

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Canton

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North Canton, OH 44720

Tel: (330)497-9396

TestAmerica Job ID: 240-99575-1

Client Project/Site: Ford LTP Livonia MI - E203631

For:

ARCADIS U.S., Inc.

28550 Cabot Drive

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Novi, Michigan 48377

Attn: Kristoffer Hinskey



Authorized for release by:

8/21/2018 2:26:59 PM

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*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

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

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# Definitions/Glossary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

## Qualifiers

### GC/MS VOA

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

## Glossary

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

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Job ID: 240-99575-1**

**Laboratory: TestAmerica Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP Livonia MI - E203631**

**Report Number: 240-99575-1**

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 8/8/2018 9:50 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.4° C and 1.8° C.

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

Samples MW-87\_080618 (240-99575-1), MW-86\_080618 (240-99575-2), MW-77\_080618 (240-99575-3), MW-84\_080618 (240-99575-4), MW-79D\_080618 (240-99575-5), MW-79S\_080618 (240-99575-6), MW-78\_080618 (240-99575-7), MW-80S\_080618 (240-99575-8), DUP-01\_080618 (240-99575-9) and TRIP BLANK (240-99575-10) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 08/15/2018 and 08/18/2018.

Tetrachloroethene failed the recovery criteria high for LCS 240-341003/5. Refer to the QC report for details.

The laboratory control sample (LCS) for analytical batch 240-341003 recovered outside control limits for the following analyte: Tetrachloroethane. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data has been reported: MW-77\_080618 (240-99575-3) and (LCS 240-341003/5).

The vial used for reanalysis contained headspace due to instrument malfunction. Only one vial was received for the following sample: TRIP BLANK (240-99575-10).

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

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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## Job ID: 240-99575-1 (Continued)

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### Laboratory: TestAmerica Canton (Continued)

#### VOLATILE ORGANIC COMPOUNDS (GCMS SIM)

Samples MW-87\_080618 (240-99575-1), MW-86\_080618 (240-99575-2), MW-77\_080618 (240-99575-3), MW-84\_080618 (240-99575-4), MW-79D\_080618 (240-99575-5), MW-79S\_080618 (240-99575-6), MW-78\_080618 (240-99575-7), MW-80S\_080618 (240-99575-8), DUP-01\_080618 (240-99575-9) and TRIP BLANK (240-99575-10) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 08/09/2018.

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 - E203631

TestAmerica Job ID: 240-99575-1

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

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# Sample Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-99575-1	MW-87_080618	Water	08/06/18 09:05	08/08/18 09:50
240-99575-2	MW-86_080618	Water	08/06/18 10:05	08/08/18 09:50
240-99575-3	MW-77_080618	Water	08/06/18 11:09	08/08/18 09:50
240-99575-4	MW-84_080618	Water	08/06/18 12:10	08/08/18 09:50
240-99575-5	MW-79D_080618	Water	08/06/18 13:29	08/08/18 09:50
240-99575-6	MW-79S_080618	Water	08/06/18 14:11	08/08/18 09:50
240-99575-7	MW-78_080618	Water	08/06/18 15:06	08/08/18 09:50
240-99575-8	MW-80S_080618	Water	08/06/18 15:56	08/08/18 09:50
240-99575-9	DUP-01_080618	Water	08/06/18 00:00	08/08/18 09:50
240-99575-10	TRIP BLANK	Water	08/06/18 00:00	08/08/18 09:50



# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

## Client Sample ID: MW-87\_080618

Lab Sample ID: 240-99575-1

No Detections.

## Client Sample ID: MW-86\_080618

Lab Sample ID: 240-99575-2

No Detections.

## Client Sample ID: MW-77\_080618

Lab Sample ID: 240-99575-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.61	J	1.0	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	0.24	J	1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-84\_080618

Lab Sample ID: 240-99575-4

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

## Client Sample ID: MW-79D\_080618

Lab Sample ID: 240-99575-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.87	J	2.0	0.86	ug/L	1		8260B SIM	Total/NA
Vinyl chloride	2.8		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-79S\_080618

Lab Sample ID: 240-99575-6

No Detections.

## Client Sample ID: MW-78\_080618

Lab Sample ID: 240-99575-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.28	J	1.0	0.16	ug/L	1		8260B	Total/NA

## Client Sample ID: MW-80S\_080618

Lab Sample ID: 240-99575-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	6.2		1.0	0.20	ug/L	1		8260B	Total/NA

## Client Sample ID: DUP-01\_080618

Lab Sample ID: 240-99575-9

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

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-99575-10

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Canton



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-87\_080618**

**Lab Sample ID: 240-99575-1**

**Date Collected: 08/06/18 09:05**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 16:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		63 - 125					08/09/18 16:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 12:00	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 12:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:00	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 12:00	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 12:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		61 - 138					08/18/18 12:00	1
4-Bromofluorobenzene (Surr)	108		69 - 120					08/18/18 12:00	1
Toluene-d8 (Surr)	110		73 - 120					08/18/18 12:00	1
Dibromofluoromethane (Surr)	111		69 - 124					08/18/18 12:00	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-86\_080618**

**Lab Sample ID: 240-99575-2**

**Date Collected: 08/06/18 10:05**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 16:38	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	115		63 - 125					08/09/18 16:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 12:22	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 12:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:22	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 12:22	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 12:22	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	119		61 - 138					08/18/18 12:22	1
4-Bromofluorobenzene (Surr)	105		69 - 120					08/18/18 12:22	1
Toluene-d8 (Surr)	108		73 - 120					08/18/18 12:22	1
Dibromofluoromethane (Surr)	107		69 - 124					08/18/18 12:22	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-77\_080618**

**Lab Sample ID: 240-99575-3**

**Date Collected: 08/06/18 11:09**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 17:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		63 - 125					08/09/18 17:03	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/15/18 15:50	1
<b>cis-1,2-Dichloroethene</b>	<b>0.61</b>	<b>J</b>	1.0	0.16	ug/L			08/15/18 15:50	1
Tetrachloroethene	1.0	U *	1.0	0.15	ug/L			08/15/18 15:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/15/18 15:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/15/18 15:50	1
<b>Vinyl chloride</b>	<b>0.24</b>	<b>J</b>	1.0	0.20	ug/L			08/15/18 15:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		61 - 138					08/15/18 15:50	1
4-Bromofluorobenzene (Surr)	85		69 - 120					08/15/18 15:50	1
Toluene-d8 (Surr)	89		73 - 120					08/15/18 15:50	1
Dibromofluoromethane (Surr)	98		69 - 124					08/15/18 15:50	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-84\_080618**

**Lab Sample ID: 240-99575-4**

**Date Collected: 08/06/18 12:10**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 18:17	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	105		63 - 125					08/09/18 18:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 12:44	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 12:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 12:44	1
<b>Trichloroethene</b>	<b>0.14</b>	<b>J</b>	1.0	0.10	ug/L			08/18/18 12:44	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 12:44	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	123		61 - 138					08/18/18 12:44	1
4-Bromofluorobenzene (Surr)	108		69 - 120					08/18/18 12:44	1
Toluene-d8 (Surr)	110		73 - 120					08/18/18 12:44	1
Dibromofluoromethane (Surr)	110		69 - 124					08/18/18 12:44	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-79D\_080618**

**Lab Sample ID: 240-99575-5**

**Date Collected: 08/06/18 13:29**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.87	J	2.0	0.86	ug/L			08/09/18 18:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					08/09/18 18:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 13:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 13:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:06	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 13:06	1
Vinyl chloride	2.8		1.0	0.20	ug/L			08/18/18 13:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		61 - 138					08/18/18 13:06	1
4-Bromofluorobenzene (Surr)	104		69 - 120					08/18/18 13:06	1
Toluene-d8 (Surr)	109		73 - 120					08/18/18 13:06	1
Dibromofluoromethane (Surr)	108		69 - 124					08/18/18 13:06	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-79S\_080618**

**Lab Sample ID: 240-99575-6**

**Date Collected: 08/06/18 14:11**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 19:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		63 - 125					08/09/18 19:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 13:28	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 13:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:28	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 13:28	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 13:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		61 - 138					08/18/18 13:28	1
4-Bromofluorobenzene (Surr)	107		69 - 120					08/18/18 13:28	1
Toluene-d8 (Surr)	110		73 - 120					08/18/18 13:28	1
Dibromofluoromethane (Surr)	111		69 - 124					08/18/18 13:28	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-78\_080618**

**Lab Sample ID: 240-99575-7**

**Date Collected: 08/06/18 15:06**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 19:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		63 - 125					08/09/18 19:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:50	1
<b>cis-1,2-Dichloroethene</b>	<b>0.28</b>	<b>J</b>	1.0	0.16	ug/L			08/18/18 13:50	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 13:50	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 13:50	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 13:50	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 13:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		61 - 138					08/18/18 13:50	1
4-Bromofluorobenzene (Surr)	110		69 - 120					08/18/18 13:50	1
Toluene-d8 (Surr)	115		73 - 120					08/18/18 13:50	1
Dibromofluoromethane (Surr)	109		69 - 124					08/18/18 13:50	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-80S\_080618**

**Lab Sample ID: 240-99575-8**

**Date Collected: 08/06/18 15:56**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 19:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	107		63 - 125					08/09/18 19:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 14:12	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 14:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:12	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 14:12	1
<b>Vinyl chloride</b>	<b>6.2</b>		1.0	0.20	ug/L			08/18/18 14:12	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	122		61 - 138					08/18/18 14:12	1
4-Bromofluorobenzene (Surr)	106		69 - 120					08/18/18 14:12	1
Toluene-d8 (Surr)	110		73 - 120					08/18/18 14:12	1
Dibromofluoromethane (Surr)	110		69 - 124					08/18/18 14:12	1



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: DUP-01\_080618**

**Lab Sample ID: 240-99575-9**

**Date Collected: 08/06/18 00:00**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 20:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		63 - 125					08/09/18 20:21	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 14:34	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 14:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:34	1
<b>Trichloroethene</b>	<b>0.10</b>	<b>J</b>	1.0	0.10	ug/L			08/18/18 14:34	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 14:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	121		61 - 138					08/18/18 14:34	1
4-Bromofluorobenzene (Surr)	108		69 - 120					08/18/18 14:34	1
Toluene-d8 (Surr)	111		73 - 120					08/18/18 14:34	1
Dibromofluoromethane (Surr)	112		69 - 124					08/18/18 14:34	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99575-10**

**Date Collected: 08/06/18 00:00**

**Matrix: Water**

**Date Received: 08/08/18 09:50**

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/09/18 15:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		63 - 125					08/09/18 15:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 14:56	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 14:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 14:56	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 14:56	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 14:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124		61 - 138					08/18/18 14:56	1
4-Bromofluorobenzene (Surr)	109		69 - 120					08/18/18 14:56	1
Toluene-d8 (Surr)	110		73 - 120					08/18/18 14:56	1
Dibromofluoromethane (Surr)	115		69 - 124					08/18/18 14:56	1

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (61-138)	BFB (69-120)	TOL (73-120)	DBFM (69-124)
240-99575-1	MW-87_080618	124	108	110	111
240-99575-2	MW-86_080618	119	105	108	107
240-99575-3	MW-77_080618	88	85	89	98
240-99575-3 MS	MW-77_080618	85	86	91	92
240-99575-3 MSD	MW-77_080618	85	86	92	94
240-99575-4	MW-84_080618	123	108	110	110
240-99575-5	MW-79D_080618	122	104	109	108
240-99575-6	MW-79S_080618	121	107	110	111
240-99575-7	MW-78_080618	124	110	115	109
240-99575-8	MW-80S_080618	122	106	110	110
240-99575-9	DUP-01_080618	121	108	111	112
240-99575-10	TRIP BLANK	124	109	110	115
240-99576-E-1 MS	Matrix Spike	118	110	110	104
240-99576-E-1 MSD	Matrix Spike Duplicate	118	112	110	104
LCS 240-341003/5	Lab Control Sample	85	88	99	99
LCS 240-341482/6	Lab Control Sample	123	112	110	112
MB 240-341003/7	Method Blank	92	82	90	99
MB 240-341482/9	Method Blank	122	107	108	107

#### Surrogate Legend

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

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(63-125)
240-99575-1	MW-87_080618	101
240-99575-2	MW-86_080618	115
240-99575-3	MW-77_080618	103
240-99575-3 MS	MW-77_080618	103
240-99575-3 MSD	MW-77_080618	105
240-99575-4	MW-84_080618	105
240-99575-5	MW-79D_080618	107
240-99575-6	MW-79S_080618	97
240-99575-7	MW-78_080618	108
240-99575-8	MW-80S_080618	107
240-99575-9	DUP-01_080618	106
240-99575-10	TRIP BLANK	104
LCS 240-340120/4	Lab Control Sample	99
MB 240-340120/5	Method Blank	100

#### Surrogate Legend

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

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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

**Lab Sample ID: MB 240-341003/7**

**Matrix: Water**

**Analysis Batch: 341003**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/15/18 13:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/15/18 13:23	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/15/18 13:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/15/18 13:23	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/15/18 13:23	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/15/18 13:23	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		61 - 138		08/15/18 13:23	1
4-Bromofluorobenzene (Surr)	82		69 - 120		08/15/18 13:23	1
Toluene-d8 (Surr)	90		73 - 120		08/15/18 13:23	1
Dibromofluoromethane (Surr)	99		69 - 124		08/15/18 13:23	1

**Lab Sample ID: LCS 240-341003/5**

**Matrix: Water**

**Analysis Batch: 341003**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	10.0	11.5		ug/L		115	65 - 127
cis-1,2-Dichloroethene	10.0	11.0		ug/L		110	77 - 120
Tetrachloroethene	10.0	13.1	*	ug/L		131	80 - 122
trans-1,2-Dichloroethene	10.0	11.9		ug/L		119	74 - 124
Trichloroethene	10.0	11.2		ug/L		112	76 - 124
Vinyl chloride	10.0	9.61		ug/L		96	65 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		61 - 138
4-Bromofluorobenzene (Surr)	88		69 - 120
Toluene-d8 (Surr)	99		73 - 120
Dibromofluoromethane (Surr)	99		69 - 124

**Lab Sample ID: 240-99575-3 MS**

**Matrix: Water**

**Analysis Batch: 341003**

**Client Sample ID: MW-77\_080618**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	1.0	U	10.0	9.42		ug/L		94	62 - 127
cis-1,2-Dichloroethene	0.61	J	10.0	9.33		ug/L		87	69 - 127
Tetrachloroethene	1.0	U *	10.0	10.3		ug/L		103	69 - 126
trans-1,2-Dichloroethene	1.0	U	10.0	9.65		ug/L		97	66 - 131
Trichloroethene	1.0	U	10.0	9.50		ug/L		95	68 - 129
Vinyl chloride	0.24	J	10.0	10.7		ug/L		105	55 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		61 - 138
4-Bromofluorobenzene (Surr)	86		69 - 120
Toluene-d8 (Surr)	91		73 - 120

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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

**Lab Sample ID: 240-99575-3 MS**  
**Matrix: Water**  
**Analysis Batch: 341003**

**Client Sample ID: MW-77\_080618**  
**Prep Type: Total/NA**

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	92		69 - 124

**Lab Sample ID: 240-99575-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 341003**

**Client Sample ID: MW-77\_080618**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	10.0	9.98		ug/L		100	62 - 127	6	14
cis-1,2-Dichloroethene	0.61	J	10.0	9.91		ug/L		93	69 - 127	6	11
Tetrachloroethene	1.0	U *	10.0	11.2		ug/L		112	69 - 126	9	18
trans-1,2-Dichloroethene	1.0	U	10.0	9.95		ug/L		99	66 - 131	3	11
Trichloroethene	1.0	U	10.0	9.79		ug/L		98	68 - 129	3	12
Vinyl chloride	0.24	J	10.0	10.8		ug/L		105	55 - 123	1	12

  

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		61 - 138
4-Bromofluorobenzene (Surr)	86		69 - 120
Toluene-d8 (Surr)	92		73 - 120
Dibromofluoromethane (Surr)	94		69 - 124

**Lab Sample ID: MB 240-341482/9**  
**Matrix: Water**  
**Analysis Batch: 341482**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 11:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			08/18/18 11:15	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			08/18/18 11:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			08/18/18 11:15	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			08/18/18 11:15	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			08/18/18 11:15	1

  

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	122		61 - 138		08/18/18 11:15	1
4-Bromofluorobenzene (Surr)	107		69 - 120		08/18/18 11:15	1
Toluene-d8 (Surr)	108		73 - 120		08/18/18 11:15	1
Dibromofluoromethane (Surr)	107		69 - 124		08/18/18 11:15	1

**Lab Sample ID: LCS 240-341482/6**  
**Matrix: Water**  
**Analysis Batch: 341482**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	20.0	21.8		ug/L		109	65 - 127
cis-1,2-Dichloroethene	20.0	19.8		ug/L		99	77 - 120
Tetrachloroethene	20.0	18.3		ug/L		92	80 - 122
trans-1,2-Dichloroethene	20.0	21.2		ug/L		106	74 - 124

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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

**Lab Sample ID: LCS 240-341482/6**

**Matrix: Water**

**Analysis Batch: 341482**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	20.0	17.8		ug/L		89	76 - 124
Vinyl chloride	20.0	19.9		ug/L		100	65 - 124

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	123		61 - 138
4-Bromofluorobenzene (Surr)	112		69 - 120
Toluene-d8 (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	112		69 - 124

**Lab Sample ID: 240-99576-E-1 MS**

**Matrix: Water**

**Analysis Batch: 341482**

**Client Sample ID: Matrix Spike**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethene	40	U	800	802		ug/L		100	62 - 127
cis-1,2-Dichloroethene	180		800	905		ug/L		90	69 - 127
Tetrachloroethene	40	U	800	703		ug/L		88	69 - 126
trans-1,2-Dichloroethene	40	U	800	800		ug/L		100	66 - 131
Trichloroethene	40	U	800	691		ug/L		86	68 - 129
Vinyl chloride	870		800	1490		ug/L		78	55 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		61 - 138
4-Bromofluorobenzene (Surr)	110		69 - 120
Toluene-d8 (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	104		69 - 124

**Lab Sample ID: 240-99576-E-1 MSD**

**Matrix: Water**

**Analysis Batch: 341482**

**Client Sample ID: Matrix Spike Duplicate**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	40	U	800	804		ug/L		100	62 - 127	0	14
cis-1,2-Dichloroethene	180		800	905		ug/L		90	69 - 127	0	11
Tetrachloroethene	40	U	800	686		ug/L		86	69 - 126	2	18
trans-1,2-Dichloroethene	40	U	800	811		ug/L		101	66 - 131	1	11
Trichloroethene	40	U	800	682		ug/L		85	68 - 129	1	12
Vinyl chloride	870		800	1560		ug/L		86	55 - 123	4	12

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	118		61 - 138
4-Bromofluorobenzene (Surr)	112		69 - 120
Toluene-d8 (Surr)	110		73 - 120
Dibromofluoromethane (Surr)	104		69 - 124

TestAmerica Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

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

**Lab Sample ID: MB 240-340120/5**

**Matrix: Water**

**Analysis Batch: 340120**

**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			08/09/18 12:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		63 - 125					08/09/18 12:36	1

**Lab Sample ID: LCS 240-340120/4**

**Matrix: Water**

**Analysis Batch: 340120**

**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	8.42		ug/L		84	59 - 131
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	99		63 - 125				

**Lab Sample ID: 240-99575-3 MS**

**Matrix: Water**

**Analysis Batch: 340120**

**Client Sample ID: MW-77\_080618**

**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	9.43		ug/L		94	52 - 129
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	103		63 - 125						

**Lab Sample ID: 240-99575-3 MSD**

**Matrix: Water**

**Analysis Batch: 340120**

**Client Sample ID: MW-77\_080618**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.12		ug/L		91	52 - 129	3	13
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	105		63 - 125								

TestAmerica Canton

# QC Association Summary

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

## GC/MS VOA

### Analysis Batch: 340120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99575-1	MW-87_080618	Total/NA	Water	8260B SIM	
240-99575-2	MW-86_080618	Total/NA	Water	8260B SIM	
240-99575-3	MW-77_080618	Total/NA	Water	8260B SIM	
240-99575-4	MW-84_080618	Total/NA	Water	8260B SIM	
240-99575-5	MW-79D_080618	Total/NA	Water	8260B SIM	
240-99575-6	MW-79S_080618	Total/NA	Water	8260B SIM	
240-99575-7	MW-78_080618	Total/NA	Water	8260B SIM	
240-99575-8	MW-80S_080618	Total/NA	Water	8260B SIM	
240-99575-9	DUP-01_080618	Total/NA	Water	8260B SIM	
240-99575-10	TRIP BLANK	Total/NA	Water	8260B SIM	
MB 240-340120/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-340120/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-99575-3 MS	MW-77_080618	Total/NA	Water	8260B SIM	
240-99575-3 MSD	MW-77_080618	Total/NA	Water	8260B SIM	

### Analysis Batch: 341003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99575-3	MW-77_080618	Total/NA	Water	8260B	
MB 240-341003/7	Method Blank	Total/NA	Water	8260B	
LCS 240-341003/5	Lab Control Sample	Total/NA	Water	8260B	
240-99575-3 MS	MW-77_080618	Total/NA	Water	8260B	
240-99575-3 MSD	MW-77_080618	Total/NA	Water	8260B	

### Analysis Batch: 341482

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-99575-1	MW-87_080618	Total/NA	Water	8260B	
240-99575-2	MW-86_080618	Total/NA	Water	8260B	
240-99575-4	MW-84_080618	Total/NA	Water	8260B	
240-99575-5	MW-79D_080618	Total/NA	Water	8260B	
240-99575-6	MW-79S_080618	Total/NA	Water	8260B	
240-99575-7	MW-78_080618	Total/NA	Water	8260B	
240-99575-8	MW-80S_080618	Total/NA	Water	8260B	
240-99575-9	DUP-01_080618	Total/NA	Water	8260B	
240-99575-10	TRIP BLANK	Total/NA	Water	8260B	
MB 240-341482/9	Method Blank	Total/NA	Water	8260B	
LCS 240-341482/6	Lab Control Sample	Total/NA	Water	8260B	
240-99576-E-1 MS	Matrix Spike	Total/NA	Water	8260B	
240-99576-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	



# Lab Chronicle

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-87\_080618**

**Date Collected: 08/06/18 09:05**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 12:00	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 16:13	SAM	TAL CAN

**Client Sample ID: MW-86\_080618**

**Date Collected: 08/06/18 10:05**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 12:22	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 16:38	SAM	TAL CAN

**Client Sample ID: MW-77\_080618**

**Date Collected: 08/06/18 11:09**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341003	08/15/18 15:50	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 17:03	SAM	TAL CAN

**Client Sample ID: MW-84\_080618**

**Date Collected: 08/06/18 12:10**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 12:44	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 18:17	SAM	TAL CAN

**Client Sample ID: MW-79D\_080618**

**Date Collected: 08/06/18 13:29**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-5**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 13:06	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 18:42	SAM	TAL CAN

**Client Sample ID: MW-79S\_080618**

**Date Collected: 08/06/18 14:11**

**Date Received: 08/08/18 09:50**

**Lab Sample ID: 240-99575-6**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 13:28	HMB	TAL CAN

TestAmerica Canton

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP Livonia MI - E203631

TestAmerica Job ID: 240-99575-1

**Client Sample ID: MW-79S\_080618**

**Lab Sample ID: 240-99575-6**

Date Collected: 08/06/18 14:11

Matrix: Water

Date Received: 08/08/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 19:07	SAM	TAL CAN

**Client Sample ID: MW-78\_080618**

**Lab Sample ID: 240-99575-7**

Date Collected: 08/06/18 15:06

Matrix: Water

Date Received: 08/08/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 13:50	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 19:32	SAM	TAL CAN

**Client Sample ID: MW-80S\_080618**

**Lab Sample ID: 240-99575-8**

Date Collected: 08/06/18 15:56

Matrix: Water

Date Received: 08/08/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 14:12	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 19:56	SAM	TAL CAN

**Client Sample ID: DUP-01\_080618**

**Lab Sample ID: 240-99575-9**

Date Collected: 08/06/18 00:00

Matrix: Water

Date Received: 08/08/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 14:34	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 20:21	SAM	TAL CAN

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-99575-10**

Date Collected: 08/06/18 00:00

Matrix: Water

Date Received: 08/08/18 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	341482	08/18/18 14:56	HMB	TAL CAN
Total/NA	Analysis	8260B SIM		1	340120	08/09/18 15:48	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 - E203631

TestAmerica Job ID: 240-99575-1

## 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	07-31-18 *
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	08-31-18 *
USDA	Federal		P330-16-00404	12-28-19
Virginia	NELAP	3	460175	09-14-18 *
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.





