

## ANALYTICAL REPORT

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

Laboratory Job ID: 240-140443-1  
Client Project/Site: Ford LTP - On Site  
Revision: 1

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

Attn: Kristoffer Hinskey



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Authorized for release by:  
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Michael DelMonico, Project Manager I  
(330)497-9396  
[Michael.DelMonico@Eurofinset.com](mailto:Michael.DelMonico@Eurofinset.com)

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	2
Definitions/Glossary . . . . .	3
Case Narrative . . . . .	4
Method Summary . . . . .	6
Sample Summary . . . . .	7
Detection Summary . . . . .	8
Client Sample Results . . . . .	9
Surrogate Summary . . . . .	14
QC Sample Results . . . . .	15
QC Association Summary . . . . .	18
Lab Chronicle . . . . .	19
Certification Summary . . . . .	20
Chain of Custody . . . . .	21

# Definitions/Glossary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

## Qualifiers

### GC/MS VOA

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

## 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
CFU	Colony Forming Unit
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)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
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)
TNTC	Too Numerous To Count

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Job ID: 240-140443-1**

**Laboratory: Eurofins TestAmerica, Canton**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP - On Site**

**Report Number: 240-140443-1**

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.

Eurofins TestAmerica, Canton attests to the validity of the laboratory data generated by Eurofins TestAmerica facilities reported herein. All analyses performed by Eurofins TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the application methods. Eurofins 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 Eurofins TestAmerica and its client.

### **RECEIPT**

The samples were received on 11/18/2020 9:40 AM; the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.2° C.

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

Samples TRIP BLANK (240-140443-1), LMW-20-15\_111620 (240-140443-2), MW-195S\_111620 (240-140443-3), MW-196\_111620 (240-140443-4) and MW-196S\_111620 (240-140443-5) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/25/2020.

cis-1,2-Dichloroethene was detected in method blank MB 240-462825/7 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. Refer to the QC report for details.

Samples LMW-20-15\_111620 (240-140443-2)[5X], MW-195S\_111620 (240-140443-3)[100X], MW-196\_111620 (240-140443-4)[25X] and MW-196S\_111620 (240-140443-5)[4X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

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 LMW-20-15\_111620 (240-140443-2), MW-195S\_111620 (240-140443-3), MW-196\_111620 (240-140443-4) and

# Case Narrative

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

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## Job ID: 240-140443-1 (Continued)

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### Laboratory: Eurofins TestAmerica, Canton (Continued)

MW-196S\_111620 (240-140443-5) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 11/24/2020.

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

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

# Method Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

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 = Eurofins 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 - On Site

Job ID: 240-140443-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-140443-1	TRIP BLANK	Water	11/16/20 00:00	11/18/20 09:40	
240-140443-2	LMW-20-15_111620	Water	11/16/20 09:04	11/18/20 09:40	
240-140443-3	MW-195S_111620	Water	11/16/20 10:17	11/18/20 09:40	
240-140443-4	MW-196_111620	Water	11/16/20 11:39	11/18/20 09:40	
240-140443-5	MW-196S_111620	Water	11/16/20 12:56	11/18/20 09:40	

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# Detection Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-140443-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.43	J B	1.0	0.16	ug/L	1		8260B	Total/NA

## Client Sample ID: LMW-20-15\_111620

Lab Sample ID: 240-140443-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.5	J	5.0	0.95	ug/L	5		8260B	Total/NA
cis-1,2-Dichloroethene	180	B	5.0	0.80	ug/L	5		8260B	Total/NA
trans-1,2-Dichloroethene	17		5.0	0.95	ug/L	5		8260B	Total/NA
Trichloroethene	62		5.0	0.50	ug/L	5		8260B	Total/NA
Vinyl chloride	13		5.0	1.0	ug/L	5		8260B	Total/NA

## Client Sample ID: MW-195S\_111620

Lab Sample ID: 240-140443-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	180	B	100	16	ug/L	100		8260B	Total/NA
trans-1,2-Dichloroethene	140		100	19	ug/L	100		8260B	Total/NA
Trichloroethene	2400		100	10	ug/L	100		8260B	Total/NA

## Client Sample ID: MW-196\_111620

Lab Sample ID: 240-140443-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	310	B	25	4.0	ug/L	25		8260B	Total/NA
trans-1,2-Dichloroethene	94		25	4.8	ug/L	25		8260B	Total/NA
Trichloroethene	610		25	2.5	ug/L	25		8260B	Total/NA

## Client Sample ID: MW-196S\_111620

Lab Sample ID: 240-140443-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	85	B	4.0	0.64	ug/L	4		8260B	Total/NA
trans-1,2-Dichloroethene	1.9	J	4.0	0.76	ug/L	4		8260B	Total/NA
Trichloroethene	34		4.0	0.40	ug/L	4		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Canton



# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-140443-1**

**Date Collected: 11/16/20 00:00**

**Matrix: Water**

**Date Received: 11/18/20 09:40**

**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			11/25/20 17:37	1
<b>cis-1,2-Dichloroethene</b>	<b>0.43</b>	<b>J B</b>	1.0	0.16	ug/L			11/25/20 17:37	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/25/20 17:37	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/25/20 17:37	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/25/20 17:37	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/25/20 17:37	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/25/20 17:37	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/25/20 17:37	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)	86		75 - 130					11/25/20 17:37	1
4-Bromofluorobenzene (Surr)	106		47 - 134					11/25/20 17:37	1
Toluene-d8 (Surr)	77		69 - 122					11/25/20 17:37	1
Dibromofluoromethane (Surr)	84		78 - 129					11/25/20 17:37	1

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Client Sample ID: LMW-20-15\_111620**

**Lab Sample ID: 240-140443-2**

Date Collected: 11/16/20 09:04

Matrix: Water

Date Received: 11/18/20 09:40

**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			11/24/20 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 133					11/24/20 15:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.5	J	5.0	0.95	ug/L			11/25/20 18:03	5
cis-1,2-Dichloroethene	180	B	5.0	0.80	ug/L			11/25/20 18:03	5
Tetrachloroethene	5.0	U	5.0	0.75	ug/L			11/25/20 18:03	5
trans-1,2-Dichloroethene	17		5.0	0.95	ug/L			11/25/20 18:03	5
Trichloroethene	62		5.0	0.50	ug/L			11/25/20 18:03	5
Vinyl chloride	13		5.0	1.0	ug/L			11/25/20 18:03	5
2-Methylnaphthalene	25	U	25	12	ug/L			11/25/20 18:03	5
Naphthalene	5.0	U	5.0	1.6	ug/L			11/25/20 18:03	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 130					11/25/20 18:03	5
4-Bromofluorobenzene (Surr)	102		47 - 134					11/25/20 18:03	5
Toluene-d8 (Surr)	77		69 - 122					11/25/20 18:03	5
Dibromofluoromethane (Surr)	90		78 - 129					11/25/20 18:03	5

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Client Sample ID: MW-195S\_111620**

**Lab Sample ID: 240-140443-3**

Date Collected: 11/16/20 10:17

Matrix: Water

Date Received: 11/18/20 09:40

**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			11/24/20 15:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		70 - 133		11/24/20 15:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	100	U	100	19	ug/L			11/25/20 18:28	100
<b>cis-1,2-Dichloroethene</b>	<b>180</b>	<b>B</b>	100	16	ug/L			11/25/20 18:28	100
Tetrachloroethene	100	U	100	15	ug/L			11/25/20 18:28	100
<b>trans-1,2-Dichloroethene</b>	<b>140</b>		100	19	ug/L			11/25/20 18:28	100
<b>Trichloroethene</b>	<b>2400</b>		100	10	ug/L			11/25/20 18:28	100
Vinyl chloride	100	U	100	20	ug/L			11/25/20 18:28	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		75 - 130		11/25/20 18:28	100
4-Bromofluorobenzene (Surr)	100		47 - 134		11/25/20 18:28	100
Toluene-d8 (Surr)	77		69 - 122		11/25/20 18:28	100
Dibromofluoromethane (Surr)	88		78 - 129		11/25/20 18:28	100

# Client Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Client Sample ID: MW-196\_111620**

**Lab Sample ID: 240-140443-4**

Date Collected: 11/16/20 11:39

Matrix: Water

Date Received: 11/18/20 09:40

**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			11/24/20 16:08	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		70 - 133					11/24/20 16:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	25	U	25	4.8	ug/L			11/25/20 18:53	25
<b>cis-1,2-Dichloroethene</b>	<b>310</b>	<b>B</b>	25	4.0	ug/L			11/25/20 18:53	25
Tetrachloroethene	25	U	25	3.8	ug/L			11/25/20 18:53	25
<b>trans-1,2-Dichloroethene</b>	<b>94</b>		25	4.8	ug/L			11/25/20 18:53	25
<b>Trichloroethene</b>	<b>610</b>		25	2.5	ug/L			11/25/20 18:53	25
Vinyl chloride	25	U	25	5.0	ug/L			11/25/20 18:53	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130					11/25/20 18:53	25
4-Bromofluorobenzene (Surr)	98		47 - 134					11/25/20 18:53	25
Toluene-d8 (Surr)	76		69 - 122					11/25/20 18:53	25
Dibromofluoromethane (Surr)	84		78 - 129					11/25/20 18:53	25

# Client Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

**Client Sample ID: MW-196S\_111620**

**Lab Sample ID: 240-140443-5**

Date Collected: 11/16/20 12:56

Matrix: Water

Date Received: 11/18/20 09:40

**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			11/24/20 16:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		70 - 133					11/24/20 16:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	4.0	U	4.0	0.76	ug/L			11/25/20 19:18	4
<b>cis-1,2-Dichloroethene</b>	<b>85</b>	<b>B</b>	4.0	0.64	ug/L			11/25/20 19:18	4
Tetrachloroethene	4.0	U	4.0	0.60	ug/L			11/25/20 19:18	4
<b>trans-1,2-Dichloroethene</b>	<b>1.9</b>	<b>J</b>	4.0	0.76	ug/L			11/25/20 19:18	4
<b>Trichloroethene</b>	<b>34</b>		4.0	0.40	ug/L			11/25/20 19:18	4
Vinyl chloride	4.0	U	4.0	0.80	ug/L			11/25/20 19:18	4
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130					11/25/20 19:18	4
4-Bromofluorobenzene (Surr)	100		47 - 134					11/25/20 19:18	4
Toluene-d8 (Surr)	75		69 - 122					11/25/20 19:18	4
Dibromofluoromethane (Surr)	84		78 - 129					11/25/20 19:18	4

# Surrogate Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

## 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 (75-130)	BFB (47-134)	TOL (69-122)	DBFM (78-129)
240-140443-1	TRIP BLANK	86	106	77	84
240-140443-2	LMW-20-15_111620	87	102	77	90
240-140443-3	MW-195S_111620	91	100	77	88
240-140443-4	MW-196_111620	90	98	76	84
240-140443-5	MW-196S_111620	86	100	75	84
240-140444-G-4 MS	Matrix Spike	85	110	79	91
240-140444-H-4 MSD	Matrix Spike Duplicate	83	108	77	89
LCS 240-462825/4	Lab Control Sample	84	112	79	86
MB 240-462825/7	Method Blank	87	103	77	88

#### 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
		(70-133)
240-140443-2	LMW-20-15_111620	94
240-140443-3	MW-195S_111620	88
240-140443-4	MW-196_111620	90
240-140443-5	MW-196S_111620	95
240-140444-A-4 MS	Matrix Spike	98
240-140444-A-4 MSD	Matrix Spike Duplicate	95
LCS 240-462582/4	Lab Control Sample	87
MB 240-462582/5	Method Blank	89

#### Surrogate Legend

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

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

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

**Lab Sample ID: MB 240-462825/7**  
**Matrix: Water**  
**Analysis Batch: 462825**

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/25/20 15:17	1
cis-1,2-Dichloroethene	0.437	J	1.0	0.16	ug/L			11/25/20 15:17	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			11/25/20 15:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			11/25/20 15:17	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			11/25/20 15:17	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			11/25/20 15:17	1
2-Methylnaphthalene	5.0	U	5.0	2.4	ug/L			11/25/20 15:17	1
Naphthalene	1.0	U	1.0	0.32	ug/L			11/25/20 15:17	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	87		75 - 130		11/25/20 15:17	1
4-Bromofluorobenzene (Surr)	103		47 - 134		11/25/20 15:17	1
Toluene-d8 (Surr)	77		69 - 122		11/25/20 15:17	1
Dibromofluoromethane (Surr)	88		78 - 129		11/25/20 15:17	1

**Lab Sample ID: LCS 240-462825/4**  
**Matrix: Water**  
**Analysis Batch: 462825**

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

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1-Dichloroethene	10.0	10.9		ug/L		109	73 - 129
cis-1,2-Dichloroethene	10.0	11.2		ug/L		112	75 - 124
Tetrachloroethene	10.0	9.97		ug/L		100	70 - 125
trans-1,2-Dichloroethene	10.0	10.6		ug/L		106	74 - 130
Trichloroethene	10.0	10.9		ug/L		109	71 - 121
Vinyl chloride	10.0	11.8		ug/L		118	61 - 134
Naphthalene	10.0	8.12		ug/L		81	28 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		75 - 130
4-Bromofluorobenzene (Surr)	112		47 - 134
Toluene-d8 (Surr)	79		69 - 122
Dibromofluoromethane (Surr)	86		78 - 129

**Lab Sample ID: 240-140444-G-4 MS**  
**Matrix: Water**  
**Analysis Batch: 462825**

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

Analyte	Sample Sample		Spike Added	MS MS		Unit	D	%Rec	%Rec. Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	64 - 132
cis-1,2-Dichloroethene	0.30	J B	10.0	10.2		ug/L		99	68 - 121
Tetrachloroethene	1.0	U	10.0	8.55		ug/L		86	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	9.29		ug/L		93	69 - 126
Trichloroethene	1.0	U	10.0	9.63		ug/L		96	56 - 124
Vinyl chloride	1.0	U	10.0	11.4		ug/L		114	49 - 136

Eurofins TestAmerica, Canton

# QC Sample Results

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

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

**Lab Sample ID: 240-140444-G-4 MS**  
**Matrix: Water**  
**Analysis Batch: 462825**

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	85		75 - 130
4-Bromofluorobenzene (Surr)	110		47 - 134
Toluene-d8 (Surr)	79		69 - 122
Dibromofluoromethane (Surr)	91		78 - 129

**Lab Sample ID: 240-140444-H-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 462825**

**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	1.0	U	10.0	10.5		ug/L		105	64 - 132	4	35
cis-1,2-Dichloroethene	0.30	J B	10.0	10.8		ug/L		105	68 - 121	7	35
Tetrachloroethene	1.0	U	10.0	8.79		ug/L		88	52 - 129	3	35
trans-1,2-Dichloroethene	1.0	U	10.0	10.0		ug/L		100	69 - 126	8	35
Trichloroethene	1.0	U	10.0	10.4		ug/L		104	56 - 124	8	35
Vinyl chloride	1.0	U	10.0	11.1		ug/L		111	49 - 136	2	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	108		47 - 134
Toluene-d8 (Surr)	77		69 - 122
Dibromofluoromethane (Surr)	89		78 - 129

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

**Lab Sample ID: MB 240-462582/5**  
**Matrix: Water**  
**Analysis Batch: 462582**

**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			11/24/20 11:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		70 - 133		11/24/20 11:31	1

**Lab Sample ID: LCS 240-462582/4**  
**Matrix: Water**  
**Analysis Batch: 462582**

**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	9.63		ug/L		96	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	87		70 - 133



# QC Sample Results

Client: ARCADIS U.S., Inc.  
 Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

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

**Lab Sample ID: 240-140444-A-4 MS**  
**Matrix: Water**  
**Analysis Batch: 462582**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	2.0	U	10.0	10.4		ug/L		104	46 - 170
<b>MS MS</b>									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		70 - 133						

**Lab Sample ID: 240-140444-A-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 462582**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.3		ug/L		103	46 - 170	1	26
<b>MSD MSD</b>											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	95		70 - 133								



# QC Association Summary

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

## GC/MS VOA

### Analysis Batch: 462582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140443-2	LMW-20-15_111620	Total/NA	Water	8260B SIM	
240-140443-3	MW-195S_111620	Total/NA	Water	8260B SIM	
240-140443-4	MW-196_111620	Total/NA	Water	8260B SIM	
240-140443-5	MW-196S_111620	Total/NA	Water	8260B SIM	
MB 240-462582/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-462582/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-140444-A-4 MS	Matrix Spike	Total/NA	Water	8260B SIM	
240-140444-A-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B SIM	

### Analysis Batch: 462825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-140443-1	TRIP BLANK	Total/NA	Water	8260B	
240-140443-2	LMW-20-15_111620	Total/NA	Water	8260B	
240-140443-3	MW-195S_111620	Total/NA	Water	8260B	
240-140443-4	MW-196_111620	Total/NA	Water	8260B	
240-140443-5	MW-196S_111620	Total/NA	Water	8260B	
MB 240-462825/7	Method Blank	Total/NA	Water	8260B	
LCS 240-462825/4	Lab Control Sample	Total/NA	Water	8260B	
240-140444-G-4 MS	Matrix Spike	Total/NA	Water	8260B	
240-140444-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260B	

# Lab Chronicle

Client: ARCADIS U.S., Inc.  
Project/Site: Ford LTP - On Site

Job ID: 240-140443-1

## Client Sample ID: TRIP BLANK

Date Collected: 11/16/20 00:00

Date Received: 11/18/20 09:40

## Lab Sample ID: 240-140443-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	462825	11/25/20 17:37	LRW	TAL CAN

## Client Sample ID: LMW-20-15\_111620

Date Collected: 11/16/20 09:04

Date Received: 11/18/20 09:40

## Lab Sample ID: 240-140443-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	462825	11/25/20 18:03	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462582	11/24/20 15:17	SAM	TAL CAN

## Client Sample ID: MW-195S\_111620

Date Collected: 11/16/20 10:17

Date Received: 11/18/20 09:40

## Lab Sample ID: 240-140443-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	462825	11/25/20 18:28	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462582	11/24/20 15:42	SAM	TAL CAN

## Client Sample ID: MW-196\_111620

Date Collected: 11/16/20 11:39

Date Received: 11/18/20 09:40

## Lab Sample ID: 240-140443-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	462825	11/25/20 18:53	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462582	11/24/20 16:08	SAM	TAL CAN

## Client Sample ID: MW-196S\_111620

Date Collected: 11/16/20 12:56

Date Received: 11/18/20 09:40

## Lab Sample ID: 240-140443-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		4	462825	11/25/20 19:18	LRW	TAL CAN
Total/NA	Analysis	8260B SIM		1	462582	11/24/20 16:33	SAM	TAL CAN

### Laboratory References:

TAL CAN = Eurofins 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 - On Site

Job ID: 240-140443-1

## Laboratory: Eurofins TestAmerica, Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-23-21
Connecticut	State	PH-0590	12-31-21
Florida	NELAP	E87225	06-30-21
Georgia	State	4062	02-23-21
Illinois	NELAP	004498	07-31-21
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-21
Kentucky (UST)	State	112225	02-23-21
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-21
New York	NELAP	10975	03-31-21
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-24-21
Pennsylvania	NELAP	68-00340	08-31-21
Texas	NELAP	T104704517-18-10	08-31-21
USDA	US Federal Programs	P330-18-00281	09-17-21
Virginia	NELAP	010101	09-14-21
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20



Chain of Custody Record

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

MICHIGAN 190

TestAmerica Laboratories, Inc.  
COC No: \_\_\_\_\_

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

Site Contact: Julia McClafferty  
Telephone: 734-644-5131

Client Project Manager: Kris Hinskey  
Telephone: 248-994-2240

Regulatory program:  DW  NPDES  RCRA  Other

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

Project Name: Ford LTP On-Site  
Project Number: 30050315.401.03  
PO # 30050315.401.03

Analyses  
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

Sampler Name: Xenia Chan  
Method of Shipment/Carrier:  
Shipping/Tracking No:

Containers & Preservatives  
H2SO4  
HNO3  
HCl  
NaOH  
ZnAc  
NaOH  
Others:

Matrix  
Aqueous  
Solid  
Sediment  
Air  
Others:

Sample Identification  
Sample Date  
Sample Time

Sample Identification	Sample Date	Sample Time	Matrix	Containers & Preservatives	Filtered Sample (Y/N)	Composite=C/Grab=G	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Naphthalene	2-methylnaphthalene	Sample Specific Notes / Special Instructions:
TRIP BLANK					NG		X	X	X	X	X	X	X	X	X	1 Trip Blank
LMW-20-15-111620	11/16/20	904	6		NG		X	X	X	X	X	X	X	X	X	3 vials for 8260B 3 vials for 8260B SIM
MW-1955-111620	11/16/20	1017	6		NG		X	X	X	X	X	X	X	X	X	
MW-196-111620	11/16/20	1139	6		NG		X	X	X	X	X	X	X	X	X	
MW-1965-111620	11/16/20	1256	6		NG		X	X	X	X	X	X	X	X	X	



Possible Hazard Identification  
 Non-Hazard  Flammable  Irritant  Poison B  Unknown  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments:  
 Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203728  
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	Arcadis	11/16/20 1415	Non Cold Storage	Arcadis	11/16/20 1415
<i>[Signature]</i>	Arcadis	11/17/20 1140	Received by: [Signature]	ETA	11/17/20 1140
<i>[Signature]</i>	ETA	11/17/20 1700	Received in Laboratory by: [Signature]	TA	11-18-20 940

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**Eurofins TestAmerica Canton Sample Receipt Form/Narrative**  
**Canton Facility**

Login # : 140443

Client Arcadis Site Name \_\_\_\_\_

Cooler unpacked by: \_\_\_\_\_

Cooler Received on 11-18-20 Opened on 11-18-20

FedEx: 1<sup>st</sup> 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-11 (CF +0.9 °C) Observed Cooler Temp. 1-3 °C Corrected Cooler Temp. 21 °C  
 IR GUN #IR-12 (CF +0.5°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

Tests that are not checked for pH by Receiving:  
 VOAs  
 Oil and Grease  
 TOC

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 (ID/Date/Time) be reconciled with the COC?  Yes No  
 9. For each sample, does the COC specify preservatives  (Y/N), # of containers  (Y/N), and sample type of grab/comp  (Y/N)?  
 10. Were correct bottle(s) used for the test(s) indicated?  Yes No  
 11. Sufficient quantity received to perform indicated analyses?  Yes No  
 12. Are these work share samples and all listed on the COC?  Yes  No

If yes, Questions 13-17 have been checked at the originating laboratory.

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No  NA pH Strip Lot# HC907861  
 14. Were VOAs on the COC?  Yes No  
 15. Were air bubbles >6 mm in any VOA vials?  Yes  No NA Larger than this.  
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_  Yes No  
 17. Was a LL Hg or Me Hg trip blank present? \_\_\_\_\_ Yes  No

Contacted PM \_\_\_\_\_ Date \_\_\_\_\_ by \_\_\_\_\_ via Verbal Voice Mail Other \_\_\_\_\_

Concerning \_\_\_\_\_

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES  additional next page Samples processed by: \_\_\_\_\_

19. 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)

20. SAMPLE PRESERVATION  
 Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_  
 VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_