

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton  
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North Canton, OH 44720  
Tel: (330)497-9396

TestAmerica Job ID: 240-103638-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
11/14/2018 4:41:18 PM

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*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.*

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# Definitions/Glossary

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

TestAmerica Job ID: 240-103638-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

## 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: 240-103638-1

**Job ID: 240-103638-1**

**Laboratory: TestAmerica Canton**

**Narrative**

## CASE NARRATIVE

**Client: ARCADIS U.S., Inc.**

**Project: Ford LTP Livonia MI - E203728**

**Report Number: 240-103638-1**

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 10/31/2018 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

### **VOLATILE ORGANIC COMPOUNDS (GCMS)**

Samples TRIP BLANK (240-103638-1), MW-25\_102918 (240-103638-2), MW-1\_102918 (240-103638-3), MW-7\_102918 (240-103638-4), MW-9\_102918 (240-103638-5), MW-18\_102918 (240-103638-6), DUP-01 (240-103638-7), MW-15-60D\_102918 (240-103638-8), MW-36\_102918 (240-103638-9), MW-24\_102918 (240-103638-10), MW-14\_102918 (240-103638-11) and MW-20\_102918 (240-103638-12) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/07/2018, 11/08/2018 and 11/09/2018.

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

### **VOLATILE ORGANIC COMPOUNDS (GCMS SIM)**

Samples TRIP BLANK (240-103638-1), MW-25\_102918 (240-103638-2), MW-1\_102918 (240-103638-3), MW-7\_102918 (240-103638-4), MW-9\_102918 (240-103638-5), MW-18\_102918 (240-103638-6), DUP-01 (240-103638-7), MW-15-60D\_102918 (240-103638-8), MW-36\_102918 (240-103638-9), MW-24\_102918 (240-103638-10), MW-14\_102918 (240-103638-11) and MW-20\_102918 (240-103638-12) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/05/2018 and 11/07/2018.

# Case Narrative

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

TestAmerica Job ID: 240-103638-1

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## Job ID: 240-103638-1 (Continued)

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### Laboratory: TestAmerica Canton (Continued)

1,4-Dioxane exceeded the RPD limit for the MSD of sample 240-103550-6 in batch 240-353689. Refer to the QC report for details.

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

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# Method Summary

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

TestAmerica Job ID: 240-103638-1

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: 240-103638-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-103638-1	TRIP BLANK	Water	10/29/18 00:00	10/31/18 10:00
240-103638-2	MW-25_102918	Water	10/29/18 11:05	10/31/18 10:00
240-103638-3	MW-1_102918	Water	10/29/18 13:15	10/31/18 10:00
240-103638-4	MW-7_102918	Water	10/29/18 14:35	10/31/18 10:00
240-103638-5	MW-9_102918	Water	10/29/18 15:45	10/31/18 10:00
240-103638-6	MW-18_102918	Water	10/29/18 17:55	10/31/18 10:00
240-103638-7	DUP-01	Water	10/29/18 00:00	10/31/18 10:00
240-103638-8	MW-15-60D_102918	Water	10/29/18 11:40	10/31/18 10:00
240-103638-9	MW-36_102918	Water	10/29/18 13:45	10/31/18 10:00
240-103638-10	MW-24_102918	Water	10/29/18 14:55	10/31/18 10:00
240-103638-11	MW-14_102918	Water	10/29/18 16:15	10/31/18 10:00
240-103638-12	MW-20_102918	Water	10/29/18 17:55	10/31/18 10:00



# Detection Summary

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

TestAmerica Job ID: 240-103638-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-103638-1

No Detections.

## Client Sample ID: MW-25\_102918

Lab Sample ID: 240-103638-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.2		2.0	0.86	ug/L	1		8260B SIM	Total/NA

## Client Sample ID: MW-1\_102918

Lab Sample ID: 240-103638-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.37	J	1.0	0.15	ug/L	1		8260B	Total/NA
1,2,4-Trichlorobenzene	0.33	J	1.0	0.26	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-7\_102918

Lab Sample ID: 240-103638-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.36	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-9\_102918

Lab Sample ID: 240-103638-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.9		2.0	0.86	ug/L	1		8260B SIM	Total/NA
1,3-Dichlorobenzene	0.28	J	1.0	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	1.5		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-18\_102918

Lab Sample ID: 240-103638-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.24	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: DUP-01

Lab Sample ID: 240-103638-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.37	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-15-60D\_102918

Lab Sample ID: 240-103638-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.38	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-36\_102918

Lab Sample ID: 240-103638-9

No Detections.

## Client Sample ID: MW-24\_102918

Lab Sample ID: 240-103638-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.29	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-14\_102918

Lab Sample ID: 240-103638-11

This Detection Summary does not include radiochemical test results.

TestAmerica Canton



# Detection Summary

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

TestAmerica Job ID: 240-103638-1

## Client Sample ID: MW-14\_102918 (Continued)

Lab Sample ID: 240-103638-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.36	J	1.0	0.15	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-20\_102918

Lab Sample ID: 240-103638-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.17	J	1.0	0.15	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: 240-103638-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-103638-1**

**Date Collected: 10/29/18 00:00**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 13:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					11/07/18 13:36	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			11/08/18 17:25	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 17:25	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 17:25	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 17:25	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 17:25	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 17:25	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 17:25	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 17:25	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 17:25	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 17:25	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 17:25	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 17:25	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 17:25	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 17:25	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 17:25	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 17:25	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 17:25	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 17:25	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 17:25	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 17:25	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 17:25	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 17:25	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 17:25	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 17:25	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 17:25	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 17:25	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 17:25	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 17:25	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 17:25	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 17:25	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 17:25	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 17:25	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 17:25	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 17:25	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 17:25	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 17:25	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 17:25	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 17:25	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 17:25	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 17:25	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 17:25	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 17:25	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 17:25	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-103638-1**

**Date Collected: 10/29/18 00:00**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 17:25	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 17:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 17:25	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 17:25	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 17:25	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 17:25	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 17:25	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 17:25	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 17:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120		11/08/18 17:25	1
Dibromofluoromethane (Surr)	117		75 - 128		11/08/18 17:25	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 121		11/08/18 17:25	1
Toluene-d8 (Surr)	73		70 - 123		11/08/18 17:25	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-25\_102918**

**Lab Sample ID: 240-103638-2**

**Date Collected: 10/29/18 11:05**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.2		2.0	0.86	ug/L			11/07/18 14:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/07/18 14:26	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			11/08/18 17:47	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 17:47	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 17:47	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 17:47	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 17:47	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 17:47	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 17:47	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 17:47	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 17:47	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 17:47	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 17:47	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 17:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 17:47	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 17:47	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 17:47	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 17:47	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 17:47	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 17:47	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 17:47	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 17:47	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 17:47	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 17:47	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 17:47	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 17:47	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 17:47	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 17:47	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 17:47	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 17:47	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 17:47	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 17:47	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 17:47	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 17:47	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 17:47	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 17:47	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 17:47	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 17:47	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 17:47	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 17:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 17:47	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 17:47	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 17:47	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 17:47	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 17:47	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-25\_102918**

**Lab Sample ID: 240-103638-2**

**Date Collected: 10/29/18 11:05**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 17:47	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 17:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 17:47	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 17:47	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 17:47	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 17:47	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 17:47	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 17:47	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 17:47	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	78		59 - 120					11/08/18 17:47	1
Dibromofluoromethane (Surr)	122		75 - 128					11/08/18 17:47	1
1,2-Dichloroethane-d4 (Surr)	107		70 - 121					11/08/18 17:47	1
Toluene-d8 (Surr)	78		70 - 123					11/08/18 17:47	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-1\_102918**

**Lab Sample ID: 240-103638-3**

**Date Collected: 10/29/18 13:15**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 15:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		63 - 125					11/07/18 15:43	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			11/08/18 18:54	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 18:54	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 18:54	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 18:54	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 18:54	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 18:54	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 18:54	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 18:54	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 18:54	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 18:54	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 18:54	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 18:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 18:54	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 18:54	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 18:54	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 18:54	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 18:54	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 18:54	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 18:54	1
<b>1,3-Dichlorobenzene</b>	<b>0.37</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 18:54	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 18:54	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 18:54	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 18:54	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 18:54	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 18:54	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 18:54	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 18:54	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 18:54	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 18:54	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 18:54	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 18:54	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 18:54	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 18:54	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 18:54	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 18:54	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 18:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 18:54	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 18:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 18:54	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 18:54	1
<b>1,2,4-Trichlorobenzene</b>	<b>0.33</b>	<b>J</b>	1.0	0.26	ug/L			11/08/18 18:54	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 18:54	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 18:54	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-1\_102918**

**Lab Sample ID: 240-103638-3**

**Date Collected: 10/29/18 13:15**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 18:54	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 18:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 18:54	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 18:54	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 18:54	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 18:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 18:54	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 18:54	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 18:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	75		59 - 120					11/08/18 18:54	1
Dibromofluoromethane (Surr)	105		75 - 128					11/08/18 18:54	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 121					11/08/18 18:54	1
Toluene-d8 (Surr)	73		70 - 123					11/08/18 18:54	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-7\_102918**

**Lab Sample ID: 240-103638-4**

**Date Collected: 10/29/18 14:35**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 16:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/07/18 16:09	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			11/08/18 19:17	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 19:17	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 19:17	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 19:17	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 19:17	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 19:17	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 19:17	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 19:17	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 19:17	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 19:17	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 19:17	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 19:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 19:17	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 19:17	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 19:17	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 19:17	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 19:17	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 19:17	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 19:17	1
<b>1,3-Dichlorobenzene</b>	<b>0.36</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 19:17	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 19:17	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 19:17	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 19:17	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 19:17	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 19:17	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 19:17	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 19:17	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 19:17	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 19:17	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 19:17	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 19:17	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 19:17	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 19:17	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 19:17	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 19:17	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 19:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 19:17	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 19:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 19:17	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 19:17	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 19:17	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 19:17	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 19:17	1

TestAmerica Canton



# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-7\_102918**

**Lab Sample ID: 240-103638-4**

**Date Collected: 10/29/18 14:35**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 19:17	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 19:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 19:17	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 19:17	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 19:17	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 19:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 19:17	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 19:17	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 19:17	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	78		59 - 120					11/08/18 19:17	1
Dibromofluoromethane (Surr)	124		75 - 128					11/08/18 19:17	1
1,2-Dichloroethane-d4 (Surr)	112		70 - 121					11/08/18 19:17	1
Toluene-d8 (Surr)	77		70 - 123					11/08/18 19:17	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-9\_102918**

**Lab Sample ID: 240-103638-5**

**Date Collected: 10/29/18 15:45**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.9		2.0	0.86	ug/L			11/07/18 16:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/07/18 16:34	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			11/08/18 19:39	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 19:39	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 19:39	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 19:39	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 19:39	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 19:39	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 19:39	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 19:39	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 19:39	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 19:39	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 19:39	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 19:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 19:39	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 19:39	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 19:39	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 19:39	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 19:39	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 19:39	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 19:39	1
<b>1,3-Dichlorobenzene</b>	<b>0.28</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 19:39	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 19:39	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 19:39	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 19:39	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 19:39	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 19:39	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 19:39	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 19:39	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 19:39	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 19:39	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 19:39	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 19:39	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 19:39	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 19:39	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 19:39	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 19:39	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 19:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 19:39	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 19:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 19:39	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 19:39	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 19:39	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 19:39	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 19:39	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-9\_102918**

**Lab Sample ID: 240-103638-5**

**Date Collected: 10/29/18 15:45**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

## 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			11/08/18 19:39	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 19:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 19:39	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 19:39	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 19:39	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 19:39	1
<b>Vinyl chloride</b>	<b>1.5</b>		1.0	0.20	ug/L			11/08/18 19:39	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 19:39	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 19:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		59 - 120					11/08/18 19:39	1
Dibromofluoromethane (Surr)	124		75 - 128					11/08/18 19:39	1
1,2-Dichloroethane-d4 (Surr)	111		70 - 121					11/08/18 19:39	1
Toluene-d8 (Surr)	79		70 - 123					11/08/18 19:39	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-18\_102918**

**Lab Sample ID: 240-103638-6**

**Date Collected: 10/29/18 17:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/07/18 17:00	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			11/08/18 20:01	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 20:01	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:01	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 20:01	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 20:01	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 20:01	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 20:01	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 20:01	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 20:01	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 20:01	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 20:01	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 20:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 20:01	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 20:01	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 20:01	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 20:01	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 20:01	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 20:01	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 20:01	1
<b>1,3-Dichlorobenzene</b>	<b>0.24</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 20:01	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 20:01	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 20:01	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:01	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 20:01	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:01	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 20:01	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 20:01	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 20:01	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 20:01	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 20:01	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 20:01	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 20:01	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 20:01	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 20:01	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 20:01	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 20:01	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 20:01	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 20:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:01	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 20:01	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 20:01	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 20:01	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 20:01	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-18\_102918**

**Lab Sample ID: 240-103638-6**

**Date Collected: 10/29/18 17:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 20:01	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 20:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 20:01	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 20:01	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 20:01	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 20:01	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 20:01	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 20:01	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 20:01	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	79		59 - 120					11/08/18 20:01	1
Dibromofluoromethane (Surr)	124		75 - 128					11/08/18 20:01	1
1,2-Dichloroethane-d4 (Surr)	109		70 - 121					11/08/18 20:01	1
Toluene-d8 (Surr)	77		70 - 123					11/08/18 20:01	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: DUP-01**  
**Date Collected: 10/29/18 00:00**  
**Date Received: 10/31/18 10:00**

**Lab Sample ID: 240-103638-7**  
**Matrix: Water**

### 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			11/07/18 17:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		63 - 125					11/07/18 17:26	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			11/08/18 20:22	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 20:22	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:22	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 20:22	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 20:22	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 20:22	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 20:22	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 20:22	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 20:22	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 20:22	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 20:22	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 20:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 20:22	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 20:22	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 20:22	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 20:22	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 20:22	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 20:22	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 20:22	1
<b>1,3-Dichlorobenzene</b>	<b>0.37</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 20:22	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 20:22	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 20:22	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:22	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 20:22	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:22	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 20:22	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 20:22	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 20:22	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 20:22	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 20:22	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 20:22	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 20:22	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 20:22	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 20:22	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 20:22	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 20:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 20:22	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 20:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:22	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 20:22	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 20:22	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 20:22	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 20:22	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: DUP-01**  
**Date Collected: 10/29/18 00:00**  
**Date Received: 10/31/18 10:00**

**Lab Sample ID: 240-103638-7**  
**Matrix: Water**

**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			11/08/18 20:22	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 20:22	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 20:22	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 20:22	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 20:22	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 20:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 20:22	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 20:22	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 20:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		59 - 120		11/08/18 20:22	1
Dibromofluoromethane (Surr)	124		75 - 128		11/08/18 20:22	1
1,2-Dichloroethane-d4 (Surr)	114		70 - 121		11/08/18 20:22	1
Toluene-d8 (Surr)	77		70 - 123		11/08/18 20:22	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-15-60D\_102918**

**Lab Sample ID: 240-103638-8**

**Date Collected: 10/29/18 11:40**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 17:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/07/18 17:51	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			11/07/18 20:51	1
Benzene	1.0	U	1.0	0.13	ug/L			11/07/18 20:51	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/07/18 20:51	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/07/18 20:51	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/07/18 20:51	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/07/18 20:51	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/07/18 20:51	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/07/18 20:51	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/07/18 20:51	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/07/18 20:51	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/07/18 20:51	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/07/18 20:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/07/18 20:51	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/07/18 20:51	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/07/18 20:51	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/07/18 20:51	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/07/18 20:51	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/07/18 20:51	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/07/18 20:51	1
<b>1,3-Dichlorobenzene</b>	<b>0.38</b>	<b>J</b>	1.0	0.15	ug/L			11/07/18 20:51	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/07/18 20:51	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/07/18 20:51	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/07/18 20:51	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/07/18 20:51	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/07/18 20:51	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/07/18 20:51	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/07/18 20:51	1
2-Hexanone	10	U	10	0.54	ug/L			11/07/18 20:51	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/07/18 20:51	1
Methyl acetate	10	U	10	1.7	ug/L			11/07/18 20:51	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/07/18 20:51	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/07/18 20:51	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/07/18 20:51	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/07/18 20:51	1
Styrene	1.0	U	1.0	0.10	ug/L			11/07/18 20:51	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/07/18 20:51	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/07/18 20:51	1
Toluene	1.0	U	1.0	0.14	ug/L			11/07/18 20:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/07/18 20:51	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/07/18 20:51	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/07/18 20:51	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/07/18 20:51	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/07/18 20:51	1

TestAmerica Canton



# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-15-60D\_102918**

**Lab Sample ID: 240-103638-8**

**Date Collected: 10/29/18 11:40**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 20:51	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/07/18 20:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/07/18 20:51	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/07/18 20:51	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/07/18 20:51	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/07/18 20:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/07/18 20:51	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/07/18 20:51	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/07/18 20:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		59 - 120		11/07/18 20:51	1
Dibromofluoromethane (Surr)	119		75 - 128		11/07/18 20:51	1
1,2-Dichloroethane-d4 (Surr)	107		70 - 121		11/07/18 20:51	1
Toluene-d8 (Surr)	92		70 - 123		11/07/18 20:51	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-36\_102918**

**Lab Sample ID: 240-103638-9**

**Date Collected: 10/29/18 13:45**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 19:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/07/18 19:08	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			11/09/18 13:49	1
Benzene	1.0	U	1.0	0.13	ug/L			11/09/18 13:49	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/09/18 13:49	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/09/18 13:49	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/09/18 13:49	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/09/18 13:49	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/09/18 13:49	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/09/18 13:49	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/09/18 13:49	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/09/18 13:49	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/09/18 13:49	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/09/18 13:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/18 13:49	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/09/18 13:49	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/09/18 13:49	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/09/18 13:49	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/09/18 13:49	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/09/18 13:49	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 13:49	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 13:49	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/09/18 13:49	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/09/18 13:49	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/18 13:49	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/09/18 13:49	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 13:49	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/09/18 13:49	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/09/18 13:49	1
2-Hexanone	10	U	10	0.54	ug/L			11/09/18 13:49	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/09/18 13:49	1
Methyl acetate	10	U	10	1.7	ug/L			11/09/18 13:49	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/09/18 13:49	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/09/18 13:49	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/09/18 13:49	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/09/18 13:49	1
Styrene	1.0	U	1.0	0.10	ug/L			11/09/18 13:49	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/09/18 13:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/09/18 13:49	1
Toluene	1.0	U	1.0	0.14	ug/L			11/09/18 13:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 13:49	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/09/18 13:49	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/09/18 13:49	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/09/18 13:49	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/09/18 13:49	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-36\_102918**

**Lab Sample ID: 240-103638-9**

**Date Collected: 10/29/18 13:45**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/09/18 13:49	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/09/18 13:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/09/18 13:49	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/09/18 13:49	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/09/18 13:49	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/09/18 13:49	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/18 13:49	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/09/18 13:49	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/09/18 13:49	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	77		59 - 120					11/09/18 13:49	1
Dibromofluoromethane (Surr)	127		75 - 128					11/09/18 13:49	1
1,2-Dichloroethane-d4 (Surr)	111		70 - 121					11/09/18 13:49	1
Toluene-d8 (Surr)	76		70 - 123					11/09/18 13:49	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-24\_102918**

**Lab Sample ID: 240-103638-10**

**Date Collected: 10/29/18 14:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/07/18 20:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/07/18 20:25	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			11/08/18 20:44	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 20:44	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:44	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 20:44	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 20:44	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 20:44	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 20:44	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 20:44	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 20:44	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 20:44	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 20:44	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 20:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 20:44	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 20:44	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 20:44	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 20:44	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 20:44	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 20:44	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 20:44	1
<b>1,3-Dichlorobenzene</b>	<b>0.29</b>	<b>J</b>	1.0	0.15	ug/L			11/08/18 20:44	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 20:44	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 20:44	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 20:44	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 20:44	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:44	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 20:44	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 20:44	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 20:44	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 20:44	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 20:44	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 20:44	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 20:44	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 20:44	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 20:44	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 20:44	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 20:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 20:44	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 20:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 20:44	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 20:44	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 20:44	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 20:44	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 20:44	1

TestAmerica Canton

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-24\_102918**

**Lab Sample ID: 240-103638-10**

**Date Collected: 10/29/18 14:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/08/18 20:44	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 20:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 20:44	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 20:44	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 20:44	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 20:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 20:44	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 20:44	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 20:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	77		59 - 120					11/08/18 20:44	1
Dibromofluoromethane (Surr)	128		75 - 128					11/08/18 20:44	1
1,2-Dichloroethane-d4 (Surr)	112		70 - 121					11/08/18 20:44	1
Toluene-d8 (Surr)	74		70 - 123					11/08/18 20:44	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-14\_102918**

**Lab Sample ID: 240-103638-11**

**Date Collected: 10/29/18 16:15**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/05/18 23:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/05/18 23:27	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			11/09/18 19:21	1
Benzene	1.0	U	1.0	0.13	ug/L			11/09/18 19:21	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/09/18 19:21	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/09/18 19:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/09/18 19:21	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/09/18 19:21	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/09/18 19:21	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/09/18 19:21	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/09/18 19:21	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/09/18 19:21	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/09/18 19:21	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/09/18 19:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/18 19:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/09/18 19:21	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/09/18 19:21	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/09/18 19:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/09/18 19:21	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/09/18 19:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 19:21	1
<b>1,3-Dichlorobenzene</b>	<b>0.36</b>	<b>J</b>	1.0	0.15	ug/L			11/09/18 19:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/09/18 19:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/09/18 19:21	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/18 19:21	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/09/18 19:21	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 19:21	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/09/18 19:21	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/09/18 19:21	1
2-Hexanone	10	U	10	0.54	ug/L			11/09/18 19:21	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/09/18 19:21	1
Methyl acetate	10	U	10	1.7	ug/L			11/09/18 19:21	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/09/18 19:21	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/09/18 19:21	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/09/18 19:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/09/18 19:21	1
Styrene	1.0	U	1.0	0.10	ug/L			11/09/18 19:21	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/09/18 19:21	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/09/18 19:21	1
Toluene	1.0	U	1.0	0.14	ug/L			11/09/18 19:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 19:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/09/18 19:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/09/18 19:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/09/18 19:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/09/18 19:21	1

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# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-14\_102918**

**Lab Sample ID: 240-103638-11**

**Date Collected: 10/29/18 16:15**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/09/18 19:21	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/09/18 19:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/09/18 19:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/09/18 19:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/09/18 19:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/09/18 19:21	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/18 19:21	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/09/18 19:21	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/09/18 19:21	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
4-Bromofluorobenzene (Surr)	78		59 - 120					11/09/18 19:21	1
Dibromofluoromethane (Surr)	112		75 - 128					11/09/18 19:21	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 121					11/09/18 19:21	1
Toluene-d8 (Surr)	75		70 - 123					11/09/18 19:21	1

# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-20\_102918**

**Lab Sample ID: 240-103638-12**

**Date Collected: 10/29/18 17:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

**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			11/05/18 23:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/05/18 23:53	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			11/09/18 19:44	1
Benzene	1.0	U	1.0	0.13	ug/L			11/09/18 19:44	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/09/18 19:44	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/09/18 19:44	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/09/18 19:44	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/09/18 19:44	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/09/18 19:44	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/09/18 19:44	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/09/18 19:44	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/09/18 19:44	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/09/18 19:44	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/09/18 19:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/18 19:44	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/09/18 19:44	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/09/18 19:44	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/09/18 19:44	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/09/18 19:44	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/09/18 19:44	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 19:44	1
<b>1,3-Dichlorobenzene</b>	<b>0.17</b>	<b>J</b>	1.0	0.15	ug/L			11/09/18 19:44	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/09/18 19:44	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/09/18 19:44	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/18 19:44	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/09/18 19:44	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 19:44	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/09/18 19:44	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/09/18 19:44	1
2-Hexanone	10	U	10	0.54	ug/L			11/09/18 19:44	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/09/18 19:44	1
Methyl acetate	10	U	10	1.7	ug/L			11/09/18 19:44	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/09/18 19:44	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/09/18 19:44	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/09/18 19:44	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/09/18 19:44	1
Styrene	1.0	U	1.0	0.10	ug/L			11/09/18 19:44	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/09/18 19:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/09/18 19:44	1
Toluene	1.0	U	1.0	0.14	ug/L			11/09/18 19:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 19:44	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/09/18 19:44	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/09/18 19:44	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/09/18 19:44	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/09/18 19:44	1

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# Client Sample Results

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-20\_102918**  
**Date Collected: 10/29/18 17:55**  
**Date Received: 10/31/18 10:00**

**Lab Sample ID: 240-103638-12**  
**Matrix: Water**

**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			11/09/18 19:44	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/09/18 19:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/09/18 19:44	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/09/18 19:44	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/09/18 19:44	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/09/18 19:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/18 19:44	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/09/18 19:44	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/09/18 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	79		59 - 120		11/09/18 19:44	1
Dibromofluoromethane (Surr)	123		75 - 128		11/09/18 19:44	1
1,2-Dichloroethane-d4 (Surr)	112		70 - 121		11/09/18 19:44	1
Toluene-d8 (Surr)	79		70 - 123		11/09/18 19:44	1

# Surrogate Summary

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

TestAmerica Job ID: 240-103638-1

## 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 (59-120)	DBFM (75-128)	DCA (70-121)	TOL (70-123)
240-103638-1	TRIP BLANK	77	117	99	73
240-103638-2	MW-25_102918	78	122	107	78
240-103638-2 MS	MW-25_102918	89	110	97	81
240-103638-2 MSD	MW-25_102918	83	115	94	79
240-103638-3	MW-1_102918	75	105	95	73
240-103638-4	MW-7_102918	78	124	112	77
240-103638-5	MW-9_102918	79	124	111	79
240-103638-6	MW-18_102918	79	124	109	77
240-103638-7	DUP-01	80	124	114	77
240-103638-8	MW-15-60D_102918	78	119	107	92
240-103638-8 MS	MW-15-60D_102918	100	97	88	102
240-103638-8 MSD	MW-15-60D_102918	99	96	88	100
240-103638-9	MW-36_102918	77	127	111	76
240-103638-9 MS	MW-36_102918	88	109	101	81
240-103638-9 MSD	MW-36_102918	88	116	104	85
240-103638-10	MW-24_102918	77	128	112	74
240-103638-11	MW-14_102918	78	112	104	75
240-103638-12	MW-20_102918	79	123	112	79
LCS 240-354118/4	Lab Control Sample	101	97	88	103
LCS 240-354368/4	Lab Control Sample	91	115	97	85
LCS 240-354546/4	Lab Control Sample	89	113	98	84
MB 240-354118/6	Method Blank	80	112	105	94
MB 240-354368/6	Method Blank	83	122	105	81
MB 240-354546/6	Method Blank	78	120	111	79

**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)
240-103550-C-6 MS	Matrix Spike	109
240-103550-C-6 MSD	Matrix Spike Duplicate	108
240-103638-1	TRIP BLANK	101
240-103638-2	MW-25_102918	108
240-103638-2 MS	MW-25_102918	107
240-103638-2 MSD	MW-25_102918	105
240-103638-3	MW-1_102918	114
240-103638-4	MW-7_102918	106
240-103638-5	MW-9_102918	106
240-103638-6	MW-18_102918	107
240-103638-7	DUP-01	113
240-103638-8	MW-15-60D_102918	108

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# Surrogate Summary

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

TestAmerica Job ID: 240-103638-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (63-125)
240-103638-8 MS	MW-15-60D_102918	106
240-103638-8 MSD	MW-15-60D_102918	108
240-103638-9	MW-36_102918	106
240-103638-9 MS	MW-36_102918	104
240-103638-9 MSD	MW-36_102918	106
240-103638-10	MW-24_102918	107
240-103638-11	MW-14_102918	107
240-103638-12	MW-20_102918	108
LCS 240-353689/4	Lab Control Sample	103
LCS 240-354129/4	Lab Control Sample	103
MB 240-353689/5	Method Blank	106
MB 240-354129/5	Method Blank	98

#### 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: 240-103638-1

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

**Lab Sample ID: MB 240-354118/6**

**Matrix: Water**

**Analysis Batch: 354118**

**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			11/07/18 12:36	1
Benzene	1.0	U	1.0	0.13	ug/L			11/07/18 12:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/07/18 12:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/07/18 12:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/07/18 12:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/07/18 12:36	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/07/18 12:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/07/18 12:36	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/07/18 12:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/07/18 12:36	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/07/18 12:36	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/07/18 12:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/07/18 12:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/07/18 12:36	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/07/18 12:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/07/18 12:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/07/18 12:36	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/07/18 12:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/07/18 12:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/07/18 12:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/07/18 12:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/07/18 12:36	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/07/18 12:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/07/18 12:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/07/18 12:36	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/07/18 12:36	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/07/18 12:36	1
2-Hexanone	10	U	10	0.54	ug/L			11/07/18 12:36	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/07/18 12:36	1
Methyl acetate	10	U	10	1.7	ug/L			11/07/18 12:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/07/18 12:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/07/18 12:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/07/18 12:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/07/18 12:36	1
Styrene	1.0	U	1.0	0.10	ug/L			11/07/18 12:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/07/18 12:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/07/18 12:36	1
Toluene	1.0	U	1.0	0.14	ug/L			11/07/18 12:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/07/18 12:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/07/18 12:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/07/18 12:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/07/18 12:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/07/18 12:36	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/07/18 12:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/07/18 12:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/07/18 12:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/07/18 12:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/07/18 12:36	1

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# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: MB 240-354118/6**  
**Matrix: Water**  
**Analysis Batch: 354118**

**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			11/07/18 12:36	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/07/18 12:36	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/07/18 12:36	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/07/18 12:36	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		59 - 120		11/07/18 12:36	1
Dibromofluoromethane (Surr)	112		75 - 128		11/07/18 12:36	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 121		11/07/18 12:36	1
Toluene-d8 (Surr)	94		70 - 123		11/07/18 12:36	1

**Lab Sample ID: LCS 240-354118/4**  
**Matrix: Water**  
**Analysis Batch: 354118**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	18.1		ug/L		90	21 - 162
Benzene	10.0	10.5		ug/L		105	80 - 123
Bromodichloromethane	10.0	9.18		ug/L		92	77 - 125
Bromoform	10.0	7.83		ug/L		78	49 - 141
Bromomethane	10.0	7.90		ug/L		79	41 - 175
2-Butanone (MEK)	20.0	18.3		ug/L		91	39 - 163
Carbon disulfide	10.0	9.90		ug/L		99	60 - 138
Carbon tetrachloride	10.0	9.85		ug/L		98	63 - 140
Chlorobenzene	10.0	10.6		ug/L		106	80 - 121
Chloroethane	10.0	7.43		ug/L		74	33 - 173
Chloroform	10.0	10.1		ug/L		101	79 - 127
Chloromethane	10.0	11.2		ug/L		112	54 - 143
cis-1,2-Dichloroethene	10.0	9.97		ug/L		100	76 - 128
cis-1,3-Dichloropropene	10.0	9.21		ug/L		92	64 - 132
Cyclohexane	10.0	10.5		ug/L		105	58 - 145
Dibromochloromethane	10.0	9.12		ug/L		91	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	7.80		ug/L		78	46 - 132
1,2-Dibromoethane	10.0	10.6		ug/L		106	77 - 123
1,2-Dichlorobenzene	10.0	10.3		ug/L		103	78 - 120
1,3-Dichlorobenzene	10.0	9.87		ug/L		99	78 - 120
1,4-Dichlorobenzene	10.0	9.73		ug/L		97	78 - 120
Dichlorodifluoromethane	10.0	9.68		ug/L		97	29 - 148
1,1-Dichloroethane	10.0	10.2		ug/L		102	75 - 133
1,2-Dichloroethane	10.0	9.05		ug/L		91	71 - 135
1,1-Dichloroethene	10.0	11.1		ug/L		111	65 - 139
1,2-Dichloropropane	10.0	11.0		ug/L		110	78 - 133
Ethylbenzene	10.0	10.5		ug/L		105	80 - 120
2-Hexanone	20.0	18.2		ug/L		91	43 - 148
Isopropylbenzene	10.0	10.1		ug/L		101	74 - 120
Methyl acetate	20.0	21.3		ug/L		107	52 - 145
Methylcyclohexane	10.0	9.42		ug/L		94	60 - 125
Methylene Chloride	10.0	11.2		ug/L		112	70 - 134

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: LCS 240-354118/4**

**Matrix: Water**

**Analysis Batch: 354118**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	20.0	17.5		ug/L		88	49 - 143
Methyl tert-butyl ether	10.0	5.92		ug/L		59	51 - 133
Styrene	10.0	10.5		ug/L		105	79 - 120
1,1,2,2-Tetrachloroethane	10.0	10.4		ug/L		104	65 - 139
Tetrachloroethene	10.0	10.7		ug/L		107	74 - 130
Toluene	10.0	10.9		ug/L		109	78 - 129
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	78 - 133
trans-1,3-Dichloropropene	10.0	9.01		ug/L		90	55 - 128
1,2,4-Trichlorobenzene	10.0	8.25		ug/L		82	42 - 133
1,1,1-Trichloroethane	10.0	9.47		ug/L		95	69 - 134
1,1,2-Trichloroethane	10.0	11.6		ug/L		116	78 - 133
Trichloroethene	10.0	9.60		ug/L		96	76 - 125
Trichlorofluoromethane	10.0	10.4		ug/L		104	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.2		ug/L		112	50 - 156
1,2,4-Trimethylbenzene	10.0	9.79		ug/L		98	74 - 120
1,3,5-Trimethylbenzene	10.0	9.66		ug/L		97	75 - 121
Vinyl chloride	10.0	9.97		ug/L		100	58 - 143
Xylenes, Total	20.0	21.0		ug/L		105	80 - 120
1,4-Dioxane	200	146		ug/L		73	10 - 175
Diethyl ether	10.0	10.8		ug/L		108	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
4-Bromofluorobenzene (Surr)	101		59 - 120
Dibromofluoromethane (Surr)	97		75 - 128
1,2-Dichloroethane-d4 (Surr)	88		70 - 121
Toluene-d8 (Surr)	103		70 - 123

**Lab Sample ID: 240-103638-8 MS**

**Matrix: Water**

**Analysis Batch: 354118**

**Client Sample ID: MW-15-60D\_102918**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	20.3		ug/L		102	10 - 168
Benzene	1.0	U	10.0	10.7		ug/L		107	71 - 122
Bromodichloromethane	1.0	U	10.0	9.08		ug/L		91	64 - 125
Bromoform	1.0	U	10.0	7.89		ug/L		79	44 - 129
Bromomethane	1.0	U	10.0	6.76		ug/L		68	19 - 187
2-Butanone (MEK)	10	U	20.0	18.0		ug/L		90	37 - 156
Carbon disulfide	5.0	U	10.0	10.7		ug/L		107	43 - 144
Carbon tetrachloride	1.0	U	10.0	9.48		ug/L		95	41 - 143
Chlorobenzene	1.0	U	10.0	10.6		ug/L		106	70 - 123
Chloroethane	1.0	U	10.0	6.36		ug/L		64	11 - 189
Chloroform	1.0	U	10.0	10.3		ug/L		103	68 - 130
Chloromethane	1.0	U	10.0	9.56		ug/L		96	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	9.98		ug/L		100	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	8.01		ug/L		80	48 - 127
Cyclohexane	1.0	U	10.0	9.29		ug/L		93	42 - 135

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# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

Lab Sample ID: 240-103638-8 MS

Client Sample ID: MW-15-60D\_102918

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 354118

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Dibromochloromethane	1.0	U	10.0	9.25		ug/L		92	60 - 129
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.12		ug/L		81	38 - 124
1,2-Dibromoethane	1.0	U	10.0	10.6		ug/L		106	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	10.0		ug/L		100	64 - 120
1,3-Dichlorobenzene	0.38	J	10.0	10.2		ug/L		99	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.89		ug/L		99	63 - 120
Dichlorodifluoromethane	1.0	U	10.0	8.63		ug/L		86	28 - 136
1,1-Dichloroethane	1.0	U	10.0	10.3		ug/L		103	63 - 136
1,2-Dichloroethane	1.0	U	10.0	9.37		ug/L		94	65 - 135
1,1-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	53 - 140
1,2-Dichloropropane	1.0	U	10.0	11.0		ug/L		110	70 - 132
Ethylbenzene	1.0	U	10.0	10.6		ug/L		106	66 - 120
2-Hexanone	10	U	20.0	18.9		ug/L		94	42 - 150
Isopropylbenzene	1.0	U	10.0	10.0		ug/L		100	59 - 120
Methyl acetate	10	U	20.0	20.6		ug/L		103	41 - 142
Methylcyclohexane	1.0	U	10.0	8.09		ug/L		81	37 - 123
Methylene Chloride	5.0	U	10.0	11.1		ug/L		111	61 - 130
4-Methyl-2-pentanone (MIBK)	10	U	20.0	17.3		ug/L		87	44 - 143
Methyl tert-butyl ether	1.0	U	10.0	5.78		ug/L		58	41 - 136
Styrene	1.0	U	10.0	10.9		ug/L		109	68 - 120
1,1,2,2-Tetrachloroethane	1.0	U	10.0	10.4		ug/L		104	60 - 137
Tetrachloroethene	1.0	U	10.0	10.7		ug/L		107	51 - 136
Toluene	1.0	U	10.0	11.1		ug/L		111	62 - 132
trans-1,2-Dichloroethene	1.0	U	10.0	11.0		ug/L		110	68 - 133
trans-1,3-Dichloropropene	1.0	U	10.0	8.48		ug/L		85	40 - 125
1,2,4-Trichlorobenzene	1.0	U	10.0	7.51		ug/L		75	30 - 126
1,1,1-Trichloroethane	1.0	U	10.0	9.73		ug/L		97	51 - 138
1,1,2-Trichloroethane	1.0	U	10.0	12.0		ug/L		120	76 - 132
Trichloroethene	1.0	U	10.0	9.60		ug/L		96	55 - 131
Trichlorofluoromethane	1.0	U	10.0	9.61		ug/L		96	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	10.4		ug/L		104	31 - 156
1,2,4-Trimethylbenzene	1.0	U	10.0	9.78		ug/L		98	62 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	9.67		ug/L		97	64 - 120
Vinyl chloride	1.0	U	10.0	10.0		ug/L		100	43 - 154
Xylenes, Total	2.0	U	20.0	21.2		ug/L		106	67 - 120
1,4-Dioxane	50	U	200	160		ug/L		80	10 - 143
Diethyl ether	2.0	U	10.0	11.0		ug/L		110	65 - 134

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		59 - 120
Dibromofluoromethane (Surr)	97		75 - 128
1,2-Dichloroethane-d4 (Surr)	88		70 - 121
Toluene-d8 (Surr)	102		70 - 123

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# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-8 MSD**

**Matrix: Water**

**Analysis Batch: 354118**

**Client Sample ID: MW-15-60D\_102918**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	RPD
	Result	Qualifier		Added	Result				Qualifier		Limits
Acetone	10	U	20.0	20.6		ug/L		103	10 - 168	1	35
Benzene	1.0	U	10.0	10.5		ug/L		105	71 - 122	2	22
Bromodichloromethane	1.0	U	10.0	9.04		ug/L		90	64 - 125	0	27
Bromoform	1.0	U	10.0	7.93		ug/L		79	44 - 129	0	28
Bromomethane	1.0	U	10.0	6.77		ug/L		68	19 - 187	0	35
2-Butanone (MEK)	10	U	20.0	18.4		ug/L		92	37 - 156	2	35
Carbon disulfide	5.0	U	10.0	10.4		ug/L		104	43 - 144	2	33
Carbon tetrachloride	1.0	U	10.0	9.13		ug/L		91	41 - 143	4	30
Chlorobenzene	1.0	U	10.0	10.3		ug/L		103	70 - 123	3	23
Chloroethane	1.0	U	10.0	6.43		ug/L		64	11 - 189	1	35
Chloroform	1.0	U	10.0	10.0		ug/L		100	68 - 130	3	23
Chloromethane	1.0	U	10.0	10.6		ug/L		106	31 - 154	10	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.95		ug/L		99	64 - 130	0	21
cis-1,3-Dichloropropene	1.0	U	10.0	7.74		ug/L		77	48 - 127	3	30
Cyclohexane	1.0	U	10.0	8.98		ug/L		90	42 - 135	3	35
Dibromochloromethane	1.0	U	10.0	8.72		ug/L		87	60 - 129	6	26
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.70		ug/L		77	38 - 124	5	35
1,2-Dibromoethane	1.0	U	10.0	10.3		ug/L		103	71 - 123	3	27
1,2-Dichlorobenzene	1.0	U	10.0	9.88		ug/L		99	64 - 120	2	30
1,3-Dichlorobenzene	0.38	J	10.0	9.90		ug/L		95	62 - 120	3	31
1,4-Dichlorobenzene	1.0	U	10.0	9.46		ug/L		95	63 - 120	4	28
Dichlorodifluoromethane	1.0	U	10.0	8.50		ug/L		85	28 - 136	1	35
1,1-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	63 - 136	2	23
1,2-Dichloroethane	1.0	U	10.0	9.02		ug/L		90	65 - 135	4	24
1,1-Dichloroethene	1.0	U	10.0	10.6		ug/L		106	53 - 140	4	35
1,2-Dichloropropane	1.0	U	10.0	10.6		ug/L		106	70 - 132	4	26
Ethylbenzene	1.0	U	10.0	10.2		ug/L		102	66 - 120	4	24
2-Hexanone	10	U	20.0	18.9		ug/L		95	42 - 150	0	35
Isopropylbenzene	1.0	U	10.0	9.66		ug/L		97	59 - 120	4	31
Methyl acetate	10	U	20.0	21.0		ug/L		105	41 - 142	2	35
Methylcyclohexane	1.0	U	10.0	7.70		ug/L		77	37 - 123	5	35
Methylene Chloride	5.0	U	10.0	10.8		ug/L		108	61 - 130	3	29
4-Methyl-2-pentanone (MIBK)	10	U	20.0	17.3		ug/L		87	44 - 143	0	35
Methyl tert-butyl ether	1.0	U	10.0	5.74		ug/L		57	41 - 136	1	29
Styrene	1.0	U	10.0	10.4		ug/L		104	68 - 120	5	26
1,1,2,2-Tetrachloroethane	1.0	U	10.0	10.3		ug/L		103	60 - 137	0	31
Tetrachloroethene	1.0	U	10.0	10.0		ug/L		100	51 - 136	6	23
Toluene	1.0	U	10.0	10.7		ug/L		107	62 - 132	4	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	68 - 133	3	24
trans-1,3-Dichloropropene	1.0	U	10.0	8.09		ug/L		81	40 - 125	5	27
1,2,4-Trichlorobenzene	1.0	U	10.0	7.66		ug/L		77	30 - 126	2	35
1,1,1-Trichloroethane	1.0	U	10.0	9.11		ug/L		91	51 - 138	7	27
1,1,2-Trichloroethane	1.0	U	10.0	11.4		ug/L		114	76 - 132	5	25
Trichloroethene	1.0	U	10.0	9.47		ug/L		95	55 - 131	1	23
Trichlorofluoromethane	1.0	U	10.0	9.31		ug/L		93	37 - 174	3	35
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.48		ug/L		95	31 - 156	10	35
1,2,4-Trimethylbenzene	1.0	U	10.0	9.57		ug/L		96	62 - 120	2	27

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# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-8 MSD**

**Client Sample ID: MW-15-60D\_102918**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 354118**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	1.0	U	10.0	9.43		ug/L		94	64 - 120	3	23
Vinyl chloride	1.0	U	10.0	10.2		ug/L		102	43 - 154	1	29
Xylenes, Total	2.0	U	20.0	20.5		ug/L		103	67 - 120	3	25
1,4-Dioxane	50	U	200	171		ug/L		85	10 - 143	6	35
Diethyl ether	2.0	U	10.0	10.8		ug/L		108	65 - 134	1	33

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	99		59 - 120
Dibromofluoromethane (Surr)	96		75 - 128
1,2-Dichloroethane-d4 (Surr)	88		70 - 121
Toluene-d8 (Surr)	100		70 - 123

**Lab Sample ID: MB 240-354368/6**

**Client Sample ID: Method Blank**

**Matrix: Water**

**Prep Type: Total/NA**

**Analysis Batch: 354368**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/08/18 12:37	1
Benzene	1.0	U	1.0	0.13	ug/L			11/08/18 12:37	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/08/18 12:37	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/08/18 12:37	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/08/18 12:37	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/08/18 12:37	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/08/18 12:37	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/08/18 12:37	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/08/18 12:37	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/08/18 12:37	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/08/18 12:37	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/08/18 12:37	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/08/18 12:37	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/08/18 12:37	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/08/18 12:37	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/08/18 12:37	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/08/18 12:37	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/08/18 12:37	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 12:37	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/08/18 12:37	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/08/18 12:37	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/08/18 12:37	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/08/18 12:37	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/08/18 12:37	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 12:37	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/08/18 12:37	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/08/18 12:37	1
2-Hexanone	10	U	10	0.54	ug/L			11/08/18 12:37	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/08/18 12:37	1
Methyl acetate	10	U	10	1.7	ug/L			11/08/18 12:37	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/08/18 12:37	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: MB 240-354368/6**  
**Matrix: Water**  
**Analysis Batch: 354368**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/08/18 12:37	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/08/18 12:37	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/08/18 12:37	1
Styrene	1.0	U	1.0	0.10	ug/L			11/08/18 12:37	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/08/18 12:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/08/18 12:37	1
Toluene	1.0	U	1.0	0.14	ug/L			11/08/18 12:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/08/18 12:37	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/08/18 12:37	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/08/18 12:37	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/08/18 12:37	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/08/18 12:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/08/18 12:37	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/08/18 12:37	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/08/18 12:37	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/08/18 12:37	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/08/18 12:37	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/08/18 12:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/08/18 12:37	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/08/18 12:37	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/08/18 12:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	83		59 - 120		11/08/18 12:37	1
Dibromofluoromethane (Surr)	122		75 - 128		11/08/18 12:37	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 121		11/08/18 12:37	1
Toluene-d8 (Surr)	81		70 - 123		11/08/18 12:37	1

**Lab Sample ID: LCS 240-354368/4**  
**Matrix: Water**  
**Analysis Batch: 354368**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	13.6		ug/L		68	21 - 162
Benzene	10.0	9.10		ug/L		91	80 - 123
Bromodichloromethane	10.0	9.89		ug/L		99	77 - 125
Bromoform	10.0	11.1		ug/L		111	49 - 141
Bromomethane	10.0	9.06		ug/L		91	41 - 175
2-Butanone (MEK)	20.0	9.97	J	ug/L		50	39 - 163
Carbon disulfide	10.0	9.73		ug/L		97	60 - 138
Carbon tetrachloride	10.0	11.9		ug/L		119	63 - 140
Chlorobenzene	10.0	9.05		ug/L		91	80 - 121
Chloroethane	10.0	8.10		ug/L		81	33 - 173
Chloroform	10.0	11.3		ug/L		113	79 - 127
Chloromethane	10.0	9.74		ug/L		97	54 - 143
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	76 - 128
cis-1,3-Dichloropropene	10.0	7.90		ug/L		79	64 - 132
Cyclohexane	10.0	7.77		ug/L		78	58 - 145

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: LCS 240-354368/4**  
**Matrix: Water**  
**Analysis Batch: 354368**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	10.0	10.2		ug/L		102	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	7.38		ug/L		74	46 - 132
1,2-Dibromoethane	10.0	8.22		ug/L		82	77 - 123
1,2-Dichlorobenzene	10.0	9.41		ug/L		94	78 - 120
1,3-Dichlorobenzene	10.0	9.13		ug/L		91	78 - 120
1,4-Dichlorobenzene	10.0	9.41		ug/L		94	78 - 120
Dichlorodifluoromethane	10.0	14.0		ug/L		140	29 - 148
1,1-Dichloroethane	10.0	9.80		ug/L		98	75 - 133
1,2-Dichloroethane	10.0	9.67		ug/L		97	71 - 135
1,1-Dichloroethene	10.0	9.92		ug/L		99	65 - 139
1,2-Dichloropropane	10.0	8.08		ug/L		81	78 - 133
Ethylbenzene	10.0	8.49		ug/L		85	80 - 120
2-Hexanone	20.0	10.6		ug/L		53	43 - 148
Isopropylbenzene	10.0	8.52		ug/L		85	74 - 120
Methyl acetate	20.0	13.3		ug/L		66	52 - 145
Methylcyclohexane	10.0	7.66		ug/L		77	60 - 125
Methylene Chloride	10.0	10.8		ug/L		108	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	11.9		ug/L		59	49 - 143
Methyl tert-butyl ether	10.0	9.58		ug/L		96	51 - 133
Styrene	10.0	8.67		ug/L		87	79 - 120
1,1,2,2-Tetrachloroethane	10.0	7.10		ug/L		71	65 - 139
Tetrachloroethene	10.0	10.9		ug/L		109	74 - 130
Toluene	10.0	8.33		ug/L		83	78 - 129
trans-1,2-Dichloroethene	10.0	10.5		ug/L		105	78 - 133
trans-1,3-Dichloropropene	10.0	7.39		ug/L		74	55 - 128
1,2,4-Trichlorobenzene	10.0	8.85		ug/L		88	42 - 133
1,1,1-Trichloroethane	10.0	11.9		ug/L		119	69 - 134
1,1,2-Trichloroethane	10.0	8.16		ug/L		82	78 - 133
Trichloroethene	10.0	10.7		ug/L		107	76 - 125
Trichlorofluoromethane	10.0	10.7		ug/L		107	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.3		ug/L		113	50 - 156
1,2,4-Trimethylbenzene	10.0	7.41		ug/L		74	74 - 120
1,3,5-Trimethylbenzene	10.0	7.60		ug/L		76	75 - 121
Vinyl chloride	10.0	9.11		ug/L		91	58 - 143
Xylenes, Total	20.0	17.8		ug/L		89	80 - 120
1,4-Dioxane	200	147		ug/L		73	10 - 175
Diethyl ether	10.0	7.97		ug/L		80	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		59 - 120
Dibromofluoromethane (Surr)	115		75 - 128
1,2-Dichloroethane-d4 (Surr)	97		70 - 121
Toluene-d8 (Surr)	85		70 - 123

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-2 MS**

**Matrix: Water**

**Analysis Batch: 354368**

**Client Sample ID: MW-25\_102918**

**Prep Type: Total/NA**

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec.
	Result	Qualifier		Added	Result				
Acetone	10	U	20.0	14.3		ug/L		71	10 - 168
Benzene	1.0	U	10.0	8.78		ug/L		88	71 - 122
Bromodichloromethane	1.0	U	10.0	9.57		ug/L		96	64 - 125
Bromoform	1.0	U	10.0	11.7		ug/L		117	44 - 129
Bromomethane	1.0	U	10.0	8.08		ug/L		81	19 - 187
2-Butanone (MEK)	10	U	20.0	11.8		ug/L		59	37 - 156
Carbon disulfide	5.0	U	10.0	9.20		ug/L		92	43 - 144
Carbon tetrachloride	1.0	U	10.0	11.6		ug/L		116	41 - 143
Chlorobenzene	1.0	U	10.0	9.07		ug/L		91	70 - 123
Chloroethane	1.0	U	10.0	7.31		ug/L		73	11 - 189
Chloroform	1.0	U	10.0	10.4		ug/L		104	68 - 130
Chloromethane	1.0	U	10.0	8.79		ug/L		88	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	9.48		ug/L		95	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	8.37		ug/L		84	48 - 127
Cyclohexane	1.0	U	10.0	7.21		ug/L		72	42 - 135
Dibromochloromethane	1.0	U	10.0	10.0		ug/L		100	60 - 129
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	6.97		ug/L		70	38 - 124
1,2-Dibromoethane	1.0	U	10.0	9.22		ug/L		92	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	8.49		ug/L		85	64 - 120
1,3-Dichlorobenzene	1.0	U	10.0	8.91		ug/L		89	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.96		ug/L		90	63 - 120
Dichlorodifluoromethane	1.0	U	10.0	12.1		ug/L		121	28 - 136
1,1-Dichloroethane	1.0	U	10.0	9.42		ug/L		94	63 - 136
1,2-Dichloroethane	1.0	U	10.0	9.81		ug/L		98	65 - 135
1,1-Dichloroethene	1.0	U	10.0	9.07		ug/L		91	53 - 140
1,2-Dichloropropane	1.0	U	10.0	8.69		ug/L		87	70 - 132
Ethylbenzene	1.0	U	10.0	8.62		ug/L		86	66 - 120
2-Hexanone	10	U	20.0	11.8		ug/L		59	42 - 150
Isopropylbenzene	1.0	U	10.0	8.39		ug/L		84	59 - 120
Methyl acetate	10	U	20.0	13.7		ug/L		69	41 - 142
Methylcyclohexane	1.0	U	10.0	7.28		ug/L		73	37 - 123
Methylene Chloride	5.0	U	10.0	10.1		ug/L		101	61 - 130
4-Methyl-2-pentanone (MIBK)	10	U	20.0	12.8		ug/L		64	44 - 143
Methyl tert-butyl ether	1.0	U	10.0	8.37		ug/L		84	41 - 136
Styrene	1.0	U	10.0	8.82		ug/L		88	68 - 120
1,1,2,2-Tetrachloroethane	1.0	U	10.0	6.79		ug/L		68	60 - 137
Tetrachloroethene	1.0	U	10.0	11.1		ug/L		111	51 - 136
Toluene	1.0	U	10.0	8.09		ug/L		81	62 - 132
trans-1,2-Dichloroethene	1.0	U	10.0	9.60		ug/L		96	68 - 133
trans-1,3-Dichloropropene	1.0	U	10.0	7.73		ug/L		77	40 - 125
1,2,4-Trichlorobenzene	1.0	U	10.0	7.16		ug/L		72	30 - 126
1,1,1-Trichloroethane	1.0	U	10.0	11.3		ug/L		113	51 - 138
1,1,2-Trichloroethane	1.0	U	10.0	9.04		ug/L		90	76 - 132
Trichloroethene	1.0	U	10.0	10.5		ug/L		105	55 - 131
Trichlorofluoromethane	1.0	U	10.0	9.81		ug/L		98	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	11.1		ug/L		111	31 - 156
1,2,4-Trimethylbenzene	1.0	U	10.0	6.92		ug/L		69	62 - 120

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-2 MS**

**Matrix: Water**

**Analysis Batch: 354368**

**Client Sample ID: MW-25\_102918**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	1.0	U	10.0	7.04		ug/L		70	64 - 120
Vinyl chloride	1.0	U	10.0	8.35		ug/L		84	43 - 154
Xylenes, Total	2.0	U	20.0	16.6		ug/L		83	67 - 120
1,4-Dioxane	50	U	200	112		ug/L		56	10 - 143
Diethyl ether	2.0	U	10.0	7.49		ug/L		75	65 - 134

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		59 - 120
Dibromofluoromethane (Surr)	110		75 - 128
1,2-Dichloroethane-d4 (Surr)	97		70 - 121
Toluene-d8 (Surr)	81		70 - 123

**Lab Sample ID: 240-103638-2 MSD**

**Matrix: Water**

**Analysis Batch: 354368**

**Client Sample ID: MW-25\_102918**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	14.1		ug/L		71	10 - 168	1	35
Benzene	1.0	U	10.0	8.87		ug/L		89	71 - 122	1	22
Bromodichloromethane	1.0	U	10.0	9.42		ug/L		94	64 - 125	2	27
Bromoform	1.0	U	10.0	10.3		ug/L		103	44 - 129	13	28
Bromomethane	1.0	U	10.0	8.69		ug/L		87	19 - 187	7	35
2-Butanone (MEK)	10	U	20.0	9.74	J	ug/L		49	37 - 156	19	35
Carbon disulfide	5.0	U	10.0	9.03		ug/L		90	43 - 144	2	33
Carbon tetrachloride	1.0	U	10.0	11.8		ug/L		118	41 - 143	1	30
Chlorobenzene	1.0	U	10.0	8.70		ug/L		87	70 - 123	4	23
Chloroethane	1.0	U	10.0	7.02		ug/L		70	11 - 189	4	35
Chloroform	1.0	U	10.0	10.9		ug/L		109	68 - 130	5	23
Chloromethane	1.0	U	10.0	8.39		ug/L		84	31 - 154	5	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.83		ug/L		98	64 - 130	4	21
cis-1,3-Dichloropropene	1.0	U	10.0	7.40		ug/L		74	48 - 127	12	30
Cyclohexane	1.0	U	10.0	8.26		ug/L		83	42 - 135	14	35
Dibromochloromethane	1.0	U	10.0	9.32		ug/L		93	60 - 129	7	26
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	6.88		ug/L		69	38 - 124	1	35
1,2-Dibromoethane	1.0	U	10.0	7.98		ug/L		80	71 - 123	14	27
1,2-Dichlorobenzene	1.0	U	10.0	8.66		ug/L		87	64 - 120	2	30
1,3-Dichlorobenzene	1.0	U	10.0	8.96		ug/L		90	62 - 120	1	31
1,4-Dichlorobenzene	1.0	U	10.0	8.81		ug/L		88	63 - 120	2	28
Dichlorodifluoromethane	1.0	U	10.0	12.4		ug/L		124	28 - 136	3	35
1,1-Dichloroethane	1.0	U	10.0	9.62		ug/L		96	63 - 136	2	23
1,2-Dichloroethane	1.0	U	10.0	9.71		ug/L		97	65 - 135	1	24
1,1-Dichloroethene	1.0	U	10.0	9.29		ug/L		93	53 - 140	2	35
1,2-Dichloropropane	1.0	U	10.0	8.33		ug/L		83	70 - 132	4	26
Ethylbenzene	1.0	U	10.0	7.67		ug/L		77	66 - 120	12	24
2-Hexanone	10	U	20.0	10.0		ug/L		50	42 - 150	16	35
Isopropylbenzene	1.0	U	10.0	8.16		ug/L		82	59 - 120	3	31
Methyl acetate	10	U	20.0	12.4		ug/L		62	41 - 142	10	35
Methylcyclohexane	1.0	U	10.0	7.46		ug/L		75	37 - 123	3	35

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-2 MSD**  
**Matrix: Water**  
**Analysis Batch: 354368**

**Client Sample ID: MW-25\_102918**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride	5.0	U	10.0	10.8		ug/L		108	61 - 130	6	29
4-Methyl-2-pentanone (MIBK)	10	U	20.0	10.8		ug/L		54	44 - 143	16	35
Methyl tert-butyl ether	1.0	U	10.0	8.85		ug/L		89	41 - 136	6	29
Styrene	1.0	U	10.0	8.27		ug/L		83	68 - 120	6	26
1,1,2,2-Tetrachloroethane	1.0	U	10.0	6.74		ug/L		67	60 - 137	1	31
Tetrachloroethene	1.0	U	10.0	10.8		ug/L		108	51 - 136	3	23
Toluene	1.0	U	10.0	7.86		ug/L		79	62 - 132	3	23
trans-1,2-Dichloroethene	1.0	U	10.0	9.62		ug/L		96	68 - 133	0	24
trans-1,3-Dichloropropene	1.0	U	10.0	6.97		ug/L		70	40 - 125	10	27
1,2,4-Trichlorobenzene	1.0	U	10.0	7.75		ug/L		77	30 - 126	8	35
1,1,1-Trichloroethane	1.0	U	10.0	11.5		ug/L		115	51 - 138	3	27
1,1,2-Trichloroethane	1.0	U	10.0	7.55		ug/L		76	76 - 132	18	25
Trichloroethene	1.0	U	10.0	10.2		ug/L		102	55 - 131	3	23
Trichlorofluoromethane	1.0	U	10.0	9.94		ug/L		99	37 - 174	1	35
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	11.4		ug/L		114	31 - 156	3	35
1,2,4-Trimethylbenzene	1.0	U	10.0	7.28		ug/L		73	62 - 120	5	27
1,3,5-Trimethylbenzene	1.0	U	10.0	7.29		ug/L		73	64 - 120	3	23
Vinyl chloride	1.0	U	10.0	7.54		ug/L		75	43 - 154	10	29
Xylenes, Total	2.0	U	20.0	16.2		ug/L		81	67 - 120	2	25
1,4-Dioxane	50	U	200	118		ug/L		59	10 - 143	5	35
Diethyl ether	2.0	U	10.0	7.69		ug/L		77	65 - 134	3	33

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	83		59 - 120
Dibromofluoromethane (Surr)	115		75 - 128
1,2-Dichloroethane-d4 (Surr)	94		70 - 121
Toluene-d8 (Surr)	79		70 - 123

**Lab Sample ID: MB 240-354546/6**  
**Matrix: Water**  
**Analysis Batch: 354546**

**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			11/09/18 11:14	1
Benzene	1.0	U	1.0	0.13	ug/L			11/09/18 11:14	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/09/18 11:14	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/09/18 11:14	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/09/18 11:14	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/09/18 11:14	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/09/18 11:14	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/09/18 11:14	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/09/18 11:14	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/09/18 11:14	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/09/18 11:14	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/09/18 11:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/09/18 11:14	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/09/18 11:14	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: MB 240-354546/6**  
**Matrix: Water**  
**Analysis Batch: 354546**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/09/18 11:14	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/09/18 11:14	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/09/18 11:14	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/09/18 11:14	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 11:14	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/09/18 11:14	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/09/18 11:14	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/09/18 11:14	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/09/18 11:14	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/09/18 11:14	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 11:14	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/09/18 11:14	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/09/18 11:14	1
2-Hexanone	10	U	10	0.54	ug/L			11/09/18 11:14	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/09/18 11:14	1
Methyl acetate	10	U	10	1.7	ug/L			11/09/18 11:14	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/09/18 11:14	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/09/18 11:14	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/09/18 11:14	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/09/18 11:14	1
Styrene	1.0	U	1.0	0.10	ug/L			11/09/18 11:14	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/09/18 11:14	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/09/18 11:14	1
Toluene	1.0	U	1.0	0.14	ug/L			11/09/18 11:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/09/18 11:14	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/09/18 11:14	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/09/18 11:14	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/09/18 11:14	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/09/18 11:14	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/09/18 11:14	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/09/18 11:14	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/09/18 11:14	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/09/18 11:14	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/09/18 11:14	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/09/18 11:14	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/09/18 11:14	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/09/18 11:14	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/09/18 11:14	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	78		59 - 120		11/09/18 11:14	1
Dibromofluoromethane (Surr)	120		75 - 128		11/09/18 11:14	1
1,2-Dichloroethane-d4 (Surr)	111		70 - 121		11/09/18 11:14	1
Toluene-d8 (Surr)	79		70 - 123		11/09/18 11:14	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

Lab Sample ID: LCS 240-354546/4

Matrix: Water

Analysis Batch: 354546

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	19.7		ug/L		99	21 - 162
Benzene	10.0	9.37		ug/L		94	80 - 123
Bromodichloromethane	10.0	10.3		ug/L		103	77 - 125
Bromoform	10.0	12.1		ug/L		121	49 - 141
Bromomethane	10.0	8.42		ug/L		84	41 - 175
2-Butanone (MEK)	20.0	13.3		ug/L		66	39 - 163
Carbon disulfide	10.0	9.49		ug/L		95	60 - 138
Carbon tetrachloride	10.0	12.4		ug/L		124	63 - 140
Chlorobenzene	10.0	9.76		ug/L		98	80 - 121
Chloroethane	10.0	7.26		ug/L		73	33 - 173
Chloroform	10.0	11.6		ug/L		116	79 - 127
Chloromethane	10.0	8.56		ug/L		86	54 - 143
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	76 - 128
cis-1,3-Dichloropropene	10.0	8.17		ug/L		82	64 - 132
Cyclohexane	10.0	7.97		ug/L		80	58 - 145
Dibromochloromethane	10.0	10.9		ug/L		109	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	8.63		ug/L		86	46 - 132
1,2-Dibromoethane	10.0	8.65		ug/L		87	77 - 123
1,2-Dichlorobenzene	10.0	9.54		ug/L		95	78 - 120
1,3-Dichlorobenzene	10.0	9.54		ug/L		95	78 - 120
1,4-Dichlorobenzene	10.0	9.35		ug/L		93	78 - 120
Dichlorodifluoromethane	10.0	13.0		ug/L		130	29 - 148
1,1-Dichloroethane	10.0	10.2		ug/L		102	75 - 133
1,2-Dichloroethane	10.0	10.3		ug/L		103	71 - 135
1,1-Dichloroethene	10.0	9.84		ug/L		98	65 - 139
1,2-Dichloropropane	10.0	9.09		ug/L		91	78 - 133
Ethylbenzene	10.0	9.01		ug/L		90	80 - 120
2-Hexanone	20.0	13.3		ug/L		67	43 - 148
Isopropylbenzene	10.0	9.10		ug/L		91	74 - 120
Methyl acetate	20.0	17.1		ug/L		85	52 - 145
Methylcyclohexane	10.0	8.24		ug/L		82	60 - 125
Methylene Chloride	10.0	11.5		ug/L		115	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	14.6		ug/L		73	49 - 143
Methyl tert-butyl ether	10.0	9.55		ug/L		95	51 - 133
Styrene	10.0	9.03		ug/L		90	79 - 120
1,1,2,2-Tetrachloroethane	10.0	7.50		ug/L		75	65 - 139
Tetrachloroethene	10.0	11.3		ug/L		113	74 - 130
Toluene	10.0	8.72		ug/L		87	78 - 129
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	78 - 133
trans-1,3-Dichloropropene	10.0	7.76		ug/L		78	55 - 128
1,2,4-Trichlorobenzene	10.0	9.07		ug/L		91	42 - 133
1,1,1-Trichloroethane	10.0	11.8		ug/L		118	69 - 134
1,1,2-Trichloroethane	10.0	9.22		ug/L		92	78 - 133
Trichloroethene	10.0	10.9		ug/L		109	76 - 125
Trichlorofluoromethane	10.0	9.84		ug/L		98	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.8		ug/L		118	50 - 156
1,2,4-Trimethylbenzene	10.0	7.79		ug/L		78	74 - 120

TestAmerica Canton



# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: LCS 240-354546/4**

**Matrix: Water**

**Analysis Batch: 354546**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	10.0	8.04		ug/L		80	75 - 121
Vinyl chloride	10.0	8.62		ug/L		86	58 - 143
Xylenes, Total	20.0	18.4		ug/L		92	80 - 120
1,4-Dioxane	200	172		ug/L		86	10 - 175
Diethyl ether	10.0	8.01		ug/L		80	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	89		59 - 120
Dibromofluoromethane (Surr)	113		75 - 128
1,2-Dichloroethane-d4 (Surr)	98		70 - 121
Toluene-d8 (Surr)	84		70 - 123

**Lab Sample ID: 240-103638-9 MS**

**Matrix: Water**

**Analysis Batch: 354546**

**Client Sample ID: MW-36\_102918**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	19.2		ug/L		96	10 - 168
Benzene	1.0	U	10.0	9.13		ug/L		91	71 - 122
Bromodichloromethane	1.0	U	10.0	10.3		ug/L		103	64 - 125
Bromoform	1.0	U	10.0	11.3		ug/L		113	44 - 129
Bromomethane	1.0	U	10.0	7.74		ug/L		77	19 - 187
2-Butanone (MEK)	10	U	20.0	15.1		ug/L		76	37 - 156
Carbon disulfide	5.0	U	10.0	8.73		ug/L		87	43 - 144
Carbon tetrachloride	1.0	U	10.0	10.8		ug/L		108	41 - 143
Chlorobenzene	1.0	U	10.0	9.24		ug/L		92	70 - 123
Chloroethane	1.0	U	10.0	6.50		ug/L		65	11 - 189
Chloroform	1.0	U	10.0	10.8		ug/L		108	68 - 130
Chloromethane	1.0	U	10.0	8.08		ug/L		81	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	9.66		ug/L		97	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	8.63		ug/L		86	48 - 127
Cyclohexane	1.0	U	10.0	6.92		ug/L		69	42 - 135
Dibromochloromethane	1.0	U	10.0	10.1		ug/L		101	60 - 129
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.38		ug/L		84	38 - 124
1,2-Dibromoethane	1.0	U	10.0	8.95		ug/L		90	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	9.04		ug/L		90	64 - 120
1,3-Dichlorobenzene	1.0	U	10.0	9.23		ug/L		92	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.15		ug/L		91	63 - 120
Dichlorodifluoromethane	1.0	U	10.0	10.7		ug/L		107	28 - 136
1,1-Dichloroethane	1.0	U	10.0	9.63		ug/L		96	63 - 136
1,2-Dichloroethane	1.0	U	10.0	10.1		ug/L		101	65 - 135
1,1-Dichloroethene	1.0	U	10.0	8.91		ug/L		89	53 - 140
1,2-Dichloropropane	1.0	U	10.0	8.63		ug/L		86	70 - 132
Ethylbenzene	1.0	U	10.0	8.50		ug/L		85	66 - 120
2-Hexanone	10	U	20.0	12.7		ug/L		64	42 - 150
Isopropylbenzene	1.0	U	10.0	8.63		ug/L		86	59 - 120
Methyl acetate	10	U	20.0	17.3		ug/L		86	41 - 142
Methylcyclohexane	1.0	U	10.0	7.25		ug/L		72	37 - 123

TestAmerica Canton



# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

Lab Sample ID: 240-103638-9 MSD

Matrix: Water

Analysis Batch: 354546

Client Sample ID: MW-36\_102918

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyclohexane	1.0	U	10.0	8.10		ug/L		81	42 - 135	16	35
Dibromochloromethane	1.0	U	10.0	10.2		ug/L		102	60 - 129	1	26
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.57		ug/L		86	38 - 124	2	35
1,2-Dibromoethane	1.0	U	10.0	8.96		ug/L		90	71 - 123	0	27
1,2-Dichlorobenzene	1.0	U	10.0	8.76		ug/L		88	64 - 120	3	30
1,3-Dichlorobenzene	1.0	U	10.0	8.98		ug/L		90	62 - 120	3	31
1,4-Dichlorobenzene	1.0	U	10.0	8.98		ug/L		90	63 - 120	2	28
Dichlorodifluoromethane	1.0	U	10.0	12.1		ug/L		121	28 - 136	13	35
1,1-Dichloroethane	1.0	U	10.0	9.54		ug/L		95	63 - 136	1	23
1,2-Dichloroethane	1.0	U	10.0	10.3		ug/L		103	65 - 135	2	24
1,1-Dichloroethene	1.0	U	10.0	9.72		ug/L		97	53 - 140	9	35
1,2-Dichloropropane	1.0	U	10.0	8.52		ug/L		85	70 - 132	1	26
Ethylbenzene	1.0	U	10.0	8.20		ug/L		82	66 - 120	4	24
2-Hexanone	10	U	20.0	12.1		ug/L		61	42 - 150	5	35
Isopropylbenzene	1.0	U	10.0	8.77		ug/L		88	59 - 120	2	31
Methyl acetate	10	U	20.0	16.5		ug/L		83	41 - 142	4	35
Methylcyclohexane	1.0	U	10.0	8.81		ug/L		88	37 - 123	19	35
Methylene Chloride	5.0	U	10.0	10.1		ug/L		101	61 - 130	3	29
4-Methyl-2-pentanone (MIBK)	10	U	20.0	13.4		ug/L		67	44 - 143	10	35
Methyl tert-butyl ether	1.0	U	10.0	9.10		ug/L		91	41 - 136	4	29
Styrene	1.0	U	10.0	8.80		ug/L		88	68 - 120	1	26
1,1,2,2-Tetrachloroethane	1.0	U	10.0	7.72		ug/L		77	60 - 137	8	31
Tetrachloroethene	1.0	U	10.0	11.2		ug/L		112	51 - 136	2	23
Toluene	1.0	U	10.0	8.41		ug/L		84	62 - 132	1	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.1		ug/L		101	68 - 133	5	24
trans-1,3-Dichloropropene	1.0	U	10.0	7.30		ug/L		73	40 - 125	7	27
1,2,4-Trichlorobenzene	1.0	U	10.0	8.05		ug/L		81	30 - 126	10	35
1,1,1-Trichloroethane	1.0	U	10.0	11.9		ug/L		119	51 - 138	3	27
1,1,2-Trichloroethane	1.0	U	10.0	8.62		ug/L		86	76 - 132	2	25
Trichloroethene	1.0	U	10.0	11.4		ug/L		114	55 - 131	3	23
Trichlorofluoromethane	1.0	U	10.0	9.75		ug/L		98	37 - 174	9	35
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	11.6		ug/L		116	31 - 156	6	35
1,2,4-Trimethylbenzene	1.0	U	10.0	7.57		ug/L		76	62 - 120	4	27
1,3,5-Trimethylbenzene	1.0	U	10.0	7.79		ug/L		78	64 - 120	4	23
Vinyl chloride	1.0	U	10.0	7.94		ug/L		79	43 - 154	10	29
Xylenes, Total	2.0	U	20.0	17.6		ug/L		88	67 - 120	2	25
1,4-Dioxane	50	U	200	184		ug/L		92	10 - 143	3	35
Diethyl ether	2.0	U	10.0	8.33		ug/L		83	65 - 134	6	33

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	88		59 - 120
Dibromofluoromethane (Surr)	116		75 - 128
1,2-Dichloroethane-d4 (Surr)	104		70 - 121
Toluene-d8 (Surr)	85		70 - 123

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: MB 240-353689/5**

**Matrix: Water**

**Analysis Batch: 353689**

**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			11/05/18 13:37	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/05/18 13:37	1

**Lab Sample ID: LCS 240-353689/4**

**Matrix: Water**

**Analysis Batch: 353689**

**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	11.3		ug/L		113	59 - 131
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	103		63 - 125				

**Lab Sample ID: 240-103550-C-6 MS**

**Matrix: Water**

**Analysis Batch: 353689**

**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	4.3	F2	10.0	16.4		ug/L		121	52 - 129
Surrogate	%Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	109		63 - 125						

**Lab Sample ID: 240-103550-C-6 MSD**

**Matrix: Water**

**Analysis Batch: 353689**

**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	4.3	F2	10.0	13.4	F2	ug/L		91	52 - 129	20	13
Surrogate	%Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	108		63 - 125								

**Lab Sample ID: MB 240-354129/5**

**Matrix: Water**

**Analysis Batch: 354129**

**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			11/07/18 12:44	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		63 - 125					11/07/18 12:44	1

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: LCS 240-354129/4**

**Matrix: Water**

**Analysis Batch: 354129**

**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	9.22		ug/L		92	59 - 131
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	103		63 - 125				

**Lab Sample ID: 240-103638-2 MS**

**Matrix: Water**

**Analysis Batch: 354129**

**Client Sample ID: MW-25\_102918**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	3.2		10.0	14.0		ug/L		107	52 - 129
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	107		63 - 125						

**Lab Sample ID: 240-103638-2 MSD**

**Matrix: Water**

**Analysis Batch: 354129**

**Client Sample ID: MW-25\_102918**

**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	3.2		10.0	13.6		ug/L		104	52 - 129	3	13
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	105		63 - 125								

**Lab Sample ID: 240-103638-8 MS**

**Matrix: Water**

**Analysis Batch: 354129**

**Client Sample ID: MW-15-60D\_102918**

**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	10.6		ug/L		106	52 - 129
<b>Surrogate</b>	<b>%Recovery</b>	<b>MS Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	106		63 - 125						

**Lab Sample ID: 240-103638-8 MSD**

**Matrix: Water**

**Analysis Batch: 354129**

**Client Sample ID: MW-15-60D\_102918**

**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	9.75		ug/L		98	52 - 129	9	13
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	108		63 - 125								

TestAmerica Canton

# QC Sample Results

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

TestAmerica Job ID: 240-103638-1

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

**Lab Sample ID: 240-103638-9 MS**  
**Matrix: Water**  
**Analysis Batch: 354129**

**Client Sample ID: MW-36\_102918**  
**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	9.97		ug/L		100	52 - 129
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	104		63 - 125						

**Lab Sample ID: 240-103638-9 MSD**  
**Matrix: Water**  
**Analysis Batch: 354129**

**Client Sample ID: MW-36\_102918**  
**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	10.5		ug/L		105	52 - 129	5	13
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	106		63 - 125								

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# QC Association Summary

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

TestAmerica Job ID: 240-103638-1

## GC/MS VOA

### Analysis Batch: 353689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103638-11	MW-14_102918	Total/NA	Water	8260B SIM	
240-103638-12	MW-20_102918	Total/NA	Water	8260B SIM	
MB 240-353689/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-353689/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103550-C-6 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103550-C-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 354118

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103638-8	MW-15-60D_102918	Total/NA	Water	8260B	
MB 240-354118/6	Method Blank	Total/NA	Water	8260B	
LCS 240-354118/4	Lab Control Sample	Total/NA	Water	8260B	
240-103638-8 MS	MW-15-60D_102918	Total/NA	Water	8260B	
240-103638-8 MSD	MW-15-60D_102918	Total/NA	Water	8260B	

### Analysis Batch: 354129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103638-1	TRIP BLANK	Total/NA	Water	8260B SIM	
240-103638-2	MW-25_102918	Total/NA	Water	8260B SIM	
240-103638-3	MW-1_102918	Total/NA	Water	8260B SIM	
240-103638-4	MW-7_102918	Total/NA	Water	8260B SIM	
240-103638-5	MW-9_102918	Total/NA	Water	8260B SIM	
240-103638-6	MW-18_102918	Total/NA	Water	8260B SIM	
240-103638-7	DUP-01	Total/NA	Water	8260B SIM	
240-103638-8	MW-15-60D_102918	Total/NA	Water	8260B SIM	
240-103638-9	MW-36_102918	Total/NA	Water	8260B SIM	
240-103638-10	MW-24_102918	Total/NA	Water	8260B SIM	
MB 240-354129/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354129/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103638-2 MS	MW-25_102918	Total/NA	Water	8260B SIM	
240-103638-2 MSD	MW-25_102918	Total/NA	Water	8260B SIM	
240-103638-8 MS	MW-15-60D_102918	Total/NA	Water	8260B SIM	
240-103638-8 MSD	MW-15-60D_102918	Total/NA	Water	8260B SIM	
240-103638-9 MS	MW-36_102918	Total/NA	Water	8260B SIM	
240-103638-9 MSD	MW-36_102918	Total/NA	Water	8260B SIM	

### Analysis Batch: 354368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103638-1	TRIP BLANK	Total/NA	Water	8260B	
240-103638-2	MW-25_102918	Total/NA	Water	8260B	
240-103638-3	MW-1_102918	Total/NA	Water	8260B	
240-103638-4	MW-7_102918	Total/NA	Water	8260B	
240-103638-5	MW-9_102918	Total/NA	Water	8260B	
240-103638-6	MW-18_102918	Total/NA	Water	8260B	
240-103638-7	DUP-01	Total/NA	Water	8260B	
240-103638-10	MW-24_102918	Total/NA	Water	8260B	
MB 240-354368/6	Method Blank	Total/NA	Water	8260B	
LCS 240-354368/4	Lab Control Sample	Total/NA	Water	8260B	
240-103638-2 MS	MW-25_102918	Total/NA	Water	8260B	
240-103638-2 MSD	MW-25_102918	Total/NA	Water	8260B	

TestAmerica Canton

# QC Association Summary

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

TestAmerica Job ID: 240-103638-1

## GC/MS VOA (Continued)

### Analysis Batch: 354546

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103638-9	MW-36_102918	Total/NA	Water	8260B	
240-103638-11	MW-14_102918	Total/NA	Water	8260B	
240-103638-12	MW-20_102918	Total/NA	Water	8260B	
MB 240-354546/6	Method Blank	Total/NA	Water	8260B	
LCS 240-354546/4	Lab Control Sample	Total/NA	Water	8260B	
240-103638-9 MS	MW-36_102918	Total/NA	Water	8260B	
240-103638-9 MSD	MW-36_102918	Total/NA	Water	8260B	



# Lab Chronicle

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

TestAmerica Job ID: 240-103638-1

## Client Sample ID: TRIP BLANK

Date Collected: 10/29/18 00:00

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 17:25	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 13:36	SAM	TAL CAN

## Client Sample ID: MW-25\_102918

Date Collected: 10/29/18 11:05

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 17:47	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 14:26	SAM	TAL CAN

## Client Sample ID: MW-1\_102918

Date Collected: 10/29/18 13:15

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 18:54	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 15:43	SAM	TAL CAN

## Client Sample ID: MW-7\_102918

Date Collected: 10/29/18 14:35

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 19:17	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 16:09	SAM	TAL CAN

## Client Sample ID: MW-9\_102918

Date Collected: 10/29/18 15:45

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 19:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 16:34	SAM	TAL CAN

## Client Sample ID: MW-18\_102918

Date Collected: 10/29/18 17:55

Date Received: 10/31/18 10:00

## Lab Sample ID: 240-103638-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 20:01	LEE	TAL CAN

TestAmerica Canton

# Lab Chronicle

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-18\_102918**

**Lab Sample ID: 240-103638-6**

Date Collected: 10/29/18 17:55

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 17:00	SAM	TAL CAN

**Client Sample ID: DUP-01**

**Lab Sample ID: 240-103638-7**

Date Collected: 10/29/18 00:00

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 20:22	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 17:26	SAM	TAL CAN

**Client Sample ID: MW-15-60D\_102918**

**Lab Sample ID: 240-103638-8**

Date Collected: 10/29/18 11:40

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354118	11/07/18 20:51	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 17:51	SAM	TAL CAN

**Client Sample ID: MW-36\_102918**

**Lab Sample ID: 240-103638-9**

Date Collected: 10/29/18 13:45

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354546	11/09/18 13:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 19:08	SAM	TAL CAN

**Client Sample ID: MW-24\_102918**

**Lab Sample ID: 240-103638-10**

Date Collected: 10/29/18 14:55

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354368	11/08/18 20:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354129	11/07/18 20:25	SAM	TAL CAN

**Client Sample ID: MW-14\_102918**

**Lab Sample ID: 240-103638-11**

Date Collected: 10/29/18 16:15

Matrix: Water

Date Received: 10/31/18 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354546	11/09/18 19:21	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	353689	11/05/18 23:27	SAM	TAL CAN

TestAmerica Canton

# Lab Chronicle

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

TestAmerica Job ID: 240-103638-1

**Client Sample ID: MW-20\_102918**

**Lab Sample ID: 240-103638-12**

**Date Collected: 10/29/18 17:55**

**Matrix: Water**

**Date Received: 10/31/18 10:00**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354546	11/09/18 19:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	353689	11/05/18 23:53	SAM	TAL CAN

**Laboratory References:**

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

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# Accreditation/Certification Summary

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

TestAmerica Job ID: 240-103638-1

## 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	07-31-19
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	08-31-19
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-19
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.

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

Regulatory program:  DW  NPDES  RCRA  Other

Client Project Manager: Kris Hinskey  
 Telephone: 248-994-2240  
 Email: kristoffer.hinskey@arcadis.com

Site Contact: Angela DeGrandis  
 Telephone: 734-320-0065

Lab Contact: Mike DeMonico  
 Telephone: 330-497-9396

Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377  
 Phone: 248-994-2240  
 Project Name: Ford LTP  
 Project Number: M1001454.0004.00001  
 PO # M1001454.0004.00001

Analysis Turnaround Time  
 TAT, if different from below  
 3 weeks  
 2 weeks  
 1 week  
 2 days  
 1 day

Method of Shipment/Carrier:  
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives							Filtered Sample (Y/N)	Composite C/Grab-G	VOCs 8260B	1,4-Dioxane 8260B SIM	Analyses	COCs	Sample Specific Notes / Special Instructions:														
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Other:																					
TRIP BLANK	—	—	X																															
MW-25-102918	10/29/18	1105																																
MW-25-MS/MSD-102918	10/29/18	1105																																
MW-1-102918	10/29/18	1315																																
MW-7-102918	10/29/18	1435																																
MW-9-102918	10/29/18	1545																																
MW-18-102918	10/29/18	1755																																
DUP-01	—	—																																
MW-15-606-102918	10/29/18	1140																																
MW-15-606-MS/MSD-102918	10/29/18	1140	X																															



Possible Hazard Identification  
 Non-Hazard  Irritable  Poison B  Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728  
 Level IV Reporting.

Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 10/29/18 17:12	Received by: Arcadis Sample Fridge	Company: Arcadis	Date/Time: 10/29/18 19:12
Relinquished by: <i>[Signature]</i>	Company: Arcadis	Date/Time: 10/30/18 12:00	Received by: <i>[Signature]</i>	Company: <i>[Signature]</i>	Date/Time: 11/30/18 12:00
Relinquished by: <i>[Signature]</i>	Company: <i>[Signature]</i>	Date/Time: 10/30/18 1345	Received in Laboratory by: <i>[Signature]</i>	Company: TA	Date/Time: 10/31/18 1000

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

<b>Client Contact</b> Company Name: Arcadis Address: 28550 Cahot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford LTP Project Number: MI001454.0004.00001 PO # MI001454.0004.00001		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
<b>Client Project Manager:</b> Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		<b>Site Contact:</b> Angela DeGrandis Telephone: 330-497-9396	
<b>Method of Shipment/Carrier:</b> Shipping/Tracking No:		<b>Analysis Turnaround Time</b> TAT if different from below <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
<b>Sample Identification</b>		<b>Containers &amp; Preservatives</b>	
Sample Date Sample Time	Matrix Air Aqueous Sediment Solid Other:	H2SO4 HNO3 HCl NaOH ZnAc NaOH Others:	Filtered Sample (Y/N) Composite C/Grab-G VOCs 8260B 1,4-Dioxane 8260B SIM
MW-36-102918	X	X	NG 3 3
MW-36-MS/MSB-102918			6 6
MW-24-102918			3 3
MW-14-102918			3 3
MW-20-102918	X	X	NG 3 3
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/OC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728 Level IV Reporting.			
Relinquished by: <i>[Signature]</i>	Company: Arcadis Date/Time: 10/29/18 19:12	Received by: <i>[Signature]</i> Company: Arcadis Date/Time: 10/30/18 12:00	Company: Arcadis Date/Time: 10/29/18 19:12
Relinquished by: <i>[Signature]</i>	Company: Arcadis Date/Time: 10/30/18 12:00	Received by: <i>[Signature]</i> Company: TA Date/Time: 10/30/18 12:00	Company: TA Date/Time: 10/31/18 10:00


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**TestAmerica Canton Sample Receipt Form/Narrative**  
**Canton Facility**

Login # : 103638

Client Arcaadis Site Name \_\_\_\_\_  
 Cooler Received on 10-31-18 Opened on 10-31-18  
 FedEx: 1<sup>st</sup>  Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

Cooler unpacked by:  


**Receipt After-hours: Drop-off Date/Time** \_\_\_\_\_ **Storage Location** \_\_\_\_\_

TestAmerica Cooler # TA 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 \_\_\_\_\_

1. Cooler temperature upon receipt  See Multiple Cooler Form  
 IR GUN# IR-8 (CF +0.9 °C) Observed Cooler Temp. 0.2 °C Corrected Cooler Temp. 1.1 °C  
 IR GUN #36 (CF +0.6°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 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?  Larger than this. Yes ~~No~~ NA
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~~

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

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other

Concerning \_\_\_\_\_

**17. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES**

Samples processed by:  
POI

**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): \_\_\_\_\_

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