

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

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Tel: (330)497-9396

TestAmerica Job ID: 240-108688-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

ARCADIS U.S., Inc.
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Authorized for release by:
3/14/2019 9:17:08 AM

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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: 240-108688-1

Qualifiers

GC/MS VOA

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

Glossary

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

Case Narrative

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

TestAmerica Job ID: 240-108688-1

Job ID: 240-108688-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-108688-1

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 2/28/2019 8:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.6° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples PW-16-01_022619 (240-108688-1), TW-16-01_022619 (240-108688-2), TW-16-02_022619 (240-108688-3), MW-21_022619 (240-108688-4), MW-70_022619 (240-108688-5), MW-28_022619 (240-108688-6), MW-46_022619 (240-108688-7), MW-45_022619 (240-108688-8), MW-18_022619 (240-108688-9), MW-14_022619 (240-108688-10), MW-20_022619 (240-108688-11) and TRIP BLANK (240-108688-12) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/06/2019 and 03/07/2019.

Samples TW-16-01_022619 (240-108688-2)[100X], TW-16-02_022619 (240-108688-3)[1666.67X], TW-16-02_022619 (240-108688-3)[333.33X], MW-21_022619 (240-108688-4)[2500X], MW-70_022619 (240-108688-5)[10X] and MW-45_022619 (240-108688-8)[16.67X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

The continuing calibration verification (CCV) associated with batch 370676 recovered above the upper control limit for Chloroform. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The following samples are impacted: PW-16-01_022619 (240-108688-1), TW-16-02_022619 (240-108688-3), MW-28_022619 (240-108688-6) and MW-45_022619 (240-108688-8).

Case Narrative

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

TestAmerica Job ID: 240-108688-1

Job ID: 240-108688-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

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 PW-16-01_022619 (240-108688-1), TW-16-01_022619 (240-108688-2), TW-16-02_022619 (240-108688-3), MW-21_022619 (240-108688-4), MW-70_022619 (240-108688-5), MW-28_022619 (240-108688-6), MW-46_022619 (240-108688-7), MW-45_022619 (240-108688-8), MW-18_022619 (240-108688-9), MW-14_022619 (240-108688-10) and MW-20_022619 (240-108688-11) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 03/05/2019.

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: 240-108688-1

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: 240-108688-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-108688-1	PW-16-01_022619	Water	02/26/19 10:44	02/28/19 08:00
240-108688-2	TW-16-01_022619	Water	02/26/19 10:37	02/28/19 08:00
240-108688-3	TW-16-02_022619	Water	02/26/19 11:10	02/28/19 08:00
240-108688-4	MW-21_022619	Water	02/26/19 13:50	02/28/19 08:00
240-108688-5	MW-70_022619	Water	02/26/19 16:14	02/28/19 08:00
240-108688-6	MW-28_022619	Water	02/26/19 13:09	02/28/19 08:00
240-108688-7	MW-46_022619	Water	02/26/19 17:35	02/28/19 08:00
240-108688-8	MW-45_022619	Water	02/26/19 15:30	02/28/19 08:00
240-108688-9	MW-18_022619	Water	02/26/19 15:55	02/28/19 08:00
240-108688-10	MW-14_022619	Water	02/26/19 18:00	02/28/19 08:00
240-108688-11	MW-20_022619	Water	02/26/19 13:45	02/28/19 08:00
240-108688-12	TRIP BLANK	Water	02/26/19 00:00	02/28/19 08:00



Detection Summary

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: PW-16-01_022619

Lab Sample ID: 240-108688-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.51	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.92	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TW-16-01_022619

Lab Sample ID: 240-108688-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	150		100	16	ug/L	100		8260B	Total/NA
trans-1,2-Dichloroethene	22	J	100	19	ug/L	100		8260B	Total/NA
Trichloroethene	15	J	100	10	ug/L	100		8260B	Total/NA
Vinyl chloride	750		100	20	ug/L	100		8260B	Total/NA

Client Sample ID: TW-16-02_022619

Lab Sample ID: 240-108688-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	7700		330	53	ug/L	333.33		8260B	Total/NA
trans-1,2-Dichloroethene	130	J	330	63	ug/L	333.33		8260B	Total/NA
Vinyl chloride	8900		1700	330	ug/L	1666.67		8260B	Total/NA

Client Sample ID: MW-21_022619

Lab Sample ID: 240-108688-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	18		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	25000		2500	400	ug/L	2500		8260B	Total/NA
Trichloroethene	570	J	2500	250	ug/L	2500		8260B	Total/NA
Vinyl chloride	5600		2500	500	ug/L	2500		8260B	Total/NA

Client Sample ID: MW-70_022619

Lab Sample ID: 240-108688-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	6.5		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	290		10	1.6	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	2.3	J	10	1.7	ug/L	10		8260B	Total/NA
trans-1,2-Dichloroethene	3.8	J	10	1.9	ug/L	10		8260B	Total/NA
Vinyl chloride	350		10	2.0	ug/L	10		8260B	Total/NA

Client Sample ID: MW-28_022619

Lab Sample ID: 240-108688-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.24	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	7.9		1.0	0.17	ug/L	1		8260B	Total/NA
1,1-Dichloroethene	0.40	J	1.0	0.19	ug/L	1		8260B	Total/NA
1,1,1-Trichloroethane	15		1.0	0.24	ug/L	1		8260B	Total/NA
Trichloroethene	0.30	J	1.0	0.10	ug/L	1		8260B	Total/NA
Vinyl chloride	0.33	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-46_022619

Lab Sample ID: 240-108688-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.0		2.0	0.86	ug/L	1		8260B SIM	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Canton

Detection Summary

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-46_022619 (Continued)

Lab Sample ID: 240-108688-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.4		1.0	0.16	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.32	J	1.0	0.17	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	0.20	J	1.0	0.19	ug/L	1		8260B	Total/NA
Vinyl chloride	17		1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-45_022619

Lab Sample ID: 240-108688-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	340		17	2.7	ug/L	16.67		8260B	Total/NA
Vinyl chloride	380		17	3.3	ug/L	16.67		8260B	Total/NA

Client Sample ID: MW-18_022619

Lab Sample ID: 240-108688-9

No Detections.

Client Sample ID: MW-14_022619

Lab Sample ID: 240-108688-10

No Detections.

Client Sample ID: MW-20_022619

Lab Sample ID: 240-108688-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
4-Methyl-2-pentanone (MIBK)	0.52	J	10	0.42	ug/L	1		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108688-12

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: 240-108688-1

Client Sample ID: PW-16-01_022619

Lab Sample ID: 240-108688-1

Date Collected: 02/26/19 10:44

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 15:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		63 - 125					03/05/19 15:39	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			03/07/19 15:16	1
Benzene	1.0	U	1.0	0.13	ug/L			03/07/19 15:16	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/07/19 15:16	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/07/19 15:16	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/07/19 15:16	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/07/19 15:16	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/07/19 15:16	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/07/19 15:16	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/07/19 15:16	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/07/19 15:16	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/07/19 15:16	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/07/19 15:16	1
cis-1,2-Dichloroethene	0.51	J	1.0	0.16	ug/L			03/07/19 15:16	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/07/19 15:16	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/07/19 15:16	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/07/19 15:16	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/07/19 15:16	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/07/19 15:16	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 15:16	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 15:16	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/07/19 15:16	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/07/19 15:16	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/07/19 15:16	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/07/19 15:16	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/07/19 15:16	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/07/19 15:16	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/07/19 15:16	1
2-Hexanone	10	U	10	0.54	ug/L			03/07/19 15:16	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/07/19 15:16	1
Methyl acetate	10	U	10	1.7	ug/L			03/07/19 15:16	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/07/19 15:16	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/07/19 15:16	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/07/19 15:16	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/07/19 15:16	1
Styrene	1.0	U	1.0	0.10	ug/L			03/07/19 15:16	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/07/19 15:16	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/07/19 15:16	1
Toluene	1.0	U	1.0	0.14	ug/L			03/07/19 15:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/07/19 15:16	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/07/19 15:16	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/07/19 15:16	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/07/19 15:16	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/07/19 15:16	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: PW-16-01_022619

Lab Sample ID: 240-108688-1

Date Collected: 02/26/19 10:44

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/07/19 15:16	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/07/19 15:16	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/07/19 15:16	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/07/19 15:16	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/07/19 15:16	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/07/19 15:16	1
Vinyl chloride	0.92	J	1.0	0.20	ug/L			03/07/19 15:16	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/07/19 15:16	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/07/19 15:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	67		59 - 120					03/07/19 15:16	1
Dibromofluoromethane (Surr)	102		75 - 128					03/07/19 15:16	1
1,2-Dichloroethane-d4 (Surr)	96		70 - 121					03/07/19 15:16	1
Toluene-d8 (Surr)	71		70 - 123					03/07/19 15:16	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TW-16-01_022619

Lab Sample ID: 240-108688-2

Date Collected: 02/26/19 10:37

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 16:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		63 - 125					03/05/19 16:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	1000	U	1000	540	ug/L			03/06/19 13:50	100
Benzene	100	U	100	13	ug/L			03/06/19 13:50	100
Bromodichloromethane	100	U	100	17	ug/L			03/06/19 13:50	100
Bromoform	100	U	100	76	ug/L			03/06/19 13:50	100
Bromomethane	100	U	100	42	ug/L			03/06/19 13:50	100
2-Butanone (MEK)	1000	U	1000	120	ug/L			03/06/19 13:50	100
Carbon disulfide	500	U	500	28	ug/L			03/06/19 13:50	100
Carbon tetrachloride	100	U	100	26	ug/L			03/06/19 13:50	100
Chlorobenzene	100	U	100	14	ug/L			03/06/19 13:50	100
Chloroethane	100	U	100	83	ug/L			03/06/19 13:50	100
Chloroform	100	U	100	13	ug/L			03/06/19 13:50	100
Chloromethane	100	U	100	20	ug/L			03/06/19 13:50	100
cis-1,2-Dichloroethene	150		100	16	ug/L			03/06/19 13:50	100
cis-1,3-Dichloropropene	100	U	100	61	ug/L			03/06/19 13:50	100
Cyclohexane	100	U	100	24	ug/L			03/06/19 13:50	100
Dibromochloromethane	100	U	100	39	ug/L			03/06/19 13:50	100
1,2-Dibromo-3-Chloropropane	100	U	100	91	ug/L			03/06/19 13:50	100
1,2-Dibromoethane	100	U	100	12	ug/L			03/06/19 13:50	100
1,2-Dichlorobenzene	100	U	100	15	ug/L			03/06/19 13:50	100
1,3-Dichlorobenzene	100	U	100	15	ug/L			03/06/19 13:50	100
1,4-Dichlorobenzene	100	U	100	16	ug/L			03/06/19 13:50	100
Dichlorodifluoromethane	100	U	100	35	ug/L			03/06/19 13:50	100
1,1-Dichloroethane	100	U	100	17	ug/L			03/06/19 13:50	100
1,2-Dichloroethane	100	U	100	21	ug/L			03/06/19 13:50	100
1,1-Dichloroethene	100	U	100	19	ug/L			03/06/19 13:50	100
1,2-Dichloropropane	100	U	100	15	ug/L			03/06/19 13:50	100
Ethylbenzene	100	U	100	11	ug/L			03/06/19 13:50	100
2-Hexanone	1000	U	1000	54	ug/L			03/06/19 13:50	100
Isopropylbenzene	100	U	100	9.0	ug/L			03/06/19 13:50	100
Methyl acetate	1000	U	1000	170	ug/L			03/06/19 13:50	100
Methylcyclohexane	100	U	100	33	ug/L			03/06/19 13:50	100
Methylene Chloride	500	U	500	260	ug/L			03/06/19 13:50	100
4-Methyl-2-pentanone (MIBK)	1000	U	1000	42	ug/L			03/06/19 13:50	100
Methyl tert-butyl ether	100	U	100	7.0	ug/L			03/06/19 13:50	100
Styrene	100	U	100	10	ug/L			03/06/19 13:50	100
1,1,2,2-Tetrachloroethane	100	U	100	13	ug/L			03/06/19 13:50	100
Tetrachloroethene	100	U	100	15	ug/L			03/06/19 13:50	100
Toluene	100	U	100	14	ug/L			03/06/19 13:50	100
trans-1,2-Dichloroethene	22	J	100	19	ug/L			03/06/19 13:50	100
trans-1,3-Dichloropropene	100	U	100	67	ug/L			03/06/19 13:50	100
1,2,4-Trichlorobenzene	100	U	100	26	ug/L			03/06/19 13:50	100
1,1,1-Trichloroethane	100	U	100	24	ug/L			03/06/19 13:50	100
1,1,2-Trichloroethane	100	U	100	9.0	ug/L			03/06/19 13:50	100

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TW-16-01_022619

Lab Sample ID: 240-108688-2

Date Collected: 02/26/19 10:37

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	15	J	100	10	ug/L			03/06/19 13:50	100
Trichlorofluoromethane	100	U	100	45	ug/L			03/06/19 13:50	100
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	100	41	ug/L			03/06/19 13:50	100
1,2,3-Trimethylbenzene	500	U	500	14	ug/L			03/06/19 13:50	100
1,2,4-Trimethylbenzene	100	U	100	7.0	ug/L			03/06/19 13:50	100
1,3,5-Trimethylbenzene	100	U	100	12	ug/L			03/06/19 13:50	100
Vinyl chloride	750		100	20	ug/L			03/06/19 13:50	100
Xylenes, Total	200	U	200	15	ug/L			03/06/19 13:50	100
Diethyl ether	200	U	200	19	ug/L			03/06/19 13:50	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		59 - 120					03/06/19 13:50	100
Dibromofluoromethane (Surr)	101		75 - 128					03/06/19 13:50	100
1,2-Dichloroethane-d4 (Surr)	103		70 - 121					03/06/19 13:50	100
Toluene-d8 (Surr)	77		70 - 123					03/06/19 13:50	100

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TW-16-02_022619

Lab Sample ID: 240-108688-3

Date Collected: 02/26/19 11:10

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.6		2.0	0.86	ug/L			03/05/19 16:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		63 - 125					03/05/19 16:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	3300	U	3300	1800	ug/L			03/07/19 13:05	333.33
Benzene	330	U	330	43	ug/L			03/07/19 13:05	333.33
Bromodichloromethane	330	U	330	57	ug/L			03/07/19 13:05	333.33
Bromoform	330	U	330	250	ug/L			03/07/19 13:05	333.33
Bromomethane	330	U	330	140	ug/L			03/07/19 13:05	333.33
2-Butanone (MEK)	3300	U	3300	390	ug/L			03/07/19 13:05	333.33
Carbon disulfide	1700	U	1700	93	ug/L			03/07/19 13:05	333.33
Carbon tetrachloride	330	U	330	87	ug/L			03/07/19 13:05	333.33
Chlorobenzene	330	U	330	47	ug/L			03/07/19 13:05	333.33
Chloroethane	330	U	330	280	ug/L			03/07/19 13:05	333.33
Chloroform	330	U	330	43	ug/L			03/07/19 13:05	333.33
Chloromethane	330	U	330	67	ug/L			03/07/19 13:05	333.33
cis-1,2-Dichloroethene	7700		330	53	ug/L			03/07/19 13:05	333.33
cis-1,3-Dichloropropene	330	U	330	200	ug/L			03/07/19 13:05	333.33
Cyclohexane	330	U	330	80	ug/L			03/07/19 13:05	333.33
Dibromochloromethane	330	U	330	130	ug/L			03/07/19 13:05	333.33
1,2-Dibromo-3-Chloropropane	330	U	330	300	ug/L			03/07/19 13:05	333.33
1,2-Dibromoethane	330	U	330	40	ug/L			03/07/19 13:05	333.33
1,2-Dichlorobenzene	330	U	330	50	ug/L			03/07/19 13:05	333.33
1,3-Dichlorobenzene	330	U	330	50	ug/L			03/07/19 13:05	333.33
1,4-Dichlorobenzene	330	U	330	53	ug/L			03/07/19 13:05	333.33
Dichlorodifluoromethane	330	U	330	120	ug/L			03/07/19 13:05	333.33
1,1-Dichloroethane	330	U	330	57	ug/L			03/07/19 13:05	333.33
1,2-Dichloroethane	330	U	330	70	ug/L			03/07/19 13:05	333.33
1,1-Dichloroethene	330	U	330	63	ug/L			03/07/19 13:05	333.33
1,2-Dichloropropane	330	U	330	50	ug/L			03/07/19 13:05	333.33
Ethylbenzene	330	U	330	37	ug/L			03/07/19 13:05	333.33
2-Hexanone	3300	U	3300	180	ug/L			03/07/19 13:05	333.33
Isopropylbenzene	330	U	330	30	ug/L			03/07/19 13:05	333.33
Methyl acetate	3300	U	3300	570	ug/L			03/07/19 13:05	333.33
Methylcyclohexane	330	U	330	110	ug/L			03/07/19 13:05	333.33
Methylene Chloride	1700	U	1700	870	ug/L			03/07/19 13:05	333.33
4-Methyl-2-pentanone (MIBK)	3300	U	3300	140	ug/L			03/07/19 13:05	333.33
Methyl tert-butyl ether	330	U	330	23	ug/L			03/07/19 13:05	333.33
Styrene	330	U	330	33	ug/L			03/07/19 13:05	333.33
1,1,2,2-Tetrachloroethane	330	U	330	43	ug/L			03/07/19 13:05	333.33
Tetrachloroethene	330	U	330	50	ug/L			03/07/19 13:05	333.33
Toluene	330	U	330	47	ug/L			03/07/19 13:05	333.33
trans-1,2-Dichloroethene	130	J	330	63	ug/L			03/07/19 13:05	333.33
trans-1,3-Dichloropropene	330	U	330	220	ug/L			03/07/19 13:05	333.33
1,2,4-Trichlorobenzene	330	U	330	87	ug/L			03/07/19 13:05	333.33
1,1,1-Trichloroethane	330	U	330	80	ug/L			03/07/19 13:05	333.33
1,1,2-Trichloroethane	330	U	330	30	ug/L			03/07/19 13:05	333.33

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TW-16-02_022619

Lab Sample ID: 240-108688-3

Date Collected: 02/26/19 11:10

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	330	U	330	33	ug/L			03/07/19 13:05	333.33
Trichlorofluoromethane	330	U	330	150	ug/L			03/07/19 13:05	333.33
1,1,2-Trichloro-1,2,2-trifluoroethane	330	U	330	140	ug/L			03/07/19 13:05	333.33
1,2,3-Trimethylbenzene	1700	U	1700	47	ug/L			03/07/19 13:05	333.33
1,2,4-Trimethylbenzene	330	U	330	23	ug/L			03/07/19 13:05	333.33
1,3,5-Trimethylbenzene	330	U	330	40	ug/L			03/07/19 13:05	333.33
Vinyl chloride	8900		1700	330	ug/L			03/06/19 14:12	1666.67
Xylenes, Total	670	U	670	50	ug/L			03/07/19 13:05	333.33
Diethyl ether	670	U	670	63	ug/L			03/07/19 13:05	333.33

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	67		59 - 120		03/06/19 14:12	1666.67
4-Bromofluorobenzene (Surr)	73		59 - 120		03/07/19 13:05	333.33
Dibromofluoromethane (Surr)	97		75 - 128		03/06/19 14:12	1666.67
Dibromofluoromethane (Surr)	107		75 - 128		03/07/19 13:05	333.33
1,2-Dichloroethane-d4 (Surr)	97		70 - 121		03/06/19 14:12	1666.67
1,2-Dichloroethane-d4 (Surr)	102		70 - 121		03/07/19 13:05	333.33
Toluene-d8 (Surr)	73		70 - 123		03/06/19 14:12	1666.67
Toluene-d8 (Surr)	75		70 - 123		03/07/19 13:05	333.33

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-21_022619

Lab Sample ID: 240-108688-4

Date Collected: 02/26/19 13:50

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	18		2.0	0.86	ug/L			03/05/19 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		63 - 125					03/05/19 17:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	25000	U	25000	14000	ug/L			03/06/19 14:34	2500
Benzene	2500	U	2500	330	ug/L			03/06/19 14:34	2500
Bromodichloromethane	2500	U	2500	430	ug/L			03/06/19 14:34	2500
Bromoform	2500	U	2500	1900	ug/L			03/06/19 14:34	2500
Bromomethane	2500	U	2500	1100	ug/L			03/06/19 14:34	2500
2-Butanone (MEK)	25000	U	25000	2900	ug/L			03/06/19 14:34	2500
Carbon disulfide	13000	U	13000	700	ug/L			03/06/19 14:34	2500
Carbon tetrachloride	2500	U	2500	650	ug/L			03/06/19 14:34	2500
Chlorobenzene	2500	U	2500	350	ug/L			03/06/19 14:34	2500
Chloroethane	2500	U	2500	2100	ug/L			03/06/19 14:34	2500
Chloroform	2500	U	2500	330	ug/L			03/06/19 14:34	2500
Chloromethane	2500	U	2500	500	ug/L			03/06/19 14:34	2500
cis-1,2-Dichloroethene	25000		2500	400	ug/L			03/06/19 14:34	2500
cis-1,3-Dichloropropene	2500	U	2500	1500	ug/L			03/06/19 14:34	2500
Cyclohexane	2500	U	2500	600	ug/L			03/06/19 14:34	2500
Dibromochloromethane	2500	U	2500	980	ug/L			03/06/19 14:34	2500
1,2-Dibromo-3-Chloropropane	2500	U	2500	2300	ug/L			03/06/19 14:34	2500
1,2-Dibromoethane	2500	U	2500	300	ug/L			03/06/19 14:34	2500
1,2-Dichlorobenzene	2500	U	2500	380	ug/L			03/06/19 14:34	2500
1,3-Dichlorobenzene	2500	U	2500	380	ug/L			03/06/19 14:34	2500
1,4-Dichlorobenzene	2500	U	2500	400	ug/L			03/06/19 14:34	2500
Dichlorodifluoromethane	2500	U	2500	880	ug/L			03/06/19 14:34	2500
1,1-Dichloroethane	2500	U	2500	430	ug/L			03/06/19 14:34	2500
1,2-Dichloroethane	2500	U	2500	530	ug/L			03/06/19 14:34	2500
1,1-Dichloroethene	2500	U	2500	480	ug/L			03/06/19 14:34	2500
1,2-Dichloropropane	2500	U	2500	380	ug/L			03/06/19 14:34	2500
Ethylbenzene	2500	U	2500	280	ug/L			03/06/19 14:34	2500
2-Hexanone	25000	U	25000	1400	ug/L			03/06/19 14:34	2500
Isopropylbenzene	2500	U	2500	230	ug/L			03/06/19 14:34	2500
Methyl acetate	25000	U	25000	4300	ug/L			03/06/19 14:34	2500
Methylcyclohexane	2500	U	2500	830	ug/L			03/06/19 14:34	2500
Methylene Chloride	13000	U	13000	6600	ug/L			03/06/19 14:34	2500
4-Methyl-2-pentanone (MIBK)	25000	U	25000	1100	ug/L			03/06/19 14:34	2500
Methyl tert-butyl ether	2500	U	2500	180	ug/L			03/06/19 14:34	2500
Styrene	2500	U	2500	250	ug/L			03/06/19 14:34	2500
1,1,2,2-Tetrachloroethane	2500	U	2500	330	ug/L			03/06/19 14:34	2500
Tetrachloroethene	2500	U	2500	380	ug/L			03/06/19 14:34	2500
Toluene	2500	U	2500	350	ug/L			03/06/19 14:34	2500
trans-1,2-Dichloroethene	2500	U	2500	480	ug/L			03/06/19 14:34	2500
trans-1,3-Dichloropropene	2500	U	2500	1700	ug/L			03/06/19 14:34	2500
1,2,4-Trichlorobenzene	2500	U	2500	650	ug/L			03/06/19 14:34	2500
1,1,1-Trichloroethane	2500	U	2500	600	ug/L			03/06/19 14:34	2500
1,1,2-Trichloroethane	2500	U	2500	230	ug/L			03/06/19 14:34	2500

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-21_022619

Lab Sample ID: 240-108688-4

Date Collected: 02/26/19 13:50

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	570	J	2500	250	ug/L			03/06/19 14:34	2500
Trichlorofluoromethane	2500	U	2500	1100	ug/L			03/06/19 14:34	2500
1,1,2-Trichloro-1,2,2-trifluoroethane	2500	U	2500	1000	ug/L			03/06/19 14:34	2500
1,2,3-Trimethylbenzene	13000	U	13000	350	ug/L			03/06/19 14:34	2500
1,2,4-Trimethylbenzene	2500	U	2500	180	ug/L			03/06/19 14:34	2500
1,3,5-Trimethylbenzene	2500	U	2500	300	ug/L			03/06/19 14:34	2500
Vinyl chloride	5600		2500	500	ug/L			03/06/19 14:34	2500
Xylenes, Total	5000	U	5000	380	ug/L			03/06/19 14:34	2500
Diethyl ether	5000	U	5000	480	ug/L			03/06/19 14:34	2500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66		59 - 120					03/06/19 14:34	2500
Dibromofluoromethane (Surr)	95		75 - 128					03/06/19 14:34	2500
1,2-Dichloroethane-d4 (Surr)	92		70 - 121					03/06/19 14:34	2500
Toluene-d8 (Surr)	71		70 - 123					03/06/19 14:34	2500

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-70_022619

Lab Sample ID: 240-108688-5

Date Collected: 02/26/19 16:14

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	6.5		2.0	0.86	ug/L			03/05/19 18:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125					03/05/19 18:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	100	U	100	54	ug/L			03/06/19 14:56	10
Benzene	10	U	10	1.3	ug/L			03/06/19 14:56	10
Bromodichloromethane	10	U	10	1.7	ug/L			03/06/19 14:56	10
Bromoform	10	U	10	7.6	ug/L			03/06/19 14:56	10
Bromomethane	10	U	10	4.2	ug/L			03/06/19 14:56	10
2-Butanone (MEK)	100	U	100	12	ug/L			03/06/19 14:56	10
Carbon disulfide	50	U	50	2.8	ug/L			03/06/19 14:56	10
Carbon tetrachloride	10	U	10	2.6	ug/L			03/06/19 14:56	10
Chlorobenzene	10	U	10	1.4	ug/L			03/06/19 14:56	10
Chloroethane	10	U	10	8.3	ug/L			03/06/19 14:56	10
Chloroform	10	U	10	1.3	ug/L			03/06/19 14:56	10
Chloromethane	10	U	10	2.0	ug/L			03/06/19 14:56	10
cis-1,2-Dichloroethene	290		10	1.6	ug/L			03/06/19 14:56	10
cis-1,3-Dichloropropene	10	U	10	6.1	ug/L			03/06/19 14:56	10
Cyclohexane	10	U	10	2.4	ug/L			03/06/19 14:56	10
Dibromochloromethane	10	U	10	3.9	ug/L			03/06/19 14:56	10
1,2-Dibromo-3-Chloropropane	10	U	10	9.1	ug/L			03/06/19 14:56	10
1,2-Dibromoethane	10	U	10	1.2	ug/L			03/06/19 14:56	10
1,2-Dichlorobenzene	10	U	10	1.5	ug/L			03/06/19 14:56	10
1,3-Dichlorobenzene	10	U	10	1.5	ug/L			03/06/19 14:56	10
1,4-Dichlorobenzene	10	U	10	1.6	ug/L			03/06/19 14:56	10
Dichlorodifluoromethane	10	U	10	3.5	ug/L			03/06/19 14:56	10
1,1-Dichloroethane	2.3	J	10	1.7	ug/L			03/06/19 14:56	10
1,2-Dichloroethane	10	U	10	2.1	ug/L			03/06/19 14:56	10
1,1-Dichloroethene	10	U	10	1.9	ug/L			03/06/19 14:56	10
1,2-Dichloropropane	10	U	10	1.5	ug/L			03/06/19 14:56	10
Ethylbenzene	10	U	10	1.1	ug/L			03/06/19 14:56	10
2-Hexanone	100	U	100	5.4	ug/L			03/06/19 14:56	10
Isopropylbenzene	10	U	10	0.90	ug/L			03/06/19 14:56	10
Methyl acetate	100	U	100	17	ug/L			03/06/19 14:56	10
Methylcyclohexane	10	U	10	3.3	ug/L			03/06/19 14:56	10
Methylene Chloride	50	U	50	26	ug/L			03/06/19 14:56	10
4-Methyl-2-pentanone (MIBK)	100	U	100	4.2	ug/L			03/06/19 14:56	10
Methyl tert-butyl ether	10	U	10	0.70	ug/L			03/06/19 14:56	10
Styrene	10	U	10	1.0	ug/L			03/06/19 14:56	10
1,1,2,2-Tetrachloroethane	10	U	10	1.3	ug/L			03/06/19 14:56	10
Tetrachloroethene	10	U	10	1.5	ug/L			03/06/19 14:56	10
Toluene	10	U	10	1.4	ug/L			03/06/19 14:56	10
trans-1,2-Dichloroethene	3.8	J	10	1.9	ug/L			03/06/19 14:56	10
trans-1,3-Dichloropropene	10	U	10	6.7	ug/L			03/06/19 14:56	10
1,2,4-Trichlorobenzene	10	U	10	2.6	ug/L			03/06/19 14:56	10
1,1,1-Trichloroethane	10	U	10	2.4	ug/L			03/06/19 14:56	10
1,1,2-Trichloroethane	10	U	10	0.90	ug/L			03/06/19 14:56	10

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-70_022619

Lab Sample ID: 240-108688-5

Date Collected: 02/26/19 16:14

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	10	U	10	1.0	ug/L			03/06/19 14:56	10
Trichlorofluoromethane	10	U	10	4.5	ug/L			03/06/19 14:56	10
1,1,2-Trichloro-1,2,2-trifluoroethane	10	U	10	4.1	ug/L			03/06/19 14:56	10
1,2,3-Trimethylbenzene	50	U	50	1.4	ug/L			03/06/19 14:56	10
1,2,4-Trimethylbenzene	10	U	10	0.70	ug/L			03/06/19 14:56	10
1,3,5-Trimethylbenzene	10	U	10	1.2	ug/L			03/06/19 14:56	10
Vinyl chloride	350		10	2.0	ug/L			03/06/19 14:56	10
Xylenes, Total	20	U	20	1.5	ug/L			03/06/19 14:56	10
Diethyl ether	20	U	20	1.9	ug/L			03/06/19 14:56	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	69		59 - 120		03/06/19 14:56	10
Dibromofluoromethane (Surr)	101		75 - 128		03/06/19 14:56	10
1,2-Dichloroethane-d4 (Surr)	100		70 - 121		03/06/19 14:56	10
Toluene-d8 (Surr)	74		70 - 123		03/06/19 14:56	10

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-28_022619

Lab Sample ID: 240-108688-6

Date Collected: 02/26/19 13:09

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 18:35	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125					03/05/19 18:35	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			03/07/19 13:27	1
Benzene	1.0	U	1.0	0.13	ug/L			03/07/19 13:27	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/07/19 13:27	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/07/19 13:27	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/07/19 13:27	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/07/19 13:27	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/07/19 13:27	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/07/19 13:27	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/07/19 13:27	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/07/19 13:27	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/07/19 13:27	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/07/19 13:27	1
cis-1,2-Dichloroethene	0.24	J	1.0	0.16	ug/L			03/07/19 13:27	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/07/19 13:27	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/07/19 13:27	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/07/19 13:27	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/07/19 13:27	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/07/19 13:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 13:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 13:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/07/19 13:27	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/07/19 13:27	1
1,1-Dichloroethane	7.9		1.0	0.17	ug/L			03/07/19 13:27	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/07/19 13:27	1
1,1-Dichloroethene	0.40	J	1.0	0.19	ug/L			03/07/19 13:27	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/07/19 13:27	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/07/19 13:27	1
2-Hexanone	10	U	10	0.54	ug/L			03/07/19 13:27	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/07/19 13:27	1
Methyl acetate	10	U	10	1.7	ug/L			03/07/19 13:27	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/07/19 13:27	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/07/19 13:27	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/07/19 13:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/07/19 13:27	1
Styrene	1.0	U	1.0	0.10	ug/L			03/07/19 13:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/07/19 13:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/07/19 13:27	1
Toluene	1.0	U	1.0	0.14	ug/L			03/07/19 13:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/07/19 13:27	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/07/19 13:27	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/07/19 13:27	1
1,1,1-Trichloroethane	15		1.0	0.24	ug/L			03/07/19 13:27	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/07/19 13:27	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-28_022619

Lab Sample ID: 240-108688-6

Date Collected: 02/26/19 13:09

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.30	J	1.0	0.10	ug/L			03/07/19 13:27	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/07/19 13:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/07/19 13:27	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/07/19 13:27	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/07/19 13:27	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/07/19 13:27	1
Vinyl chloride	0.33	J	1.0	0.20	ug/L			03/07/19 13:27	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/07/19 13:27	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/07/19 13:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68		59 - 120					03/07/19 13:27	1
Dibromofluoromethane (Surr)	106		75 - 128					03/07/19 13:27	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 121					03/07/19 13:27	1
Toluene-d8 (Surr)	76		70 - 123					03/07/19 13:27	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-46_022619

Lab Sample ID: 240-108688-7

Date Collected: 02/26/19 17:35

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.0		2.0	0.86	ug/L			03/05/19 19:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		63 - 125					03/05/19 19:01	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			03/06/19 15:39	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 15:39	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 15:39	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 15:39	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 15:39	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 15:39	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 15:39	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 15:39	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 15:39	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 15:39	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 15:39	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 15:39	1
cis-1,2-Dichloroethene	1.4		1.0	0.16	ug/L			03/06/19 15:39	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 15:39	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 15:39	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 15:39	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 15:39	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 15:39	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 15:39	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 15:39	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 15:39	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 15:39	1
1,1-Dichloroethane	0.32	J	1.0	0.17	ug/L			03/06/19 15:39	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 15:39	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 15:39	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 15:39	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 15:39	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 15:39	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 15:39	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 15:39	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 15:39	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 15:39	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/06/19 15:39	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 15:39	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 15:39	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 15:39	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 15:39	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 15:39	1
trans-1,2-Dichloroethene	0.20	J	1.0	0.19	ug/L			03/06/19 15:39	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 15:39	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 15:39	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 15:39	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 15:39	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-46_022619

Lab Sample ID: 240-108688-7

Date Collected: 02/26/19 17:35

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 15:39	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 15:39	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 15:39	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 15:39	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 15:39	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 15:39	1
Vinyl chloride	17		1.0	0.20	ug/L			03/06/19 15:39	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 15:39	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 15:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	69		59 - 120		03/06/19 15:39	1
Dibromofluoromethane (Surr)	98		75 - 128		03/06/19 15:39	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 121		03/06/19 15:39	1
Toluene-d8 (Surr)	73		70 - 123		03/06/19 15:39	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-45_022619

Lab Sample ID: 240-108688-8

Date Collected: 02/26/19 15:30

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 19:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		63 - 125					03/05/19 19:26	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	170	U	170	90	ug/L			03/07/19 13:49	16.67
Benzene	17	U	17	2.2	ug/L			03/07/19 13:49	16.67
Bromodichloromethane	17	U	17	2.8	ug/L			03/07/19 13:49	16.67
Bromoform	17	U	17	13	ug/L			03/07/19 13:49	16.67
Bromomethane	17	U	17	7.0	ug/L			03/07/19 13:49	16.67
2-Butanone (MEK)	170	U	170	19	ug/L			03/07/19 13:49	16.67
Carbon disulfide	83	U	83	4.7	ug/L			03/07/19 13:49	16.67
Carbon tetrachloride	17	U	17	4.3	ug/L			03/07/19 13:49	16.67
Chlorobenzene	17	U	17	2.3	ug/L			03/07/19 13:49	16.67
Chloroethane	17	U	17	14	ug/L			03/07/19 13:49	16.67
Chloroform	17	U	17	2.2	ug/L			03/07/19 13:49	16.67
Chloromethane	17	U	17	3.3	ug/L			03/07/19 13:49	16.67
cis-1,2-Dichloroethene	340		17	2.7	ug/L			03/07/19 13:49	16.67
cis-1,3-Dichloropropene	17	U	17	10	ug/L			03/07/19 13:49	16.67
Cyclohexane	17	U	17	4.0	ug/L			03/07/19 13:49	16.67
Dibromochloromethane	17	U	17	6.5	ug/L			03/07/19 13:49	16.67
1,2-Dibromo-3-Chloropropane	17	U	17	15	ug/L			03/07/19 13:49	16.67
1,2-Dibromoethane	17	U	17	2.0	ug/L			03/07/19 13:49	16.67
1,2-Dichlorobenzene	17	U	17	2.5	ug/L			03/07/19 13:49	16.67
1,3-Dichlorobenzene	17	U	17	2.5	ug/L			03/07/19 13:49	16.67
1,4-Dichlorobenzene	17	U	17	2.7	ug/L			03/07/19 13:49	16.67
Dichlorodifluoromethane	17	U	17	5.8	ug/L			03/07/19 13:49	16.67
1,1-Dichloroethane	17	U	17	2.8	ug/L			03/07/19 13:49	16.67
1,2-Dichloroethane	17	U	17	3.5	ug/L			03/07/19 13:49	16.67
1,1-Dichloroethene	17	U	17	3.2	ug/L			03/07/19 13:49	16.67
1,2-Dichloropropane	17	U	17	2.5	ug/L			03/07/19 13:49	16.67
Ethylbenzene	17	U	17	1.8	ug/L			03/07/19 13:49	16.67
2-Hexanone	170	U	170	9.0	ug/L			03/07/19 13:49	16.67
Isopropylbenzene	17	U	17	1.5	ug/L			03/07/19 13:49	16.67
Methyl acetate	170	U	170	29	ug/L			03/07/19 13:49	16.67
Methylcyclohexane	17	U	17	5.5	ug/L			03/07/19 13:49	16.67
Methylene Chloride	83	U	83	44	ug/L			03/07/19 13:49	16.67
4-Methyl-2-pentanone (MIBK)	170	U	170	7.0	ug/L			03/07/19 13:49	16.67
Methyl tert-butyl ether	17	U	17	1.2	ug/L			03/07/19 13:49	16.67
Styrene	17	U	17	1.7	ug/L			03/07/19 13:49	16.67
1,1,2,2-Tetrachloroethane	17	U	17	2.2	ug/L			03/07/19 13:49	16.67
Tetrachloroethene	17	U	17	2.5	ug/L			03/07/19 13:49	16.67
Toluene	17	U	17	2.3	ug/L			03/07/19 13:49	16.67
trans-1,2-Dichloroethene	17	U	17	3.2	ug/L			03/07/19 13:49	16.67
trans-1,3-Dichloropropene	17	U	17	11	ug/L			03/07/19 13:49	16.67
1,2,4-Trichlorobenzene	17	U	17	4.3	ug/L			03/07/19 13:49	16.67
1,1,1-Trichloroethane	17	U	17	4.0	ug/L			03/07/19 13:49	16.67
1,1,2-Trichloroethane	17	U	17	1.5	ug/L			03/07/19 13:49	16.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-45_022619

Lab Sample ID: 240-108688-8

Date Collected: 02/26/19 15:30

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	17	U	17	1.7	ug/L			03/07/19 13:49	16.67
Trichlorofluoromethane	17	U	17	7.5	ug/L			03/07/19 13:49	16.67
1,1,2-Trichloro-1,2,2-trifluoroethane	17	U	17	6.8	ug/L			03/07/19 13:49	16.67
1,2,3-Trimethylbenzene	83	U	83	2.3	ug/L			03/07/19 13:49	16.67
1,2,4-Trimethylbenzene	17	U	17	1.2	ug/L			03/07/19 13:49	16.67
1,3,5-Trimethylbenzene	17	U	17	2.0	ug/L			03/07/19 13:49	16.67
Vinyl chloride	380		17	3.3	ug/L			03/07/19 13:49	16.67
Xylenes, Total	33	U	33	2.5	ug/L			03/07/19 13:49	16.67
Diethyl ether	33	U	33	3.2	ug/L			03/07/19 13:49	16.67
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	71		59 - 120					03/07/19 13:49	16.67
Dibromofluoromethane (Surr)	101		75 - 128					03/07/19 13:49	16.67
1,2-Dichloroethane-d4 (Surr)	98		70 - 121					03/07/19 13:49	16.67
Toluene-d8 (Surr)	75		70 - 123					03/07/19 13:49	16.67

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-18_022619

Lab Sample ID: 240-108688-9

Date Collected: 02/26/19 15:55

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 19:51	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		63 - 125					03/05/19 19:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			03/06/19 16:23	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 16:23	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 16:23	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 16:23	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 16:23	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 16:23	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 16:23	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 16:23	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 16:23	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 16:23	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 16:23	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 16:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/06/19 16:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 16:23	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 16:23	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 16:23	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 16:23	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 16:23	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 16:23	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 16:23	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 16:23	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 16:23	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/06/19 16:23	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 16:23	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 16:23	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 16:23	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 16:23	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 16:23	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 16:23	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 16:23	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 16:23	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 16:23	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/06/19 16:23	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 16:23	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 16:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 16:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 16:23	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 16:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 16:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 16:23	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 16:23	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 16:23	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 16:23	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-18_022619
Date Collected: 02/26/19 15:55
Date Received: 02/28/19 08:00

Lab Sample ID: 240-108688-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 16:23	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 16:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 16:23	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 16:23	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 16:23	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 16:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/06/19 16:23	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 16:23	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	65		59 - 120		03/06/19 16:23	1
Dibromofluoromethane (Surr)	97		75 - 128		03/06/19 16:23	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 121		03/06/19 16:23	1
Toluene-d8 (Surr)	71		70 - 123		03/06/19 16:23	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-14_022619

Lab Sample ID: 240-108688-10

Date Collected: 02/26/19 18:00

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 20:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		63 - 125					03/05/19 20:16	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			03/06/19 16:45	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 16:45	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 16:45	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 16:45	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 16:45	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 16:45	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 16:45	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 16:45	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 16:45	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 16:45	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 16:45	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 16:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/06/19 16:45	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 16:45	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 16:45	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 16:45	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 16:45	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 16:45	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 16:45	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 16:45	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 16:45	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 16:45	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/06/19 16:45	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 16:45	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 16:45	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 16:45	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 16:45	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 16:45	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 16:45	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 16:45	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 16:45	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 16:45	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/06/19 16:45	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 16:45	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 16:45	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 16:45	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 16:45	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 16:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 16:45	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 16:45	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 16:45	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 16:45	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 16:45	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-14_022619

Lab Sample ID: 240-108688-10

Date Collected: 02/26/19 18:00

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 16:45	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 16:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 16:45	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 16:45	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 16:45	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 16:45	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/06/19 16:45	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 16:45	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 16:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68		59 - 120					03/06/19 16:45	1
Dibromofluoromethane (Surr)	104		75 - 128					03/06/19 16:45	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 121					03/06/19 16:45	1
Toluene-d8 (Surr)	77		70 - 123					03/06/19 16:45	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-20_022619

Lab Sample ID: 240-108688-11

Date Collected: 02/26/19 13:45

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/05/19 20:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		63 - 125					03/05/19 20:41	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			03/06/19 17:07	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 17:07	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 17:07	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 17:07	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 17:07	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 17:07	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 17:07	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 17:07	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 17:07	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 17:07	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 17:07	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 17:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/06/19 17:07	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 17:07	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 17:07	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 17:07	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 17:07	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 17:07	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 17:07	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 17:07	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 17:07	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 17:07	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/06/19 17:07	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 17:07	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 17:07	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 17:07	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 17:07	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 17:07	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 17:07	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 17:07	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 17:07	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 17:07	1
4-Methyl-2-pentanone (MIBK)	0.52	J	10	0.42	ug/L			03/06/19 17:07	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 17:07	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 17:07	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 17:07	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 17:07	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 17:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 17:07	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 17:07	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 17:07	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 17:07	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 17:07	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-20_022619

Lab Sample ID: 240-108688-11

Date Collected: 02/26/19 13:45

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 17:07	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 17:07	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 17:07	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 17:07	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 17:07	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/06/19 17:07	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 17:07	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 17:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	68		59 - 120					03/06/19 17:07	1
Dibromofluoromethane (Surr)	103		75 - 128					03/06/19 17:07	1
1,2-Dichloroethane-d4 (Surr)	101		70 - 121					03/06/19 17:07	1
Toluene-d8 (Surr)	74		70 - 123					03/06/19 17:07	1

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108688-12

Date Collected: 02/26/19 00:00

Matrix: Water

Date Received: 02/28/19 08:00

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			03/06/19 17:29	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 17:29	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 17:29	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 17:29	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 17:29	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 17:29	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 17:29	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 17:29	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 17:29	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 17:29	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 17:29	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 17:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/06/19 17:29	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 17:29	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 17:29	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 17:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 17:29	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 17:29	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 17:29	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 17:29	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 17:29	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 17:29	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/06/19 17:29	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 17:29	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 17:29	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 17:29	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 17:29	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 17:29	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 17:29	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 17:29	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 17:29	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 17:29	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/06/19 17:29	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 17:29	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 17:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 17:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 17:29	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 17:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 17:29	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 17:29	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 17:29	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 17:29	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 17:29	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 17:29	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 17:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 17:29	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 17:29	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 17:29	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 17:29	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108688-12

Date Collected: 02/26/19 00:00

Matrix: Water

Date Received: 02/28/19 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/06/19 17:29	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 17:29	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 17:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	70		59 - 120		03/06/19 17:29	1
Dibromofluoromethane (Surr)	101		75 - 128		03/06/19 17:29	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 121		03/06/19 17:29	1
Toluene-d8 (Surr)	74		70 - 123		03/06/19 17:29	1

Surrogate Summary

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

TestAmerica Job ID: 240-108688-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (59-120)	DBFM (75-128)	DCA (70-121)	TOL (70-123)
240-108688-1	PW-16-01_022619	67	102	96	71
240-108688-2	TW-16-01_022619	73	101	103	77
240-108688-2 MS	TW-16-01_022619	80	99	91	80
240-108688-2 MSD	TW-16-01_022619	82	102	94	81
240-108688-3	TW-16-02_022619	67	97	97	73
240-108688-3	TW-16-02_022619	73	107	102	75
240-108688-4	MW-21_022619	66	95	92	71
240-108688-5	MW-70_022619	69	101	100	74
240-108688-6	MW-28_022619	68	106	102	76
240-108688-7	MW-46_022619	69	98	99	73
240-108688-8	MW-45_022619	71	101	98	75
240-108688-9	MW-18_022619	65	97	95	71
240-108688-10	MW-14_022619	68	104	102	77
240-108688-11	MW-20_022619	68	103	101	74
240-108688-12	TRIP BLANK	70	101	99	74
240-108850-B-3 MS	Matrix Spike	83	104	93	80
240-108850-B-3 MSD	Matrix Spike Duplicate	82	104	95	80
LCS 240-370486/4	Lab Control Sample	81	99	92	80
LCS 240-370676/4	Lab Control Sample	79	100	92	79
MB 240-370486/6	Method Blank	72	100	99	77
MB 240-370676/6	Method Blank	70	101	98	75

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

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(63-125)
240-108688-1	PW-16-01_022619	85
240-108688-2	TW-16-01_022619	84
240-108688-3	TW-16-02_022619	80
240-108688-3 MS	TW-16-02_022619	80
240-108688-3 MSD	TW-16-02_022619	85
240-108688-4	MW-21_022619	80
240-108688-5	MW-70_022619	86
240-108688-6	MW-28_022619	86
240-108688-7	MW-46_022619	85
240-108688-8	MW-45_022619	85
240-108688-9	MW-18_022619	82
240-108688-10	MW-14_022619	85
240-108688-11	MW-20_022619	83
LCS 240-370304/4	Lab Control Sample	84
MB 240-370304/5	Method Blank	86

TestAmerica Canton

Surrogate Summary

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

TestAmerica Job ID: 240-108688-1

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: 240-108688-1

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

Lab Sample ID: MB 240-370486/6

Matrix: Water

Analysis Batch: 370486

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			03/06/19 11:34	1
Benzene	1.0	U	1.0	0.13	ug/L			03/06/19 11:34	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/06/19 11:34	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/06/19 11:34	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/06/19 11:34	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/06/19 11:34	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/06/19 11:34	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/06/19 11:34	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/06/19 11:34	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/06/19 11:34	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/06/19 11:34	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/06/19 11:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/06/19 11:34	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/06/19 11:34	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/06/19 11:34	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/06/19 11:34	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/06/19 11:34	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/06/19 11:34	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 11:34	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/06/19 11:34	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/06/19 11:34	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/06/19 11:34	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/06/19 11:34	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/06/19 11:34	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 11:34	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/06/19 11:34	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/06/19 11:34	1
2-Hexanone	10	U	10	0.54	ug/L			03/06/19 11:34	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/06/19 11:34	1
Methyl acetate	10	U	10	1.7	ug/L			03/06/19 11:34	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/06/19 11:34	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/06/19 11:34	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/06/19 11:34	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/06/19 11:34	1
Styrene	1.0	U	1.0	0.10	ug/L			03/06/19 11:34	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/06/19 11:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/06/19 11:34	1
Toluene	1.0	U	1.0	0.14	ug/L			03/06/19 11:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/06/19 11:34	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/06/19 11:34	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/06/19 11:34	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/06/19 11:34	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/06/19 11:34	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/06/19 11:34	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/06/19 11:34	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/06/19 11:34	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/06/19 11:34	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/06/19 11:34	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: MB 240-370486/6
Matrix: Water
Analysis Batch: 370486

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/06/19 11:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/06/19 11:34	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/06/19 11:34	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/06/19 11:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	72		59 - 120		03/06/19 11:34	1
Dibromofluoromethane (Surr)	100		75 - 128		03/06/19 11:34	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 121		03/06/19 11:34	1
Toluene-d8 (Surr)	77		70 - 123		03/06/19 11:34	1

Lab Sample ID: LCS 240-370486/4
Matrix: Water
Analysis Batch: 370486

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	20.0	18.1		ug/L		90	21 - 162
Benzene	10.0	11.4		ug/L		114	80 - 123
Bromodichloromethane	10.0	9.48		ug/L		95	77 - 125
Bromoform	10.0	5.83		ug/L		58	49 - 141
Bromomethane	10.0	10.2		ug/L		102	41 - 175
2-Butanone (MEK)	20.0	17.0		ug/L		85	39 - 163
Carbon disulfide	10.0	8.60		ug/L		86	60 - 138
Carbon tetrachloride	10.0	10.7		ug/L		107	63 - 140
Chlorobenzene	10.0	9.50		ug/L		95	80 - 121
Chloroethane	10.0	9.93		ug/L		99	33 - 173
Chloroform	10.0	11.9		ug/L		119	79 - 127
Chloromethane	10.0	9.23		ug/L		92	54 - 143
cis-1,2-Dichloroethene	10.0	11.5		ug/L		115	76 - 128
cis-1,3-Dichloropropene	10.0	8.23		ug/L		82	64 - 132
Cyclohexane	10.0	10.8		ug/L		108	58 - 145
Dibromochloromethane	10.0	7.61		ug/L		76	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	5.00		ug/L		50	46 - 132
1,2-Dibromoethane	10.0	7.82		ug/L		78	77 - 123
1,2-Dichlorobenzene	10.0	9.00		ug/L		90	78 - 120
1,3-Dichlorobenzene	10.0	8.60		ug/L		86	78 - 120
1,4-Dichlorobenzene	10.0	8.60		ug/L		86	78 - 120
Dichlorodifluoromethane	10.0	9.80		ug/L		98	29 - 148
1,1-Dichloroethane	10.0	11.2		ug/L		112	75 - 133
1,2-Dichloroethane	10.0	11.1		ug/L		111	71 - 135
1,1-Dichloroethene	10.0	9.94		ug/L		99	65 - 139
1,2-Dichloropropane	10.0	10.4		ug/L		104	78 - 133
Ethylbenzene	10.0	9.18		ug/L		92	80 - 120
2-Hexanone	20.0	12.1		ug/L		60	43 - 148
Isopropylbenzene	10.0	9.44		ug/L		94	74 - 120
Methyl acetate	20.0	16.1		ug/L		81	52 - 145
Methylcyclohexane	10.0	10.7		ug/L		107	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: 240-108688-1

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

Lab Sample ID: LCS 240-370486/4

Matrix: Water

Analysis Batch: 370486

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	13.7		ug/L		69	49 - 143
Methyl tert-butyl ether	10.0	8.12		ug/L		81	51 - 133
Styrene	10.0	8.80		ug/L		88	79 - 120
1,1,2,2-Tetrachloroethane	10.0	6.66		ug/L		67	65 - 139
Tetrachloroethene	10.0	10.2		ug/L		102	74 - 130
Toluene	10.0	9.40		ug/L		94	78 - 129
trans-1,2-Dichloroethene	10.0	12.1		ug/L		121	78 - 133
trans-1,3-Dichloropropene	10.0	5.89		ug/L		59	55 - 128
1,2,4-Trichlorobenzene	10.0	8.38		ug/L		84	42 - 133
1,1,1-Trichloroethane	10.0	12.2		ug/L		122	69 - 134
1,1,2-Trichloroethane	10.0	8.87		ug/L		89	78 - 133
Trichloroethene	10.0	11.6		ug/L		116	76 - 125
Trichlorofluoromethane	10.0	11.7		ug/L		117	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	12.7		ug/L		127	50 - 156
1,2,4-Trimethylbenzene	10.0	8.34		ug/L		83	74 - 120
1,3,5-Trimethylbenzene	10.0	8.20		ug/L		82	75 - 121
Vinyl chloride	10.0	11.1		ug/L		111	58 - 143
Xylenes, Total	20.0	18.4		ug/L		92	80 - 120
Diethyl ether	10.0	10.0		ug/L		100	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	81		59 - 120
Dibromofluoromethane (Surr)	99		75 - 128
1,2-Dichloroethane-d4 (Surr)	92		70 - 121
Toluene-d8 (Surr)	80		70 - 123

Lab Sample ID: 240-108688-2 MS

Matrix: Water

Analysis Batch: 370486

Client Sample ID: TW-16-01_022619

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	1000	U	2000	1920		ug/L		96	10 - 168
Benzene	100	U	1000	1190		ug/L		119	71 - 122
Bromodichloromethane	100	U	1000	964		ug/L		96	64 - 125
Bromoform	100	U	1000	541		ug/L		54	44 - 129
Bromomethane	100	U	1000	849		ug/L		85	19 - 187
2-Butanone (MEK)	1000	U	2000	1720		ug/L		86	37 - 156
Carbon disulfide	500	U	1000	797		ug/L		80	43 - 144
Carbon tetrachloride	100	U	1000	990		ug/L		99	41 - 143
Chlorobenzene	100	U	1000	972		ug/L		97	70 - 123
Chloroethane	100	U	1000	928		ug/L		93	11 - 189
Chloroform	100	U	1000	1230		ug/L		123	68 - 130
Chloromethane	100	U	1000	965		ug/L		96	31 - 154
cis-1,2-Dichloroethene	150		1000	1350		ug/L		120	64 - 130
cis-1,3-Dichloropropene	100	U	1000	796		ug/L		80	48 - 127
Cyclohexane	100	U	1000	824		ug/L		82	42 - 135
Dibromochloromethane	100	U	1000	742		ug/L		74	60 - 129

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: 240-108688-2 MS

Matrix: Water

Analysis Batch: 370486

Client Sample ID: TW-16-01_022619

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
1,2-Dibromo-3-Chloropropane	100	U	1000	454		ug/L		45	38 - 124
1,2-Dibromoethane	100	U	1000	800		ug/L		80	71 - 123
1,2-Dichlorobenzene	100	U	1000	883		ug/L		88	64 - 120
1,3-Dichlorobenzene	100	U	1000	850		ug/L		85	62 - 120
1,4-Dichlorobenzene	100	U	1000	859		ug/L		86	63 - 120
Dichlorodifluoromethane	100	U	1000	628		ug/L		63	28 - 136
1,1-Dichloroethane	100	U	1000	1140		ug/L		114	63 - 136
1,2-Dichloroethane	100	U	1000	1170		ug/L		117	65 - 135
1,1-Dichloroethene	100	U	1000	994		ug/L		99	53 - 140
1,2-Dichloropropane	100	U	1000	1090		ug/L		109	70 - 132
Ethylbenzene	100	U	1000	904		ug/L		90	66 - 120
2-Hexanone	1000	U	2000	1130		ug/L		57	42 - 150
Isopropylbenzene	100	U	1000	890		ug/L		89	59 - 120
Methyl acetate	1000	U	2000	1650		ug/L		83	41 - 142
Methylcyclohexane	100	U	1000	767		ug/L		77	37 - 123
Methylene Chloride	500	U	1000	1120		ug/L		112	61 - 130
4-Methyl-2-pentanone (MIBK)	1000	U	2000	1330		ug/L		67	44 - 143
Methyl tert-butyl ether	100	U	1000	782		ug/L		78	41 - 136
Styrene	100	U	1000	888		ug/L		89	68 - 120
1,1,2,2-Tetrachloroethane	100	U	1000	683		ug/L		68	60 - 137
Tetrachloroethene	100	U	1000	978		ug/L		98	51 - 136
Toluene	100	U	1000	956		ug/L		96	62 - 132
trans-1,2-Dichloroethene	22	J	1000	1250		ug/L		123	68 - 133
trans-1,3-Dichloropropene	100	U	1000	545		ug/L		55	40 - 125
1,2,4-Trichlorobenzene	100	U	1000	735		ug/L		73	30 - 126
1,1,1-Trichloroethane	100	U	1000	1190		ug/L		119	51 - 138
1,1,2-Trichloroethane	100	U	1000	937		ug/L		94	76 - 132
Trichloroethene	15	J	1000	1170		ug/L		115	55 - 131
Trichlorofluoromethane	100	U	1000	968		ug/L		97	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	1000	945		ug/L		95	31 - 156
1,2,4-Trimethylbenzene	100	U	1000	806		ug/L		81	62 - 120
1,3,5-Trimethylbenzene	100	U	1000	794		ug/L		79	64 - 120
Vinyl chloride	750		1000	1640		ug/L		89	43 - 154
Xylenes, Total	200	U	2000	1830		ug/L		92	67 - 120
Diethyl ether	200	U	1000	1030		ug/L		103	65 - 134

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	80		59 - 120
Dibromofluoromethane (Surr)	99		75 - 128
1,2-Dichloroethane-d4 (Surr)	91		70 - 121
Toluene-d8 (Surr)	80		70 - 123

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: 240-108688-2 MSD

Matrix: Water

Analysis Batch: 370486

Client Sample ID: TW-16-01_022619

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	1000	U	2000	1660		ug/L		83	10 - 168	14	35
Benzene	100	U	1000	1070		ug/L		107	71 - 122	10	22
Bromodichloromethane	100	U	1000	863		ug/L		86	64 - 125	11	27
Bromoform	100	U	1000	470		ug/L		47	44 - 129	14	28
Bromomethane	100	U	1000	775		ug/L		77	19 - 187	9	35
2-Butanone (MEK)	1000	U	2000	1470		ug/L		74	37 - 156	16	35
Carbon disulfide	500	U	1000	701		ug/L		70	43 - 144	13	33
Carbon tetrachloride	100	U	1000	886		ug/L		89	41 - 143	11	30
Chlorobenzene	100	U	1000	850		ug/L		85	70 - 123	13	23
Chloroethane	100	U	1000	812		ug/L		81	11 - 189	13	35
Chloroform	100	U	1000	1110		ug/L		111	68 - 130	10	23
Chloromethane	100	U	1000	1000		ug/L		100	31 - 154	4	35
cis-1,2-Dichloroethene	150		1000	1220		ug/L		108	64 - 130	10	21
cis-1,3-Dichloropropene	100	U	1000	694		ug/L		69	48 - 127	14	30
Cyclohexane	100	U	1000	814		ug/L		81	42 - 135	1	35
Dibromochloromethane	100	U	1000	648		ug/L		65	60 - 129	14	26
1,2-Dibromo-3-Chloropropane	100	U	1000	390		ug/L		39	38 - 124	15	35
1,2-Dibromoethane	100	U	1000	719		ug/L		72	71 - 123	11	27
1,2-Dichlorobenzene	100	U	1000	809		ug/L		81	64 - 120	9	30
1,3-Dichlorobenzene	100	U	1000	765		ug/L		77	62 - 120	11	31
1,4-Dichlorobenzene	100	U	1000	764		ug/L		76	63 - 120	12	28
Dichlorodifluoromethane	100	U	1000	842		ug/L		84	28 - 136	29	35
1,1-Dichloroethane	100	U	1000	1060		ug/L		106	63 - 136	7	23
1,2-Dichloroethane	100	U	1000	1060		ug/L		106	65 - 135	10	24
1,1-Dichloroethene	100	U	1000	866		ug/L		87	53 - 140	14	35
1,2-Dichloropropane	100	U	1000	989		ug/L		99	70 - 132	10	26
Ethylbenzene	100	U	1000	794		ug/L		79	66 - 120	13	24
2-Hexanone	1000	U	2000	1020		ug/L		51	42 - 150	10	35
Isopropylbenzene	100	U	1000	771		ug/L		77	59 - 120	14	31
Methyl acetate	1000	U	2000	1490		ug/L		74	41 - 142	10	35
Methylcyclohexane	100	U	1000	807		ug/L		81	37 - 123	5	35
Methylene Chloride	500	U	1000	997		ug/L		100	61 - 130	11	29
4-Methyl-2-pentanone (MIBK)	1000	U	2000	1210		ug/L		61	44 - 143	10	35
Methyl tert-butyl ether	100	U	1000	722		ug/L		72	41 - 136	8	29
Styrene	100	U	1000	781		ug/L		78	68 - 120	13	26
1,1,2,2-Tetrachloroethane	100	U	1000	629		ug/L		63	60 - 137	8	31
Tetrachloroethene	100	U	1000	870		ug/L		87	51 - 136	12	23
Toluene	100	U	1000	841		ug/L		84	62 - 132	13	23
trans-1,2-Dichloroethene	22	J	1000	1120		ug/L		110	68 - 133	11	24
trans-1,3-Dichloropropene	100	U	1000	492		ug/L		49	40 - 125	10	27
1,2,4-Trichlorobenzene	100	U	1000	714		ug/L		71	30 - 126	3	35
1,1,1-Trichloroethane	100	U	1000	1050		ug/L		105	51 - 138	12	27
1,1,2-Trichloroethane	100	U	1000	845		ug/L		84	76 - 132	10	25
Trichloroethene	15	J	1000	1040		ug/L		102	55 - 131	12	23
Trichlorofluoromethane	100	U	1000	997		ug/L		100	37 - 174	3	35
1,1,2-Trichloro-1,2,2-trifluoroethane	100	U	1000	946		ug/L		95	31 - 156	0	35
1,2,4-Trimethylbenzene	100	U	1000	718		ug/L		72	62 - 120	12	27

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: 240-108688-2 MSD

Matrix: Water

Analysis Batch: 370486

Client Sample ID: TW-16-01_022619

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3,5-Trimethylbenzene	100	U	1000	702		ug/L		70	64 - 120	12	23
Vinyl chloride	750		1000	1490		ug/L		73	43 - 154	10	29
Xylenes, Total	200	U	2000	1580		ug/L		79	67 - 120	15	25
Diethyl ether	200	U	1000	957		ug/L		96	65 - 134	7	33

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	82		59 - 120
Dibromofluoromethane (Surr)	102		75 - 128
1,2-Dichloroethane-d4 (Surr)	94		70 - 121
Toluene-d8 (Surr)	81		70 - 123

Lab Sample ID: MB 240-370676/6

Matrix: Water

Analysis Batch: 370676

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			03/07/19 12:21	1
Benzene	1.0	U	1.0	0.13	ug/L			03/07/19 12:21	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/07/19 12:21	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/07/19 12:21	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/07/19 12:21	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/07/19 12:21	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/07/19 12:21	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/07/19 12:21	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/07/19 12:21	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/07/19 12:21	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/07/19 12:21	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/07/19 12:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/07/19 12:21	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/07/19 12:21	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/07/19 12:21	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/07/19 12:21	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/07/19 12:21	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/07/19 12:21	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 12:21	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/07/19 12:21	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/07/19 12:21	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/07/19 12:21	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/07/19 12:21	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/07/19 12:21	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/07/19 12:21	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/07/19 12:21	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/07/19 12:21	1
2-Hexanone	10	U	10	0.54	ug/L			03/07/19 12:21	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/07/19 12:21	1
Methyl acetate	10	U	10	1.7	ug/L			03/07/19 12:21	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/07/19 12:21	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/07/19 12:21	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: MB 240-370676/6

Matrix: Water

Analysis Batch: 370676

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/07/19 12:21	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/07/19 12:21	1
Styrene	1.0	U	1.0	0.10	ug/L			03/07/19 12:21	1
1,1,1,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/07/19 12:21	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/07/19 12:21	1
Toluene	1.0	U	1.0	0.14	ug/L			03/07/19 12:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/07/19 12:21	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/07/19 12:21	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/07/19 12:21	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/07/19 12:21	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/07/19 12:21	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/07/19 12:21	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/07/19 12:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/07/19 12:21	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/07/19 12:21	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/07/19 12:21	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/07/19 12:21	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/07/19 12:21	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/07/19 12:21	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/07/19 12:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	70		59 - 120		03/07/19 12:21	1
Dibromofluoromethane (Surr)	101		75 - 128		03/07/19 12:21	1
1,2-Dichloroethane-d4 (Surr)	98		70 - 121		03/07/19 12:21	1
Toluene-d8 (Surr)	75		70 - 123		03/07/19 12:21	1

Lab Sample ID: LCS 240-370676/4

Matrix: Water

Analysis Batch: 370676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	11.7		ug/L		117	80 - 123
Bromodichloromethane	10.0	9.84		ug/L		98	77 - 125
Bromoform	10.0	5.63		ug/L		56	49 - 141
Bromomethane	10.0	9.01		ug/L		90	41 - 175
2-Butanone (MEK)	20.0	16.0		ug/L		80	39 - 163
Carbon disulfide	10.0	8.19		ug/L		82	60 - 138
Carbon tetrachloride	10.0	11.0		ug/L		110	63 - 140
Chlorobenzene	10.0	9.58		ug/L		96	80 - 121
Chloroethane	10.0	9.06		ug/L		91	33 - 173
Chloroform	10.0	12.1		ug/L		121	79 - 127
Chloromethane	10.0	10.4		ug/L		104	54 - 143
cis-1,2-Dichloroethene	10.0	11.6		ug/L		116	76 - 128
cis-1,3-Dichloropropene	10.0	8.55		ug/L		85	64 - 132
Cyclohexane	10.0	10.3		ug/L		103	58 - 145
Dibromochloromethane	10.0	7.64		ug/L		76	70 - 132

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: LCS 240-370676/4

Matrix: Water

Analysis Batch: 370676

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromo-3-Chloropropane	10.0	4.81		ug/L		48	46 - 132
1,2-Dibromoethane	10.0	7.73		ug/L		77	77 - 123
1,2-Dichlorobenzene	10.0	8.92		ug/L		89	78 - 120
1,3-Dichlorobenzene	10.0	8.73		ug/L		87	78 - 120
1,4-Dichlorobenzene	10.0	8.85		ug/L		89	78 - 120
Dichlorodifluoromethane	10.0	11.7		ug/L		117	29 - 148
1,1-Dichloroethane	10.0	11.3		ug/L		113	75 - 133
1,2-Dichloroethane	10.0	11.1		ug/L		111	71 - 135
1,1-Dichloroethene	10.0	9.81		ug/L		98	65 - 139
1,2-Dichloropropane	10.0	10.9		ug/L		109	78 - 133
Ethylbenzene	10.0	9.11		ug/L		91	80 - 120
2-Hexanone	20.0	11.3		ug/L		56	43 - 148
Isopropylbenzene	10.0	9.26		ug/L		93	74 - 120
Methyl acetate	20.0	15.9		ug/L		79	52 - 145
Methylcyclohexane	10.0	10.6		ug/L		106	60 - 125
Methylene Chloride	10.0	10.3		ug/L		103	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	13.1		ug/L		66	49 - 143
Methyl tert-butyl ether	10.0	8.26		ug/L		83	51 - 133
Styrene	10.0	8.72		ug/L		87	79 - 120
1,1,2,2-Tetrachloroethane	10.0	6.78		ug/L		68	65 - 139
Tetrachloroethene	10.0	10.1		ug/L		101	74 - 130
Toluene	10.0	9.47		ug/L		95	78 - 129
trans-1,2-Dichloroethene	10.0	12.2		ug/L		122	78 - 133
trans-1,3-Dichloropropene	10.0	5.89		ug/L		59	55 - 128
1,2,4-Trichlorobenzene	10.0	8.12		ug/L		81	42 - 133
1,1,1-Trichloroethane	10.0	12.2		ug/L		122	69 - 134
1,1,2-Trichloroethane	10.0	8.87		ug/L		89	78 - 133
Trichloroethene	10.0	11.8		ug/L		118	76 - 125
Trichlorofluoromethane	10.0	11.6		ug/L		116	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.4		ug/L		114	50 - 156
1,2,4-Trimethylbenzene	10.0	8.57		ug/L		86	74 - 120
1,3,5-Trimethylbenzene	10.0	8.54		ug/L		85	75 - 121
Vinyl chloride	10.0	10.4		ug/L		104	58 - 143
Xylenes, Total	20.0	18.4		ug/L		92	80 - 120
Diethyl ether	10.0	9.99		ug/L		100	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	79		59 - 120
Dibromofluoromethane (Surr)	100		75 - 128
1,2-Dichloroethane-d4 (Surr)	92		70 - 121
Toluene-d8 (Surr)	79		70 - 123

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: 240-108850-B-3 MS

Matrix: Water

Analysis Batch: 370676

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
Acetone	33	U	66.6	61.0		ug/L		92	10 - 168
Benzene	2.5	J	33.3	39.2		ug/L		110	71 - 122
Bromodichloromethane	3.3	U	33.3	29.3		ug/L		88	64 - 125
Bromoform	3.3	U	33.3	14.9		ug/L		45	44 - 129
Bromomethane	3.3	U	33.3	28.3		ug/L		85	19 - 187
2-Butanone (MEK)	33	U	66.6	50.4		ug/L		76	37 - 156
Carbon disulfide	17	U	33.3	23.9		ug/L		72	43 - 144
Carbon tetrachloride	3.3	U	33.3	31.3		ug/L		94	41 - 143
Chlorobenzene	8.7		33.3	37.9		ug/L		88	70 - 123
Chloroethane	3.3	U	33.3	32.8		ug/L		98	11 - 189
Chloroform	3.3	U	33.3	39.7		ug/L		119	68 - 130
Chloromethane	3.3	U	33.3	32.9		ug/L		99	31 - 154
cis-1,2-Dichloroethene	6.1		33.3	43.1		ug/L		111	64 - 130
cis-1,3-Dichloropropene	3.3	U	33.3	23.5		ug/L		71	48 - 127
Dibromochloromethane	3.3	U	33.3	21.2		ug/L		64	60 - 129
1,2-Dichlorobenzene	3.3	U	33.3	26.5		ug/L		80	64 - 120
1,3-Dichlorobenzene	3.3	U	33.3	25.7		ug/L		77	62 - 120
1,4-Dichlorobenzene	3.3	U	33.3	25.3		ug/L		76	63 - 120
1,1-Dichloroethane	58		33.3	90.1		ug/L		97	63 - 136
1,2-Dichloroethane	1.1	J	33.3	37.1		ug/L		108	65 - 135
1,1-Dichloroethene	35		33.3	62.6		ug/L		84	53 - 140
1,2-Dichloropropane	3.3	U	33.3	34.0		ug/L		102	70 - 132
Ethylbenzene	3.3	U	33.3	27.5		ug/L		82	66 - 120
2-Hexanone	33	U	66.6	34.7		ug/L		52	42 - 150
Methylene Chloride	17	U	33.3	37.6		ug/L		113	61 - 130
4-Methyl-2-pentanone (MIBK)	33	U	66.6	40.8		ug/L		61	44 - 143
Styrene	3.3	U	33.3	26.9		ug/L		81	68 - 120
1,1,2,2-Tetrachloroethane	3.3	U	33.3	21.2		ug/L		64	60 - 137
Tetrachloroethene	0.88	J	33.3	30.4		ug/L		89	51 - 136
Toluene	3.3	U	33.3	28.5		ug/L		86	62 - 132
trans-1,2-Dichloroethene	3.3	U	33.3	38.5		ug/L		116	68 - 133
trans-1,3-Dichloropropene	3.3	U	33.3	16.0		ug/L		48	40 - 125
1,1,1-Trichloroethane	25		33.3	61.8		ug/L		111	51 - 138
1,1,2-Trichloroethane	1.8	J	33.3	30.4		ug/L		86	76 - 132
Trichloroethene	4.8		33.3	40.1		ug/L		106	55 - 131
Vinyl chloride	1.3	J	33.3	34.4		ug/L		99	43 - 154
Xylenes, Total	6.7	U	66.6	55.2		ug/L		83	67 - 120

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	83		59 - 120
Dibromofluoromethane (Surr)	104		75 - 128
1,2-Dichloroethane-d4 (Surr)	93		70 - 121
Toluene-d8 (Surr)	80		70 - 123

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: 240-108850-B-3 MSD

Matrix: Water

Analysis Batch: 370676

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	33	U	66.6	62.8		ug/L		94	10 - 168	3	35
Benzene	2.5	J	33.3	39.4		ug/L		111	71 - 122	0	22
Bromodichloromethane	3.3	U	33.3	29.7		ug/L		89	64 - 125	2	27
Bromoform	3.3	U	33.3	15.8		ug/L		47	44 - 129	5	28
Bromomethane	3.3	U	33.3	29.2		ug/L		88	19 - 187	3	35
2-Butanone (MEK)	33	U	66.6	52.8		ug/L		79	37 - 156	5	35
Carbon disulfide	17	U	33.3	25.3		ug/L		76	43 - 144	6	33
Carbon tetrachloride	3.3	U	33.3	33.6		ug/L		101	41 - 143	7	30
Chlorobenzene	8.7		33.3	38.8		ug/L		90	70 - 123	2	23
Chloroethane	3.3	U	33.3	32.2		ug/L		97	11 - 189	2	35
Chloroform	3.3	U	33.3	40.0		ug/L		120	68 - 130	1	23
Chloromethane	3.3	U	33.3	34.6		ug/L		104	31 - 154	5	35
cis-1,2-Dichloroethene	6.1		33.3	45.0		ug/L		117	64 - 130	4	21
cis-1,3-Dichloropropene	3.3	U	33.3	24.3		ug/L		73	48 - 127	3	30
Dibromochloromethane	3.3	U	33.3	22.2		ug/L		67	60 - 129	4	26
1,2-Dichlorobenzene	3.3	U	33.3	27.5		ug/L		83	64 - 120	4	30
1,3-Dichlorobenzene	3.3	U	33.3	26.6		ug/L		80	62 - 120	4	31
1,4-Dichlorobenzene	3.3	U	33.3	26.6		ug/L		80	63 - 120	5	28
1,1-Dichloroethane	58		33.3	92.8		ug/L		105	63 - 136	3	23
1,2-Dichloroethane	1.1	J	33.3	37.4		ug/L		109	65 - 135	1	24
1,1-Dichloroethene	35		33.3	63.8		ug/L		88	53 - 140	2	35
1,2-Dichloropropane	3.3	U	33.3	34.8		ug/L		105	70 - 132	2	26
Ethylbenzene	3.3	U	33.3	28.6		ug/L		86	66 - 120	4	24
2-Hexanone	33	U	66.6	35.8		ug/L		54	42 - 150	3	35
Methylene Chloride	17	U	33.3	38.0		ug/L		114	61 - 130	1	29
4-Methyl-2-pentanone (MIBK)	33	U	66.6	42.6		ug/L		64	44 - 143	4	35
Styrene	3.3	U	33.3	27.3		ug/L		82	68 - 120	2	26
1,1,2,2-Tetrachloroethane	3.3	U	33.3	21.5		ug/L		65	60 - 137	2	31
Tetrachloroethene	0.88	J	33.3	32.1		ug/L		94	51 - 136	5	23
Toluene	3.3	U	33.3	29.5		ug/L		89	62 - 132	3	23
trans-1,2-Dichloroethene	3.3	U	33.3	40.4		ug/L		121	68 - 133	5	24
trans-1,3-Dichloropropene	3.3	U	33.3	16.7		ug/L		50	40 - 125	4	27
1,1,1-Trichloroethane	25		33.3	64.1		ug/L		118	51 - 138	4	27
1,1,2-Trichloroethane	1.8	J	33.3	30.9		ug/L		87	76 - 132	1	25
Trichloroethene	4.8		33.3	41.2		ug/L		109	55 - 131	3	23
Vinyl chloride	1.3	J	33.3	34.3		ug/L		99	43 - 154	0	29
Xylenes, Total	6.7	U	66.6	56.6		ug/L		85	67 - 120	3	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	82		59 - 120
Dibromofluoromethane (Surr)	104		75 - 128
1,2-Dichloroethane-d4 (Surr)	95		70 - 121
Toluene-d8 (Surr)	80		70 - 123

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108688-1

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

Lab Sample ID: MB 240-370304/5
Matrix: Water
Analysis Batch: 370304

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			03/05/19 11:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		63 - 125					03/05/19 11:27	1

Lab Sample ID: LCS 240-370304/4
Matrix: Water
Analysis Batch: 370304

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	11.7		ug/L		117	59 - 131
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	84		63 - 125				

Lab Sample ID: 240-108688-3 MS
Matrix: Water
Analysis Batch: 370304

Client Sample ID: TW-16-02_022619
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	4.6		10.0	15.5		ug/L		109	52 - 129
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	80		63 - 125						

Lab Sample ID: 240-108688-3 MSD
Matrix: Water
Analysis Batch: 370304

Client Sample ID: TW-16-02_022619
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	4.6		10.0	16.6		ug/L		120	52 - 129	7	13
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	85		63 - 125								

QC Association Summary

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

TestAmerica Job ID: 240-108688-1

GC/MS VOA

Analysis Batch: 370304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108688-1	PW-16-01_022619	Total/NA	Water	8260B SIM	
240-108688-2	TW-16-01_022619	Total/NA	Water	8260B SIM	
240-108688-3	TW-16-02_022619	Total/NA	Water	8260B SIM	
240-108688-4	MW-21_022619	Total/NA	Water	8260B SIM	
240-108688-5	MW-70_022619	Total/NA	Water	8260B SIM	
240-108688-6	MW-28_022619	Total/NA	Water	8260B SIM	
240-108688-7	MW-46_022619	Total/NA	Water	8260B SIM	
240-108688-8	MW-45_022619	Total/NA	Water	8260B SIM	
240-108688-9	MW-18_022619	Total/NA	Water	8260B SIM	
240-108688-10	MW-14_022619	Total/NA	Water	8260B SIM	
240-108688-11	MW-20_022619	Total/NA	Water	8260B SIM	
MB 240-370304/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-370304/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-108688-3 MS	TW-16-02_022619	Total/NA	Water	8260B SIM	
240-108688-3 MSD	TW-16-02_022619	Total/NA	Water	8260B SIM	

Analysis Batch: 370486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108688-2	TW-16-01_022619	Total/NA	Water	8260B	
240-108688-3	TW-16-02_022619	Total/NA	Water	8260B	
240-108688-4	MW-21_022619	Total/NA	Water	8260B	
240-108688-5	MW-70_022619	Total/NA	Water	8260B	
240-108688-7	MW-46_022619	Total/NA	Water	8260B	
240-108688-9	MW-18_022619	Total/NA	Water	8260B	
240-108688-10	MW-14_022619	Total/NA	Water	8260B	
240-108688-11	MW-20_022619	Total/NA	Water	8260B	
240-108688-12	TRIP BLANK	Total/NA	Water	8260B	
MB 240-370486/6	Method Blank	Total/NA	Water	8260B	
LCS 240-370486/4	Lab Control Sample	Total/NA	Water	8260B	
240-108688-2 MS	TW-16-01_022619	Total/NA	Water	8260B	
240-108688-2 MSD	TW-16-01_022619	Total/NA	Water	8260B	

Analysis Batch: 370676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108688-1	PW-16-01_022619	Total/NA	Water	8260B	
240-108688-3	TW-16-02_022619	Total/NA	Water	8260B	
240-108688-6	MW-28_022619	Total/NA	Water	8260B	
240-108688-8	MW-45_022619	Total/NA	Water	8260B	
MB 240-370676/6	Method Blank	Total/NA	Water	8260B	
LCS 240-370676/4	Lab Control Sample	Total/NA	Water	8260B	
240-108850-B-3 MS	Matrix Spike	Total/NA	Water	8260B	
240-108850-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Lab Chronicle

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: PW-16-01_022619

Lab Sample ID: 240-108688-1

Date Collected: 02/26/19 10:44

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370676	03/07/19 15:16	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 15:39	SAM	TAL CAN

Client Sample ID: TW-16-01_022619

Lab Sample ID: 240-108688-2

Date Collected: 02/26/19 10:37

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	370486	03/06/19 13:50	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 16:05	SAM	TAL CAN

Client Sample ID: TW-16-02_022619

Lab Sample ID: 240-108688-3

Date Collected: 02/26/19 11:10

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1666.67	370486	03/06/19 14:12	LEE	TAL CAN
Total/NA	Analysis	8260B		333.33	370676	03/07/19 13:05	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 16:29	SAM	TAL CAN

Client Sample ID: MW-21_022619

Lab Sample ID: 240-108688-4

Date Collected: 02/26/19 13:50

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2500	370486	03/06/19 14:34	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 17:45	SAM	TAL CAN

Client Sample ID: MW-70_022619

Lab Sample ID: 240-108688-5

Date Collected: 02/26/19 16:14

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	370486	03/06/19 14:56	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 18:10	SAM	TAL CAN

Lab Chronicle

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-28_022619

Lab Sample ID: 240-108688-6

Date Collected: 02/26/19 13:09

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370676	03/07/19 13:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 18:35	SAM	TAL CAN

Client Sample ID: MW-46_022619

Lab Sample ID: 240-108688-7

Date Collected: 02/26/19 17:35

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370486	03/06/19 15:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 19:01	SAM	TAL CAN

Client Sample ID: MW-45_022619

Lab Sample ID: 240-108688-8

Date Collected: 02/26/19 15:30

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		16.67	370676	03/07/19 13:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 19:26	SAM	TAL CAN

Client Sample ID: MW-18_022619

Lab Sample ID: 240-108688-9

Date Collected: 02/26/19 15:55

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370486	03/06/19 16:23	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 19:51	SAM	TAL CAN

Client Sample ID: MW-14_022619

Lab Sample ID: 240-108688-10

Date Collected: 02/26/19 18:00

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370486	03/06/19 16:45	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 20:16	SAM	TAL CAN

Client Sample ID: MW-20_022619

Lab Sample ID: 240-108688-11

Date Collected: 02/26/19 13:45

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370486	03/06/19 17:07	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-108688-1

Client Sample ID: MW-20_022619

Lab Sample ID: 240-108688-11

Date Collected: 02/26/19 13:45

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	370304	03/05/19 20:41	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108688-12

Date Collected: 02/26/19 00:00

Matrix: Water

Date Received: 02/28/19 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370486	03/06/19 17:29	LEE	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 240-108688-1

Laboratory: TestAmerica Canton

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

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2927	02-23-20
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	04-30-19 *
Kentucky (UST)	State Program	4	58	02-23-20
Kentucky (WW)	State Program	4	98016	12-31-19
Minnesota	NELAP	5	039-999-348	12-31-19 *
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	02-23-20
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	01-12-20 *
West Virginia DEP	State Program	3	210	12-31-19

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

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

Regulatory program: DW NPDES RCRA Other

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

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

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

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

Project Name: Ford LTP
 Project Number: M1001454.0004.000001
 M1001454.0004.000003
 PO # M1001454.0004.000001
 M1001454.0004.000003

Sample Identification	Sample Date	Sample Time	Matrix			Containers & Preservatives							Filtered Sample (Y/N)	Composite C/Grab-C	1,4-Dioxane 8260B SIM	Analyses	Job/SDG No.	Sample Specific Notes / Special Instructions:
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc						
PW-16-01-022619	2/26/19	1044	X															
TW-16-01-022619	2/26/19	1037	X															
TW-16-02-022619	2/26/19	1110	X															
MW-21-022619	2/26/19	1350	X															
MW-70-022619	2/26/19	1614	X															
MW-28-022619	2/26/19	1309	X															
MW-46-022619	2/26/19	1735	X															
MW-45-022619	2/26/19	1530	X															
MW-18-022619	2/26/19	1555	X															
MW-14-022619	2/26/19	1800	X															



Possible Hazard Identification
 Non-Hazard 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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>SAFEE BIELAK Paul Polak</i>	ARCADIS	2/26/19 1136	<i>RCB NOVI COLD STORAGE</i>	ARCADIS	2/26/19 1136
<i>Cathy O'Neil</i>	ARCADIS	02/27/19 14:15	<i>WV</i>	TESTAMERICA	2/27/19 1415
<i>WV</i>	TESTAMERICA	2/27/19 1520	<i>WV</i>	TA	2-28-19 0800

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

Special Instructions/OC Requirements & Comments:

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Client Contact 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		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kristoffer.hinskey@arcadis.com		Site Contact: Angela DeGrandis Telephone: 734-320-0065	
Method of Shipment/Carrier: Shipping/Tracking No:		Analysis Turnaround Time TAT if different from below: <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 10 day <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
Sample Date: 2/26/19 Sample Time: 1345 Sample Identification: PAW-20-022619 TRIP BLANK		Matrix: Aqueous: <input checked="" type="checkbox"/> Sediment: <input type="checkbox"/> Solid: <input type="checkbox"/> Other: <input type="checkbox"/>	
Containers & Preservatives: HCl: <input checked="" type="checkbox"/> HNO3: <input type="checkbox"/> H2SO4: <input type="checkbox"/> Other: <input type="checkbox"/>		Filtered Sample (Y/N): N A 3 3 Composite C/Grab: G VOCs 8260B 1,4-Dioxane 8260B SIM	
Possible Hazard Identification: <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Humane <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jim.tomalia@cadena.com, Cadena #E203728 Level IV Reporting.			
Relinquished by: KAGIEL BIELEK Relinquished by: <i>Carly O'Neill</i> Relinquished by: <i>WJ</i>		Received by: ARCADIS Received by: NOVI GOLD STORE HERE Received by: <i>WJ</i> Received in Laboratory by: <i>WJ</i>	
Date/Time: 2/26/19 1336 Date/Time: 02/27/19 14:15 Date/Time: 2/27/19 1520		Company: ARCADIS Company: ARCADIS Company: TESTAMERICA	
Date/Time: 2/28/19 0800		Company: TA	

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TestAmerica Canton Sample Receipt Form/Narrative

Login # : 108488

Canton Facility

Client Arcadis Site Name Cooler unpacked by: Ryan Cribley

Cooler Received on 2-28-19 Opened on 2-28-19 0800

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

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

TestAmerica Cooler # TA Foam Box Client Cooler Box Other

Packing material used: Bubble Wrap Foam Plastic Bag None Other

COOLANT: Wet Ice Blue Ice Dry Ice Water None

- 1. Cooler temperature upon receipt... IR GUN# IR-8 (CF -0.2 °C) Observed Cooler Temp. 1.8 °C Corrected Cooler Temp. 1.6 °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
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
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC861525
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # B831701VB 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: RL

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):
VOA Sample Preservation - Date/Time VOAs Frozen: