

## ANALYTICAL REPORT

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Tel: (330)497-9396

Laboratory Job ID: 240-126438-1  
Client Project/Site: Ford LTP On Site

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



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



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# Definitions/Glossary

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

Job ID: 240-126438-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.
X	Surrogate is outside control 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 On Site

Job ID: 240-126438-1

**Job ID: 240-126438-1**

**Laboratory: Eurofins TestAmerica, Canton**

## Narrative

### CASE NARRATIVE

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

**Project: Ford LTP On Site**

**Report Number: 240-126438-1**

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 2/18/2020 9:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.5° C.

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

Samples TRIP BLANK (240-126438-1), MW-21\_021420 (240-126438-2), MW-1\_021420 (240-126438-3) and DUP-03 (240-126438-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 02/24/2020.

Vinyl chloride failed the recovery criteria low for the MS of sample MW-1-MS\_021420MS (240-126438-3) in batch 240-423965. Refer to the QC report for details.

Samples MW-21\_021420 (240-126438-2)[500X] and DUP-03 (240-126438-4)[500X] 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 MW-21\_021420 (240-126438-2), MW-1\_021420 (240-126438-3) and DUP-03 (240-126438-4) were analyzed for volatile organic compounds (GCMS SIM) in accordance with EPA SW-846 Method 8260B SIM. The samples were analyzed on 02/26/2020.

# Case Narrative

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

Job ID: 240-126438-1

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## Job ID: 240-126438-1 (Continued)

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

1,2-Dichloroethane-d4 (Surr) failed the surrogate recovery criteria high for MW-1-MS\_021420MS (240-126438-3MS). Refer to the QC report for details.

Surrogate recovery for the following sample was outside control limits: MW-1-MS\_021420 (240-126438-3[MS]). Evidence of matrix interference is present; 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.

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# Method Summary

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

Job ID: 240-126438-1

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



# Sample Summary

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

Job ID: 240-126438-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
240-126438-1	TRIP BLANK	Water	02/14/20 00:00	02/18/20 09:00	
240-126438-2	MW-21_021420	Water	02/14/20 13:28	02/18/20 09:00	
240-126438-3	MW-1_021420	Water	02/14/20 17:48	02/18/20 09:00	
240-126438-4	DUP-03	Water	02/14/20 00:00	02/18/20 09:00	

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- 11
- 12
- 13
- 14

# Detection Summary

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

Job ID: 240-126438-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126438-1

No Detections.

## Client Sample ID: MW-21\_021420

Lab Sample ID: 240-126438-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	33		2.0	0.86	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	6500		500	80	ug/L	500			8260B	Total/NA
Trichloroethene	250	J	500	50	ug/L	500			8260B	Total/NA
Vinyl chloride	2500		500	100	ug/L	500			8260B	Total/NA

## Client Sample ID: MW-1\_021420

Lab Sample ID: 240-126438-3

No Detections.

## Client Sample ID: DUP-03

Lab Sample ID: 240-126438-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	31		2.0	0.86	ug/L	1			8260B SIM	Total/NA
cis-1,2-Dichloroethene	6300		500	80	ug/L	500			8260B	Total/NA
trans-1,2-Dichloroethene	110	J	500	95	ug/L	500			8260B	Total/NA
Trichloroethene	260	J	500	50	ug/L	500			8260B	Total/NA
Vinyl chloride	2400		500	100	ug/L	500			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: 240-126438-1

**Client Sample ID: TRIP BLANK**

**Lab Sample ID: 240-126438-1**

Date Collected: 02/14/20 00:00

Matrix: Water

Date Received: 02/18/20 09:00

**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			02/24/20 18:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/20 18:06	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/20 18:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/20 18:06	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/20 18:06	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/20 18:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		75 - 130		02/24/20 18:06	1
4-Bromofluorobenzene (Surr)	62		47 - 134		02/24/20 18:06	1
Toluene-d8 (Surr)	81		69 - 122		02/24/20 18:06	1
Dibromofluoromethane (Surr)	91		78 - 129		02/24/20 18:06	1

# Client Sample Results

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

Job ID: 240-126438-1

**Client Sample ID: MW-21\_021420**

**Lab Sample ID: 240-126438-2**

Date Collected: 02/14/20 13:28

Matrix: Water

Date Received: 02/18/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	33		2.0	0.86	ug/L			02/26/20 18:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 133		02/26/20 18:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	95	ug/L			02/24/20 18:27	500
cis-1,2-Dichloroethene	6500		500	80	ug/L			02/24/20 18:27	500
Tetrachloroethene	500	U	500	75	ug/L			02/24/20 18:27	500
trans-1,2-Dichloroethene	500	U	500	95	ug/L			02/24/20 18:27	500
Trichloroethene	250	J	500	50	ug/L			02/24/20 18:27	500
Vinyl chloride	2500		500	100	ug/L			02/24/20 18:27	500

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		75 - 130		02/24/20 18:27	500
4-Bromofluorobenzene (Surr)	67		47 - 134		02/24/20 18:27	500
Toluene-d8 (Surr)	87		69 - 122		02/24/20 18:27	500
Dibromofluoromethane (Surr)	94		78 - 129		02/24/20 18:27	500

# Client Sample Results

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

Job ID: 240-126438-1

**Client Sample ID: MW-1\_021420**

**Lab Sample ID: 240-126438-3**

Date Collected: 02/14/20 17:48

Matrix: Water

Date Received: 02/18/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L	-		02/26/20 18:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	133		70 - 133		02/26/20 18:34	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	-		02/24/20 18:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L	-		02/24/20 18:49	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L	-		02/24/20 18:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L	-		02/24/20 18:49	1
Trichloroethene	1.0	U	1.0	0.10	ug/L	-		02/24/20 18:49	1
Vinyl chloride	1.0	U F1	1.0	0.20	ug/L	-		02/24/20 18:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		75 - 130		02/24/20 18:49	1
4-Bromofluorobenzene (Surr)	59		47 - 134		02/24/20 18:49	1
Toluene-d8 (Surr)	75		69 - 122		02/24/20 18:49	1
Dibromofluoromethane (Surr)	85		78 - 129		02/24/20 18:49	1

# Client Sample Results

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

Job ID: 240-126438-1

**Client Sample ID: DUP-03**

**Lab Sample ID: 240-126438-4**

Date Collected: 02/14/20 00:00

Matrix: Water

Date Received: 02/18/20 09:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	31		2.0	0.86	ug/L			02/26/20 19:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 133					02/26/20 19:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	95	ug/L			02/24/20 19:54	500
cis-1,2-Dichloroethene	6300		500	80	ug/L			02/24/20 19:54	500
Tetrachloroethene	500	U	500	75	ug/L			02/24/20 19:54	500
trans-1,2-Dichloroethene	110	J	500	95	ug/L			02/24/20 19:54	500
Trichloroethene	260	J	500	50	ug/L			02/24/20 19:54	500
Vinyl chloride	2400		500	100	ug/L			02/24/20 19:54	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		75 - 130					02/24/20 19:54	500
4-Bromofluorobenzene (Surr)	69		47 - 134					02/24/20 19:54	500
Toluene-d8 (Surr)	86		69 - 122					02/24/20 19:54	500
Dibromofluoromethane (Surr)	90		78 - 129					02/24/20 19:54	500

# Surrogate Summary

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

Job ID: 240-126438-1

## 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)
240-126438-1	TRIP BLANK	87	62	81	91
240-126438-2	MW-21_021420	90	67	87	94
240-126438-3	MW-1_021420	93	59	75	85
240-126438-3 MS	MW-1-MS_021420	83	72	86	84
240-126438-3 MSD	MW-1-MSD_021420	80	71	81	80
240-126438-4	DUP-03	86	69	86	90
LCS 240-423965/4	Lab Control Sample	83	87	95	92
MB 240-423965/7	Method Blank	88	73	89	92

#### 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)
240-126438-2	MW-21_021420	109
240-126438-3	MW-1_021420	133
240-126438-3 MS	MW-1-MS_021420	134 X
240-126438-3 MSD	MW-1-MSD_021420	133
240-126438-4	DUP-03	109
LCS 240-424320/4	Lab Control Sample	105
MB 240-424320/5	Method Blank	105

#### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-126438-1

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

**Lab Sample ID: MB 240-423965/7**  
**Matrix: Water**  
**Analysis Batch: 423965**

**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			02/24/20 12:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.16	ug/L			02/24/20 12:54	1
Tetrachloroethene	1.0	U	1.0	0.15	ug/L			02/24/20 12:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.19	ug/L			02/24/20 12:54	1
Trichloroethene	1.0	U	1.0	0.10	ug/L			02/24/20 12:54	1
Vinyl chloride	1.0	U	1.0	0.20	ug/L			02/24/20 12:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88		75 - 130		02/24/20 12:54	1
4-Bromofluorobenzene (Surr)	73		47 - 134		02/24/20 12:54	1
Toluene-d8 (Surr)	89		69 - 122		02/24/20 12:54	1
Dibromofluoromethane (Surr)	92		78 - 129		02/24/20 12:54	1

**Lab Sample ID: LCS 240-423965/4**  
**Matrix: Water**  
**Analysis Batch: 423965**

**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	10.5		ug/L		105	73 - 129
cis-1,2-Dichloroethene	10.0	10.2		ug/L		102	75 - 124
Tetrachloroethene	10.0	11.7		ug/L		117	70 - 125
trans-1,2-Dichloroethene	10.0	10.1		ug/L		101	74 - 130
Trichloroethene	10.0	10.0		ug/L		100	71 - 121
Vinyl chloride	10.0	6.62		ug/L		66	61 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	87		47 - 134
Toluene-d8 (Surr)	95		69 - 122
Dibromofluoromethane (Surr)	92		78 - 129

**Lab Sample ID: 240-126438-3 MS**  
**Matrix: Water**  
**Analysis Batch: 423965**

**Client Sample ID: MW-1-MS\_021420**  
**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	8.52		ug/L		85	64 - 132
cis-1,2-Dichloroethene	1.0	U	10.0	8.52		ug/L		85	68 - 121
Tetrachloroethene	1.0	U	10.0	8.91		ug/L		89	52 - 129
trans-1,2-Dichloroethene	1.0	U	10.0	8.25		ug/L		83	69 - 126
Trichloroethene	1.0	U	10.0	8.12		ug/L		81	56 - 124
Vinyl chloride	1.0	U F1	10.0	4.78	F1	ug/L		48	49 - 136

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	83		75 - 130
4-Bromofluorobenzene (Surr)	72		47 - 134
Toluene-d8 (Surr)	86		69 - 122

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-126438-1

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

**Lab Sample ID: 240-126438-3 MS**  
**Matrix: Water**  
**Analysis Batch: 423965**

**Client Sample ID: MW-1-MS\_021420**  
**Prep Type: Total/NA**

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	84		78 - 129

**Lab Sample ID: 240-126438-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 423965**

**Client Sample ID: MW-1-MSD\_021420**  
**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	7.20		ug/L		72	64 - 132	17	35
cis-1,2-Dichloroethene	1.0	U	10.0	8.00		ug/L		80	68 - 121	6	35
Tetrachloroethene	1.0	U	10.0	8.24		ug/L		82	52 - 129	8	35
trans-1,2-Dichloroethene	1.0	U	10.0	7.70		ug/L		77	69 - 126	7	35
Trichloroethene	1.0	U	10.0	7.62		ug/L		76	56 - 124	6	35
Vinyl chloride	1.0	U F1	10.0	5.67		ug/L		57	49 - 136	17	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	80		75 - 130
4-Bromofluorobenzene (Surr)	71		47 - 134
Toluene-d8 (Surr)	81		69 - 122
Dibromofluoromethane (Surr)	80		78 - 129

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

**Lab Sample ID: MB 240-424320/5**  
**Matrix: Water**  
**Analysis Batch: 424320**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			02/26/20 12:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 133		02/26/20 12:03	1

**Lab Sample ID: LCS 240-424320/4**  
**Matrix: Water**  
**Analysis Batch: 424320**

**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	80 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 133

**Lab Sample ID: 240-126438-3 MS**  
**Matrix: Water**  
**Analysis Batch: 424320**

**Client Sample ID: MW-1-MS\_021420**  
**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	9.77		ug/L		98	46 - 170

Eurofins TestAmerica, Canton

# QC Sample Results

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

Job ID: 240-126438-1

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	134	X	70 - 133

Lab Sample ID: 240-126438-3 MSD  
 Matrix: Water  
 Analysis Batch: 424320

Client Sample ID: MW-1-MSD\_021420  
 Prep Type: Total/NA

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec.</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
1,4-Dioxane	2.0	U	10.0	10.9		ug/L		109	46 - 170	11	26

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	133		70 - 133

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



# QC Association Summary

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

Job ID: 240-126438-1

## GC/MS VOA

### Analysis Batch: 423965

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126438-1	TRIP BLANK	Total/NA	Water	8260B	
240-126438-2	MW-21_021420	Total/NA	Water	8260B	
240-126438-3	MW-1_021420	Total/NA	Water	8260B	
240-126438-4	DUP-03	Total/NA	Water	8260B	
MB 240-423965/7	Method Blank	Total/NA	Water	8260B	
LCS 240-423965/4	Lab Control Sample	Total/NA	Water	8260B	
240-126438-3 MS	MW-1-MS_021420	Total/NA	Water	8260B	
240-126438-3 MSD	MW-1-MSD_021420	Total/NA	Water	8260B	

### Analysis Batch: 424320

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-126438-2	MW-21_021420	Total/NA	Water	8260B SIM	
240-126438-3	MW-1_021420	Total/NA	Water	8260B SIM	
240-126438-4	DUP-03	Total/NA	Water	8260B SIM	
MB 240-424320/5	Method Blank	Total/NA	Water	8260B SIM	
LCS 240-424320/4	Lab Control Sample	Total/NA	Water	8260B SIM	
240-126438-3 MS	MW-1-MS_021420	Total/NA	Water	8260B SIM	
240-126438-3 MSD	MW-1-MSD_021420	Total/NA	Water	8260B SIM	

# Lab Chronicle

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

Job ID: 240-126438-1

## Client Sample ID: TRIP BLANK

Lab Sample ID: 240-126438-1

Date Collected: 02/14/20 00:00

Matrix: Water

Date Received: 02/18/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423965	02/24/20 18:06	LEE	TAL CAN

## Client Sample ID: MW-21\_021420

Lab Sample ID: 240-126438-2

Date Collected: 02/14/20 13:28

Matrix: Water

Date Received: 02/18/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	423965	02/24/20 18:27	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	424320	02/26/20 18:08	SAM	TAL CAN

## Client Sample ID: MW-1\_021420

Lab Sample ID: 240-126438-3

Date Collected: 02/14/20 17:48

Matrix: Water

Date Received: 02/18/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	423965	02/24/20 18:49	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	424320	02/26/20 18:34	SAM	TAL CAN

## Client Sample ID: DUP-03

Lab Sample ID: 240-126438-4

Date Collected: 02/14/20 00:00

Matrix: Water

Date Received: 02/18/20 09:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		500	423965	02/24/20 19:54	LEE	TAL CAN
Total/NA	Analysis	8260B SIM		1	424320	02/26/20 19:52	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: 240-126438-1

## 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	02-23-20 *
Connecticut	State	PH-0590	12-31-19 *
Florida	NELAP	E87225	06-30-20
Georgia	State	4062	02-23-20 *
Illinois	NELAP	004498	07-31-20
Iowa	State	421	06-01-21
Kansas	NELAP	E-10336	04-30-20
Kentucky (WW)	State	KY98016	12-31-20
Minnesota	NELAP	OH00048	12-31-20
Minnesota (Petrofund)	State	3506	08-01-21
New Jersey	NELAP	OH001	06-30-20
New York	NELAP	10975	03-31-20
Ohio VAP	State	CL0024	06-05-21
Oregon	NELAP	4062	02-23-20 *
Pennsylvania	NELAP	68-00340	08-31-20
Texas	NELAP	T104704517-18-10	08-31-20
USDA	US Federal Programs	P330-16-00404	12-28-19 *
Virginia	NELAP	010101	09-14-20
Washington	State	C971	01-12-21
West Virginia DEP	State	210	12-31-20

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



Chain of Custody Record

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

Regulatory program:  DW  NPDES  RCRA  Other

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

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

Company Name: Arcadis  
 Address: 28550 Cabot Drive, Suite 500  
 City/State/Zip: Novi, MI, 48377

Phone: 248-994-2240

Project Name: Ford LTP On-Site  
 Project Number: 30042006.0401.02  
 PO # 30042006.0401.02

Sampler Name: Melissa Weaver  
 Method of Shipment/Carrier:  
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite=C/Grab=G	Analyses						Sample Specific Notes / Special Instructions:					
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl			NaOH	ZnAc NaOH	Umpres	Other:	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
TRIP BLANK																								1 TRIP BLANK
MW-21-021420	2/14/20	1328	6																					3 VOAs FOR 8260B
MW-1-021420	2/14/20	1748	6																					3 VOAs For 8260B SIM
MW-1-MS-021420	2/14/20	1748	6																					Run MS/MSD
MW-1-MSD-021420	2/14/20	1748	6																					Run MS/MSD
DUP-03	2/14/20		6																					

Barcode: 240-126438 Chain of Custody

Possible Hazard Identification  
 Non-Hazard  Irritable  Inflammable  In Irritant  Poison B  In Unknown  Return to Client  Disposal by Lab  Archive for 1  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:
M Weaver	Arcadis	2/14/20 1938	Novi Cold Storage	Arcadis	2/14/20 1938
Kris Hinskey	Arcadis	2/17/20 1345		ETA	2/17/20 1345
	ETA	2/17/20 1930		ETA	2-18-20 900



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


Login # : 126438

Client Arcadis Site Name \_\_\_\_\_  
 Cooler Received on 2-18-20 Opened on 2-18-20  
 FedEx:  1<sup>st</sup> Grd  Exp  UPS  FAS  Clipper Client Drop Off  TestAmerica Courier  Other

Cooler unpacked by:  
Ryan C

**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-10 (CF +0.7 °C) Observed Cooler Temp. 2.8 °C Corrected Cooler Temp. 3.5 °C  
 IR GUN #IR-11 (CF +0.9°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
12. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC995364
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 # 59072 Yes No ROC 2-18-20
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: \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**18. SAMPLE CONDITION**

Sample(s) \_\_\_\_\_ were received after the recommended holding time had expired.  
 Sample(s) \_\_\_\_\_ were received in a broken container.  
 Sample(s) \_\_\_\_\_ were received with bubble >6 mm in diameter. (Notify PM)

**19. SAMPLE PRESERVATION**

Sample(s) \_\_\_\_\_ were further preserved in the laboratory.  
 Time preserved: \_\_\_\_\_ Preservative(s) added/Lot number(s): \_\_\_\_\_

VOA Sample Preservation - Date/Time VOAs Frozen: \_\_\_\_\_