TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 240-103817-1
Client Project/Site: Ford LTP Livonia MI - E203728

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

Attn: Kristoffer Hinskey

Authorized for release by:
11/16/2018 4:17:43 PM

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

Table of Contents

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control 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

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	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)

Job ID: 240-103817-1

Laboratory: TestAmerica Canton

Narrative

CASE NARRATIVE

Client: ARCADIS U.S., Inc.

Project: Ford LTP Livonia MI - E203728

Report Number: 240-103817-1

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

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

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

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

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

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

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

RECEIPT

The samples were received on 11/2/2018 8:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

VOLATILE ORGANIC COMPOUNDS (GCMS)

Samples TRIP BLANK (240-103817-1), MW-53_103118 (240-103817-2), MW-54_103118 (240-103817-3), MW-55_103118 (240-103817-4), MW-56_103118 (240-103817-5), MW-37_103118 (240-103817-6), MW-15-59D_103118 (240-103817-7), MW-28_103118 (240-103817-8), MW-58_103118 (240-103817-9) and MW-52_103118 (240-103817-10) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/12/2018 and 11/13/2018.

Dibromofluoromethane (Surr) failed the surrogate recovery criteria high for TRIP BLANK (240-103817-1), MW-53_103118 (240-103817-2), MW-55_103118 (240-103817-4), MW-56_103118 (240-103817-5), and MW-58_103118 (240-103817-9). Refer to the QC report for details.

1,1,2-Trichloro-1,2,2-trifluoroethane, Chloromethane and Methylcyclohexane exceeded the RPD limit for the MSD of sample MW-15-59D_103118MSD (240-103817-7) in batch 240-355141.

Refer to the QC report for details. Sample MW-28_103118 (240-103817-8)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

Surrogate recovery for the following samples were outside the upper control limit: TRIP BLANK (240-103817-1), MW-53_103118

Job ID: 240-103817-1 (Continued)

Laboratory: TestAmerica Canton (Continued)

(240-103817-2), MW-55_103118 (240-103817-4), MW-56_103118 (240-103817-5) and MW-58_103118 (240-103817-9). 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.

VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples TRIP BLANK (240-103817-1), MW-53_103118 (240-103817-2), MW-54_103118 (240-103817-3), MW-55_103118 (240-103817-4), MW-56_103118 (240-103817-5), MW-37_103118 (240-103817-6), MW-15-59D_103118 (240-103817-7), MW-28_103118 (240-103817-8), MW-58_103118 (240-103817-9) and MW-52_103118 (240-103817-10) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/11/2018.

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: 240-103817-1

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: 240-103817-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-103817-1	TRIP BLANK	Water	10/31/18 00:00	11/02/18 08:50
240-103817-2	MW-53_103118	Water	10/31/18 08:55	11/02/18 08:50
240-103817-3	MW-54_103118	Water	10/31/18 10:25	11/02/18 08:50
240-103817-4	MW-55_103118	Water	10/31/18 12:15	11/02/18 08:50
240-103817-5	MW-56_103118	Water	10/31/18 13:25	11/02/18 08:50
240-103817-6	MW-37_103118	Water	10/31/18 16:00	11/02/18 08:50
240-103817-7	MW-15-59D_103118	Water	10/31/18 09:05	11/02/18 08:50
240-103817-8	MW-28_103118	Water	10/31/18 10:40	11/02/18 08:50
240-103817-9	MW-58_103118	Water	10/31/18 12:10	11/02/18 08:50
240-103817-10	MW-52_103118	Water	10/31/18 13:20	11/02/18 08:50

Detection Summary

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: TRIP BLANK — Lab Sample ID: 240-103817-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.21	J	1.0	0.14	ug/L	1		8260B	Total/NA
Trichloroethene	0.15	J	1.0	0.10	ug/L	1		8260B	Total/NA

Client Sample ID: MW-53_103118 — Lab Sample ID: 240-103817-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.8	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
1,4-Dichlorobenzene	0.18	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.60	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-54_103118 — Lab Sample ID: 240-103817-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		2.0	0.86	ug/L	1		8260B SIM	Total/NA
1,3-Dichlorobenzene	0.26	J	1.0	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.85	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-55_103118 — Lab Sample ID: 240-103817-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.19	J	1.0	0.16	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	0.25	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.57	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-56_103118 — Lab Sample ID: 240-103817-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
cis-1,2-Dichloroethene	0.43	J	1.0	0.16	ug/L	1		8260B	Total/NA
Methyl tert-butyl ether	0.11	J	1.0	0.070	ug/L	1		8260B	Total/NA
Vinyl chloride	0.31	J	1.0	0.20	ug/L	1		8260B	Total/NA

Client Sample ID: MW-37_103118 — Lab Sample ID: 240-103817-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,3-Dichlorobenzene	0.17	J	1.0	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: MW-15-59D_103118 — Lab Sample ID: 240-103817-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	0.34	J	1.0	0.24	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	0.23	J	1.0	0.15	ug/L	1		8260B	Total/NA

Client Sample ID: MW-28_103118 — Lab Sample ID: 240-103817-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.51	J	2.0	0.32	ug/L	2		8260B	Total/NA
1,1-Dichloroethane	15		2.0	0.34	ug/L	2		8260B	Total/NA
1,1-Dichloroethene	0.43	J	2.0	0.38	ug/L	2		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-28_103118 (Continued) — Lab Sample ID: 240-103817-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1,1-Trichloroethane	35		2.0	0.48	ug/L	2		8260B	Total/NA
Trichloroethene	0.70	J	2.0	0.20	ug/L	2		8260B	Total/NA

Client Sample ID: MW-58_103118 — Lab Sample ID: 240-103817-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.9		2.0	0.86	ug/L	1		8260B SIM	Total/NA

Client Sample ID: MW-52_103118 — Lab Sample ID: 240-103817-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.7		2.0	0.86	ug/L	1		8260B SIM	Total/NA
1,3-Dichlorobenzene	0.18	J	1.0	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	5.0		1.0	0.20	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: TRIP BLANK

Date Collected: 10/31/18 00:00
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-1

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 14:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*63 - 125*		*11/11/18 14:05*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 16:40	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 16:40	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 16:40	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 16:40	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 16:40	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 16:40	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 16:40	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 16:40	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 16:40	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 16:40	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 16:40	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 16:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 16:40	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 16:40	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 16:40	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 16:40	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 16:40	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 16:40	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 16:40	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 16:40	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 16:40	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 16:40	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 16:40	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 16:40	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 16:40	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 16:40	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 16:40	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 16:40	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 16:40	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 16:40	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 16:40	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 16:40	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 16:40	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 16:40	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 16:40	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 16:40	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 16:40	1
Toluene	**0.21**	**J**	1.0	0.14	ug/L			11/12/18 16:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 16:40	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 16:40	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 16:40	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 16:40	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 16:40	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: TRIP BLANK
Date Collected: 10/31/18 00:00
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.15**	**J**	1.0	0.10	ug/L			11/12/18 16:40	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 16:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 16:40	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 16:40	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 16:40	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 16:40	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 16:40	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 16:40	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 16:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*74*		*59 - 120*		*11/12/18 16:40*	*1*
Dibromofluoromethane (Surr)	*133*	*X*	*75 - 128*		*11/12/18 16:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*116*		*70 - 121*		*11/12/18 16:40*	*1*
Toluene-d8 (Surr)	*86*		*70 - 123*		*11/12/18 16:40*	*1*

Client Sample ID: MW-53_103118
Date Collected: 10/31/18 08:55
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.8**	**J**	2.0	0.86	ug/L			11/11/18 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*102*		*63 - 125*		*11/11/18 15:48*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 17:02	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 17:02	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 17:02	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 17:02	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 17:02	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 17:02	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 17:02	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 17:02	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 17:02	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 17:02	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 17:02	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 17:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 17:02	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 17:02	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 17:02	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 17:02	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 17:02	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 17:02	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 17:02	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 17:02	1
1,4-Dichlorobenzene	**0.18**	**J**	1.0	0.16	ug/L			11/12/18 17:02	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 17:02	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 17:02	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 17:02	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:02	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 17:02	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 17:02	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 17:02	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 17:02	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 17:02	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 17:02	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 17:02	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 17:02	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 17:02	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 17:02	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 17:02	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 17:02	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 17:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:02	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 17:02	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 17:02	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 17:02	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 17:02	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-53_103118
Date Collected: 10/31/18 08:55
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 17:02	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 17:02	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 17:02	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 17:02	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 17:02	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 17:02	1
Vinyl chloride	**0.60**	**J**	1.0	0.20	ug/L			11/12/18 17:02	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 17:02	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 17:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*76*		*59 - 120*		*11/12/18 17:02*	*1*
Dibromofluoromethane (Surr)	*135*	*X*	*75 - 128*		*11/12/18 17:02*	*1*
1,2-Dichloroethane-d4 (Surr)	*115*		*70 - 121*		*11/12/18 17:02*	*1*
Toluene-d8 (Surr)	*87*		*70 - 123*		*11/12/18 17:02*	*1*

Client Sample ID: MW-54_103118
Date Collected: 10/31/18 10:25
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.6**		2.0	0.86	ug/L			11/11/18 16:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*11/11/18 16:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/13/18 13:55	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 13:55	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 13:55	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 13:55	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 13:55	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 13:55	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 13:55	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 13:55	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 13:55	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 13:55	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 13:55	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/13/18 13:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/13/18 13:55	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 13:55	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/13/18 13:55	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 13:55	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 13:55	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 13:55	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 13:55	1
1,3-Dichlorobenzene	**0.26**	**J**	1.0	0.15	ug/L			11/13/18 13:55	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 13:55	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 13:55	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/13/18 13:55	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/13/18 13:55	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 13:55	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 13:55	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 13:55	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 13:55	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 13:55	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 13:55	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/13/18 13:55	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 13:55	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 13:55	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 13:55	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 13:55	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 13:55	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 13:55	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 13:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 13:55	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 13:55	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 13:55	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 13:55	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 13:55	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-54_103118
Date Collected: 10/31/18 10:25
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 13:55	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/13/18 13:55	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 13:55	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 13:55	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 13:55	1
Vinyl chloride	**0.85**	**J**	1.0	0.20	ug/L			11/13/18 13:55	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 13:55	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 13:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*59 - 120*		*11/13/18 13:55*	*1*
Dibromofluoromethane (Surr)	*118*		*75 - 128*		*11/13/18 13:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 121*		*11/13/18 13:55*	*1*
Toluene-d8 (Surr)	*74*		*70 - 123*		*11/13/18 13:55*	*1*

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-55_103118
Date Collected: 10/31/18 12:15
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			11/11/18 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*11/11/18 17:31*	*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			11/12/18 17:46	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 17:46	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 17:46	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 17:46	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 17:46	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 17:46	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 17:46	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 17:46	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 17:46	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 17:46	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 17:46	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 17:46	1
cis-1,2-Dichloroethene	0.19	J	1.0	0.16	ug/L			11/12/18 17:46	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 17:46	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 17:46	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 17:46	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 17:46	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 17:46	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 17:46	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 17:46	1
1,4-Dichlorobenzene	0.25	J	1.0	0.16	ug/L			11/12/18 17:46	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 17:46	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 17:46	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 17:46	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:46	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 17:46	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 17:46	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 17:46	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 17:46	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 17:46	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 17:46	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 17:46	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 17:46	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 17:46	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 17:46	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 17:46	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 17:46	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 17:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 17:46	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 17:46	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 17:46	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 17:46	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 17:46	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-55_103118
Date Collected: 10/31/18 12:15
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 17:46	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 17:46	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 17:46	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 17:46	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 17:46	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 17:46	1
Vinyl chloride	**0.57**	**J**	1.0	0.20	ug/L			11/12/18 17:46	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 17:46	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 17:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*75*		*59 - 120*		*11/12/18 17:46*	*1*
Dibromofluoromethane (Surr)	*134*	*X*	*75 - 128*		*11/12/18 17:46*	*1*
1,2-Dichloroethane-d4 (Surr)	*118*		*70 - 121*		*11/12/18 17:46*	*1*
Toluene-d8 (Surr)	*88*		*70 - 123*		*11/12/18 17:46*	*1*

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-56_103118
Date Collected: 10/31/18 13:25
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.7**		2.0	0.86	ug/L			11/11/18 17:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*11/11/18 17:57*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 18:08	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 18:08	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 18:08	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 18:08	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 18:08	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 18:08	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 18:08	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 18:08	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 18:08	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 18:08	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 18:08	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 18:08	1
cis-1,2-Dichloroethene	**0.43**	**J**	1.0	0.16	ug/L			11/12/18 18:08	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 18:08	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 18:08	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 18:08	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 18:08	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 18:08	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 18:08	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 18:08	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 18:08	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 18:08	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 18:08	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 18:08	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 18:08	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 18:08	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 18:08	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 18:08	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 18:08	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 18:08	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 18:08	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 18:08	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 18:08	1
Methyl tert-butyl ether	**0.11**	**J**	1.0	0.070	ug/L			11/12/18 18:08	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 18:08	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 18:08	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 18:08	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 18:08	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 18:08	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 18:08	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 18:08	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 18:08	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 18:08	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-56_103118
Date Collected: 10/31/18 13:25
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 18:08	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 18:08	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 18:08	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 18:08	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 18:08	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 18:08	1
Vinyl chloride	**0.31**	**J**	1.0	0.20	ug/L			11/12/18 18:08	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 18:08	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 18:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*59 - 120*		*11/12/18 18:08*	*1*
Dibromofluoromethane (Surr)	*136*	*X*	*75 - 128*		*11/12/18 18:08*	*1*
1,2-Dichloroethane-d4 (Surr)	*119*		*70 - 121*		*11/12/18 18:08*	*1*
Toluene-d8 (Surr)	*90*		*70 - 123*		*11/12/18 18:08*	*1*

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-37_103118
Date Collected: 10/31/18 16:00
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 18:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*63 - 125*		*11/11/18 18:22*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 18:29	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 18:29	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 18:29	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 18:29	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 18:29	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 18:29	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 18:29	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 18:29	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 18:29	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 18:29	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 18:29	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 18:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 18:29	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 18:29	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 18:29	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 18:29	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 18:29	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 18:29	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 18:29	1
1,3-Dichlorobenzene	**0.17**	**J**	1.0	0.15	ug/L			11/12/18 18:29	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 18:29	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 18:29	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 18:29	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 18:29	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 18:29	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 18:29	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 18:29	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 18:29	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 18:29	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 18:29	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 18:29	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 18:29	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 18:29	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 18:29	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 18:29	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 18:29	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 18:29	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 18:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 18:29	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 18:29	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 18:29	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 18:29	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 18:29	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-37_103118
Date Collected: 10/31/18 16:00
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 18:29	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 18:29	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 18:29	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 18:29	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 18:29	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 18:29	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 18:29	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 18:29	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*59 - 120*		*11/12/18 18:29*	*1*
Dibromofluoromethane (Surr)	*127*		*75 - 128*		*11/12/18 18:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 121*		*11/12/18 18:29*	*1*
Toluene-d8 (Surr)	*84*		*70 - 123*		*11/12/18 18:29*	*1*

Client Sample ID: MW-15-59D_103118

Date Collected: 10/31/18 09:05
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-7

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 18:47	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*63 - 125*		*11/11/18 18:47*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/13/18 14:17	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 14:17	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 14:17	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 14:17	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 14:17	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 14:17	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 14:17	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 14:17	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 14:17	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 14:17	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 14:17	1
Chloromethane	1.0	U F2	1.0	0.20	ug/L			11/13/18 14:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/13/18 14:17	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 14:17	1
Cyclohexane	**0.34**	**J**	1.0	0.24	ug/L			11/13/18 14:17	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 14:17	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 14:17	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 14:17	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 14:17	1
1,3-Dichlorobenzene	**0.23**	**J**	1.0	0.15	ug/L			11/13/18 14:17	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 14:17	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 14:17	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/13/18 14:17	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/13/18 14:17	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 14:17	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 14:17	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 14:17	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 14:17	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 14:17	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 14:17	1
Methylcyclohexane	1.0	U F2	1.0	0.33	ug/L			11/13/18 14:17	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 14:17	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 14:17	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 14:17	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 14:17	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 14:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 14:17	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 14:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 14:17	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 14:17	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 14:17	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 14:17	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 14:17	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-15-59D_103118
Date Collected: 10/31/18 09:05
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-7
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 14:17	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 14:17	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2	1.0	0.41	ug/L			11/13/18 14:17	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 14:17	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 14:17	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 14:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/13/18 14:17	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 14:17	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 14:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*59 - 120*		*11/13/18 14:17*	*1*
Dibromofluoromethane (Surr)	*114*		*75 - 128*		*11/13/18 14:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 121*		*11/13/18 14:17*	*1*
Toluene-d8 (Surr)	*76*		*70 - 123*		*11/13/18 14:17*	*1*

Client Sample ID: MW-28_103118

Date Collected: 10/31/18 10:40
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-8

Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 20:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*63 - 125*		*11/11/18 20:04*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	20	U	20	11	ug/L			11/13/18 14:39	2
Benzene	2.0	U	2.0	0.26	ug/L			11/13/18 14:39	2
Bromodichloromethane	2.0	U	2.0	0.34	ug/L			11/13/18 14:39	2
Bromoform	2.0	U	2.0	1.5	ug/L			11/13/18 14:39	2
Bromomethane	2.0	U	2.0	0.84	ug/L			11/13/18 14:39	2
2-Butanone (MEK)	20	U	20	2.3	ug/L			11/13/18 14:39	2
Carbon disulfide	10	U	10	0.56	ug/L			11/13/18 14:39	2
Carbon tetrachloride	2.0	U	2.0	0.52	ug/L			11/13/18 14:39	2
Chlorobenzene	2.0	U	2.0	0.28	ug/L			11/13/18 14:39	2
Chloroethane	2.0	U	2.0	1.7	ug/L			11/13/18 14:39	2
Chloroform	2.0	U	2.0	0.26	ug/L			11/13/18 14:39	2
Chloromethane	2.0	U	2.0	0.40	ug/L			11/13/18 14:39	2
cis-1,2-Dichloroethene	**0.51**	**J**	2.0	0.32	ug/L			11/13/18 14:39	2
cis-1,3-Dichloropropene	2.0	U	2.0	1.2	ug/L			11/13/18 14:39	2
Cyclohexane	2.0	U	2.0	0.48	ug/L			11/13/18 14:39	2
Dibromochloromethane	2.0	U	2.0	0.78	ug/L			11/13/18 14:39	2
1,2-Dibromo-3-Chloropropane	2.0	U	2.0	1.8	ug/L			11/13/18 14:39	2
1,2-Dibromoethane	2.0	U	2.0	0.24	ug/L			11/13/18 14:39	2
1,2-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/13/18 14:39	2
1,3-Dichlorobenzene	2.0	U	2.0	0.30	ug/L			11/13/18 14:39	2
1,4-Dichlorobenzene	2.0	U	2.0	0.32	ug/L			11/13/18 14:39	2
Dichlorodifluoromethane	2.0	U	2.0	0.70	ug/L			11/13/18 14:39	2
1,1-Dichloroethane	**15**		2.0	0.34	ug/L			11/13/18 14:39	2
1,2-Dichloroethane	2.0	U	2.0	0.42	ug/L			11/13/18 14:39	2
1,1-Dichloroethene	**0.43**	**J**	2.0	0.38	ug/L			11/13/18 14:39	2
1,2-Dichloropropane	2.0	U	2.0	0.30	ug/L			11/13/18 14:39	2
Ethylbenzene	2.0	U	2.0	0.22	ug/L			11/13/18 14:39	2
2-Hexanone	20	U	20	1.1	ug/L			11/13/18 14:39	2
Isopropylbenzene	2.0	U	2.0	0.18	ug/L			11/13/18 14:39	2
Methyl acetate	20	U	20	3.4	ug/L			11/13/18 14:39	2
Methylcyclohexane	2.0	U	2.0	0.66	ug/L			11/13/18 14:39	2
Methylene Chloride	10	U	10	5.2	ug/L			11/13/18 14:39	2
4-Methyl-2-pentanone (MIBK)	20	U	20	0.84	ug/L			11/13/18 14:39	2
Methyl tert-butyl ether	2.0	U	2.0	0.14	ug/L			11/13/18 14:39	2
Styrene	2.0	U	2.0	0.20	ug/L			11/13/18 14:39	2
1,1,2,2-Tetrachloroethane	2.0	U	2.0	0.26	ug/L			11/13/18 14:39	2
Tetrachloroethene	2.0	U	2.0	0.30	ug/L			11/13/18 14:39	2
Toluene	2.0	U	2.0	0.28	ug/L			11/13/18 14:39	2
trans-1,2-Dichloroethene	2.0	U	2.0	0.38	ug/L			11/13/18 14:39	2
trans-1,3-Dichloropropene	2.0	U	2.0	1.3	ug/L			11/13/18 14:39	2
1,2,4-Trichlorobenzene	2.0	U	2.0	0.52	ug/L			11/13/18 14:39	2
1,1,1-Trichloroethane	**35**		2.0	0.48	ug/L			11/13/18 14:39	2
1,1,2-Trichloroethane	2.0	U	2.0	0.18	ug/L			11/13/18 14:39	2

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-28_103118
Date Collected: 10/31/18 10:40
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-8
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	**0.70**	**J**	2.0	0.20	ug/L			11/13/18 14:39	2
Trichlorofluoromethane	2.0	U	2.0	0.90	ug/L			11/13/18 14:39	2
1,1,2-Trichloro-1,2,2-trifluoroethane	2.0	U	2.0	0.82	ug/L			11/13/18 14:39	2
1,2,3-Trimethylbenzene	10	U	10	0.28	ug/L			11/13/18 14:39	2
1,2,4-Trimethylbenzene	2.0	U	2.0	0.14	ug/L			11/13/18 14:39	2
1,3,5-Trimethylbenzene	2.0	U	2.0	0.24	ug/L			11/13/18 14:39	2
Vinyl chloride	2.0	U	2.0	0.40	ug/L			11/13/18 14:39	2
Xylenes, Total	4.0	U	4.0	0.30	ug/L			11/13/18 14:39	2
Diethyl ether	4.0	U	4.0	0.38	ug/L			11/13/18 14:39	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*59 - 120*		*11/13/18 14:39*	*2*
Dibromofluoromethane (Surr)	*121*		*75 - 128*		*11/13/18 14:39*	*2*
1,2-Dichloroethane-d4 (Surr)	*110*		*70 - 121*		*11/13/18 14:39*	*2*
Toluene-d8 (Surr)	*77*		*70 - 123*		*11/13/18 14:39*	*2*

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-58_103118
Date Collected: 10/31/18 12:10
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-9
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.9		2.0	0.86	ug/L			11/11/18 20:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*63 - 125*		*11/11/18 20:30*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 19:35	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 19:35	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 19:35	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 19:35	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 19:35	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 19:35	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 19:35	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 19:35	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 19:35	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 19:35	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 19:35	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 19:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 19:35	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 19:35	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 19:35	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 19:35	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 19:35	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 19:35	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 19:35	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 19:35	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 19:35	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 19:35	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 19:35	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 19:35	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 19:35	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 19:35	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 19:35	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 19:35	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 19:35	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 19:35	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 19:35	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 19:35	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 19:35	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 19:35	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 19:35	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 19:35	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 19:35	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 19:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 19:35	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 19:35	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 19:35	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 19:35	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 19:35	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-58_103118
Date Collected: 10/31/18 12:10
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-9
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			11/12/18 19:35	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 19:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 19:35	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 19:35	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 19:35	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 19:35	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 19:35	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 19:35	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 19:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*73*		*59 - 120*		*11/12/18 19:35*	*1*
Dibromofluoromethane (Surr)	*129*	*X*	*75 - 128*		*11/12/18 19:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*70 - 121*		*11/12/18 19:35*	*1*
Toluene-d8 (Surr)	*86*		*70 - 123*		*11/12/18 19:35*	*1*

Client Sample ID: MW-52_103118
Date Collected: 10/31/18 13:20
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**2.7**		2.0	0.86	ug/L			11/11/18 20:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*63 - 125*		*11/11/18 20:55*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 19:56	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 19:56	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 19:56	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 19:56	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 19:56	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 19:56	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 19:56	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 19:56	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 19:56	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 19:56	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 19:56	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 19:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 19:56	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 19:56	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 19:56	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 19:56	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 19:56	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 19:56	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 19:56	1
1,3-Dichlorobenzene	**0.18**	**J**	1.0	0.15	ug/L			11/12/18 19:56	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 19:56	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 19:56	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 19:56	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 19:56	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 19:56	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 19:56	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 19:56	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 19:56	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 19:56	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 19:56	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 19:56	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 19:56	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 19:56	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 19:56	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 19:56	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 19:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 19:56	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 19:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 19:56	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 19:56	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 19:56	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 19:56	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 19:56	1

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-52_103118
Date Collected: 10/31/18 13:20
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-10
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 19:56	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 19:56	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 19:56	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 19:56	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 19:56	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 19:56	1
Vinyl chloride	**5.0**		1.0	0.20	ug/L			11/12/18 19:56	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 19:56	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 19:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*72*		*59 - 120*		*11/12/18 19:56*	*1*
Dibromofluoromethane (Surr)	*128*		*75 - 128*		*11/12/18 19:56*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*70 - 121*		*11/12/18 19:56*	*1*
Toluene-d8 (Surr)	*84*		*70 - 123*		*11/12/18 19:56*	*1*

Surrogate Summary

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

TestAmerica Job ID: 240-103817-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(59-120)	(75-128)	(70-121)	(70-123)
240-103817-1	TRIP BLANK	74	133 X	116	86
240-103817-2	MW-53_103118	76	135 X	115	87
240-103817-3	MW-54_103118	78	118	108	74
240-103817-3 MS	MW-54_103118	83	107	99	79
240-103817-3 MSD	MW-54_103118	88	109	103	81
240-103817-4	MW-55_103118	75	134 X	118	88
240-103817-5	MW-56_103118	78	136 X	119	90
240-103817-6	MW-37_103118	72	127	110	84
240-103817-7	MW-15-59D_103118	78	114	103	76
240-103817-7 MS	MW-15-59D_103118	81	104	96	77
240-103817-7 MSD	MW-15-59D_103118	83	115	99	79
240-103817-8	MW-28_103118	77	121	110	77
240-103817-9	MW-58_103118	73	129 X	112	86
240-103817-10	MW-52_103118	72	128	111	84
240-104049-E-31 MS	Matrix Spike	98	111	93	98
240-104049-H-31 MSD	Matrix Spike Duplicate	95	111	93	99
LCS 240-354893/4	Lab Control Sample	100	109	93	103
LCS 240-355141/4	Lab Control Sample	83	109	99	80
MB 240-354893/6	Method Blank	78	122	107	89
MB 240-355141/6	Method Blank	77	119	107	79

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(63-125)
240-103817-1	TRIP BLANK	101
240-103817-2	MW-53_103118	102
240-103817-3	MW-54_103118	106
240-103817-3 MS	MW-54_103118	104
240-103817-3 MSD	MW-54_103118	107
240-103817-4	MW-55_103118	106
240-103817-5	MW-56_103118	106
240-103817-6	MW-37_103118	105
240-103817-7	MW-15-59D_103118	110
240-103817-7 MS	MW-15-59D_103118	110
240-103817-7 MSD	MW-15-59D_103118	110
240-103817-8	MW-28_103118	106
240-103817-9	MW-58_103118	108
240-103817-10	MW-52_103118	105
LCS 240-354800/4	Lab Control Sample	92
MB 240-354800/5	Method Blank	103

Surrogate Summary

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

TestAmerica Job ID: 240-103817-1

Surrogate Legend

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

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

Lab Sample ID: MB 240-354893/6
Matrix: Water
Analysis Batch: 354893

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/12/18 11:42	1
Benzene	1.0	U	1.0	0.13	ug/L			11/12/18 11:42	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/12/18 11:42	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/12/18 11:42	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/12/18 11:42	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/12/18 11:42	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/12/18 11:42	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/12/18 11:42	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/12/18 11:42	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/12/18 11:42	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/12/18 11:42	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/12/18 11:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/12/18 11:42	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/12/18 11:42	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/12/18 11:42	1
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/12/18 11:42	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/12/18 11:42	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/12/18 11:42	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 11:42	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/12/18 11:42	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/12/18 11:42	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/12/18 11:42	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/12/18 11:42	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/12/18 11:42	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 11:42	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/12/18 11:42	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/12/18 11:42	1
2-Hexanone	10	U	10	0.54	ug/L			11/12/18 11:42	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/12/18 11:42	1
Methyl acetate	10	U	10	1.7	ug/L			11/12/18 11:42	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/12/18 11:42	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/12/18 11:42	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/12/18 11:42	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/12/18 11:42	1
Styrene	1.0	U	1.0	0.10	ug/L			11/12/18 11:42	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/12/18 11:42	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/12/18 11:42	1
Toluene	1.0	U	1.0	0.14	ug/L			11/12/18 11:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/12/18 11:42	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/12/18 11:42	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/12/18 11:42	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/12/18 11:42	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/12/18 11:42	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/12/18 11:42	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/12/18 11:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/12/18 11:42	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/12/18 11:42	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/12/18 11:42	1

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

Lab Sample ID: MB 240-354893/6
Matrix: Water
Analysis Batch: 354893

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/12/18 11:42	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/12/18 11:42	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/12/18 11:42	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/12/18 11:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*78*		*59 - 120*		*11/12/18 11:42*	*1*
Dibromofluoromethane (Surr)	*122*		*75 - 128*		*11/12/18 11:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 121*		*11/12/18 11:42*	*1*
Toluene-d8 (Surr)	*89*		*70 - 123*		*11/12/18 11:42*	*1*

Lab Sample ID: LCS 240-354893/4
Matrix: Water
Analysis Batch: 354893

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	17.9		ug/L		89	21 - 162
Benzene	10.0	10.9		ug/L		109	80 - 123
Bromodichloromethane	10.0	10.3		ug/L		103	77 - 125
Bromoform	10.0	10.7		ug/L		107	49 - 141
Bromomethane	10.0	8.36		ug/L		84	41 - 175
2-Butanone (MEK)	20.0	17.4		ug/L		87	39 - 163
Carbon disulfide	10.0	9.92		ug/L		99	60 - 138
Carbon tetrachloride	10.0	12.2		ug/L		122	63 - 140
Chlorobenzene	10.0	10.2		ug/L		102	80 - 121
Chloroethane	10.0	9.32		ug/L		93	33 - 173
Chloroform	10.0	10.9		ug/L		109	79 - 127
Chloromethane	10.0	10.5		ug/L		105	54 - 143
cis-1,2-Dichloroethene	10.0	11.0		ug/L		110	76 - 128
cis-1,3-Dichloropropene	10.0	8.54		ug/L		85	64 - 132
Cyclohexane	10.0	9.78		ug/L		98	58 - 145
Dibromochloromethane	10.0	10.7		ug/L		107	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	8.33		ug/L		83	46 - 132
1,2-Dibromoethane	10.0	9.19		ug/L		92	77 - 123
1,2-Dichlorobenzene	10.0	9.56		ug/L		96	78 - 120
1,3-Dichlorobenzene	10.0	9.19		ug/L		92	78 - 120
1,4-Dichlorobenzene	10.0	9.05		ug/L		91	78 - 120
Dichlorodifluoromethane	10.0	8.86		ug/L		89	29 - 148
1,1-Dichloroethane	10.0	10.7		ug/L		107	75 - 133
1,2-Dichloroethane	10.0	9.59		ug/L		96	71 - 135
1,1-Dichloroethene	10.0	9.80		ug/L		98	65 - 139
1,2-Dichloropropane	10.0	10.4		ug/L		104	78 - 133
Ethylbenzene	10.0	9.83		ug/L		98	80 - 120
2-Hexanone	20.0	16.5		ug/L		82	43 - 148
Isopropylbenzene	10.0	9.26		ug/L		93	74 - 120
Methyl acetate	20.0	17.5		ug/L		87	52 - 145
Methylcyclohexane	10.0	8.51		ug/L		85	60 - 125
Methylene Chloride	10.0	11.5		ug/L		115	70 - 134

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

Lab Sample ID: LCS 240-354893/4
Matrix: Water
Analysis Batch: 354893

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Methyl-2-pentanone (MIBK)	20.0	15.1		ug/L		75	49 - 143
Methyl tert-butyl ether	10.0	8.02		ug/L		80	51 - 133
Styrene	10.0	9.87		ug/L		99	79 - 120
1,1,2,2-Tetrachloroethane	10.0	8.76		ug/L		88	65 - 139
Tetrachloroethene	10.0	11.2		ug/L		112	74 - 130
Toluene	10.0	10.4		ug/L		104	78 - 129
trans-1,2-Dichloroethene	10.0	11.5		ug/L		115	78 - 133
trans-1,3-Dichloropropene	10.0	7.90		ug/L		79	55 - 128
1,2,4-Trichlorobenzene	10.0	8.82		ug/L		88	42 - 133
1,1,1-Trichloroethane	10.0	11.2		ug/L		112	69 - 134
1,1,2-Trichloroethane	10.0	10.5		ug/L		105	78 - 133
Trichloroethene	10.0	10.5		ug/L		105	76 - 125
Trichlorofluoromethane	10.0	9.35		ug/L		94	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	11.1		ug/L		111	50 - 156
1,2,4-Trimethylbenzene	10.0	8.56		ug/L		86	74 - 120
1,3,5-Trimethylbenzene	10.0	8.38		ug/L		84	75 - 121
Vinyl chloride	10.0	10.2		ug/L		102	58 - 143
Xylenes, Total	20.0	19.5		ug/L		97	80 - 120
1,4-Dioxane	200	219		ug/L		109	10 - 175
Diethyl ether	10.0	11.6		ug/L		116	70 - 146

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*100*		*59 - 120*
Dibromofluoromethane (Surr)	*109*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*
Toluene-d8 (Surr)	*103*		*70 - 123*

Lab Sample ID: 240-104049-E-31 MS
Matrix: Water
Analysis Batch: 354893

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
Bromodichloromethane	1.0	U	10.0	9.79		ug/L		98	64 - 125
Carbon disulfide	5.0	U	10.0	11.0		ug/L		110	43 - 144
Chloroform	1.0	U	10.0	10.8		ug/L		108	68 - 130
cis-1,2-Dichloroethene	1.0	U	10.0	10.7		ug/L		107	64 - 130
1,1-Dichloroethane	1.0	U	10.0	10.5		ug/L		105	63 - 136
1,1-Dichloroethene	1.0	U	10.0	11.3		ug/L		113	53 - 140
Tetrachloroethene	1.0	U	10.0	9.87		ug/L		99	51 - 136
trans-1,2-Dichloroethene	1.0	U	10.0	11.2		ug/L		112	68 - 133
1,1,1-Trichloroethane	1.0	U	10.0	10.3		ug/L		103	51 - 138
1,1,2-Trichloroethane	1.0	U	10.0	10.2		ug/L		102	76 - 132
Trichloroethene	1.0	U	10.0	9.71		ug/L		97	55 - 131
Vinyl chloride	1.0	U	10.0	9.37		ug/L		94	43 - 154

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*59 - 120*

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

Lab Sample ID: 240-104049-E-31 MS
Matrix: Water
Analysis Batch: 354893

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*111*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*
Toluene-d8 (Surr)	*98*		*70 - 123*

Lab Sample ID: 240-104049-H-31 MSD
Matrix: Water
Analysis Batch: 354893

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
Bromodichloromethane	1.0	U	10.0	10.2		ug/L		102	64 - 125	4	27
Carbon disulfide	5.0	U	10.0	11.8		ug/L		118	43 - 144	7	33
Chloroform	1.0	U	10.0	11.1		ug/L		111	68 - 130	2	23
cis-1,2-Dichloroethene	1.0	U	10.0	11.1		ug/L		111	64 - 130	4	21
1,1-Dichloroethane	1.0	U	10.0	10.8		ug/L		108	63 - 136	3	23
1,1-Dichloroethene	1.0	U	10.0	10.2		ug/L		102	53 - 140	11	35
Tetrachloroethene	1.0	U	10.0	10.6		ug/L		106	51 - 136	8	23
trans-1,2-Dichloroethene	1.0	U	10.0	11.6		ug/L		116	68 - 133	3	24
1,1,1-Trichloroethane	1.0	U	10.0	11.0		ug/L		110	51 - 138	6	27
1,1,2-Trichloroethane	1.0	U	10.0	10.3		ug/L		103	76 - 132	1	25
Trichloroethene	1.0	U	10.0	10.7		ug/L		107	55 - 131	10	23
Vinyl chloride	1.0	U	10.0	10.0		ug/L		100	43 - 154	7	29

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	*95*		*59 - 120*
Dibromofluoromethane (Surr)	*111*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*93*		*70 - 121*
Toluene-d8 (Surr)	*99*		*70 - 123*

Lab Sample ID: MB 240-355141/6
Matrix: Water
Analysis Batch: 355141

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	10	U	10	5.4	ug/L			11/13/18 12:27	1
Benzene	1.0	U	1.0	0.13	ug/L			11/13/18 12:27	1
Bromodichloromethane	1.0	U	1.0	0.17	ug/L			11/13/18 12:27	1
Bromoform	1.0	U	1.0	0.76	ug/L			11/13/18 12:27	1
Bromomethane	1.0	U	1.0	0.42	ug/L			11/13/18 12:27	1
2-Butanone (MEK)	10	U	10	1.2	ug/L			11/13/18 12:27	1
Carbon disulfide	5.0	U	5.0	0.28	ug/L			11/13/18 12:27	1
Carbon tetrachloride	1.0	U	1.0	0.26	ug/L			11/13/18 12:27	1
Chlorobenzene	1.0	U	1.0	0.14	ug/L			11/13/18 12:27	1
Chloroethane	1.0	U	1.0	0.83	ug/L			11/13/18 12:27	1
Chloroform	1.0	U	1.0	0.13	ug/L			11/13/18 12:27	1
Chloromethane	1.0	U	1.0	0.20	ug/L			11/13/18 12:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			11/13/18 12:27	1
cis-1,3-Dichloropropene	1.0	U	1.0	0.61	ug/L			11/13/18 12:27	1
Cyclohexane	1.0	U	1.0	0.24	ug/L			11/13/18 12:27	1

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

Lab Sample ID: MB 240-355141/6
Matrix: Water
Analysis Batch: 355141

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromochloromethane	1.0	U	1.0	0.39	ug/L			11/13/18 12:27	1
1,2-Dibromo-3-Chloropropane	1.0	U	1.0	0.91	ug/L			11/13/18 12:27	1
1,2-Dibromoethane	1.0	U	1.0	0.12	ug/L			11/13/18 12:27	1
1,2-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 12:27	1
1,3-Dichlorobenzene	1.0	U	1.0	0.15	ug/L			11/13/18 12:27	1
1,4-Dichlorobenzene	1.0	U	1.0	0.16	ug/L			11/13/18 12:27	1
Dichlorodifluoromethane	1.0	U	1.0	0.35	ug/L			11/13/18 12:27	1
1,1-Dichloroethane	1.0	U	1.0	0.17	ug/L			11/13/18 12:27	1
1,2-Dichloroethane	1.0	U	1.0	0.21	ug/L			11/13/18 12:27	1
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 12:27	1
1,2-Dichloropropane	1.0	U	1.0	0.15	ug/L			11/13/18 12:27	1
Ethylbenzene	1.0	U	1.0	0.11	ug/L			11/13/18 12:27	1
2-Hexanone	10	U	10	0.54	ug/L			11/13/18 12:27	1
Isopropylbenzene	1.0	U	1.0	0.090	ug/L			11/13/18 12:27	1
Methyl acetate	10	U	10	1.7	ug/L			11/13/18 12:27	1
Methylcyclohexane	1.0	U	1.0	0.33	ug/L			11/13/18 12:27	1
Methylene Chloride	5.0	U	5.0	2.6	ug/L			11/13/18 12:27	1
4-Methyl-2-pentanone (MIBK)	10	U	10	0.42	ug/L			11/13/18 12:27	1
Methyl tert-butyl ether	1.0	U	1.0	0.070	ug/L			11/13/18 12:27	1
Styrene	1.0	U	1.0	0.10	ug/L			11/13/18 12:27	1
1,1,2,2-Tetrachloroethane	1.0	U	1.0	0.13	ug/L			11/13/18 12:27	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/13/18 12:27	1
Toluene	1.0	U	1.0	0.14	ug/L			11/13/18 12:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/13/18 12:27	1
trans-1,3-Dichloropropene	1.0	U	1.0	0.67	ug/L			11/13/18 12:27	1
1,2,4-Trichlorobenzene	1.0	U	1.0	0.26	ug/L			11/13/18 12:27	1
1,1,1-Trichloroethane	1.0	U	1.0	0.24	ug/L			11/13/18 12:27	1
1,1,2-Trichloroethane	1.0	U	1.0	0.090	ug/L			11/13/18 12:27	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/13/18 12:27	1
Trichlorofluoromethane	1.0	U	1.0	0.45	ug/L			11/13/18 12:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	1.0	0.41	ug/L			11/13/18 12:27	1
1,2,3-Trimethylbenzene	5.0	U	5.0	0.14	ug/L			11/13/18 12:27	1
1,2,4-Trimethylbenzene	1.0	U	1.0	0.070	ug/L			11/13/18 12:27	1
1,3,5-Trimethylbenzene	1.0	U	1.0	0.12	ug/L			11/13/18 12:27	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/13/18 12:27	1
Xylenes, Total	2.0	U	2.0	0.15	ug/L			11/13/18 12:27	1
Diethyl ether	2.0	U	2.0	0.19	ug/L			11/13/18 12:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*77*		*59 - 120*		*11/13/18 12:27*	*1*
Dibromofluoromethane (Surr)	*119*		*75 - 128*		*11/13/18 12:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 121*		*11/13/18 12:27*	*1*
Toluene-d8 (Surr)	*79*		*70 - 123*		*11/13/18 12:27*	*1*

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

Lab Sample ID: LCS 240-355141/4
Matrix: Water
Analysis Batch: 355141

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	21.4		ug/L		107	21 - 162
Benzene	10.0	10.0		ug/L		100	80 - 123
Bromodichloromethane	10.0	11.6		ug/L		116	77 - 125
Bromoform	10.0	12.4		ug/L		124	49 - 141
Bromomethane	10.0	7.64		ug/L		76	41 - 175
2-Butanone (MEK)	20.0	15.9		ug/L		80	39 - 163
Carbon disulfide	10.0	9.37		ug/L		94	60 - 138
Carbon tetrachloride	10.0	12.0		ug/L		120	63 - 140
Chlorobenzene	10.0	10.1		ug/L		101	80 - 121
Chloroethane	10.0	6.35		ug/L		64	33 - 173
Chloroform	10.0	11.6		ug/L		116	79 - 127
Chloromethane	10.0	7.22		ug/L		72	54 - 143
cis-1,2-Dichloroethene	10.0	10.5		ug/L		105	76 - 128
cis-1,3-Dichloropropene	10.0	10.6		ug/L		106	64 - 132
Cyclohexane	10.0	8.40		ug/L		84	58 - 145
Dibromochloromethane	10.0	11.0		ug/L		110	70 - 132
1,2-Dibromo-3-Chloropropane	10.0	9.91		ug/L		99	46 - 132
1,2-Dibromoethane	10.0	9.79		ug/L		98	77 - 123
1,2-Dichlorobenzene	10.0	9.99		ug/L		100	78 - 120
1,3-Dichlorobenzene	10.0	10.1		ug/L		101	78 - 120
1,4-Dichlorobenzene	10.0	10.3		ug/L		103	78 - 120
Dichlorodifluoromethane	10.0	10.2		ug/L		102	29 - 148
1,1-Dichloroethane	10.0	10.2		ug/L		102	75 - 133
1,2-Dichloroethane	10.0	10.9		ug/L		109	71 - 135
1,1-Dichloroethene	10.0	9.42		ug/L		94	65 - 139
1,2-Dichloropropane	10.0	9.72		ug/L		97	78 - 133
Ethylbenzene	10.0	8.75		ug/L		87	80 - 120
2-Hexanone	20.0	13.9		ug/L		70	43 - 148
Isopropylbenzene	10.0	8.96		ug/L		90	74 - 120
Methyl acetate	20.0	17.4		ug/L		87	52 - 145
Methylcyclohexane	10.0	8.98		ug/L		90	60 - 125
Methylene Chloride	10.0	11.1		ug/L		111	70 - 134
4-Methyl-2-pentanone (MIBK)	20.0	16.4		ug/L		82	49 - 143
Methyl tert-butyl ether	10.0	9.45		ug/L		94	51 - 133
Styrene	10.0	9.65		ug/L		97	79 - 120
1,1,2,2-Tetrachloroethane	10.0	8.16		ug/L		82	65 - 139
Tetrachloroethene	10.0	11.4		ug/L		114	74 - 130
Toluene	10.0	8.77		ug/L		88	78 - 129
trans-1,2-Dichloroethene	10.0	11.1		ug/L		111	78 - 133
trans-1,3-Dichloropropene	10.0	8.43		ug/L		84	55 - 128
1,2,4-Trichlorobenzene	10.0	9.05		ug/L		91	42 - 133
1,1,1-Trichloroethane	10.0	12.1		ug/L		121	69 - 134
1,1,2-Trichloroethane	10.0	9.22		ug/L		92	78 - 133
Trichloroethene	10.0	11.8		ug/L		118	76 - 125
Trichlorofluoromethane	10.0	8.76		ug/L		88	51 - 164
1,1,2-Trichloro-1,2,2-trifluoroethane	10.0	13.1		ug/L		131	50 - 156
1,2,4-Trimethylbenzene	10.0	8.59		ug/L		86	74 - 120

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

Lab Sample ID: LCS 240-355141/4
Matrix: Water
Analysis Batch: 355141

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	10.0	8.52		ug/L		85	75 - 121
Vinyl chloride	10.0	7.09		ug/L		71	58 - 143
Xylenes, Total	20.0	18.2		ug/L		91	80 - 120
1,4-Dioxane	200	191		ug/L		96	10 - 175
Diethyl ether	10.0	7.89		ug/L		79	70 - 146

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*59 - 120*
Dibromofluoromethane (Surr)	*109*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 121*
Toluene-d8 (Surr)	*80*		*70 - 123*

Lab Sample ID: 240-103817-3 MS
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	19.0		ug/L		95	10 - 168
Benzene	1.0	U	10.0	8.99		ug/L		90	71 - 122
Bromodichloromethane	1.0	U	10.0	9.81		ug/L		98	64 - 125
Bromoform	1.0	U	10.0	11.8		ug/L		118	44 - 129
Bromomethane	1.0	U	10.0	7.31		ug/L		73	19 - 187
2-Butanone (MEK)	10	U	20.0	12.2		ug/L		61	37 - 156
Carbon disulfide	5.0	U	10.0	8.52		ug/L		85	43 - 144
Carbon tetrachloride	1.0	U	10.0	10.8		ug/L		108	41 - 143
Chlorobenzene	1.0	U	10.0	9.00		ug/L		90	70 - 123
Chloroethane	1.0	U	10.0	6.23		ug/L		62	11 - 189
Chloroform	1.0	U	10.0	11.1		ug/L		111	68 - 130
Chloromethane	1.0	U	10.0	6.84		ug/L		68	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	7.62		ug/L		76	48 - 127
Cyclohexane	1.0	U	10.0	6.80		ug/L		68	42 - 135
Dibromochloromethane	1.0	U	10.0	9.86		ug/L		99	60 - 129
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.71		ug/L		77	38 - 124
1,2-Dibromoethane	1.0	U	10.0	8.61		ug/L		86	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	9.24		ug/L		92	64 - 120
1,3-Dichlorobenzene	0.26	J	10.0	8.92		ug/L		87	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	8.65		ug/L		86	63 - 120
Dichlorodifluoromethane	1.0	U	10.0	10.2		ug/L		102	28 - 136
1,1-Dichloroethane	1.0	U	10.0	9.25		ug/L		92	63 - 136
1,2-Dichloroethane	1.0	U	10.0	9.63		ug/L		96	65 - 135
1,1-Dichloroethene	1.0	U	10.0	8.61		ug/L		86	53 - 140
1,2-Dichloropropane	1.0	U	10.0	7.78		ug/L		78	70 - 132
Ethylbenzene	1.0	U	10.0	8.04		ug/L		80	66 - 120
2-Hexanone	10	U	20.0	11.5		ug/L		58	42 - 150
Isopropylbenzene	1.0	U	10.0	7.98		ug/L		80	59 - 120
Methyl acetate	10	U	20.0	14.7		ug/L		73	41 - 142
Methylcyclohexane	1.0	U	10.0	6.65		ug/L		66	37 - 123

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

Lab Sample ID: 240-103817-3 MS
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	5.0	U	10.0	9.48		ug/L		95	61 - 130
4-Methyl-2-pentanone (MIBK)	10	U	20.0	12.8		ug/L		64	44 - 143
Methyl tert-butyl ether	1.0	U	10.0	8.85		ug/L		89	41 - 136
Styrene	1.0	U	10.0	8.27		ug/L		83	68 - 120
1,1,2,2-Tetrachloroethane	1.0	U	10.0	6.67		ug/L		67	60 - 137
Tetrachloroethene	1.0	U	10.0	10.1		ug/L		101	51 - 136
Toluene	1.0	U	10.0	7.78		ug/L		78	62 - 132
trans-1,2-Dichloroethene	1.0	U	10.0	10.2		ug/L		102	68 - 133
trans-1,3-Dichloropropene	1.0	U	10.0	7.25		ug/L		73	40 - 125
1,2,4-Trichlorobenzene	1.0	U	10.0	7.86		ug/L		79	30 - 126
1,1,1-Trichloroethane	1.0	U	10.0	11.3		ug/L		113	51 - 138
1,1,2-Trichloroethane	1.0	U	10.0	7.97		ug/L		80	76 - 132
Trichloroethene	1.0	U	10.0	10.1		ug/L		101	55 - 131
Trichlorofluoromethane	1.0	U	10.0	8.88		ug/L		89	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	9.85		ug/L		99	31 - 156
1,2,4-Trimethylbenzene	1.0	U	10.0	7.09		ug/L		71	62 - 120
1,3,5-Trimethylbenzene	1.0	U	10.0	7.16		ug/L		72	64 - 120
Vinyl chloride	0.85	J	10.0	7.71		ug/L		69	43 - 154
Xylenes, Total	2.0	U	20.0	16.9		ug/L		84	67 - 120
1,4-Dioxane	50	U	200	178		ug/L		89	10 - 143
Diethyl ether	2.0	U	10.0	7.38		ug/L		74	65 - 134

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*59 - 120*
Dibromofluoromethane (Surr)	*107*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 121*
Toluene-d8 (Surr)	*79*		*70 - 123*

Lab Sample ID: 240-103817-3 MSD
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	18.9		ug/L		94	10 - 168	1	35
Benzene	1.0	U	10.0	9.49		ug/L		95	71 - 122	5	22
Bromodichloromethane	1.0	U	10.0	11.0		ug/L		110	64 - 125	12	27
Bromoform	1.0	U	10.0	12.1		ug/L		121	44 - 129	3	28
Bromomethane	1.0	U	10.0	7.42		ug/L		74	19 - 187	1	35
2-Butanone (MEK)	10	U	20.0	14.6		ug/L		73	37 - 156	18	35
Carbon disulfide	5.0	U	10.0	8.85		ug/L		89	43 - 144	4	33
Carbon tetrachloride	1.0	U	10.0	12.3		ug/L		123	41 - 143	13	30
Chlorobenzene	1.0	U	10.0	9.73		ug/L		97	70 - 123	8	23
Chloroethane	1.0	U	10.0	6.61		ug/L		66	11 - 189	6	35
Chloroform	1.0	U	10.0	11.0		ug/L		110	68 - 130	2	23
Chloromethane	1.0	U	10.0	6.62		ug/L		66	31 - 154	3	35
cis-1,2-Dichloroethene	1.0	U	10.0	9.37		ug/L		94	64 - 130	7	21
cis-1,3-Dichloropropene	1.0	U	10.0	9.50		ug/L		95	48 - 127	22	30

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

Lab Sample ID: 240-103817-3 MSD
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyclohexane	1.0	U	10.0	7.90		ug/L		79	42 - 135	15	35
Dibromochloromethane	1.0	U	10.0	10.8		ug/L		108	60 - 129	9	26
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	8.80		ug/L		88	38 - 124	13	35
1,2-Dibromoethane	1.0	U	10.0	9.55		ug/L		95	71 - 123	10	27
1,2-Dichlorobenzene	1.0	U	10.0	9.73		ug/L		97	64 - 120	5	30
1,3-Dichlorobenzene	0.26	J	10.0	10.3		ug/L		100	62 - 120	14	31
1,4-Dichlorobenzene	1.0	U	10.0	9.91		ug/L		99	63 - 120	14	28
Dichlorodifluoromethane	1.0	U	10.0	11.2		ug/L		112	28 - 136	9	35
1,1-Dichloroethane	1.0	U	10.0	9.57		ug/L		96	63 - 136	3	23
1,2-Dichloroethane	1.0	U	10.0	10.7		ug/L		107	65 - 135	11	24
1,1-Dichloroethene	1.0	U	10.0	8.89		ug/L		89	53 - 140	3	35
1,2-Dichloropropane	1.0	U	10.0	9.14		ug/L		91	70 - 132	16	26
Ethylbenzene	1.0	U	10.0	8.53		ug/L		85	66 - 120	6	24
2-Hexanone	10	U	20.0	13.6		ug/L		68	42 - 150	16	35
Isopropylbenzene	1.0	U	10.0	8.98		ug/L		90	59 - 120	12	31
Methyl acetate	10	U	20.0	16.6		ug/L		83	41 - 142	12	35
Methylcyclohexane	1.0	U	10.0	8.11		ug/L		81	37 - 123	20	35
Methylene Chloride	5.0	U	10.0	9.63		ug/L		96	61 - 130	2	29
4-Methyl-2-pentanone (MIBK)	10	U	20.0	15.3		ug/L		77	44 - 143	18	35
Methyl tert-butyl ether	1.0	U	10.0	8.70		ug/L		87	41 - 136	2	29
Styrene	1.0	U	10.0	9.22		ug/L		92	68 - 120	11	26
1,1,2,2-Tetrachloroethane	1.0	U	10.0	7.99		ug/L		80	60 - 137	18	31
Tetrachloroethene	1.0	U	10.0	11.7		ug/L		117	51 - 136	14	23
Toluene	1.0	U	10.0	8.66		ug/L		87	62 - 132	11	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.2		ug/L		102	68 - 133	1	24
trans-1,3-Dichloropropene	1.0	U	10.0	8.36		ug/L		84	40 - 125	14	27
1,2,4-Trichlorobenzene	1.0	U	10.0	8.47		ug/L		85	30 - 126	7	35
1,1,1-Trichloroethane	1.0	U	10.0	12.1		ug/L		121	51 - 138	7	27
1,1,2-Trichloroethane	1.0	U	10.0	9.07		ug/L		91	76 - 132	13	25
Trichloroethene	1.0	U	10.0	11.6		ug/L		116	55 - 131	14	23
Trichlorofluoromethane	1.0	U	10.0	9.27		ug/L		93	37 - 174	4	35
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U	10.0	11.6		ug/L		116	31 - 156	16	35
1,2,4-Trimethylbenzene	1.0	U	10.0	8.37		ug/L		84	62 - 120	17	27
1,3,5-Trimethylbenzene	1.0	U	10.0	8.09		ug/L		81	64 - 120	12	23
Vinyl chloride	0.85	J	10.0	8.15		ug/L		73	43 - 154	6	29
Xylenes, Total	2.0	U	20.0	18.0		ug/L		90	67 - 120	6	25
1,4-Dioxane	50	U	200	188		ug/L		94	10 - 143	5	35
Diethyl ether	2.0	U	10.0	7.23		ug/L		72	65 - 134	2	33

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*88*		*59 - 120*
Dibromofluoromethane (Surr)	*109*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*103*		*70 - 121*
Toluene-d8 (Surr)	*81*		*70 - 123*

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

Lab Sample ID: 240-103817-7 MS
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	10	U	20.0	20.0		ug/L		100	10 - 168
Benzene	1.0	U	10.0	8.90		ug/L		89	71 - 122
Bromodichloromethane	1.0	U	10.0	10.2		ug/L		102	64 - 125
Bromoform	1.0	U	10.0	11.5		ug/L		115	44 - 129
Bromomethane	1.0	U	10.0	7.10		ug/L		71	19 - 187
2-Butanone (MEK)	10	U	20.0	14.2		ug/L		71	37 - 156
Carbon disulfide	5.0	U	10.0	8.75		ug/L		88	43 - 144
Carbon tetrachloride	1.0	U	10.0	11.0		ug/L		110	41 - 143
Chlorobenzene	1.0	U	10.0	9.01		ug/L		90	70 - 123
Chloroethane	1.0	U	10.0	6.08		ug/L		61	11 - 189
Chloroform	1.0	U	10.0	10.1		ug/L		101	68 - 130
Chloromethane	1.0	U F2	10.0	10.6		ug/L		106	31 - 154
cis-1,2-Dichloroethene	1.0	U	10.0	9.58		ug/L		96	64 - 130
cis-1,3-Dichloropropene	1.0	U	10.0	8.64		ug/L		86	48 - 127
Cyclohexane	0.34	J	10.0	6.26		ug/L		59	42 - 135
Dibromochloromethane	1.0	U	10.0	9.94		ug/L		99	60 - 129
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	7.92		ug/L		79	38 - 124
1,2-Dibromoethane	1.0	U	10.0	9.02		ug/L		90	71 - 123
1,2-Dichlorobenzene	1.0	U	10.0	9.15		ug/L		92	64 - 120
1,3-Dichlorobenzene	0.23	J	10.0	9.21		ug/L		90	62 - 120
1,4-Dichlorobenzene	1.0	U	10.0	9.35		ug/L		93	63 - 120
Dichlorodifluoromethane	1.0	U	10.0	9.22		ug/L		92	28 - 136
1,1-Dichloroethane	1.0	U	10.0	9.17		ug/L		92	63 - 136
1,2-Dichloroethane	1.0	U	10.0	10.3		ug/L		103	65 - 135
1,1-Dichloroethene	1.0	U	10.0	8.68		ug/L		87	53 - 140
1,2-Dichloropropane	1.0	U	10.0	8.80		ug/L		88	70 - 132
Ethylbenzene	1.0	U	10.0	8.00		ug/L		80	66 - 120
2-Hexanone	10	U	20.0	12.2		ug/L		61	42 - 150
Isopropylbenzene	1.0	U	10.0	8.27		ug/L		83	59 - 120
Methyl acetate	10	U	20.0	16.2		ug/L		81	41 - 142
Methylcyclohexane	1.0	U F2	10.0	5.92		ug/L		59	37 - 123
Methylene Chloride	5.0	U	10.0	9.56		ug/L		96	61 - 130
4-Methyl-2-pentanone (MIBK)	10	U	20.0	14.7		ug/L		73	44 - 143
Methyl tert-butyl ether	1.0	U	10.0	8.54		ug/L		85	41 - 136
Styrene	1.0	U	10.0	8.38		ug/L		84	68 - 120
1,1,2,2-Tetrachloroethane	1.0	U	10.0	7.10		ug/L		71	60 - 137
Tetrachloroethene	1.0	U	10.0	10.5		ug/L		105	51 - 136
Toluene	1.0	U	10.0	8.17		ug/L		82	62 - 132
trans-1,2-Dichloroethene	1.0	U	10.0	9.56		ug/L		96	68 - 133
trans-1,3-Dichloropropene	1.0	U	10.0	7.74		ug/L		77	40 - 125
1,2,4-Trichlorobenzene	1.0	U	10.0	7.86		ug/L		79	30 - 126
1,1,1-Trichloroethane	1.0	U	10.0	10.9		ug/L		109	51 - 138
1,1,2-Trichloroethane	1.0	U	10.0	8.80		ug/L		88	76 - 132
Trichloroethene	1.0	U	10.0	10.9		ug/L		109	55 - 131
Trichlorofluoromethane	1.0	U	10.0	8.18		ug/L		82	37 - 174
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2	10.0	8.38		ug/L		84	31 - 156
1,2,4-Trimethylbenzene	1.0	U	10.0	7.39		ug/L		74	62 - 120

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

Lab Sample ID: 240-103817-7 MS
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3,5-Trimethylbenzene	1.0	U	10.0	7.37		ug/L		74	64 - 120
Vinyl chloride	1.0	U	10.0	6.91		ug/L		69	43 - 154
Xylenes, Total	2.0	U	20.0	16.7		ug/L		83	67 - 120
1,4-Dioxane	50	U	200	194		ug/L		97	10 - 143
Diethyl ether	2.0	U	10.0	6.95		ug/L		69	65 - 134

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*81*		*59 - 120*
Dibromofluoromethane (Surr)	*104*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*96*		*70 - 121*
Toluene-d8 (Surr)	*77*		*70 - 123*

Lab Sample ID: 240-103817-7 MSD
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	10	U	20.0	21.2		ug/L		106	10 - 168	6	35
Benzene	1.0	U	10.0	9.38		ug/L		94	71 - 122	5	22
Bromodichloromethane	1.0	U	10.0	10.1		ug/L		101	64 - 125	1	27
Bromoform	1.0	U	10.0	12.2		ug/L		122	44 - 129	6	28
Bromomethane	1.0	U	10.0	7.94		ug/L		79	19 - 187	11	35
2-Butanone (MEK)	10	U	20.0	13.4		ug/L		67	37 - 156	6	35
Carbon disulfide	5.0	U	10.0	9.98		ug/L		100	43 - 144	13	33
Carbon tetrachloride	1.0	U	10.0	12.4		ug/L		124	41 - 143	12	30
Chlorobenzene	1.0	U	10.0	9.30		ug/L		93	70 - 123	3	23
Chloroethane	1.0	U	10.0	6.87		ug/L		69	11 - 189	12	35
Chloroform	1.0	U	10.0	11.1		ug/L		111	68 - 130	9	23
Chloromethane	1.0	U F2	10.0	7.31	F2	ug/L		73	31 - 154	37	35
cis-1,2-Dichloroethene	1.0	U	10.0	10.6		ug/L		106	64 - 130	10	21
cis-1,3-Dichloropropene	1.0	U	10.0	8.43		ug/L		84	48 - 127	2	30
Cyclohexane	0.34	J	10.0	8.86		ug/L		85	42 - 135	34	35
Dibromochloromethane	1.0	U	10.0	10.6		ug/L		106	60 - 129	7	26
1,2-Dibromo-3-Chloropropane	1.0	U	10.0	9.31		ug/L		93	38 - 124	16	35
1,2-Dibromoethane	1.0	U	10.0	8.92		ug/L		89	71 - 123	1	27
1,2-Dichlorobenzene	1.0	U	10.0	9.24		ug/L		92	64 - 120	1	30
1,3-Dichlorobenzene	0.23	J	10.0	9.50		ug/L		93	62 - 120	3	31
1,4-Dichlorobenzene	1.0	U	10.0	8.85		ug/L		88	63 - 120	6	28
Dichlorodifluoromethane	1.0	U	10.0	11.4		ug/L		114	28 - 136	21	35
1,1-Dichloroethane	1.0	U	10.0	10.0		ug/L		100	63 - 136	9	23
1,2-Dichloroethane	1.0	U	10.0	10.3		ug/L		103	65 - 135	0	24
1,1-Dichloroethene	1.0	U	10.0	9.58		ug/L		96	53 - 140	10	35
1,2-Dichloropropane	1.0	U	10.0	8.17		ug/L		82	70 - 132	7	26
Ethylbenzene	1.0	U	10.0	8.78		ug/L		88	66 - 120	9	24
2-Hexanone	10	U	20.0	11.4		ug/L		57	42 - 150	7	35
Isopropylbenzene	1.0	U	10.0	8.88		ug/L		89	59 - 120	7	31
Methyl acetate	10	U	20.0	16.4		ug/L		82	41 - 142	1	35
Methylcyclohexane	1.0	U F2	10.0	8.48	F2	ug/L		85	37 - 123	36	35

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

Lab Sample ID: 240-103817-7 MSD
Matrix: Water
Analysis Batch: 355141

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride	5.0	U	10.0	10.6		ug/L		106	61 - 130	10	29
4-Methyl-2-pentanone (MIBK)	10	U	20.0	13.4		ug/L		67	44 - 143	9	35
Methyl tert-butyl ether	1.0	U	10.0	9.12		ug/L		91	41 - 136	7	29
Styrene	1.0	U	10.0	9.25		ug/L		92	68 - 120	10	26
1,1,2,2-Tetrachloroethane	1.0	U	10.0	7.44		ug/L		74	60 - 137	5	31
Tetrachloroethene	1.0	U	10.0	10.7		ug/L		107	51 - 136	2	23
Toluene	1.0	U	10.0	8.39		ug/L		84	62 - 132	3	23
trans-1,2-Dichloroethene	1.0	U	10.0	10.6		ug/L		106	68 - 133	11	24
trans-1,3-Dichloropropene	1.0	U	10.0	7.29		ug/L		73	40 - 125	6	27
1,2,4-Trichlorobenzene	1.0	U	10.0	8.38		ug/L		84	30 - 126	6	35
1,1,1-Trichloroethane	1.0	U	10.0	12.2		ug/L		122	51 - 138	11	27
1,1,2-Trichloroethane	1.0	U	10.0	8.41		ug/L		84	76 - 132	5	25
Trichloroethene	1.0	U	10.0	10.9		ug/L		109	55 - 131	0	23
Trichlorofluoromethane	1.0	U	10.0	9.77		ug/L		98	37 - 174	18	35
1,1,2-Trichloro-1,2,2-trifluoroethane	1.0	U F2	10.0	12.2	F2	ug/L		122	31 - 156	38	35
1,2,4-Trimethylbenzene	1.0	U	10.0	7.57		ug/L		76	62 - 120	2	27
1,3,5-Trimethylbenzene	1.0	U	10.0	7.36		ug/L		74	64 - 120	0	23
Vinyl chloride	1.0	U	10.0	7.83		ug/L		78	43 - 154	12	29
Xylenes, Total	2.0	U	20.0	17.9		ug/L		89	67 - 120	7	25
1,4-Dioxane	50	U	200	182		ug/L		91	10 - 143	6	35
Diethyl ether	2.0	U	10.0	7.88		ug/L		79	65 - 134	13	33

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*83*		*59 - 120*
Dibromofluoromethane (Surr)	*115*		*75 - 128*
1,2-Dichloroethane-d4 (Surr)	*99*		*70 - 121*
Toluene-d8 (Surr)	*79*		*70 - 123*

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

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

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/11/18 13:14	1

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

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

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	10.0	10.5		ug/L		105	59 - 131

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

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

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

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

Lab Sample ID: 240-103817-3 MS
Matrix: Water
Analysis Batch: 354800

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
1,4-Dioxane	2.6		10.0	13.5		ug/L		108	52 - 129		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		63 - 125

Lab Sample ID: 240-103817-3 MSD
Matrix: Water
Analysis Batch: 354800

Client Sample ID: MW-54_103118
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.6		10.0	12.9		ug/L		103	52 - 129	4	13

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		63 - 125

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

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

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

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

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

Client Sample ID: MW-15-59D_103118
Prep Type: Total/NA

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

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

GC/MS VOA

Analysis Batch: 354800

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103817-1	TRIP BLANK	Total/NA	Water	8260B SIM	
240-103817-2	MW-53_103118	Total/NA	Water	8260B SIM	
240-103817-3	MW-54_103118	Total/NA	Water	8260B SIM	
240-103817-4	MW-55_103118	Total/NA	Water	8260B SIM	
240-103817-5	MW-56_103118	Total/NA	Water	8260B SIM	
240-103817-6	MW-37_103118	Total/NA	Water	8260B SIM	
240-103817-7	MW-15-59D_103118	Total/NA	Water	8260B SIM	
240-103817-8	MW-28_103118	Total/NA	Water	8260B SIM	
240-103817-9	MW-58_103118	Total/NA	Water	8260B SIM	
240-103817-10	MW-52_103118	Total/NA	Water	8260B SIM	
MB 240-354800/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-354800/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-103817-3 MS	MW-54_103118	Total/NA	Water	8260B SIM	
240-103817-3 MSD	MW-54_103118	Total/NA	Water	8260B SIM	
240-103817-7 MS	MW-15-59D_103118	Total/NA	Water	8260B SIM	
240-103817-7 MSD	MW-15-59D_103118	Total/NA	Water	8260B SIM	

Analysis Batch: 354893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103817-1	TRIP BLANK	Total/NA	Water	8260B	
240-103817-2	MW-53_103118	Total/NA	Water	8260B	
240-103817-4	MW-55_103118	Total/NA	Water	8260B	
240-103817-5	MW-56_103118	Total/NA	Water	8260B	
240-103817-6	MW-37_103118	Total/NA	Water	8260B	
240-103817-9	MW-58_103118	Total/NA	Water	8260B	
240-103817-10	MW-52_103118	Total/NA	Water	8260B	
MB 240-354893/6	Method Blank	Total/NA	Water	8260B	
LCS 240-354893/4	Lab Control Sample	Total/NA	Water	8260B	
240-104049-E-31 MS	Matrix Spike	Total/NA	Water	8260B	
240-104049-H-31 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

Analysis Batch: 355141

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-103817-3	MW-54_103118	Total/NA	Water	8260B	
240-103817-7	MW-15-59D_103118	Total/NA	Water	8260B	
240-103817-8	MW-28_103118	Total/NA	Water	8260B	
MB 240-355141/6	Method Blank	Total/NA	Water	8260B	
LCS 240-355141/4	Lab Control Sample	Total/NA	Water	8260B	
240-103817-3 MS	MW-54_103118	Total/NA	Water	8260B	
240-103817-3 MSD	MW-54_103118	Total/NA	Water	8260B	
240-103817-7 MS	MW-15-59D_103118	Total/NA	Water	8260B	
240-103817-7 MSD	MW-15-59D_103118	Total/NA	Water	8260B	

Client Sample ID: TRIP BLANK
Lab Sample ID: 240-103817-1
Date Collected: 10/31/18 00:00
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 16:40	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 14:05	SAM	TAL CAN

Client Sample ID: MW-53_103118
Lab Sample ID: 240-103817-2
Date Collected: 10/31/18 08:55
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 17:02	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 15:48	SAM	TAL CAN

Client Sample ID: MW-54_103118
Lab Sample ID: 240-103817-3
Date Collected: 10/31/18 10:25
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355141	11/13/18 13:55	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 16:14	SAM	TAL CAN

Client Sample ID: MW-55_103118
Lab Sample ID: 240-103817-4
Date Collected: 10/31/18 12:15
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 17:46	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 17:31	SAM	TAL CAN

Client Sample ID: MW-56_103118
Lab Sample ID: 240-103817-5
Date Collected: 10/31/18 13:25
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 18:08	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 17:57	SAM	TAL CAN

Client Sample ID: MW-37_103118
Lab Sample ID: 240-103817-6
Date Collected: 10/31/18 16:00
Matrix: Water
Date Received: 11/02/18 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 18:29	LEE	TAL CAN

Lab Chronicle

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

TestAmerica Job ID: 240-103817-1

Client Sample ID: MW-37_103118
Date Collected: 10/31/18 16:00
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 18:22	SAM	TAL CAN

Client Sample ID: MW-15-59D_103118
Date Collected: 10/31/18 09:05
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355141	11/13/18 14:17	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 18:47	SAM	TAL CAN

Client Sample ID: MW-28_103118
Date Collected: 10/31/18 10:40
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	355141	11/13/18 14:39	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 20:04	SAM	TAL CAN

Client Sample ID: MW-58_103118
Date Collected: 10/31/18 12:10
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 19:35	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 20:30	SAM	TAL CAN

Client Sample ID: MW-52_103118
Date Collected: 10/31/18 13:20
Date Received: 11/02/18 08:50

Lab Sample ID: 240-103817-10
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	354893	11/12/18 19:56	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	354800	11/11/18 20:55	SAM	TAL CAN

Laboratory References:

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

Accreditation/Certification Summary

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

TestAmerica Job ID: 240-103817-1

Laboratory: TestAmerica Canton

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

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

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

MICHIGAN 190

2.2/3.1

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Angela DeGrandis	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis	Telephone: 248-994-2240	Telephone: 734-320-0065	Telephone: 330-497-9396	of COCs
Address: 28550 Cabot Drive, Suite 500	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time		For lab use only
City/State/Zip: Novi, MI, 48377		TAT if different from below: ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client
Phone: 248-994-2240		10 day		Lab sampling
Project Name: Ford LTP	Method of Shipment/Carrier:			Job/SDG No:
Project Number: MI001454.0004.00001	Shipping/Tracking No:			
PO # MI001454.0004.00001				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C/Grab=G	VOCs 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
TRIP BLANK	—	—		X						X					N	G	X	X	
MW-53_103118	10/31/18	0855															3	3	
MW-54_103118		1025															3	3	
MW-54-MS/MSD_103118		1025															6	6	
MW-55_103118		1215															3	3	
MW-56_103118		1325															3	3	
MW-37_103118		1600															3	3	
MW-15-590_103118		0905															3	3	
MW-15-590-MS/MSD_103118		0905															6	6	
MW-28_103118	10/31/18	1040		X						X					N	G	3	3	

240-103817 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

Special Instructions/QC Requirements & Comments:

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

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
[signature]	Arcadis	10/31/18 1740	Sample Fridge	Arcadis	10/31/18 1740
NOVI COLD STORAGE / [signature]	ARCADIS	11/1/18 0950	[signature]	TAL	11/1/18 950
[signature]	TAL	11/1/18 1225	Received in Laboratory by: POP	TAL	11-2-18 850

MICHIGAN
190

Chain of Custody Record

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

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Contact

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: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

Client Project Manager: Kris Hinskey
Telephone: 248-994-2240
Email: kristoffer.hinskey@arcadis.com
Method of Shipment/Carrier:
Shipping/Tracking No:

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

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

TestAmerica Laboratories, Inc.
COC No:
of COCs
For lab use only
Walk-in client
Lab sampling
Job/SDG No

Analysis Turnaround Time
TAT if different from below
10 day
☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C / Grab=G	VOCs 8260B	1,4-Dioxane 8260B SIM	Sample Specific Notes / Special Instructions:
MW-58_103118	10/31/18	1210		X						X					N	G	3	3	
MW-52_103118	10/31/18	1320		X						X					N	G	3	3	

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

Special Instructions/QC Requirements & Comments:

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

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis	10/31/18 1740	Sample Fridge	Arcadis	10/31/18 1740
NOVI COLD STORAGE / Rahlson	ARCADIS	11/1/18 09:50	Jeri Hardi	TAL	11/1/18 950
Jeri Hardi	TAL	11/1/18 1225	Received in Laboratory by: [signature]	TAL	11-2-18 850

TestAmerica Canton Sample Receipt Form/Narrative **Login # : 103817**
Canton Facility

Client ARCADIS Site Name —

Cooler Received on 11-2-18 Opened on 11-2-18

Cooler unpacked by: POP

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 ☐ See Multiple Cooler Form
   IR GUN# IR-8 (CF +0.9 °C) Observed Cooler Temp. 2.2 °C Corrected Cooler Temp. 3.1 °C
   IR GUN #36 (CF +0.6°C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 Yes No
   -Were the seals on the outside of the cooler(s) signed & dated? Yes No NA
   -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No
   -Were tamper/custody seals intact and uncompromised? Yes No NA
3. Shippers' packing slip attached to the cooler(s)? Yes No
4. Did custody papers accompany the sample(s)? Yes No
5. Were the custody papers relinquished & signed in the appropriate place? Yes No
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
7. Did all bottles arrive in good condition (Unbroken)? Yes No
8. Could all bottle labels be reconciled with the COC? Yes No
9. Were correct bottle(s) used for the test(s) indicated? Yes No
10. Sufficient quantity received to perform indicated analyses? Yes No
11. Are these work share samples? Yes No
    If yes, Questions 12-16 have been checked at the originating laboratory.
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# **HC849161**
13. Were VOAs on the COC? Yes No
14. Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this. Yes No NA
15. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0 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: POP

RECEIVED AIR BUBBLES IN SAMPLE MW-15-59D. 9X40mic

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): _____