:45						
Relinquished by: <i>[Signature]</i>		Company:		Date/Time:		Received in Laboratory by:		Company:		Date/Time:						

©2008 TestAmerica Laboratories, Inc. All rights reserved. TestAmerica & Design are trademarks of TestAmerica Laboratories, Inc.



Canton Facility
 Client Amadis Site Name _____ Cooler unpacked by: Gil Brown
 Cooler Received on 8/10/14 Opened on 8/10/14
 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time _____ Storage Location _____
 TestAmerica Cooler # _____ Foam Box Client Cooler Box _____ Other _____
 Packing material used: Bubble Wrap Foam Plastic Bag _____ None _____ Other _____
 COOLANT: Wet Ice Blue Ice Dry Ice Water _____ None _____
 See Multiple Cooler Form
 1. Cooler temperature upon receipt
 IR GUN# IR-8 (CF +0 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 IR GUN #36 (CF -0.3°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No
 -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
 -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
 -Were tamper/custody seals intact and uncompromised? Yes No NA
 3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels be reconciled with the COC? Yes No
 9. Were correct bottle(s) used for the test(s) indicated? Yes No
 10. Sufficient quantity received to perform indicated analyses? Yes No
 11. Are these work share samples? Yes No
 If yes, Questions 12-16 have been checked at the originating laboratory.
 12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC849161
 13. Were VOAs on the COC? Yes No
 14. Were air bubbles >6 mm in any VOA vials? Yes No NA  Larger than this.
 15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No
 16. Was a LL Hg or Me Hg trip blank present? Yes No
 Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other _____
 Concerning _____

Tests that are not checked for pH by Receiving:
 VOAs
 Oil and Grease
 TOC

17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES Samples processed by: GB

18. SAMPLE CONDITION
 Sample(s) _____ were received after the recommended holding time had expired.
 Sample(s) _____ were received in a broken container.
 Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

19. SAMPLE PRESERVATION
 Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

