

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton
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Tel: (330)497-9396

TestAmerica Job ID: 240-108569-1

Client Project/Site: Ford LTP Livonia MI - E203728

For:

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



Authorized for release by:
3/11/2019 3:01:00 PM

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



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Definitions/Glossary

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

TestAmerica Job ID: 240-108569-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F2	MS/MSD RPD exceeds control limits
X	Surrogate is outside control limits
U	Indicates the analyte was analyzed for but not detected.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.

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: 240-108569-1

Job ID: 240-108569-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-108569-1

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 2/27/2019 8:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.8° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples MW-22_022519 (240-108569-1), MW-44_022519 (240-108569-2), TW-16-03_022519 (240-108569-3), PW-16-02_022519 (240-108569-4), TW-16-04_022519 (240-108569-5) and TRIP BLANK (240-108569-6) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 03/01/2019 and 03/04/2019.

Toluene-d8 (Surr) failed the surrogate recovery criteria high for TRIP BLANK (240-108569-6).

4-Bromofluorobenzene (Surr) failed the surrogate recovery criteria high for 240-108509-B-4 MSD. Refer to the QC report for details.

Samples MW-22_022519 (240-108569-1)[50X], MW-44_022519 (240-108569-2)[20X], TW-16-03_022519 (240-108569-3)[1.67X] and TW-16-04_022519 (240-108569-5)[3.33X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Surrogate recovery for the following sample was outside the upper control limit: TRIP BLANK (240-108569-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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

Case Narrative

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

TestAmerica Job ID: 240-108569-1

Job ID: 240-108569-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-22_022519 (240-108569-1), MW-44_022519 (240-108569-2), TW-16-03_022519 (240-108569-3), PW-16-02_022519 (240-108569-4) and TW-16-04_022519 (240-108569-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/28/2019 and 03/02/2019.

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

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Method Summary

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

TestAmerica Job ID: 240-108569-1

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: 240-108569-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-108569-1	MW-22_022519	Water	02/25/19 11:36	02/27/19 08:20
240-108569-2	MW-44_022519	Water	02/25/19 13:14	02/27/19 08:20
240-108569-3	TW-16-03_022519	Water	02/25/19 16:10	02/27/19 08:20
240-108569-4	PW-16-02_022519	Water	02/25/19 15:43	02/27/19 08:20
240-108569-5	TW-16-04_022519	Water	02/25/19 16:19	02/27/19 08:20
240-108569-6	TRIP BLANK	Water	02/25/19 00:00	02/27/19 08:20

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Detection Summary

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: MW-22_022519

Lab Sample ID: 240-108569-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	23		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	190		50	8.0	ug/L	50		8260B	Total/NA
Vinyl chloride	1700		50	10	ug/L	50		8260B	Total/NA

Client Sample ID: MW-44_022519

Lab Sample ID: 240-108569-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	5.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	180		20	4.0	ug/L	20		8260B	Total/NA

Client Sample ID: TW-16-03_022519

Lab Sample ID: 240-108569-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	33		1.7	0.27	ug/L	1.67		8260B	Total/NA
1,1-Dichloroethane	0.43	J	1.7	0.28	ug/L	1.67		8260B	Total/NA
Vinyl chloride	48		1.7	0.33	ug/L	1.67		8260B	Total/NA

Client Sample ID: PW-16-02_022519

Lab Sample ID: 240-108569-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.9		1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.94	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: TW-16-04_022519

Lab Sample ID: 240-108569-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	14		3.3	0.53	ug/L	3.33		8260B	Total/NA
Vinyl chloride	65		3.3	0.67	ug/L	3.33		8260B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108569-6

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: 240-108569-1

Client Sample ID: MW-22_022519

Lab Sample ID: 240-108569-1

Date Collected: 02/25/19 11:36

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	23		2.0	0.86	ug/L			02/28/19 21:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		63 - 125					02/28/19 21:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	500	U	500	270	ug/L			03/04/19 17:39	50
Benzene	50	U	50	6.5	ug/L			03/04/19 17:39	50
Bromodichloromethane	50	U	50	8.5	ug/L			03/04/19 17:39	50
Bromoform	50	U	50	38	ug/L			03/04/19 17:39	50
Bromomethane	50	U	50	21	ug/L			03/04/19 17:39	50
2-Butanone (MEK)	500	U	500	58	ug/L			03/04/19 17:39	50
Carbon disulfide	250	U	250	14	ug/L			03/04/19 17:39	50
Carbon tetrachloride	50	U	50	13	ug/L			03/04/19 17:39	50
Chlorobenzene	50	U	50	7.0	ug/L			03/04/19 17:39	50
Chloroethane	50	U	50	42	ug/L			03/04/19 17:39	50
Chloroform	50	U	50	6.5	ug/L			03/04/19 17:39	50
Chloromethane	50	U	50	10	ug/L			03/04/19 17:39	50
cis-1,2-Dichloroethene	190		50	8.0	ug/L			03/04/19 17:39	50
cis-1,3-Dichloropropene	50	U	50	31	ug/L			03/04/19 17:39	50
Cyclohexane	50	U	50	12	ug/L			03/04/19 17:39	50
Dibromochloromethane	50	U	50	20	ug/L			03/04/19 17:39	50
1,2-Dibromo-3-Chloropropane	50	U	50	46	ug/L			03/04/19 17:39	50
1,2-Dibromoethane	50	U	50	6.0	ug/L			03/04/19 17:39	50
1,2-Dichlorobenzene	50	U	50	7.5	ug/L			03/04/19 17:39	50
1,3-Dichlorobenzene	50	U	50	7.5	ug/L			03/04/19 17:39	50
1,4-Dichlorobenzene	50	U	50	8.0	ug/L			03/04/19 17:39	50
Dichlorodifluoromethane	50	U	50	18	ug/L			03/04/19 17:39	50
1,1-Dichloroethane	50	U	50	8.5	ug/L			03/04/19 17:39	50
1,2-Dichloroethane	50	U	50	11	ug/L			03/04/19 17:39	50
1,1-Dichloroethene	50	U	50	9.5	ug/L			03/04/19 17:39	50
1,2-Dichloropropane	50	U	50	7.5	ug/L			03/04/19 17:39	50
Ethylbenzene	50	U	50	5.5	ug/L			03/04/19 17:39	50
2-Hexanone	500	U	500	27	ug/L			03/04/19 17:39	50
Isopropylbenzene	50	U	50	4.5	ug/L			03/04/19 17:39	50
Methyl acetate	500	U	500	86	ug/L			03/04/19 17:39	50
Methylcyclohexane	50	U	50	17	ug/L			03/04/19 17:39	50
Methylene Chloride	250	U	250	130	ug/L			03/04/19 17:39	50
4-Methyl-2-pentanone (MIBK)	500	U	500	21	ug/L			03/04/19 17:39	50
Methyl tert-butyl ether	50	U	50	3.5	ug/L			03/04/19 17:39	50
Styrene	50	U	50	5.0	ug/L			03/04/19 17:39	50
1,1,2,2-Tetrachloroethane	50	U	50	6.5	ug/L			03/04/19 17:39	50
Tetrachloroethene	50	U	50	7.5	ug/L			03/04/19 17:39	50
Toluene	50	U	50	7.0	ug/L			03/04/19 17:39	50
trans-1,2-Dichloroethene	50	U	50	9.5	ug/L			03/04/19 17:39	50
trans-1,3-Dichloropropene	50	U	50	34	ug/L			03/04/19 17:39	50
1,2,4-Trichlorobenzene	50	U	50	13	ug/L			03/04/19 17:39	50
1,1,1-Trichloroethane	50	U	50	12	ug/L			03/04/19 17:39	50
1,1,2-Trichloroethane	50	U	50	4.5	ug/L			03/04/19 17:39	50

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: MW-22_022519

Lab Sample ID: 240-108569-1

Date Collected: 02/25/19 11:36

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	50	U	50	5.0	ug/L			03/04/19 17:39	50
Trichlorofluoromethane	50	U	50	23	ug/L			03/04/19 17:39	50
1,1,2-Trichloro-1,2,2-trifluoroethane	50	U	50	21	ug/L			03/04/19 17:39	50
1,2,3-Trimethylbenzene	250	U	250	7.0	ug/L			03/04/19 17:39	50
1,2,4-Trimethylbenzene	50	U	50	3.5	ug/L			03/04/19 17:39	50
1,3,5-Trimethylbenzene	50	U	50	6.0	ug/L			03/04/19 17:39	50
Vinyl chloride	1700		50	10	ug/L			03/04/19 17:39	50
Xylenes, Total	100	U	100	7.5	ug/L			03/04/19 17:39	50
Diethyl ether	100	U	100	9.5	ug/L			03/04/19 17:39	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	66		59 - 120					03/04/19 17:39	50
Dibromofluoromethane (Surr)	93		75 - 128					03/04/19 17:39	50
1,2-Dichloroethane-d4 (Surr)	92		70 - 121					03/04/19 17:39	50
Toluene-d8 (Surr)	72		70 - 123					03/04/19 17:39	50

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: MW-44_022519

Lab Sample ID: 240-108569-2

Date Collected: 02/25/19 13:14

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	5.7		2.0	0.86	ug/L			02/28/19 21:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125					02/28/19 21:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	200	U	200	110	ug/L			03/01/19 17:44	20
Benzene	20	U	20	2.6	ug/L			03/01/19 17:44	20
Bromodichloromethane	20	U	20	3.4	ug/L			03/01/19 17:44	20
Bromoform	20	U	20	15	ug/L			03/01/19 17:44	20
Bromomethane	20	U	20	8.4	ug/L			03/01/19 17:44	20
2-Butanone (MEK)	200	U	200	23	ug/L			03/01/19 17:44	20
Carbon disulfide	100	U	100	5.6	ug/L			03/01/19 17:44	20
Carbon tetrachloride	20	U	20	5.2	ug/L			03/01/19 17:44	20
Chlorobenzene	20	U	20	2.8	ug/L			03/01/19 17:44	20
Chloroethane	20	U	20	17	ug/L			03/01/19 17:44	20
Chloroform	20	U	20	2.6	ug/L			03/01/19 17:44	20
Chloromethane	20	U	20	4.0	ug/L			03/01/19 17:44	20
cis-1,2-Dichloroethene	20	U	20	3.2	ug/L			03/01/19 17:44	20
cis-1,3-Dichloropropene	20	U	20	12	ug/L			03/01/19 17:44	20
Cyclohexane	20	U	20	4.8	ug/L			03/01/19 17:44	20
Dibromochloromethane	20	U	20	7.8	ug/L			03/01/19 17:44	20
1,2-Dibromo-3-Chloropropane	20	U	20	18	ug/L			03/01/19 17:44	20
1,2-Dibromoethane	20	U	20	2.4	ug/L			03/01/19 17:44	20
1,2-Dichlorobenzene	20	U	20	3.0	ug/L			03/01/19 17:44	20
1,3-Dichlorobenzene	20	U	20	3.0	ug/L			03/01/19 17:44	20
1,4-Dichlorobenzene	20	U	20	3.2	ug/L			03/01/19 17:44	20
Dichlorodifluoromethane	20	U	20	7.0	ug/L			03/01/19 17:44	20
1,1-Dichloroethane	20	U	20	3.4	ug/L			03/01/19 17:44	20
1,2-Dichloroethane	20	U	20	4.2	ug/L			03/01/19 17:44	20
1,1-Dichloroethene	20	U	20	3.8	ug/L			03/01/19 17:44	20
1,2-Dichloropropane	20	U	20	3.0	ug/L			03/01/19 17:44	20
Ethylbenzene	20	U	20	2.2	ug/L			03/01/19 17:44	20
2-Hexanone	200	U	200	11	ug/L			03/01/19 17:44	20
Isopropylbenzene	20	U	20	1.8	ug/L			03/01/19 17:44	20
Methyl acetate	200	U	200	34	ug/L			03/01/19 17:44	20
Methylcyclohexane	20	U	20	6.6	ug/L			03/01/19 17:44	20
Methylene Chloride	100	U	100	52	ug/L			03/01/19 17:44	20
4-Methyl-2-pentanone (MIBK)	200	U	200	8.4	ug/L			03/01/19 17:44	20
Methyl tert-butyl ether	20	U	20	1.4	ug/L			03/01/19 17:44	20
Styrene	20	U	20	2.0	ug/L			03/01/19 17:44	20
1,1,2,2-Tetrachloroethane	20	U	20	2.6	ug/L			03/01/19 17:44	20
Tetrachloroethene	20	U	20	3.0	ug/L			03/01/19 17:44	20
Toluene	20	U	20	2.8	ug/L			03/01/19 17:44	20
trans-1,2-Dichloroethene	20	U	20	3.8	ug/L			03/01/19 17:44	20
trans-1,3-Dichloropropene	20	U	20	13	ug/L			03/01/19 17:44	20
1,2,4-Trichlorobenzene	20	U	20	5.2	ug/L			03/01/19 17:44	20
1,1,1-Trichloroethane	20	U	20	4.8	ug/L			03/01/19 17:44	20
1,1,2-Trichloroethane	20	U	20	1.8	ug/L			03/01/19 17:44	20

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: MW-44_022519

Lab Sample ID: 240-108569-2

Date Collected: 02/25/19 13:14

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	20	U	20	2.0	ug/L			03/01/19 17:44	20
Trichlorofluoromethane	20	U	20	9.0	ug/L			03/01/19 17:44	20
1,1,2-Trichloro-1,2,2-trifluoroethane	20	U	20	8.2	ug/L			03/01/19 17:44	20
1,2,3-Trimethylbenzene	100	U	100	2.8	ug/L			03/01/19 17:44	20
1,2,4-Trimethylbenzene	20	U	20	1.4	ug/L			03/01/19 17:44	20
1,3,5-Trimethylbenzene	20	U	20	2.4	ug/L			03/01/19 17:44	20
Vinyl chloride	180		20	4.0	ug/L			03/01/19 17:44	20
Xylenes, Total	40	U	40	3.0	ug/L			03/01/19 17:44	20
Diethyl ether	40	U	40	3.8	ug/L			03/01/19 17:44	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	80		59 - 120					03/01/19 17:44	20
Dibromofluoromethane (Surr)	111		75 - 128					03/01/19 17:44	20
1,2-Dichloroethane-d4 (Surr)	104		70 - 121					03/01/19 17:44	20
Toluene-d8 (Surr)	96		70 - 123					03/01/19 17:44	20

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TW-16-03_022519

Lab Sample ID: 240-108569-3

Date Collected: 02/25/19 16:10

Matrix: Water

Date Received: 02/27/19 08:20

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			02/28/19 22:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		63 - 125					02/28/19 22:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	17	U	17	9.0	ug/L			03/04/19 18:01	1.67
Benzene	1.7	U	1.7	0.22	ug/L			03/04/19 18:01	1.67
Bromodichloromethane	1.7	U	1.7	0.28	ug/L			03/04/19 18:01	1.67
Bromoform	1.7	U	1.7	1.3	ug/L			03/04/19 18:01	1.67
Bromomethane	1.7	U	1.7	0.70	ug/L			03/04/19 18:01	1.67
2-Butanone (MEK)	17	U	17	1.9	ug/L			03/04/19 18:01	1.67
Carbon disulfide	8.4	U	8.4	0.47	ug/L			03/04/19 18:01	1.67
Carbon tetrachloride	1.7	U	1.7	0.43	ug/L			03/04/19 18:01	1.67
Chlorobenzene	1.7	U	1.7	0.23	ug/L			03/04/19 18:01	1.67
Chloroethane	1.7	U	1.7	1.4	ug/L			03/04/19 18:01	1.67
Chloroform	1.7	U	1.7	0.22	ug/L			03/04/19 18:01	1.67
Chloromethane	1.7	U	1.7	0.33	ug/L			03/04/19 18:01	1.67
cis-1,2-Dichloroethene	33		1.7	0.27	ug/L			03/04/19 18:01	1.67
cis-1,3-Dichloropropene	1.7	U	1.7	1.0	ug/L			03/04/19 18:01	1.67
Cyclohexane	1.7	U	1.7	0.40	ug/L			03/04/19 18:01	1.67
Dibromochloromethane	1.7	U	1.7	0.65	ug/L			03/04/19 18:01	1.67
1,2-Dibromo-3-Chloropropane	1.7	U	1.7	1.5	ug/L			03/04/19 18:01	1.67
1,2-Dibromoethane	1.7	U	1.7	0.20	ug/L			03/04/19 18:01	1.67
1,2-Dichlorobenzene	1.7	U	1.7	0.25	ug/L			03/04/19 18:01	1.67
1,3-Dichlorobenzene	1.7	U	1.7	0.25	ug/L			03/04/19 18:01	1.67
1,4-Dichlorobenzene	1.7	U	1.7	0.27	ug/L			03/04/19 18:01	1.67
Dichlorodifluoromethane	1.7	U	1.7	0.58	ug/L			03/04/19 18:01	1.67
1,1-Dichloroethane	0.43	J	1.7	0.28	ug/L			03/04/19 18:01	1.67
1,2-Dichloroethane	1.7	U	1.7	0.35	ug/L			03/04/19 18:01	1.67
1,1-Dichloroethene	1.7	U	1.7	0.32	ug/L			03/04/19 18:01	1.67
1,2-Dichloropropane	1.7	U	1.7	0.25	ug/L			03/04/19 18:01	1.67
Ethylbenzene	1.7	U	1.7	0.18	ug/L			03/04/19 18:01	1.67
2-Hexanone	17	U	17	0.90	ug/L			03/04/19 18:01	1.67
Isopropylbenzene	1.7	U	1.7	0.15	ug/L			03/04/19 18:01	1.67
Methyl acetate	17	U	17	2.9	ug/L			03/04/19 18:01	1.67
Methylcyclohexane	1.7	U	1.7	0.55	ug/L			03/04/19 18:01	1.67
Methylene Chloride	8.4	U	8.4	4.4	ug/L			03/04/19 18:01	1.67
4-Methyl-2-pentanone (MIBK)	17	U	17	0.70	ug/L			03/04/19 18:01	1.67
Methyl tert-butyl ether	1.7	U	1.7	0.12	ug/L			03/04/19 18:01	1.67
Styrene	1.7	U	1.7	0.17	ug/L			03/04/19 18:01	1.67
1,1,1,2-Tetrachloroethane	1.7	U	1.7	0.22	ug/L			03/04/19 18:01	1.67
Tetrachloroethene	1.7	U	1.7	0.25	ug/L			03/04/19 18:01	1.67
Toluene	1.7	U	1.7	0.23	ug/L			03/04/19 18:01	1.67
trans-1,2-Dichloroethene	1.7	U	1.7	0.32	ug/L			03/04/19 18:01	1.67
trans-1,3-Dichloropropene	1.7	U	1.7	1.1	ug/L			03/04/19 18:01	1.67
1,2,4-Trichlorobenzene	1.7	U	1.7	0.43	ug/L			03/04/19 18:01	1.67
1,1,1-Trichloroethane	1.7	U	1.7	0.40	ug/L			03/04/19 18:01	1.67
1,1,2-Trichloroethane	1.7	U	1.7	0.15	ug/L			03/04/19 18:01	1.67

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TW-16-03_022519

Lab Sample ID: 240-108569-3

Date Collected: 02/25/19 16:10

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.7	U	1.7	0.17	ug/L			03/04/19 18:01	1.67
Trichlorofluoromethane	1.7	U	1.7	0.75	ug/L			03/04/19 18:01	1.67
1,1,2-Trichloro-1,2,2-trifluoroethane	1.7	U	1.7	0.68	ug/L			03/04/19 18:01	1.67
1,2,3-Trimethylbenzene	8.4	U	8.4	0.23	ug/L			03/04/19 18:01	1.67
1,2,4-Trimethylbenzene	1.7	U	1.7	0.12	ug/L			03/04/19 18:01	1.67
1,3,5-Trimethylbenzene	1.7	U	1.7	0.20	ug/L			03/04/19 18:01	1.67
Vinyl chloride	48		1.7	0.33	ug/L			03/04/19 18:01	1.67
Xylenes, Total	3.3	U	3.3	0.25	ug/L			03/04/19 18:01	1.67
Diethyl ether	3.3	U	3.3	0.32	ug/L			03/04/19 18:01	1.67
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	67		59 - 120					03/04/19 18:01	1.67
Dibromofluoromethane (Surr)	99		75 - 128					03/04/19 18:01	1.67
1,2-Dichloroethane-d4 (Surr)	96		70 - 121					03/04/19 18:01	1.67
Toluene-d8 (Surr)	74		70 - 123					03/04/19 18:01	1.67

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: PW-16-02_022519

Lab Sample ID: 240-108569-4

Date Collected: 02/25/19 15:43

Matrix: Water

Date Received: 02/27/19 08:20

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			02/28/19 22:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		63 - 125					02/28/19 22:31	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			03/04/19 18:23	1
Benzene	1.0	U	1.0	0.13	ug/L			03/04/19 18:23	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/04/19 18:23	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/04/19 18:23	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/04/19 18:23	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/04/19 18:23	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/04/19 18:23	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/04/19 18:23	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/04/19 18:23	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/04/19 18:23	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/04/19 18:23	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/04/19 18:23	1
cis-1,2-Dichloroethene	1.9		1.0	0.16	ug/L			03/04/19 18:23	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/04/19 18:23	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/04/19 18:23	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/04/19 18:23	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/04/19 18:23	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/04/19 18:23	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/04/19 18:23	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/04/19 18:23	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/04/19 18:23	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/04/19 18:23	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/04/19 18:23	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/04/19 18:23	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/19 18:23	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/04/19 18:23	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/04/19 18:23	1
2-Hexanone	10	U	10	0.54	ug/L			03/04/19 18:23	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/04/19 18:23	1
Methyl acetate	10	U	10	1.7	ug/L			03/04/19 18:23	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/04/19 18:23	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/04/19 18:23	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/04/19 18:23	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/04/19 18:23	1
Styrene	1.0	U	1.0	0.10	ug/L			03/04/19 18:23	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/04/19 18:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/19 18:23	1
Toluene	1.0	U	1.0	0.14	ug/L			03/04/19 18:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/19 18:23	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/04/19 18:23	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/04/19 18:23	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/04/19 18:23	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/04/19 18:23	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: PW-16-02_022519

Lab Sample ID: 240-108569-4

Date Collected: 02/25/19 15:43

Matrix: Water

Date Received: 02/27/19 08:20

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			03/04/19 18:23	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/04/19 18:23	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/04/19 18:23	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/04/19 18:23	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/04/19 18:23	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/04/19 18:23	1
Vinyl chloride	0.94	J	1.0	0.20	ug/L			03/04/19 18:23	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/04/19 18:23	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/04/19 18:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	73		59 - 120					03/04/19 18:23	1
Dibromofluoromethane (Surr)	103		75 - 128					03/04/19 18:23	1
1,2-Dichloroethane-d4 (Surr)	105		70 - 121					03/04/19 18:23	1
Toluene-d8 (Surr)	79		70 - 123					03/04/19 18:23	1

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TW-16-04_022519

Lab Sample ID: 240-108569-5

Date Collected: 02/25/19 16:19

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.2	J	2.0	0.86	ug/L			03/02/19 16:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		63 - 125					03/02/19 16:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	33	U	33	18	ug/L			03/01/19 18:51	3.33
Benzene	3.3	U	3.3	0.43	ug/L			03/01/19 18:51	3.33
Bromodichloromethane	3.3	U	3.3	0.57	ug/L			03/01/19 18:51	3.33
Bromoform	3.3	U	3.3	2.5	ug/L			03/01/19 18:51	3.33
Bromomethane	3.3	U	3.3	1.4	ug/L			03/01/19 18:51	3.33
2-Butanone (MEK)	33	U	33	3.9	ug/L			03/01/19 18:51	3.33
Carbon disulfide	17	U	17	0.93	ug/L			03/01/19 18:51	3.33
Carbon tetrachloride	3.3	U	3.3	0.87	ug/L			03/01/19 18:51	3.33
Chlorobenzene	3.3	U	3.3	0.47	ug/L			03/01/19 18:51	3.33
Chloroethane	3.3	U	3.3	2.8	ug/L			03/01/19 18:51	3.33
Chloroform	3.3	U	3.3	0.43	ug/L			03/01/19 18:51	3.33
Chloromethane	3.3	U	3.3	0.67	ug/L			03/01/19 18:51	3.33
cis-1,2-Dichloroethene	14		3.3	0.53	ug/L			03/01/19 18:51	3.33
cis-1,3-Dichloropropene	3.3	U	3.3	2.0	ug/L			03/01/19 18:51	3.33
Cyclohexane	3.3	U	3.3	0.80	ug/L			03/01/19 18:51	3.33
Dibromochloromethane	3.3	U	3.3	1.3	ug/L			03/01/19 18:51	3.33
1,2-Dibromo-3-Chloropropane	3.3	U	3.3	3.0	ug/L			03/01/19 18:51	3.33
1,2-Dibromoethane	3.3	U	3.3	0.40	ug/L			03/01/19 18:51	3.33
1,2-Dichlorobenzene	3.3	U	3.3	0.50	ug/L			03/01/19 18:51	3.33
1,3-Dichlorobenzene	3.3	U	3.3	0.50	ug/L			03/01/19 18:51	3.33
1,4-Dichlorobenzene	3.3	U	3.3	0.53	ug/L			03/01/19 18:51	3.33
Dichlorodifluoromethane	3.3	U	3.3	1.2	ug/L			03/01/19 18:51	3.33
1,1-Dichloroethane	3.3	U	3.3	0.57	ug/L			03/01/19 18:51	3.33
1,2-Dichloroethane	3.3	U	3.3	0.70	ug/L			03/01/19 18:51	3.33
1,1-Dichloroethene	3.3	U	3.3	0.63	ug/L			03/01/19 18:51	3.33
1,2-Dichloropropane	3.3	U	3.3	0.50	ug/L			03/01/19 18:51	3.33
Ethylbenzene	3.3	U	3.3	0.37	ug/L			03/01/19 18:51	3.33
2-Hexanone	33	U	33	1.8	ug/L			03/01/19 18:51	3.33
Isopropylbenzene	3.3	U	3.3	0.30	ug/L			03/01/19 18:51	3.33
Methyl acetate	33	U	33	5.7	ug/L			03/01/19 18:51	3.33
Methylcyclohexane	3.3	U	3.3	1.1	ug/L			03/01/19 18:51	3.33
Methylene Chloride	17	U	17	8.7	ug/L			03/01/19 18:51	3.33
4-Methyl-2-pentanone (MIBK)	33	U	33	1.4	ug/L			03/01/19 18:51	3.33
Methyl tert-butyl ether	3.3	U	3.3	0.23	ug/L			03/01/19 18:51	3.33
Styrene	3.3	U	3.3	0.33	ug/L			03/01/19 18:51	3.33
1,1,2,2-Tetrachloroethane	3.3	U	3.3	0.43	ug/L			03/01/19 18:51	3.33
Tetrachloroethene	3.3	U	3.3	0.50	ug/L			03/01/19 18:51	3.33
Toluene	3.3	U	3.3	0.47	ug/L			03/01/19 18:51	3.33
trans-1,2-Dichloroethene	3.3	U	3.3	0.63	ug/L			03/01/19 18:51	3.33
trans-1,3-Dichloropropene	3.3	U	3.3	2.2	ug/L			03/01/19 18:51	3.33
1,2,4-Trichlorobenzene	3.3	U	3.3	0.87	ug/L			03/01/19 18:51	3.33
1,1,1-Trichloroethane	3.3	U	3.3	0.80	ug/L			03/01/19 18:51	3.33
1,1,2-Trichloroethane	3.3	U	3.3	0.30	ug/L			03/01/19 18:51	3.33

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TW-16-04_022519

Lab Sample ID: 240-108569-5

Date Collected: 02/25/19 16:19

Matrix: Water

Date Received: 02/27/19 08:20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	3.3	U	3.3	0.33	ug/L			03/01/19 18:51	3.33
Trichlorofluoromethane	3.3	U	3.3	1.5	ug/L			03/01/19 18:51	3.33
1,1,2-Trichloro-1,2,2-trifluoroethane	3.3	U	3.3	1.4	ug/L			03/01/19 18:51	3.33
1,2,3-Trimethylbenzene	17	U	17	0.47	ug/L			03/01/19 18:51	3.33
1,2,4-Trimethylbenzene	3.3	U	3.3	0.23	ug/L			03/01/19 18:51	3.33
1,3,5-Trimethylbenzene	3.3	U	3.3	0.40	ug/L			03/01/19 18:51	3.33
Vinyl chloride	65		3.3	0.67	ug/L			03/01/19 18:51	3.33
Xylenes, Total	6.7	U	6.7	0.50	ug/L			03/01/19 18:51	3.33
Diethyl ether	6.7	U	6.7	0.63	ug/L			03/01/19 18:51	3.33
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	113		59 - 120					03/01/19 18:51	3.33
Dibromofluoromethane (Surr)	102		75 - 128					03/01/19 18:51	3.33
1,2-Dichloroethane-d4 (Surr)	107		70 - 121					03/01/19 18:51	3.33
Toluene-d8 (Surr)	117		70 - 123					03/01/19 18:51	3.33

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108569-6

Date Collected: 02/25/19 00:00

Matrix: Water

Date Received: 02/27/19 08:20

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			03/01/19 19:13	1
Benzene	1.0	U	1.0	0.13	ug/L			03/01/19 19:13	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/01/19 19:13	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/01/19 19:13	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/01/19 19:13	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/01/19 19:13	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/01/19 19:13	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/01/19 19:13	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/01/19 19:13	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/01/19 19:13	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/01/19 19:13	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/01/19 19:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/01/19 19:13	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/01/19 19:13	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/01/19 19:13	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/01/19 19:13	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/01/19 19:13	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/01/19 19:13	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/01/19 19:13	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/01/19 19:13	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/01/19 19:13	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/01/19 19:13	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/01/19 19:13	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/01/19 19:13	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/19 19:13	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/01/19 19:13	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/01/19 19:13	1
2-Hexanone	10	U	10	0.54	ug/L			03/01/19 19:13	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/01/19 19:13	1
Methyl acetate	10	U	10	1.7	ug/L			03/01/19 19:13	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/01/19 19:13	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/01/19 19:13	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/01/19 19:13	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/01/19 19:13	1
Styrene	1.0	U	1.0	0.10	ug/L			03/01/19 19:13	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/01/19 19:13	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/01/19 19:13	1
Toluene	1.0	U	1.0	0.14	ug/L			03/01/19 19:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/19 19:13	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/01/19 19:13	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/01/19 19:13	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/01/19 19:13	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/01/19 19:13	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/01/19 19:13	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/01/19 19:13	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/01/19 19:13	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/01/19 19:13	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/01/19 19:13	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/01/19 19:13	1

TestAmerica Canton

Client Sample Results

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 240-108569-6

Date Collected: 02/25/19 00:00

Matrix: Water

Date Received: 02/27/19 08:20

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			03/01/19 19:13	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/01/19 19:13	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/01/19 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		59 - 120		03/01/19 19:13	1
Dibromofluoromethane (Surr)	103		75 - 128		03/01/19 19:13	1
1,2-Dichloroethane-d4 (Surr)	102		70 - 121		03/01/19 19:13	1
Toluene-d8 (Surr)	127	X	70 - 123		03/01/19 19:13	1

Surrogate Summary

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

TestAmerica Job ID: 240-108569-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		BFB (59-120)	DBFM (75-128)	DCA (70-121)	TOL (70-123)
240-108509-B-4 MS	Matrix Spike	64	76	77	102
240-108509-B-4 MSD	Matrix Spike Duplicate	135 X	82	78	104
240-108569-1	MW-22_022519	66	93	92	72
240-108569-2	MW-44_022519	80	111	104	96
240-108569-3	TW-16-03_022519	67	99	96	74
240-108569-4	PW-16-02_022519	73	103	105	79
240-108569-5	TW-16-04_022519	113	102	107	117
240-108569-6	TRIP BLANK	115	103	102	127 X
240-108804-H-1 MSD	Matrix Spike Duplicate	75	90	83	74
240-108804-K-1 MS	Matrix Spike	77	92	87	74
LCS 240-369932/4	Lab Control Sample	94	105	97	113
LCS 240-370116/4	Lab Control Sample	76	92	85	77
MB 240-369932/6	Method Blank	88	118	107	118
MB 240-370116/6	Method Blank	67	92	90	72

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 DCA = 1,2-Dichloroethane-d4 (Surr)
 TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (63-125)
240-108569-1	MW-22_022519	93
240-108569-2	MW-44_022519	90
240-108569-3	TW-16-03_022519	88
240-108569-4	PW-16-02_022519	88
240-108569-5	TW-16-04_022519	81
240-108589-B-1 MS	Matrix Spike	82
240-108589-B-1 MSD	Matrix Spike Duplicate	82
500-159168-B-17 MS	Matrix Spike	88
500-159168-B-17 MSD	Matrix Spike Duplicate	89
LCS 240-369782/4	Lab Control Sample	85
LCS 240-370005/4	Lab Control Sample	84
MB 240-369782/5	Method Blank	90
MB 240-370005/5	Method Blank	80

Surrogate Legend

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

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: MB 240-369932/6

Matrix: Water

Analysis Batch: 369932

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			03/01/19 12:56	1
Benzene	1.0	U	1.0	0.13	ug/L			03/01/19 12:56	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/01/19 12:56	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/01/19 12:56	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/01/19 12:56	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/01/19 12:56	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/01/19 12:56	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/01/19 12:56	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/01/19 12:56	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/01/19 12:56	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/01/19 12:56	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/01/19 12:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/01/19 12:56	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/01/19 12:56	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/01/19 12:56	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/01/19 12:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/01/19 12:56	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/01/19 12:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/01/19 12:56	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/01/19 12:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/01/19 12:56	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/01/19 12:56	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/01/19 12:56	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/01/19 12:56	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/19 12:56	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/01/19 12:56	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/01/19 12:56	1
2-Hexanone	10	U	10	0.54	ug/L			03/01/19 12:56	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/01/19 12:56	1
Methyl acetate	10	U	10	1.7	ug/L			03/01/19 12:56	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/01/19 12:56	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/01/19 12:56	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/01/19 12:56	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/01/19 12:56	1
Styrene	1.0	U	1.0	0.10	ug/L			03/01/19 12:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/01/19 12:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/01/19 12:56	1
Toluene	1.0	U	1.0	0.14	ug/L			03/01/19 12:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/01/19 12:56	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/01/19 12:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/01/19 12:56	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/01/19 12:56	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/01/19 12:56	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/01/19 12:56	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/01/19 12:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/01/19 12:56	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/01/19 12:56	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/01/19 12:56	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: MB 240-369932/6
Matrix: Water
Analysis Batch: 369932

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			03/01/19 12:56	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/01/19 12:56	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/01/19 12:56	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/01/19 12:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		59 - 120		03/01/19 12:56	1
Dibromofluoromethane (Surr)	118		75 - 128		03/01/19 12:56	1
1,2-Dichloroethane-d4 (Surr)	107		70 - 121		03/01/19 12:56	1
Toluene-d8 (Surr)	118		70 - 123		03/01/19 12:56	1

Lab Sample ID: LCS 240-369932/4
Matrix: Water
Analysis Batch: 369932

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	17.6		ug/L		88	21 - 162
Benzene	10.0	11.1		ug/L		111	80 - 123
Bromodichloromethane	10.0	10.1		ug/L		101	77 - 125
Bromoform	10.0	8.27		ug/L		83	49 - 141
Bromomethane	10.0	9.14		ug/L		91	41 - 175
2-Butanone (MEK)	20.0	24.1		ug/L		121	39 - 163
Carbon disulfide	10.0	8.20		ug/L		82	60 - 138
Carbon tetrachloride	10.0	9.86		ug/L		99	63 - 140
Chlorobenzene	10.0	9.96		ug/L		100	80 - 121
Chloroethane	10.0	10.9		ug/L		109	33 - 173
Chloroform	10.0	10.9		ug/L		109	79 - 127
Chloromethane	10.0	7.05		ug/L		70	54 - 143
cis-1,2-Dichloroethene	10.0	10.8		ug/L		108	76 - 128
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	64 - 132
Cyclohexane	10.0	13.3		ug/L		133	58 - 145
Dibromochloromethane	10.0	10.1		ug/L		101	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	9.43		ug/L		94	46 - 132
1,2-Dibromoethane	10.0	10.1		ug/L		101	77 - 123
1,2-Dichlorobenzene	10.0	8.86		ug/L		89	78 - 120
1,3-Dichlorobenzene	10.0	9.99		ug/L		100	78 - 120
1,4-Dichlorobenzene	10.0	9.36		ug/L		94	78 - 120
Dichlorodifluoromethane	10.0	5.92		ug/L		59	29 - 148
1,1-Dichloroethane	10.0	9.32		ug/L		93	75 - 133
1,2-Dichloroethane	10.0	10.1		ug/L		101	71 - 135
1,1-Dichloroethene	10.0	9.74		ug/L		97	65 - 139
1,2-Dichloropropane	10.0	12.3		ug/L		123	78 - 133
Ethylbenzene	10.0	10.0		ug/L		100	80 - 120
2-Hexanone	20.0	23.8		ug/L		119	43 - 148
Isopropylbenzene	10.0	9.49		ug/L		95	74 - 120
Methyl acetate	20.0	15.7		ug/L		79	52 - 145
Methylcyclohexane	10.0	11.0		ug/L		110	60 - 125
Methylene Chloride	10.0	7.92		ug/L		79	70 - 134

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: LCS 240-369932/4
Matrix: Water
Analysis Batch: 369932

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	23.1		ug/L		115	49 - 143
Methyl tert-butyl ether	10.0	8.07		ug/L		81	51 - 133
Styrene	10.0	9.54		ug/L		95	79 - 120
1,1,2,2-Tetrachloroethane	10.0	11.3		ug/L		113	65 - 139
Tetrachloroethene	10.0	9.80		ug/L		98	74 - 130
Toluene	10.0	11.3		ug/L		113	78 - 129
trans-1,2-Dichloroethene	10.0	7.99		ug/L		80	78 - 133
trans-1,3-Dichloropropene	10.0	9.90		ug/L		99	55 - 128
1,2,4-Trichlorobenzene	10.0	7.78		ug/L		78	42 - 133
1,1,1-Trichloroethane	10.0	9.93		ug/L		99	69 - 134
1,1,2-Trichloroethane	10.0	10.4		ug/L		104	78 - 133
Trichloroethene	10.0	9.38		ug/L		94	76 - 125
Trichlorofluoromethane	10.0	8.73		ug/L		87	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	8.91		ug/L		89	50 - 156
1,2,4-Trimethylbenzene	10.0	11.9		ug/L		119	74 - 120
1,3,5-Trimethylbenzene	10.0	11.5		ug/L		115	75 - 121
Vinyl chloride	10.0	7.58		ug/L		76	58 - 143
Xylenes, Total	20.0	19.7		ug/L		98	80 - 120
Diethyl ether	10.0	10.9		ug/L		109	70 - 146

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		59 - 120
Dibromofluoromethane (Surr)	105		75 - 128
1,2-Dichloroethane-d4 (Surr)	97		70 - 121
Toluene-d8 (Surr)	113		70 - 123

Lab Sample ID: MRL 240-369932/5
Matrix: Water
Analysis Batch: 369932

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

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	0.00100	0.000776	J	ng/uL		78	10 - 150

Lab Sample ID: 240-108509-B-4 MS
Matrix: Water
Analysis Batch: 369932

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	2000	U F2	4000	2030		ug/L		51	10 - 168
Benzene	200	U	2000	1540		ug/L		77	71 - 122
Bromodichloromethane	200	U	2000	1360		ug/L		68	64 - 125
Bromoform	200	U F2	2000	1180		ug/L		59	44 - 129
Bromomethane	200	U F2	2000	933		ug/L		47	19 - 187
2-Butanone (MEK)	2000	U	4000	2910		ug/L		73	37 - 156
Carbon disulfide	1000	U F2	2000	968	J	ug/L		48	43 - 144
Carbon tetrachloride	200	U	2000	1190		ug/L		60	41 - 143
Chlorobenzene	200	U F1 F2	2000	1300	F1	ug/L		65	70 - 123

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: 240-108509-B-4 MS

Matrix: Water

Analysis Batch: 369932

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Chloroethane	200	U F2	2000	958		ug/L		48	11 - 189
Chloroform	200	U F1 F2	2000	1090	F1	ug/L		55	68 - 130
Chloromethane	200	U F2	2000	690		ug/L		34	31 - 154
cis-1,2-Dichloroethene	1600	F1	2000	2820	F1	ug/L		63	64 - 130
cis-1,3-Dichloropropene	200	U	2000	1490		ug/L		75	48 - 127
Cyclohexane	200	U	2000	1640		ug/L		82	42 - 135
Dibromochloromethane	200	U	2000	1590		ug/L		79	60 - 129
1,2-Dibromo-3-Chloropropane	200	U F2	2000	1300		ug/L		65	38 - 124
1,2-Dibromoethane	200	U	2000	1540		ug/L		77	71 - 123
1,2-Dichlorobenzene	200	U F2	2000	1340		ug/L		67	64 - 120
1,3-Dichlorobenzene	200	U	2000	1320		ug/L		66	62 - 120
1,4-Dichlorobenzene	200	U F2	2000	1300		ug/L		65	63 - 120
Dichlorodifluoromethane	200	U F1 F2	2000	376	F1	ug/L		19	28 - 136
1,1-Dichloroethane	200	U F1 F2	2000	1000	F1	ug/L		50	63 - 136
1,2-Dichloroethane	200	U	2000	1350		ug/L		67	65 - 135
1,1-Dichloroethene	200	U F2	2000	1060		ug/L		53	53 - 140
1,2-Dichloropropane	200	U	2000	1810		ug/L		91	70 - 132
Ethylbenzene	200	U F1 F2	2000	1190	F1	ug/L		60	66 - 120
2-Hexanone	2000	U	4000	3840		ug/L		96	42 - 150
Isopropylbenzene	200	U F1 F2	2000	1080	F1	ug/L		54	59 - 120
Methyl acetate	2000	U	4000	1970	J	ug/L		49	41 - 142
Methylcyclohexane	200	U	2000	1320		ug/L		66	37 - 123
Methylene Chloride	1000	U F1 F2	2000	881	J F1	ug/L		44	61 - 130
4-Methyl-2-pentanone (MIBK)	2000	U	4000	3410		ug/L		85	44 - 143
Methyl tert-butyl ether	200	U F2	2000	876		ug/L		44	41 - 136
Styrene	200	U F1 F2	2000	1140	F1	ug/L		57	68 - 120
1,1,1,2-Tetrachloroethane	200	U F2	2000	1530		ug/L		77	60 - 137
Tetrachloroethene	200	U F2	2000	1330		ug/L		67	51 - 136
Toluene	200	U	2000	1720		ug/L		86	62 - 132
trans-1,2-Dichloroethene	430	F1 F2	2000	1210	F1	ug/L		39	68 - 133
trans-1,3-Dichloropropene	200	U	2000	1670		ug/L		84	40 - 125
1,2,4-Trichlorobenzene	200	U	2000	1170		ug/L		58	30 - 126
1,1,1-Trichloroethane	200	U	2000	1210		ug/L		61	51 - 138
1,1,2-Trichloroethane	200	U	2000	1710		ug/L		86	76 - 132
Trichloroethene	2700		2000	4030		ug/L		68	55 - 131
Trichlorofluoromethane	200	U F1 F2	2000	652	F1	ug/L		33	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	200	U F2	2000	1020		ug/L		51	31 - 156
Vinyl chloride	200	U F1 F2	2000	573	F1	ug/L		29	43 - 154
Xylenes, Total	400	U F1 F2	4000	2390	F1	ug/L		60	67 - 120

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	64		59 - 120
Dibromofluoromethane (Surr)	76		75 - 128
1,2-Dichloroethane-d4 (Surr)	77		70 - 121
Toluene-d8 (Surr)	102		70 - 123

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: 240-108509-B-4 MSD

Matrix: Water

Analysis Batch: 369932

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD		Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
				Result	Qualifier						
Acetone	2000	U F2	4000	3670	F2	ug/L		92	10 - 168	57	35
Benzene	200	U	2000	1620		ug/L		81	71 - 122	5	22
Bromodichloromethane	200	U	2000	1460		ug/L		73	64 - 125	7	27
Bromoform	200	U F2	2000	2410	F2	ug/L		121	44 - 129	69	28
Bromomethane	200	U F2	2000	1580	F2	ug/L		79	19 - 187	52	35
2-Butanone (MEK)	2000	U	4000	3280		ug/L		82	37 - 156	12	35
Carbon disulfide	1000	U F2	2000	1540	F2	ug/L		77	43 - 144	45	33
Carbon tetrachloride	200	U	2000	1540		ug/L		77	41 - 143	26	30
Chlorobenzene	200	U F1 F2	2000	1930	F2	ug/L		97	70 - 123	39	23
Chloroethane	200	U F2	2000	1880	F2	ug/L		94	11 - 189	65	35
Chloroform	200	U F1 F2	2000	1980	F2	ug/L		99	68 - 130	58	23
Chloromethane	200	U F2	2000	1280	F2	ug/L		64	31 - 154	60	35
cis-1,2-Dichloroethene	1600	F1	2000	3260		ug/L		84	64 - 130	14	21
cis-1,3-Dichloropropene	200	U	2000	1400		ug/L		70	48 - 127	6	30
Cyclohexane	200	U	2000	1980		ug/L		99	42 - 135	19	35
Dibromochloromethane	200	U	2000	1920		ug/L		96	60 - 129	19	26
1,2-Dibromo-3-Chloropropane	200	U F2	2000	2180	F2	ug/L		109	38 - 124	50	35
1,2-Dibromoethane	200	U	2000	1780		ug/L		89	71 - 123	14	27
1,2-Dichlorobenzene	200	U F2	2000	2280	F2	ug/L		114	64 - 120	52	30
1,3-Dichlorobenzene	200	U	2000	1810		ug/L		91	62 - 120	31	31
1,4-Dichlorobenzene	200	U F2	2000	1820	F2	ug/L		91	63 - 120	33	28
Dichlorodifluoromethane	200	U F1 F2	2000	903	F2	ug/L		45	28 - 136	82	35
1,1-Dichloroethane	200	U F1 F2	2000	1550	F2	ug/L		77	63 - 136	43	23
1,2-Dichloroethane	200	U	2000	1570		ug/L		79	65 - 135	15	24
1,1-Dichloroethene	200	U F2	2000	2140	F2	ug/L		107	53 - 140	68	35
1,2-Dichloropropane	200	U	2000	1740		ug/L		87	70 - 132	4	26
Ethylbenzene	200	U F1 F2	2000	2130	F2	ug/L		106	66 - 120	56	24
2-Hexanone	2000	U	4000	3900		ug/L		97	42 - 150	1	35
Isopropylbenzene	200	U F1 F2	2000	2740	F1 F2	ug/L		137	59 - 120	87	31
Methyl acetate	2000	U	4000	2680		ug/L		67	41 - 142	31	35
Methylcyclohexane	200	U	2000	1580		ug/L		79	37 - 123	18	35
Methylene Chloride	1000	U F1 F2	2000	1400	F2	ug/L		70	61 - 130	45	29
4-Methyl-2-pentanone (MIBK)	2000	U	4000	2900		ug/L		72	44 - 143	16	35
Methyl tert-butyl ether	200	U F2	2000	1430	F2	ug/L		72	41 - 136	48	29
Styrene	200	U F1 F2	2000	2080	F2	ug/L		104	68 - 120	58	26
1,1,2,2-Tetrachloroethane	200	U F2	2000	2690	F2	ug/L		134	60 - 137	55	31
Tetrachloroethene	200	U F2	2000	1850	F2	ug/L		92	51 - 136	32	23
Toluene	200	U	2000	1970		ug/L		98	62 - 132	14	23
trans-1,2-Dichloroethene	430	F1 F2	2000	1870	F2	ug/L		72	68 - 133	43	24
trans-1,3-Dichloropropene	200	U	2000	1660		ug/L		83	40 - 125	1	27
1,2,4-Trichlorobenzene	200	U	2000	1570		ug/L		79	30 - 126	30	35
1,1,1-Trichloroethane	200	U	2000	1510		ug/L		76	51 - 138	22	27
1,1,2-Trichloroethane	200	U	2000	1870		ug/L		93	76 - 132	9	25
Trichloroethene	2700		2000	4340		ug/L		83	55 - 131	7	23
Trichlorofluoromethane	200	U F1 F2	2000	1420	F2	ug/L		71	37 - 174	74	35
1,1,2-Trichloro-1,2,2-trifluoroethane	200	U F2	2000	1750	F2	ug/L		88	31 - 156	53	35
Vinyl chloride	200	U F1 F2	2000	1280	F2	ug/L		64	43 - 154	77	29

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QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: 240-108509-B-4 MSD
Matrix: Water
Analysis Batch: 369932

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
Xylenes, Total	400	U F1 F2	4000	4490	F2	ug/L		112	67 - 120	61	25
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	135	X	59 - 120								
Dibromofluoromethane (Surr)	82		75 - 128								
1,2-Dichloroethane-d4 (Surr)	78		70 - 121								
Toluene-d8 (Surr)	104		70 - 123								

Lab Sample ID: MB 240-370116/6
Matrix: Water
Analysis Batch: 370116

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			03/04/19 11:28	1
Benzene	1.0	U	1.0	0.13	ug/L			03/04/19 11:28	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			03/04/19 11:28	1
Bromoform	1.0	U	1.0	0.76	ug/L			03/04/19 11:28	1
Bromomethane	1.0	U	1.0	0.42	ug/L			03/04/19 11:28	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			03/04/19 11:28	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			03/04/19 11:28	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			03/04/19 11:28	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			03/04/19 11:28	1
Chloroethane	1.0	U	1.0	0.83	ug/L			03/04/19 11:28	1
Chloroform	1.0	U	1.0	0.13	ug/L			03/04/19 11:28	1
Chloromethane	1.0	U	1.0	0.20	ug/L			03/04/19 11:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			03/04/19 11:28	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			03/04/19 11:28	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			03/04/19 11:28	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			03/04/19 11:28	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			03/04/19 11:28	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			03/04/19 11:28	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/04/19 11:28	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			03/04/19 11:28	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			03/04/19 11:28	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			03/04/19 11:28	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			03/04/19 11:28	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			03/04/19 11:28	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/19 11:28	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			03/04/19 11:28	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			03/04/19 11:28	1
2-Hexanone	10	U	10	0.54	ug/L			03/04/19 11:28	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			03/04/19 11:28	1
Methyl acetate	10	U	10	1.7	ug/L			03/04/19 11:28	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			03/04/19 11:28	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			03/04/19 11:28	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			03/04/19 11:28	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			03/04/19 11:28	1
Styrene	1.0	U	1.0	0.10	ug/L			03/04/19 11:28	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: MB 240-370116/6
Matrix: Water
Analysis Batch: 370116

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			03/04/19 11:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			03/04/19 11:28	1
Toluene	1.0	U	1.0	0.14	ug/L			03/04/19 11:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			03/04/19 11:28	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			03/04/19 11:28	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			03/04/19 11:28	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			03/04/19 11:28	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			03/04/19 11:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			03/04/19 11:28	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			03/04/19 11:28	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			03/04/19 11:28	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			03/04/19 11:28	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			03/04/19 11:28	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			03/04/19 11:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			03/04/19 11:28	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			03/04/19 11:28	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			03/04/19 11:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	67		59 - 120		03/04/19 11:28	1
Dibromofluoromethane (Surr)	92		75 - 128		03/04/19 11:28	1
1,2-Dichloroethane-d4 (Surr)	90		70 - 121		03/04/19 11:28	1
Toluene-d8 (Surr)	72		70 - 123		03/04/19 11:28	1

Lab Sample ID: LCS 240-370116/4
Matrix: Water
Analysis Batch: 370116

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	18.4		ug/L		92	21 - 162
Benzene	10.0	11.5		ug/L		115	80 - 123
Bromodichloromethane	10.0	9.97		ug/L		100	77 - 125
Bromoform	10.0	5.90		ug/L		59	49 - 141
Bromomethane	10.0	7.96		ug/L		80	41 - 175
2-Butanone (MEK)	20.0	16.6		ug/L		83	39 - 163
Carbon disulfide	10.0	8.40		ug/L		84	60 - 138
Carbon tetrachloride	10.0	10.9		ug/L		109	63 - 140
Chlorobenzene	10.0	9.82		ug/L		98	80 - 121
Chloroethane	10.0	8.34		ug/L		83	33 - 173
Chloroform	10.0	11.8		ug/L		118	79 - 127
Chloromethane	10.0	9.28		ug/L		93	54 - 143
cis-1,2-Dichloroethene	10.0	11.6		ug/L		116	76 - 128
cis-1,3-Dichloropropene	10.0	9.03		ug/L		90	64 - 132
Cyclohexane	10.0	10.5		ug/L		105	58 - 145
Dibromochloromethane	10.0	8.01		ug/L		80	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	5.11		ug/L		51	46 - 132
1,2-Dibromoethane	10.0	8.27		ug/L		83	77 - 123
1,2-Dichlorobenzene	10.0	9.28		ug/L		93	78 - 120

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: LCS 240-370116/4

Matrix: Water

Analysis Batch: 370116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	10.0	8.99		ug/L		90	78 - 120
1,4-Dichlorobenzene	10.0	9.07		ug/L		91	78 - 120
Dichlorodifluoromethane	10.0	9.34		ug/L		93	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	9.73		ug/L		97	65 - 139
1,2-Dichloropropane	10.0	11.0		ug/L		110	78 - 133
Ethylbenzene	10.0	9.55		ug/L		95	80 - 120
2-Hexanone	20.0	11.7		ug/L		58	43 - 148
Isopropylbenzene	10.0	9.76		ug/L		98	74 - 120
Methyl acetate	20.0	16.2		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
4-Methyl-2-pentanone (MIBK)	20.0	14.2		ug/L		71	49 - 143
Methyl tert-butyl ether	10.0	8.49		ug/L		85	51 - 133
Styrene	10.0	9.06		ug/L		91	79 - 120
1,1,2,2-Tetrachloroethane	10.0	7.08		ug/L		71	65 - 139
Tetrachloroethene	10.0	10.8		ug/L		108	74 - 130
Toluene	10.0	9.91		ug/L		99	78 - 129
trans-1,2-Dichloroethene	10.0	12.2		ug/L		122	78 - 133
trans-1,3-Dichloropropene	10.0	6.51		ug/L		65	55 - 128
1,2,4-Trichlorobenzene	10.0	8.52		ug/L		85	42 - 133
1,1,1-Trichloroethane	10.0	12.3		ug/L		123	69 - 134
1,1,2-Trichloroethane	10.0	9.32		ug/L		93	78 - 133
Trichloroethene	10.0	11.6		ug/L		116	76 - 125
Trichlorofluoromethane	10.0	10.5		ug/L		105	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.5		ug/L		115	50 - 156
1,2,4-Trimethylbenzene	10.0	8.93		ug/L		89	74 - 120
1,3,5-Trimethylbenzene	10.0	8.84		ug/L		88	75 - 121
Vinyl chloride	10.0	8.87		ug/L		89	58 - 143
Xylenes, Total	20.0	19.1		ug/L		95	80 - 120
Diethyl ether	10.0	10.0		ug/L		100	70 - 146

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	76		59 - 120
Dibromofluoromethane (Surr)	92		75 - 128
1,2-Dichloroethane-d4 (Surr)	85		70 - 121
Toluene-d8 (Surr)	77		70 - 123

Lab Sample ID: MRL 240-370116/5

Matrix: Water

Analysis Batch: 370116

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	0.00100	0.00104		ng/uL		104	10 - 150

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: 240-108804-H-1 MSD

Matrix: Water
Analysis Batch: 370116

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	1.0	U	10.0	11.2		ug/L		112	64 - 130	1	21
1,1-Dichloroethene	1.0	U	10.0	9.37		ug/L		94	53 - 140	1	35
Tetrachloroethene	1.0	U	10.0	9.83		ug/L		98	51 - 136	2	23
trans-1,2-Dichloroethene	1.0	U	10.0	11.5		ug/L		115	68 - 133	2	24
Trichloroethene	0.14	J	10.0	11.2		ug/L		110	55 - 131	1	23
Vinyl chloride	1.0	U	10.0	9.89		ug/L		99	43 - 154	10	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	75		59 - 120
Dibromofluoromethane (Surr)	90		75 - 128
1,2-Dichloroethane-d4 (Surr)	83		70 - 121
Toluene-d8 (Surr)	74		70 - 123

Lab Sample ID: 240-108804-K-1 MS

Matrix: Water
Analysis Batch: 370116

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	64 - 130
1,1-Dichloroethene	1.0	U	10.0	9.28		ug/L		93	53 - 140
Tetrachloroethene	1.0	U	10.0	9.64		ug/L		96	51 - 136
trans-1,2-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	68 - 133
Trichloroethene	0.14	J	10.0	11.0		ug/L		109	55 - 131
Vinyl chloride	1.0	U	10.0	8.92		ug/L		89	43 - 154

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	77		59 - 120
Dibromofluoromethane (Surr)	92		75 - 128
1,2-Dichloroethane-d4 (Surr)	87		70 - 121
Toluene-d8 (Surr)	74		70 - 123

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

Lab Sample ID: MB 240-369782/5

Matrix: Water
Analysis Batch: 369782

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			02/28/19 12:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		63 - 125		02/28/19 12:54	1

TestAmerica Canton

QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: LCS 240-369782/4

Matrix: Water

Analysis Batch: 369782

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	11.4		ug/L		114	59 - 131
Surrogate		LCS %Recovery	LCS Qualifier				Limits
1,2-Dichloroethane-d4 (Surr)		85					63 - 125

Lab Sample ID: 500-159168-B-17 MS

Matrix: Water

Analysis Batch: 369782

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	220	E	10.0	241	E 4	ug/L		235	52 - 129
Surrogate		MS %Recovery		MS Qualifier					Limits
1,2-Dichloroethane-d4 (Surr)		88							63 - 125

Lab Sample ID: 500-159168-B-17 MSD

Matrix: Water

Analysis Batch: 369782

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	220	E	10.0	233	E 4	ug/L		153	52 - 129	3	13
Surrogate		MSD %Recovery		MSD Qualifier					Limits		
1,2-Dichloroethane-d4 (Surr)		89							63 - 125		

Lab Sample ID: MB 240-370005/5

Matrix: Water

Analysis Batch: 370005

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			03/02/19 13:07	1
Surrogate		MB %Recovery		MB Qualifier			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)		80						03/02/19 13:07	1

Lab Sample ID: LCS 240-370005/4

Matrix: Water

Analysis Batch: 370005

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	11.8		ug/L		118	59 - 131
Surrogate		LCS %Recovery	LCS Qualifier				Limits
1,2-Dichloroethane-d4 (Surr)		84					63 - 125

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QC Sample Results

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

TestAmerica Job ID: 240-108569-1

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

Lab Sample ID: 240-108589-B-1 MS
Matrix: Water
Analysis Batch: 370005

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	11		10.0	22.7		ug/L		119	52 - 129
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	82		63 - 125						

Lab Sample ID: 240-108589-B-1 MSD
Matrix: Water
Analysis Batch: 370005

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	11		10.0	21.2		ug/L		104	52 - 129	7	13
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	82		63 - 125								

QC Association Summary

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

TestAmerica Job ID: 240-108569-1

GC/MS VOA

Analysis Batch: 369782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108569-1	MW-22_022519	Total/NA	Water	8260B SIM	
240-108569-2	MW-44_022519	Total/NA	Water	8260B SIM	
240-108569-3	TW-16-03_022519	Total/NA	Water	8260B SIM	
240-108569-4	PW-16-02_022519	Total/NA	Water	8260B SIM	
MB 240-369782/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-369782/4	Lab Control Sample	Total/NA	Water	8260B SIM	
500-159168-B-17 MS	Matrix Spike	Total/NA	Water	8260B SIM	
500-159168-B-17 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 369932

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108569-2	MW-44_022519	Total/NA	Water	8260B	
240-108569-5	TW-16-04_022519	Total/NA	Water	8260B	
240-108569-6	TRIP BLANK	Total/NA	Water	8260B	
MB 240-369932/6	Method Blank	Total/NA	Water	8260B	
LCS 240-369932/4	Lab Control Sample	Total/NA	Water	8260B	
MRL 240-369932/5	Lab Control Sample	Total/NA	Water	8260B	
240-108509-B-4 MS	Matrix Spike	Total/NA	Water	8260B	
240-108509-B-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 370005

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108569-5	TW-16-04_022519	Total/NA	Water	8260B SIM	
MB 240-370005/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-370005/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-108589-B-1 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-108589-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

Analysis Batch: 370116

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-108569-1	MW-22_022519	Total/NA	Water	8260B	
240-108569-3	TW-16-03_022519	Total/NA	Water	8260B	
240-108569-4	PW-16-02_022519	Total/NA	Water	8260B	
MB 240-370116/6	Method Blank	Total/NA	Water	8260B	
LCS 240-370116/4	Lab Control Sample	Total/NA	Water	8260B	
MRL 240-370116/5	Lab Control Sample	Total/NA	Water	8260B	
240-108804-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	
240-108804-K-1 MS	Matrix Spike	Total/NA	Water	8260B	

Lab Chronicle

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

TestAmerica Job ID: 240-108569-1

Client Sample ID: MW-22_022519

Date Collected: 02/25/19 11:36

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	370116	03/04/19 17:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	369782	02/28/19 21:15	SAM	TAL CAN

Client Sample ID: MW-44_022519

Date Collected: 02/25/19 13:14

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	369932	03/01/19 17:44	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	369782	02/28/19 21:40	SAM	TAL CAN

Client Sample ID: TW-16-03_022519

Date Collected: 02/25/19 16:10

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1.67	370116	03/04/19 18:01	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	369782	02/28/19 22:06	SAM	TAL CAN

Client Sample ID: PW-16-02_022519

Date Collected: 02/25/19 15:43

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	370116	03/04/19 18:23	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	369782	02/28/19 22:31	SAM	TAL CAN

Client Sample ID: TW-16-04_022519

Date Collected: 02/25/19 16:19

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		3.33	369932	03/01/19 18:51	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	370005	03/02/19 16:03	SAM	TAL CAN

Client Sample ID: TRIP BLANK

Date Collected: 02/25/19 00:00

Date Received: 02/27/19 08:20

Lab Sample ID: 240-108569-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369932	03/01/19 19:13	LEE	TAL CAN

TestAmerica Canton

Lab Chronicle

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

TestAmerica Job ID: 240-108569-1

Laboratory References:

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

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Accreditation/Certification Summary

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

TestAmerica Job ID: 240-108569-1

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 Canton Sample Receipt Form/Narrative

Login #: 108569

Canton Facility

Client Arcadis Site Name Cooler unpacked by: Cooler Received on 2/27/19 Opened on 2/27/19 FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off TestAmerica Courier Other

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

TestAmerica Cooler # FA 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. 1.0 °C Corrected Cooler Temp. 0.8 °C IR GUN #36 (CF +0.7°C) Observed Cooler Temp. °C Corrected Cooler Temp. °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
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 # 831701 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: JR

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: