

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: 240-103931-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.
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Attn: Kristoffer Hinskey



Authorized for release by:
11/21/2018 3:43:01 PM

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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: 240-103931-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD is outside acceptance limits.
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: 240-103931-1

Job ID: 240-103931-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-103931-1

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 11/6/2018 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.7° C and 2.3° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-103931-1), MW-38-110118 (240-103931-2), MW-40-110118 (240-103931-3), MW-34-110118 (240-103931-4), MW-35-110118 (240-103931-5), MW-39-110118 (240-103931-6), MW-31-110118 (240-103931-7), MW-41-110118 (240-103931-8), MW-42-110118 (240-103931-9), MW-43-110118 (240-103931-10), MW-30-110118 (240-103931-11) and MW-15-61D-110118 (240-103931-12) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/14/2018 and 11/15/2018.

Diethyl ether and Methylene Chloride were detected in method blank MB 240-355575/6 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Methylene Chloride failed the recovery criteria high for LCS 240-355575/4. Refer to the QC report for details.

Ethylbenzene failed the recovery criteria low for the MS/MSD of sample 240-103800-8 in batch 240-355575.

Ethylbenzene failed the recovery criteria low for the MS of sample 240-103819-12 in batch 240-355368.

Case Narrative

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

TestAmerica Job ID: 240-103931-1

Job ID: 240-103931-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

Carbon tetrachloride and Tetrachloroethene exceeded the RPD limit for the MSD of sample 240-103819-12 in batch 240-355368. Refer to the QC report for details.

Method(s) 8260B: The laboratory control sample (LCS) for 355575 recovered outside control limits for the following analytes: Methylene Chloride. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported. MW-34-110118 (240-103931-4), MW-39-110118 (240-103931-6), MW-31-110118 (240-103931-7), MW-41-110118 (240-103931-8), MW-42-110118 (240-103931-9), MW-43-110118 (240-103931-10), MW-30-110118 (240-103931-11) and MW-15-61D-110118 (240-103931-12)

No additional 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 (240-103931-1), MW-38-110118 (240-103931-2), MW-40-110118 (240-103931-3), MW-34-110118 (240-103931-4), MW-35-110118 (240-103931-5), MW-39-110118 (240-103931-6), MW-31-110118 (240-103931-7), MW-41-110118 (240-103931-8), MW-42-110118 (240-103931-9), MW-43-110118 (240-103931-10), MW-30-110118 (240-103931-11) and MW-15-61D-110118 (240-103931-12) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/11/2018 and 11/12/2018.

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

Method Summary

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

TestAmerica Job ID: 240-103931-1

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: 240-103931-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-103931-1	TRIP BLANK	Water	11/01/18 00:00	11/06/18 08:50
240-103931-2	MW-38-110118	Water	11/01/18 10:00	11/06/18 08:50
240-103931-3	MW-40-110118	Water	11/01/18 11:30	11/06/18 08:50
240-103931-4	MW-34-110118	Water	11/01/18 12:30	11/06/18 08:50
240-103931-5	MW-35-110118	Water	11/01/18 14:25	11/06/18 08:50
240-103931-6	MW-39-110118	Water	11/01/18 09:38	11/06/18 08:50
240-103931-7	MW-31-110118	Water	11/01/18 11:12	11/06/18 08:50
240-103931-8	MW-41-110118	Water	11/01/18 12:16	11/06/18 08:50
240-103931-9	MW-42-110118	Water	11/01/18 13:25	11/06/18 08:50
240-103931-10	MW-43-110118	Water	11/01/18 14:34	11/06/18 08:50
240-103931-11	MW-30-110118	Water	11/01/18 12:27	11/06/18 08:50
240-103931-12	MW-15-61D-110118	Water	11/01/18 14:17	11/06/18 08:50



Detection Summary

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-103931-1

No Detections.

Client Sample ID: MW-38-110118

Lab Sample ID: 240-103931-2

No Detections.

Client Sample ID: MW-40-110118

Lab Sample ID: 240-103931-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.6		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.39	J	1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	1.4		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-34-110118

Lab Sample ID: 240-103931-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	6.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.44	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	1.2		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-35-110118

Lab Sample ID: 240-103931-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	1.8		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-39-110118

Lab Sample ID: 240-103931-6

No Detections.

Client Sample ID: MW-31-110118

Lab Sample ID: 240-103931-7

No Detections.

Client Sample ID: MW-41-110118

Lab Sample ID: 240-103931-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	2.9		1.0	0.16	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.35	J	1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	2.0		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-42-110118

Lab Sample ID: 240-103931-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	0.60	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-43-110118

Lab Sample ID: 240-103931-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-43-110118 (Continued)

Lab Sample ID: 240-103931-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.71	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-30-110118

Lab Sample ID: 240-103931-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	15		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-15-61D-110118

Lab Sample ID: 240-103931-12

No Detections.

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: 240-103931-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-103931-1

Date Collected: 11/01/18 00:00

Matrix: Water

Date Received: 11/06/18 08:50

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			11/12/18 13:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					11/12/18 13:23	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			11/14/18 18:51	1
Benzene	1.0	U	1.0	0.13	ug/L			11/14/18 18:51	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/14/18 18:51	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/14/18 18:51	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/14/18 18:51	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/14/18 18:51	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/14/18 18:51	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/14/18 18:51	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/14/18 18:51	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/14/18 18:51	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/14/18 18:51	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/14/18 18:51	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/14/18 18:51	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/14/18 18:51	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/14/18 18:51	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/14/18 18:51	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/14/18 18:51	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/14/18 18:51	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 18:51	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 18:51	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/14/18 18:51	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/14/18 18:51	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/14/18 18:51	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/14/18 18:51	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 18:51	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/14/18 18:51	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/14/18 18:51	1
2-Hexanone	10	U	10	0.54	ug/L			11/14/18 18:51	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/14/18 18:51	1
Methyl acetate	10	U	10	1.7	ug/L			11/14/18 18:51	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/14/18 18:51	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/14/18 18:51	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/14/18 18:51	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/14/18 18:51	1
Styrene	1.0	U	1.0	0.10	ug/L			11/14/18 18:51	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/14/18 18:51	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/14/18 18:51	1
Toluene	1.0	U	1.0	0.14	ug/L			11/14/18 18:51	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 18:51	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/14/18 18:51	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/14/18 18:51	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/14/18 18:51	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/14/18 18:51	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-103931-1

Date Collected: 11/01/18 00:00

Matrix: Water

Date Received: 11/06/18 08:50

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			11/14/18 18:51	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/14/18 18:51	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/14/18 18:51	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/14/18 18:51	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/14/18 18:51	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/14/18 18:51	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/14/18 18:51	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/14/18 18:51	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/14/18 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		59 - 120		11/14/18 18:51	1
Dibromofluoromethane (Surr)	127		75 - 128		11/14/18 18:51	1
1,2-Dichloroethane-d4 (Surr)	112		70 - 121		11/14/18 18:51	1
Toluene-d8 (Surr)	73		70 - 123		11/14/18 18:51	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-38-110118

Lab Sample ID: 240-103931-2

Date Collected: 11/01/18 10:00

Matrix: Water

Date Received: 11/06/18 08:50

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			11/11/18 23:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/11/18 23:04	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			11/14/18 19:13	1
Benzene	1.0	U	1.0	0.13	ug/L			11/14/18 19:13	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/14/18 19:13	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/14/18 19:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/14/18 19:13	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/14/18 19:13	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/14/18 19:13	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/14/18 19:13	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/14/18 19:13	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/14/18 19:13	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/14/18 19:13	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/14/18 19:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/14/18 19:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/14/18 19:13	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/14/18 19:13	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/14/18 19:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/14/18 19:13	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/14/18 19:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 19:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 19:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/14/18 19:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/14/18 19:13	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/14/18 19:13	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/14/18 19:13	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 19:13	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/14/18 19:13	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/14/18 19:13	1
2-Hexanone	10	U	10	0.54	ug/L			11/14/18 19:13	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/14/18 19:13	1
Methyl acetate	10	U	10	1.7	ug/L			11/14/18 19:13	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/14/18 19:13	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/14/18 19:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/14/18 19:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/14/18 19:13	1
Styrene	1.0	U	1.0	0.10	ug/L			11/14/18 19:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/14/18 19:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/14/18 19:13	1
Toluene	1.0	U	1.0	0.14	ug/L			11/14/18 19:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 19:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/14/18 19:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/14/18 19:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/14/18 19:13	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/14/18 19:13	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-38-110118

Lab Sample ID: 240-103931-2

Date Collected: 11/01/18 10:00

Matrix: Water

Date Received: 11/06/18 08:50

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			11/14/18 19:13	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/14/18 19:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/14/18 19:13	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/14/18 19:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/14/18 19:13	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/14/18 19:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/14/18 19:13	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/14/18 19:13	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/14/18 19:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		59 - 120					11/14/18 19:13	1
Dibromofluoromethane (Surr)	115		75 - 128					11/14/18 19:13	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 121					11/14/18 19:13	1
Toluene-d8 (Surr)	75		70 - 123					11/14/18 19:13	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-40-110118

Lab Sample ID: 240-103931-3

Date Collected: 11/01/18 11:30

Matrix: Water

Date Received: 11/06/18 08:50

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			11/11/18 23:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/11/18 23:29	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			11/14/18 19:36	1
Benzene	1.0	U	1.0	0.13	ug/L			11/14/18 19:36	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/14/18 19:36	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/14/18 19:36	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/14/18 19:36	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/14/18 19:36	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/14/18 19:36	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/14/18 19:36	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/14/18 19:36	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/14/18 19:36	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/14/18 19:36	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/14/18 19:36	1
cis-1,2-Dichloroethene	2.6		1.0	0.16	ug/L			11/14/18 19:36	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/14/18 19:36	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/14/18 19:36	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/14/18 19:36	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/14/18 19:36	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/14/18 19:36	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 19:36	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 19:36	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/14/18 19:36	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/14/18 19:36	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/14/18 19:36	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/14/18 19:36	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 19:36	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/14/18 19:36	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/14/18 19:36	1
2-Hexanone	10	U	10	0.54	ug/L			11/14/18 19:36	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/14/18 19:36	1
Methyl acetate	10	U	10	1.7	ug/L			11/14/18 19:36	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/14/18 19:36	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/14/18 19:36	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/14/18 19:36	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/14/18 19:36	1
Styrene	1.0	U	1.0	0.10	ug/L			11/14/18 19:36	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/14/18 19:36	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/14/18 19:36	1
Toluene	1.0	U	1.0	0.14	ug/L			11/14/18 19:36	1
trans-1,2-Dichloroethene	0.39	J	1.0	0.19	ug/L			11/14/18 19:36	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/14/18 19:36	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/14/18 19:36	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/14/18 19:36	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/14/18 19:36	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-40-110118

Lab Sample ID: 240-103931-3

Date Collected: 11/01/18 11:30

Matrix: Water

Date Received: 11/06/18 08:50

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			11/14/18 19:36	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/14/18 19:36	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/14/18 19:36	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/14/18 19:36	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/14/18 19:36	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/14/18 19:36	1
Vinyl chloride	1.4		1.0	0.20	ug/L			11/14/18 19:36	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/14/18 19:36	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/14/18 19:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		59 - 120		11/14/18 19:36	1
Dibromofluoromethane (Surr)	112		75 - 128		11/14/18 19:36	1
1,2-Dichloroethane-d4 (Surr)	104		70 - 121		11/14/18 19:36	1
Toluene-d8 (Surr)	75		70 - 123		11/14/18 19:36	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-34-110118

Lab Sample ID: 240-103931-4

Date Collected: 11/01/18 12:30

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.7		2.0	0.86	ug/L			11/12/18 15:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					11/12/18 15:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/15/18 12:53	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 12:53	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 12:53	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 12:53	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 12:53	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 12:53	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 12:53	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 12:53	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 12:53	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 12:53	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 12:53	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 12:53	1
cis-1,2-Dichloroethene	0.44	J	1.0	0.16	ug/L			11/15/18 12:53	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 12:53	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 12:53	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 12:53	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 12:53	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 12:53	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 12:53	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 12:53	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 12:53	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 12:53	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 12:53	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 12:53	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 12:53	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 12:53	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 12:53	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 12:53	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 12:53	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 12:53	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 12:53	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 12:53	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 12:53	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 12:53	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 12:53	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 12:53	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 12:53	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 12:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 12:53	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 12:53	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 12:53	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 12:53	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 12:53	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-34-110118

Lab Sample ID: 240-103931-4

Date Collected: 11/01/18 12:30

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 12:53	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 12:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 12:53	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 12:53	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 12:53	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 12:53	1
Vinyl chloride	1.2		1.0	0.20	ug/L			11/15/18 12:53	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 12:53	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 12:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	78		59 - 120		11/15/18 12:53	1
Dibromofluoromethane (Surr)	123		75 - 128		11/15/18 12:53	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 121		11/15/18 12:53	1
Toluene-d8 (Surr)	78		70 - 123		11/15/18 12:53	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-35-110118

Lab Sample ID: 240-103931-5

Date Collected: 11/01/18 14:25

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.5		2.0	0.86	ug/L			11/12/18 16:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/12/18 16:22	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			11/14/18 21:48	1
Benzene	1.0	U	1.0	0.13	ug/L			11/14/18 21:48	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/14/18 21:48	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/14/18 21:48	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/14/18 21:48	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/14/18 21:48	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/14/18 21:48	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/14/18 21:48	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/14/18 21:48	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/14/18 21:48	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/14/18 21:48	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/14/18 21:48	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/14/18 21:48	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/14/18 21:48	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/14/18 21:48	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/14/18 21:48	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/14/18 21:48	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/14/18 21:48	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 21:48	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 21:48	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/14/18 21:48	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/14/18 21:48	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/14/18 21:48	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/14/18 21:48	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 21:48	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/14/18 21:48	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/14/18 21:48	1
2-Hexanone	10	U	10	0.54	ug/L			11/14/18 21:48	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/14/18 21:48	1
Methyl acetate	10	U	10	1.7	ug/L			11/14/18 21:48	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/14/18 21:48	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/14/18 21:48	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/14/18 21:48	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/14/18 21:48	1
Styrene	1.0	U	1.0	0.10	ug/L			11/14/18 21:48	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/14/18 21:48	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/14/18 21:48	1
Toluene	1.0	U	1.0	0.14	ug/L			11/14/18 21:48	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 21:48	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/14/18 21:48	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/14/18 21:48	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/14/18 21:48	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/14/18 21:48	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-35-110118

Lab Sample ID: 240-103931-5

Date Collected: 11/01/18 14:25

Matrix: Water

Date Received: 11/06/18 08:50

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			11/14/18 21:48	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/14/18 21:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/14/18 21:48	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/14/18 21:48	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/14/18 21:48	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/14/18 21:48	1
Vinyl chloride	1.8		1.0	0.20	ug/L			11/14/18 21:48	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/14/18 21:48	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/14/18 21:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120					11/14/18 21:48	1
Dibromofluoromethane (Surr)	123		75 - 128					11/14/18 21:48	1
1,2-Dichloroethane-d4 (Surr)	115		70 - 121					11/14/18 21:48	1
Toluene-d8 (Surr)	77		70 - 123					11/14/18 21:48	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-39-110118

Lab Sample ID: 240-103931-6

Date Collected: 11/01/18 09:38

Matrix: Water

Date Received: 11/06/18 08:50

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			11/12/18 16:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 125					11/12/18 16:48	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			11/15/18 16:28	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 16:28	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 16:28	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 16:28	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 16:28	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 16:28	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 16:28	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 16:28	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 16:28	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 16:28	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 16:28	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 16:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 16:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 16:28	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 16:28	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 16:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 16:28	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 16:28	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 16:28	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 16:28	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 16:28	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 16:28	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 16:28	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 16:28	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 16:28	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 16:28	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 16:28	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 16:28	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 16:28	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 16:28	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 16:28	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 16:28	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 16:28	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 16:28	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 16:28	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 16:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 16:28	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 16:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 16:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 16:28	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 16:28	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 16:28	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 16:28	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-39-110118

Lab Sample ID: 240-103931-6

Date Collected: 11/01/18 09:38

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 16:28	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 16:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 16:28	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 16:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 16:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 16:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/15/18 16:28	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 16:28	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 16:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/15/18 16:28	1
Dibromofluoromethane (Surr)	118		75 - 128					11/15/18 16:28	1
1,2-Dichloroethane-d4 (Surr)	110		70 - 121					11/15/18 16:28	1
Toluene-d8 (Surr)	76		70 - 123					11/15/18 16:28	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-31-110118

Lab Sample ID: 240-103931-7

Date Collected: 11/01/18 11:12

Matrix: Water

Date Received: 11/06/18 08:50

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			11/12/18 17:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					11/12/18 17:14	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			11/15/18 16:50	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 16:50	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 16:50	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 16:50	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 16:50	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 16:50	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 16:50	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 16:50	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 16:50	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 16:50	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 16:50	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 16:50	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 16:50	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 16:50	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 16:50	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 16:50	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 16:50	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 16:50	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 16:50	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 16:50	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 16:50	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 16:50	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 16:50	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 16:50	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 16:50	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 16:50	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 16:50	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 16:50	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 16:50	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 16:50	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 16:50	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 16:50	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 16:50	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 16:50	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 16:50	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 16:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 16:50	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 16:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 16:50	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 16:50	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 16:50	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 16:50	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 16:50	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-31-110118

Lab Sample ID: 240-103931-7

Date Collected: 11/01/18 11:12

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 16:50	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 16:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 16:50	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 16:50	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 16:50	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 16:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/15/18 16:50	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 16:50	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 16:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	77		59 - 120		11/15/18 16:50	1
Dibromofluoromethane (Surr)	126		75 - 128		11/15/18 16:50	1
1,2-Dichloroethane-d4 (Surr)	111		70 - 121		11/15/18 16:50	1
Toluene-d8 (Surr)	78		70 - 123		11/15/18 16:50	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-41-110118

Lab Sample ID: 240-103931-8

Date Collected: 11/01/18 12:16

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.9	J	2.0	0.86	ug/L			11/12/18 17:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		63 - 125					11/12/18 17:39	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			11/15/18 17:12	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 17:12	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:12	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 17:12	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 17:12	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 17:12	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 17:12	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 17:12	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 17:12	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 17:12	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 17:12	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 17:12	1
cis-1,2-Dichloroethene	2.9		1.0	0.16	ug/L			11/15/18 17:12	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 17:12	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 17:12	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 17:12	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 17:12	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 17:12	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:12	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:12	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 17:12	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 17:12	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:12	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 17:12	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 17:12	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 17:12	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 17:12	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 17:12	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 17:12	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 17:12	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 17:12	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 17:12	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 17:12	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 17:12	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 17:12	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 17:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 17:12	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 17:12	1
trans-1,2-Dichloroethene	0.35	J	1.0	0.19	ug/L			11/15/18 17:12	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 17:12	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 17:12	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 17:12	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 17:12	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-41-110118

Lab Sample ID: 240-103931-8

Date Collected: 11/01/18 12:16

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 17:12	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 17:12	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 17:12	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 17:12	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 17:12	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 17:12	1
Vinyl chloride	2.0		1.0	0.20	ug/L			11/15/18 17:12	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 17:12	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 17:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120		11/15/18 17:12	1
Dibromofluoromethane (Surr)	118		75 - 128		11/15/18 17:12	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 121		11/15/18 17:12	1
Toluene-d8 (Surr)	75		70 - 123		11/15/18 17:12	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-42-110118

Lab Sample ID: 240-103931-9

Date Collected: 11/01/18 13:25

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.6		2.0	0.86	ug/L			11/12/18 18:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/12/18 18:05	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			11/15/18 17:34	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 17:34	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:34	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 17:34	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 17:34	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 17:34	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 17:34	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 17:34	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 17:34	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 17:34	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 17:34	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 17:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 17:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 17:34	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 17:34	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 17:34	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 17:34	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 17:34	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:34	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:34	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 17:34	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 17:34	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:34	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 17:34	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 17:34	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 17:34	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 17:34	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 17:34	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 17:34	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 17:34	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 17:34	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 17:34	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 17:34	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 17:34	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 17:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 17:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 17:34	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 17:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 17:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 17:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 17:34	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 17:34	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 17:34	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-42-110118

Lab Sample ID: 240-103931-9

Date Collected: 11/01/18 13:25

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 17:34	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 17:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 17:34	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 17:34	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 17:34	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 17:34	1
Vinyl chloride	0.60	J	1.0	0.20	ug/L			11/15/18 17:34	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 17:34	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 17:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	75		59 - 120					11/15/18 17:34	1
Dibromofluoromethane (Surr)	122		75 - 128					11/15/18 17:34	1
1,2-Dichloroethane-d4 (Surr)	109		70 - 121					11/15/18 17:34	1
Toluene-d8 (Surr)	72		70 - 123					11/15/18 17:34	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-43-110118

Lab Sample ID: 240-103931-10

Date Collected: 11/01/18 14:34

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0		2.0	0.86	ug/L			11/12/18 18:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/12/18 18:30	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			11/15/18 17:56	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 17:56	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:56	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 17:56	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 17:56	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 17:56	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 17:56	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 17:56	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 17:56	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 17:56	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 17:56	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 17:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 17:56	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 17:56	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 17:56	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 17:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 17:56	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 17:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:56	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 17:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 17:56	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 17:56	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 17:56	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 17:56	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 17:56	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 17:56	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 17:56	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 17:56	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 17:56	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 17:56	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 17:56	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 17:56	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 17:56	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 17:56	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 17:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 17:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 17:56	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 17:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 17:56	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 17:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 17:56	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 17:56	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 17:56	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-43-110118

Lab Sample ID: 240-103931-10

Date Collected: 11/01/18 14:34

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 17:56	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 17:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 17:56	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 17:56	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 17:56	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 17:56	1
Vinyl chloride	0.71	J	1.0	0.20	ug/L			11/15/18 17:56	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 17:56	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 17:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		59 - 120					11/15/18 17:56	1
Dibromofluoromethane (Surr)	128		75 - 128					11/15/18 17:56	1
1,2-Dichloroethane-d4 (Surr)	113		70 - 121					11/15/18 17:56	1
Toluene-d8 (Surr)	75		70 - 123					11/15/18 17:56	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-30-110118

Lab Sample ID: 240-103931-11

Date Collected: 11/01/18 12:27

Matrix: Water

Date Received: 11/06/18 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	15		2.0	0.86	ug/L			11/12/18 18:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					11/12/18 18:56	1

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

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

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-30-110118

Lab Sample ID: 240-103931-11

Date Collected: 11/01/18 12:27

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 18:18	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 18:18	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 18:18	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 18:18	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 18:18	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 18:18	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/15/18 18:18	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 18:18	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 18:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	74		59 - 120		11/15/18 18:18	1
Dibromofluoromethane (Surr)	125		75 - 128		11/15/18 18:18	1
1,2-Dichloroethane-d4 (Surr)	113		70 - 121		11/15/18 18:18	1
Toluene-d8 (Surr)	78		70 - 123		11/15/18 18:18	1

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-15-61D-110118

Lab Sample ID: 240-103931-12

Date Collected: 11/01/18 14:17

Matrix: Water

Date Received: 11/06/18 08:50

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			11/12/18 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					11/12/18 19:21	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			11/15/18 18:40	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 18:40	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 18:40	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 18:40	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 18:40	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 18:40	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 18:40	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 18:40	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 18:40	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 18:40	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 18:40	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 18:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 18:40	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 18:40	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 18:40	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 18:40	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 18:40	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 18:40	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 18:40	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 18:40	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 18:40	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 18:40	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 18:40	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 18:40	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 18:40	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 18:40	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 18:40	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 18:40	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 18:40	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 18:40	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 18:40	1
Methylene Chloride	5.0	U *	5.0	2.6	ug/L			11/15/18 18:40	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 18:40	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 18:40	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 18:40	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 18:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 18:40	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 18:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 18:40	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 18:40	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 18:40	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 18:40	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 18:40	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-15-61D-110118

Lab Sample ID: 240-103931-12

Date Collected: 11/01/18 14:17

Matrix: Water

Date Received: 11/06/18 08:50

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			11/15/18 18:40	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 18:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 18:40	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 18:40	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 18:40	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 18:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/15/18 18:40	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 18:40	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/15/18 18:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	76		59 - 120					11/15/18 18:40	1
Dibromofluoromethane (Surr)	125		75 - 128					11/15/18 18:40	1
1,2-Dichloroethane-d4 (Surr)	110		70 - 121					11/15/18 18:40	1
Toluene-d8 (Surr)	78		70 - 123					11/15/18 18:40	1

Surrogate Summary

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

TestAmerica Job ID: 240-103931-1

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)
240-103800-A-8 MS	Matrix Spike	78	111	102	75
240-103800-A-8 MSD	Matrix Spike Duplicate	79	108	100	74
240-103819-B-12 MS	Matrix Spike	80	117	102	74
240-103819-B-12 MSD	Matrix Spike Duplicate	84	113	104	80
240-103931-1	TRIP BLANK	72	127	112	73
240-103931-2	MW-38-110118	72	115	104	75
240-103931-3	MW-40-110118	72	112	104	75
240-103931-4	MW-34-110118	78	123	106	78
240-103931-5	MW-35-110118	75	123	115	77
240-103931-6	MW-39-110118	76	118	110	76
240-103931-7	MW-31-110118	77	126	111	78
240-103931-8	MW-41-110118	76	118	106	75
240-103931-9	MW-42-110118	75	122	109	72
240-103931-10	MW-43-110118	74	128	113	75
240-103931-11	MW-30-110118	74	125	113	78
240-103931-12	MW-15-61D-110118	76	125	110	78
LCS 240-355368/4	Lab Control Sample	86	111	102	80
LCS 240-355575/4	Lab Control Sample	84	121	106	79
MB 240-355368/6	Method Blank	78	115	106	78
MB 240-355575/6	Method Blank	74	128	111	76

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)
240-103817-C-7 MS	Matrix Spike	110
240-103817-C-7 MSD	Matrix Spike Duplicate	110
240-103927-C-2 MS	Matrix Spike	106
240-103927-C-2 MSD	Matrix Spike Duplicate	109
240-103931-1	TRIP BLANK	100
240-103931-2	MW-38-110118	108
240-103931-3	MW-40-110118	108
240-103931-4	MW-34-110118	105
240-103931-5	MW-35-110118	106
240-103931-6	MW-39-110118	103
240-103931-7	MW-31-110118	106
240-103931-8	MW-41-110118	102
240-103931-9	MW-42-110118	107
240-103931-10	MW-43-110118	107
240-103931-11	MW-30-110118	107
240-103931-12	MW-15-61D-110118	108

TestAmerica Canton

Surrogate Summary

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

TestAmerica Job ID: 240-103931-1

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)
LCS 240-354800/4	Lab Control Sample	92
LCS 240-354924/4	Lab Control Sample	100
MB 240-354800/5	Method Blank	103
MB 240-354924/5	Method Blank	100

Surrogate Legend

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

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

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: MB 240-355368/6

Matrix: Water

Analysis Batch: 355368

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			11/14/18 12:13	1
Benzene	1.0	U	1.0	0.13	ug/L			11/14/18 12:13	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/14/18 12:13	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/14/18 12:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/14/18 12:13	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/14/18 12:13	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/14/18 12:13	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/14/18 12:13	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/14/18 12:13	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/14/18 12:13	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/14/18 12:13	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/14/18 12:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/14/18 12:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/14/18 12:13	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/14/18 12:13	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/14/18 12:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/14/18 12:13	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/14/18 12:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 12:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/14/18 12:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/14/18 12:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/14/18 12:13	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/14/18 12:13	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/14/18 12:13	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 12:13	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/14/18 12:13	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/14/18 12:13	1
2-Hexanone	10	U	10	0.54	ug/L			11/14/18 12:13	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/14/18 12:13	1
Methyl acetate	10	U	10	1.7	ug/L			11/14/18 12:13	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/14/18 12:13	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/14/18 12:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/14/18 12:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/14/18 12:13	1
Styrene	1.0	U	1.0	0.10	ug/L			11/14/18 12:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/14/18 12:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/14/18 12:13	1
Toluene	1.0	U	1.0	0.14	ug/L			11/14/18 12:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/14/18 12:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/14/18 12:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/14/18 12:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/14/18 12:13	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/14/18 12:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/14/18 12:13	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/14/18 12:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/14/18 12:13	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/14/18 12:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/14/18 12:13	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: MB 240-355368/6
Matrix: Water
Analysis Batch: 355368

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/14/18 12:13	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/14/18 12:13	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/14/18 12:13	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/14/18 12:13	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	78		59 - 120		11/14/18 12:13	1
Dibromofluoromethane (Surr)	115		75 - 128		11/14/18 12:13	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 121		11/14/18 12:13	1
Toluene-d8 (Surr)	78		70 - 123		11/14/18 12:13	1

Lab Sample ID: LCS 240-355368/4
Matrix: Water
Analysis Batch: 355368

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	20.0		ug/L		100	21 - 162
Benzene	10.0	9.42		ug/L		94	80 - 123
Bromodichloromethane	10.0	10.7		ug/L		107	77 - 125
Bromoform	10.0	12.8		ug/L		128	49 - 141
Bromomethane	10.0	6.94		ug/L		69	41 - 175
2-Butanone (MEK)	20.0	15.2		ug/L		76	39 - 163
Carbon disulfide	10.0	9.44		ug/L		94	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	5.97		ug/L		60	33 - 173
Chloroform	10.0	11.1		ug/L		111	79 - 127
Chloromethane	10.0	6.87		ug/L		69	54 - 143
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	76 - 128
cis-1,3-Dichloropropene	10.0	9.83		ug/L		98	64 - 132
Cyclohexane	10.0	8.38		ug/L		84	58 - 145
Dibromochloromethane	10.0	10.5		ug/L		105	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	9.03		ug/L		90	46 - 132
1,2-Dibromoethane	10.0	10.1		ug/L		101	77 - 123
1,2-Dichlorobenzene	10.0	9.77		ug/L		98	78 - 120
1,3-Dichlorobenzene	10.0	9.41		ug/L		94	78 - 120
1,4-Dichlorobenzene	10.0	9.24		ug/L		92	78 - 120
Dichlorodifluoromethane	10.0	10.6		ug/L		106	29 - 148
1,1-Dichloroethane	10.0	10.1		ug/L		101	75 - 133
1,2-Dichloroethane	10.0	11.0		ug/L		110	71 - 135
1,1-Dichloroethene	10.0	9.50		ug/L		95	65 - 139
1,2-Dichloropropane	10.0	8.90		ug/L		89	78 - 133
Ethylbenzene	10.0	8.91		ug/L		89	80 - 120
2-Hexanone	20.0	13.4		ug/L		67	43 - 148
Isopropylbenzene	10.0	8.97		ug/L		90	74 - 120
Methyl acetate	20.0	16.8		ug/L		84	52 - 145
Methylcyclohexane	10.0	8.62		ug/L		86	60 - 125
Methylene Chloride	10.0	10.5		ug/L		105	70 - 134

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: LCS 240-355368/4

Matrix: Water

Analysis Batch: 355368

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	15.2		ug/L		76	49 - 143
Methyl tert-butyl ether	10.0	9.38		ug/L		94	51 - 133
Styrene	10.0	9.48		ug/L		95	79 - 120
1,1,2,2-Tetrachloroethane	10.0	7.46		ug/L		75	65 - 139
Tetrachloroethene	10.0	11.5		ug/L		115	74 - 130
Toluene	10.0	8.82		ug/L		88	78 - 129
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	78 - 133
trans-1,3-Dichloropropene	10.0	8.19		ug/L		82	55 - 128
1,2,4-Trichlorobenzene	10.0	8.73		ug/L		87	42 - 133
1,1,1-Trichloroethane	10.0	12.3		ug/L		123	69 - 134
1,1,2-Trichloroethane	10.0	9.04		ug/L		90	78 - 133
Trichloroethene	10.0	11.8		ug/L		118	76 - 125
Trichlorofluoromethane	10.0	9.05		ug/L		90	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	13.1		ug/L		131	50 - 156
1,2,4-Trimethylbenzene	10.0	8.05		ug/L		80	74 - 120
1,3,5-Trimethylbenzene	10.0	8.02		ug/L		80	75 - 121
Vinyl chloride	10.0	6.67		ug/L		67	58 - 143
Xylenes, Total	20.0	18.0		ug/L		90	80 - 120
Diethyl ether	10.0	7.42		ug/L		74	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
4-Bromofluorobenzene (Surr)	86		59 - 120
Dibromofluoromethane (Surr)	111		75 - 128
1,2-Dichloroethane-d4 (Surr)	102		70 - 121
Toluene-d8 (Surr)	80		70 - 123

Lab Sample ID: 240-103819-B-12 MS

Matrix: Water

Analysis Batch: 355368

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
Acetone	2000	U	4000	3640		ug/L		91	10 - 168
Benzene	200	U	2000	1550		ug/L		78	71 - 122
Bromodichloromethane	200	U	2000	1890		ug/L		95	64 - 125
Bromoform	200	U	2000	2250		ug/L		113	44 - 129
Bromomethane	200	U	2000	1500		ug/L		75	19 - 187
2-Butanone (MEK)	2000	U	4000	2450		ug/L		61	37 - 156
Carbon disulfide	1000	U	2000	1470		ug/L		74	43 - 144
Carbon tetrachloride	200	U F2	2000	1800		ug/L		90	41 - 143
Chlorobenzene	200	U	2000	1580		ug/L		79	70 - 123
Chloroethane	200	U	2000	1130		ug/L		56	11 - 189
Chloroform	200	U	2000	2040		ug/L		102	68 - 130
Chloromethane	200	U	2000	1370		ug/L		68	31 - 154
cis-1,2-Dichloroethene	800		2000	2840		ug/L		102	64 - 130
cis-1,3-Dichloropropene	200	U	2000	1520		ug/L		76	48 - 127
Dibromochloromethane	200	U	2000	1930		ug/L		96	60 - 129
1,2-Dichlorobenzene	200	U	2000	1640		ug/L		82	64 - 120

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QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: 240-103819-B-12 MS

Matrix: Water

Analysis Batch: 355368

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	Limits
	Result	Qualifier	Added	Result	Qualifier					
1,3-Dichlorobenzene	200	U	2000	1500		ug/L		75	62 - 120	
1,4-Dichlorobenzene	200	U	2000	1500		ug/L		75	63 - 120	
1,1-Dichloroethane	790		2000	2460		ug/L		84	63 - 136	
1,2-Dichloroethane	200	U	2000	2030		ug/L		102	65 - 135	
1,1-Dichloroethene	68	J	2000	1420		ug/L		67	53 - 140	
1,2-Dichloropropane	200	U	2000	1580		ug/L		79	70 - 132	
Ethylbenzene	200	U F1	2000	1290	F1	ug/L		65	66 - 120	
2-Hexanone	2000	U	4000	2180		ug/L		54	42 - 150	
Methylene Chloride	1000	U	2000	2090		ug/L		104	61 - 130	
4-Methyl-2-pentanone (MIBK)	2000	U	4000	2560		ug/L		64	44 - 143	
Styrene	200	U	2000	1530		ug/L		76	68 - 120	
1,1,2,2-Tetrachloroethane	200	U	2000	1280		ug/L		64	60 - 137	
Tetrachloroethene	200	U F2	2000	1540		ug/L		77	51 - 136	
Toluene	200	U	2000	1350		ug/L		68	62 - 132	
trans-1,2-Dichloroethene	200	U	2000	1820		ug/L		91	68 - 133	
trans-1,3-Dichloropropene	200	U	2000	1300		ug/L		65	40 - 125	
1,1,1-Trichloroethane	200	U	2000	2020		ug/L		101	51 - 138	
1,1,2-Trichloroethane	200	U	2000	1610		ug/L		81	76 - 132	
Trichloroethene	200	U	2000	1910		ug/L		95	55 - 131	
Trichlorofluoromethane	200	U	2000	1420		ug/L		71	37 - 174	
1,1,2-Trichloro-1,2,2-trifluoroethane	500		2000	1950		ug/L		73	31 - 156	
Vinyl chloride	820		2000	1950		ug/L		57	43 - 154	
Xylenes, Total	400	U	4000	2870		ug/L		72	67 - 120	

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	80		59 - 120
Dibromofluoromethane (Surr)	117		75 - 128
1,2-Dichloroethane-d4 (Surr)	102		70 - 121
Toluene-d8 (Surr)	74		70 - 123

Lab Sample ID: 240-103819-B-12 MSD

Matrix: Water

Analysis Batch: 355368

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Acetone	2000	U	4000	3910		ug/L		98	10 - 168	7	35	
Benzene	200	U	2000	1790		ug/L		89	71 - 122	14	22	
Bromodichloromethane	200	U	2000	2070		ug/L		104	64 - 125	9	27	
Bromoform	200	U	2000	2440		ug/L		122	44 - 129	8	28	
Bromomethane	200	U	2000	1530		ug/L		76	19 - 187	2	35	
2-Butanone (MEK)	2000	U	4000	2670		ug/L		67	37 - 156	9	35	
Carbon disulfide	1000	U	2000	1840		ug/L		92	43 - 144	22	33	
Carbon tetrachloride	200	U F2	2000	2490	F2	ug/L		124	41 - 143	32	30	
Chlorobenzene	200	U	2000	1850		ug/L		92	70 - 123	16	23	
Chloroethane	200	U	2000	1380		ug/L		69	11 - 189	21	35	
Chloroform	200	U	2000	2230		ug/L		111	68 - 130	9	23	
Chloromethane	200	U	2000	1470		ug/L		74	31 - 154	7	35	

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QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: 240-103819-B-12 MSD

Matrix: Water

Analysis Batch: 355368

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
cis-1,2-Dichloroethene	800		2000	2850		ug/L		102	64 - 130	1	21
cis-1,3-Dichloropropene	200	U	2000	1660		ug/L		83	48 - 127	9	30
Dibromochloromethane	200	U	2000	2150		ug/L		107	60 - 129	11	26
1,2-Dichlorobenzene	200	U	2000	1800		ug/L		90	64 - 120	9	30
1,3-Dichlorobenzene	200	U	2000	1750		ug/L		88	62 - 120	16	31
1,4-Dichlorobenzene	200	U	2000	1810		ug/L		90	63 - 120	19	28
1,1-Dichloroethane	790		2000	2650		ug/L		93	63 - 136	8	23
1,2-Dichloroethane	200	U	2000	2070		ug/L		104	65 - 135	2	24
1,1-Dichloroethene	68	J	2000	1840		ug/L		89	53 - 140	26	35
1,2-Dichloropropane	200	U	2000	1680		ug/L		84	70 - 132	6	26
Ethylbenzene	200	U F1	2000	1610		ug/L		81	66 - 120	22	24
2-Hexanone	2000	U	4000	2530		ug/L		63	42 - 150	15	35
Methylene Chloride	1000	U	2000	2280		ug/L		114	61 - 130	9	29
4-Methyl-2-pentanone (MIBK)	2000	U	4000	2630		ug/L		66	44 - 143	3	35
Styrene	200	U	2000	1680		ug/L		84	68 - 120	10	26
1,1,2,2-Tetrachloroethane	200	U	2000	1500		ug/L		75	60 - 137	16	31
Tetrachloroethene	200	U F2	2000	2070	F2	ug/L		104	51 - 136	30	23
Toluene	200	U	2000	1640		ug/L		82	62 - 132	20	23
trans-1,2-Dichloroethene	200	U	2000	2130		ug/L		107	68 - 133	16	24
trans-1,3-Dichloropropene	200	U	2000	1460		ug/L		73	40 - 125	11	27
1,1,1-Trichloroethane	200	U	2000	2550		ug/L		127	51 - 138	23	27
1,1,2-Trichloroethane	200	U	2000	1640		ug/L		82	76 - 132	2	25
Trichloroethene	200	U	2000	2130		ug/L		106	55 - 131	11	23
Trichlorofluoromethane	200	U	2000	1730		ug/L		87	37 - 174	20	35
1,1,2-Trichloro-1,2,2-trifluoroethane	500		2000	2760		ug/L		113	31 - 156	34	35
Vinyl chloride	820		2000	2110		ug/L		64	43 - 154	8	29
Xylenes, Total	400	U	4000	3370		ug/L		84	67 - 120	16	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		59 - 120
Dibromofluoromethane (Surr)	113		75 - 128
1,2-Dichloroethane-d4 (Surr)	104		70 - 121
Toluene-d8 (Surr)	80		70 - 123

Lab Sample ID: MB 240-355575/6

Matrix: Water

Analysis Batch: 355575

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			11/15/18 12:31	1
Benzene	1.0	U	1.0	0.13	ug/L			11/15/18 12:31	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/15/18 12:31	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/15/18 12:31	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/15/18 12:31	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/15/18 12:31	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/15/18 12:31	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/15/18 12:31	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: MB 240-355575/6
Matrix: Water
Analysis Batch: 355575

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/15/18 12:31	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/15/18 12:31	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/15/18 12:31	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/15/18 12:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/15/18 12:31	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/15/18 12:31	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/15/18 12:31	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/15/18 12:31	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/15/18 12:31	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/15/18 12:31	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 12:31	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/15/18 12:31	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/15/18 12:31	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/15/18 12:31	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/15/18 12:31	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/15/18 12:31	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 12:31	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/15/18 12:31	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/15/18 12:31	1
2-Hexanone	10	U	10	0.54	ug/L			11/15/18 12:31	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/15/18 12:31	1
Methyl acetate	10	U	10	1.7	ug/L			11/15/18 12:31	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/15/18 12:31	1
Methylene Chloride	3.44	J	5.0	2.6	ug/L			11/15/18 12:31	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/15/18 12:31	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/15/18 12:31	1
Styrene	1.0	U	1.0	0.10	ug/L			11/15/18 12:31	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/15/18 12:31	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/15/18 12:31	1
Toluene	1.0	U	1.0	0.14	ug/L			11/15/18 12:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/15/18 12:31	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/15/18 12:31	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/15/18 12:31	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/15/18 12:31	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/15/18 12:31	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/15/18 12:31	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/15/18 12:31	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/15/18 12:31	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/15/18 12:31	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/15/18 12:31	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/15/18 12:31	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/15/18 12:31	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/15/18 12:31	1
Diethyl ether	0.385	J	2.0	0.19	ug/L			11/15/18 12:31	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	74		59 - 120		11/15/18 12:31	1
Dibromofluoromethane (Surr)	128		75 - 128		11/15/18 12:31	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: MB 240-355575/6
Matrix: Water
Analysis Batch: 355575

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

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		70 - 121		11/15/18 12:31	1
Toluene-d8 (Surr)	76		70 - 123		11/15/18 12:31	1

Lab Sample ID: LCS 240-355575/4
Matrix: Water
Analysis Batch: 355575

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	20.5		ug/L		102	21 - 162
Benzene	10.0	9.23		ug/L		92	80 - 123
Bromodichloromethane	10.0	10.3		ug/L		103	77 - 125
Bromoform	10.0	11.8		ug/L		118	49 - 141
Bromomethane	10.0	7.89		ug/L		79	41 - 175
2-Butanone (MEK)	20.0	13.1		ug/L		66	39 - 163
Carbon disulfide	10.0	9.52		ug/L		95	60 - 138
Carbon tetrachloride	10.0	12.5		ug/L		125	63 - 140
Chlorobenzene	10.0	8.70		ug/L		87	80 - 121
Chloroethane	10.0	6.50		ug/L		65	33 - 173
Chloroform	10.0	11.2		ug/L		112	79 - 127
Chloromethane	10.0	7.26		ug/L		73	54 - 143
cis-1,2-Dichloroethene	10.0	10.4		ug/L		104	76 - 128
cis-1,3-Dichloropropene	10.0	8.05		ug/L		80	64 - 132
Cyclohexane	10.0	8.27		ug/L		83	58 - 145
Dibromochloromethane	10.0	9.66		ug/L		97	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	9.17		ug/L		92	46 - 132
1,2-Dibromoethane	10.0	8.85		ug/L		89	77 - 123
1,2-Dichlorobenzene	10.0	9.28		ug/L		93	78 - 120
1,3-Dichlorobenzene	10.0	9.10		ug/L		91	78 - 120
1,4-Dichlorobenzene	10.0	9.21		ug/L		92	78 - 120
Dichlorodifluoromethane	10.0	11.2		ug/L		112	29 - 148
1,1-Dichloroethane	10.0	9.83		ug/L		98	75 - 133
1,2-Dichloroethane	10.0	10.5		ug/L		105	71 - 135
1,1-Dichloroethene	10.0	9.50		ug/L		95	65 - 139
1,2-Dichloropropane	10.0	8.67		ug/L		87	78 - 133
Ethylbenzene	10.0	7.96		ug/L		80	80 - 120
2-Hexanone	20.0	11.1		ug/L		55	43 - 148
Isopropylbenzene	10.0	8.34		ug/L		83	74 - 120
Methyl acetate	20.0	17.0		ug/L		85	52 - 145
Methylcyclohexane	10.0	9.02		ug/L		90	60 - 125
Methylene Chloride	10.0	13.7 *		ug/L		137	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	13.7		ug/L		68	49 - 143
Methyl tert-butyl ether	10.0	9.47		ug/L		95	51 - 133
Styrene	10.0	8.87		ug/L		89	79 - 120
1,1,2,2-Tetrachloroethane	10.0	6.99		ug/L		70	65 - 139
Tetrachloroethene	10.0	10.7		ug/L		107	74 - 130
Toluene	10.0	7.78		ug/L		78	78 - 129
trans-1,2-Dichloroethene	10.0	11.0		ug/L		110	78 - 133
trans-1,3-Dichloropropene	10.0	7.41		ug/L		74	55 - 128

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: LCS 240-355575/4
Matrix: Water
Analysis Batch: 355575

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trichlorobenzene	10.0	8.19		ug/L		82	42 - 133
1,1,1-Trichloroethane	10.0	12.1		ug/L		121	69 - 134
1,1,2-Trichloroethane	10.0	8.27		ug/L		83	78 - 133
Trichloroethene	10.0	11.5		ug/L		115	76 - 125
Trichlorofluoromethane	10.0	10.4		ug/L		104	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	12.8		ug/L		128	50 - 156
1,2,4-Trimethylbenzene	10.0	7.67		ug/L		77	74 - 120
1,3,5-Trimethylbenzene	10.0	7.66		ug/L		77	75 - 121
Vinyl chloride	10.0	7.30		ug/L		73	58 - 143
Xylenes, Total	20.0	17.4		ug/L		87	80 - 120
Diethyl ether	10.0	8.30		ug/L		83	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	84		59 - 120
Dibromofluoromethane (Surr)	121		75 - 128
1,2-Dichloroethane-d4 (Surr)	106		70 - 121
Toluene-d8 (Surr)	79		70 - 123

Lab Sample ID: 240-103800-A-8 MS
Matrix: Water
Analysis Batch: 355575

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
Benzene	10	J	333	274		ug/L		79	71 - 122
Ethylbenzene	1000	F1	333	1170	F1	ug/L		51	66 - 120
Methyl tert-butyl ether	33	U	333	287		ug/L		86	41 - 136
Toluene	5.2	J	333	236		ug/L		69	62 - 132
Xylenes, Total	19	J	667	515		ug/L		74	67 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	78		59 - 120
Dibromofluoromethane (Surr)	111		75 - 128
1,2-Dichloroethane-d4 (Surr)	102		70 - 121
Toluene-d8 (Surr)	75		70 - 123

Lab Sample ID: 240-103800-A-8 MSD
Matrix: Water
Analysis Batch: 355575

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
Benzene	10	J	333	296		ug/L		86	71 - 122	8	22
Ethylbenzene	1000	F1	333	1080	F1	ug/L		25	66 - 120	8	24
Methyl tert-butyl ether	33	U	333	282		ug/L		85	41 - 136	2	29
Toluene	5.2	J	333	248		ug/L		73	62 - 132	5	23
Xylenes, Total	19	J	667	546		ug/L		79	67 - 120	6	25

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: 240-103800-A-8 MSD
Matrix: Water
Analysis Batch: 355575

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		59 - 120
Dibromofluoromethane (Surr)	108		75 - 128
1,2-Dichloroethane-d4 (Surr)	100		70 - 121
Toluene-d8 (Surr)	74		70 - 123

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

Lab Sample ID: MB 240-354800/5
Matrix: Water
Analysis Batch: 354800

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			11/11/18 13:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 125		11/11/18 13:14	1

Lab Sample ID: LCS 240-354800/4
Matrix: Water
Analysis Batch: 354800

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	10.5		ug/L		105	59 - 131

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	92		63 - 125

Lab Sample ID: 240-103817-C-7 MS
Matrix: Water
Analysis Batch: 354800

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	9.80		ug/L		98	52 - 129

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		63 - 125

Lab Sample ID: 240-103817-C-7 MSD
Matrix: Water
Analysis Batch: 354800

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.1		ug/L		101	52 - 129	3	13

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		63 - 125

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-103931-1

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

Lab Sample ID: MB 240-354924/5

Matrix: Water

Analysis Batch: 354924

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			11/12/18 12:32	1
Surrogate	%Recovery	MB Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					11/12/18 12:32	1

Lab Sample ID: LCS 240-354924/4

Matrix: Water

Analysis Batch: 354924

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	10.0		ug/L		100	59 - 131
Surrogate	LCS %Recovery	LCS Qualifier	Limits			D	%Rec. Limits
1,2-Dichloroethane-d4 (Surr)	100		63 - 125				

Lab Sample ID: 240-103927-C-2 MS

Matrix: Water

Analysis Batch: 354924

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	52 - 129
Surrogate	MS %Recovery	MS Qualifier	Limits			D	%Rec	%Rec. Limits	
1,2-Dichloroethane-d4 (Surr)	106		63 - 125						

Lab Sample ID: 240-103927-C-2 MSD

Matrix: Water

Analysis Batch: 354924

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.99		ug/L		100	52 - 129	4	13
Surrogate	MSD %Recovery	MSD Qualifier	Limits			D	%Rec	%Rec. Limits	RPD	RPD Limit	
1,2-Dichloroethane-d4 (Surr)	109		63 - 125								

QC Association Summary

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

TestAmerica Job ID: 240-103931-1

GC/MS VOA

Analysis Batch: 354800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103931-2	MW-38-110118	Total/NA	Water	8260B SIM	
240-103931-3	MW-40-110118	Total/NA	Water	8260B SIM	
MB 240-354800/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354800/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103817-C-7 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103817-C-7 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 354924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103931-1	TRIP BLANK	Total/NA	Water	8260B SIM	
240-103931-4	MW-34-110118	Total/NA	Water	8260B SIM	
240-103931-5	MW-35-110118	Total/NA	Water	8260B SIM	
240-103931-6	MW-39-110118	Total/NA	Water	8260B SIM	
240-103931-7	MW-31-110118	Total/NA	Water	8260B SIM	
240-103931-8	MW-41-110118	Total/NA	Water	8260B SIM	
240-103931-9	MW-42-110118	Total/NA	Water	8260B SIM	
240-103931-10	MW-43-110118	Total/NA	Water	8260B SIM	
240-103931-11	MW-30-110118	Total/NA	Water	8260B SIM	
240-103931-12	MW-15-61D-110118	Total/NA	Water	8260B SIM	
MB 240-354924/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354924/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103927-C-2 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-103927-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 355368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103931-1	TRIP BLANK	Total/NA	Water	8260B	
240-103931-2	MW-38-110118	Total/NA	Water	8260B	
240-103931-3	MW-40-110118	Total/NA	Water	8260B	
240-103931-5	MW-35-110118	Total/NA	Water	8260B	
MB 240-355368/6	Method Blank	Total/NA	Water	8260B	
LCS 240-355368/4	Lab Control Sample	Total/NA	Water	8260B	
240-103819-B-12 MS	Matrix Spike	Total/NA	Water	8260B	
240-103819-B-12 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 355575

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103931-4	MW-34-110118	Total/NA	Water	8260B	
240-103931-6	MW-39-110118	Total/NA	Water	8260B	
240-103931-7	MW-31-110118	Total/NA	Water	8260B	
240-103931-8	MW-41-110118	Total/NA	Water	8260B	
240-103931-9	MW-42-110118	Total/NA	Water	8260B	
240-103931-10	MW-43-110118	Total/NA	Water	8260B	
240-103931-11	MW-30-110118	Total/NA	Water	8260B	
240-103931-12	MW-15-61D-110118	Total/NA	Water	8260B	
MB 240-355575/6	Method Blank	Total/NA	Water	8260B	
LCS 240-355575/4	Lab Control Sample	Total/NA	Water	8260B	
240-103800-A-8 MS	Matrix Spike	Total/NA	Water	8260B	
240-103800-A-8 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: TRIP BLANK

Date Collected: 11/01/18 00:00

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355368	11/14/18 18:51	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 13:23	SAM	TAL CAN

Client Sample ID: MW-38-110118

Date Collected: 11/01/18 10:00

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355368	11/14/18 19:13	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 23:04	SAM	TAL CAN

Client Sample ID: MW-40-110118

Date Collected: 11/01/18 11:30

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355368	11/14/18 19:36	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 23:29	SAM	TAL CAN

Client Sample ID: MW-34-110118

Date Collected: 11/01/18 12:30

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 12:53	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 15:56	SAM	TAL CAN

Client Sample ID: MW-35-110118

Date Collected: 11/01/18 14:25

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355368	11/14/18 21:48	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 16:22	SAM	TAL CAN

Client Sample ID: MW-39-110118

Date Collected: 11/01/18 09:38

Date Received: 11/06/18 08:50

Lab Sample ID: 240-103931-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 16:28	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-39-110118

Lab Sample ID: 240-103931-6

Date Collected: 11/01/18 09:38

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 16:48	SAM	TAL CAN

Client Sample ID: MW-31-110118

Lab Sample ID: 240-103931-7

Date Collected: 11/01/18 11:12

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 16:50	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 17:14	SAM	TAL CAN

Client Sample ID: MW-41-110118

Lab Sample ID: 240-103931-8

Date Collected: 11/01/18 12:16

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 17:12	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 17:39	SAM	TAL CAN

Client Sample ID: MW-42-110118

Lab Sample ID: 240-103931-9

Date Collected: 11/01/18 13:25

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 17:34	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 18:05	SAM	TAL CAN

Client Sample ID: MW-43-110118

Lab Sample ID: 240-103931-10

Date Collected: 11/01/18 14:34

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 17:56	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 18:30	SAM	TAL CAN

Client Sample ID: MW-30-110118

Lab Sample ID: 240-103931-11

Date Collected: 11/01/18 12:27

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 18:18	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 18:56	SAM	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-103931-1

Client Sample ID: MW-15-61D-110118

Lab Sample ID: 240-103931-12

Date Collected: 11/01/18 14:17

Matrix: Water

Date Received: 11/06/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355575	11/15/18 18:40	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354924	11/12/18 19:21	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.

TestAmerica Job ID: 240-103931-1

Project/Site: Ford LTP Livonia MI - E203728

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	T104704517-18-10	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 Canton

Regulatory program: DW NPDES RCRA Other

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: MI001454.0004.00001
PO # MI001454.0004.00001

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

Site Contact: Angela DeGrandis
Telephone: 734-320-0065
Analysis Turnaround Time
TAT, if different from below
10 day 3 weeks 2 weeks 1 week 2 days 1 day

Method of Shipment/Carrier:
Shipping/Tracking No:

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

Company: Arcadis
Address: 28550 Cabot 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

Company: Arcadis
Address: 28550 Cabot 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

Company: Arcadis
Address: 28550 Cabot Drive, Suite 500
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Phone: 248-994-2240
Project Name: Ford LTP
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PO # MI001454.0004.00001

Company: Arcadis
Address: 28550 Cabot Drive, Suite 500
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PO # MI001454.0004.00001

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Company: Arcadis
Address: 28550 Cabot Drive, Suite 500
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PO # MI001454.0004.00001

Company: Arcadis
Address: 28550 Cabot Drive, Suite 500
City/State/Zip: Novi, MI, 48377
Phone: 248-994-2240
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Project Number: MI001454.0004.00001
PO # MI001454.0004.00001

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0.8/1.7 1.4/2.3



Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite (C/Grab)	VOCs 8260B	1,4-Dioxane 8260B SIM	COCs	
			Aqueous	Sediment	Solid	Other:	Air	NaOH	ZnAc	NaOH						Upret
TRIP BLANK	—	—	X													
MW-38-110118	11/01/18	1000														
MW-40-110118	11/01/18	1130														
MW-34-110118	11/01/18	1230														
MW-35-110118	11/01/18	1425														
MW-37-110118	11/01/18	0938														
MW-31-110118	11/01/18	1112														
MW-41-110118	11/01/18	1216														
MW-42-110118	11/01/18	1325														
MW-43-110118	11/01/18	1434	X													

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal By Lab 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: *[Signature]*
 Date/Time: 11/01/18 1635
 Company: Arcadis

Relinquished by: *[Signature]*
 Date/Time: 11/05/18 1300
 Company: Arcadis

Relinquished by: *[Signature]*
 Date/Time: 11/15/18 1330
 Company: Arcadis

Relinquished by: *[Signature]*
 Date/Time: 11/16/18 0850
 Company: Arcadis

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

Regulatory program: DW NPDES RCRA Other

Client Contact
 Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240

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

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

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

Project Name: Ford LTP
Project Number: MI001454.0004.00001
PO # MI001454.0004.00001

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite-C / Grab-G	VOCs 8260B	1,4-Dioxane 8260B SIM	Analytes	COCs	Sample Specific Notes / Special Instructions:
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl							
MW-30-11018	11/01/18	1227	X														
MW-15-61D-11018	11/01/18	1417	X														

Possible Hazard Identification
 Non-Hazard Flammable Irritant 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

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jim.tomalia@cadenalab.com. Cadena #E203728
 Level IV Reporting.

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
<i>[Signature]</i>	Arcadis	11/01/18 1635	Sample Fridge	Arcadis	11/01/18 1635
<i>[Signature]</i>	Arcadis	11/05/18 1300	TA <i>[Signature]</i>	TA	11/05/18 1300
<i>[Signature]</i>	TA	11/14 1310	<i>[Signature]</i>	TA	11/16/18 658

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TestAmerica Canton Sample Receipt Form/Narrative

Login # : _____

Canton Facility

Client Accords Site Name _____ Cooler unpacked by: _____

Cooler Received on 11/6/18 Opened on 11/6/18

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other _____

Receipt After-hours: Drop-off Date/Time

Storage Location

TestAmerica Cooler # 176 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. _____ °C Corrected Cooler Temp. _____ °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# HC850248

13. Were VOAs on the COC? Yes No NA

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 # N/A 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: _____

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): _____

