

## ANALYTICAL REPORT

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Laboratory Job ID: 460-197748-1  
Client Project/Site: Ford LTP On-Site

For:  
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Authorized for release by:  
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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 On-Site

Job ID: 460-197748-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
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.
▫	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: 460-197748-1

**Job ID: 460-197748-1**

**Laboratory: Eurofins TestAmerica, Edison**

**Narrative**

## CASE NARRATIVE

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

**Project: Ford LTP On-Site**

**Report Number: 460-197748-1**

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, Edison 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 11/26/2019 9:05 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 1.3° C, 2.3° C and 4.6° C.

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

Samples Trip Blank (460-197748-1), MW-120\_112319 (460-197748-2), MW-52\_112319 (460-197748-3) and MW-43\_112319 (460-197748-4) were analyzed for volatile organic compounds (GCMS) in accordance with EPA SW-846 Method 8260C. The samples were analyzed on 12/04/2019.

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

### **VOLATILE ORGANIC COMPOUNDS (GC/MS)**

Samples MW-120\_112319 (460-197748-2), MW-52\_112319 (460-197748-3) and MW-43\_112319 (460-197748-4) were analyzed for Volatile organic compounds (GC/MS) in accordance with SW-846 Method 8260C SIM. The samples were analyzed on 12/06/2019.

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

# Detection Summary

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

Job ID: 460-197748-1

## Client Sample ID: Trip Blank

Lab Sample ID: 460-197748-1

No Detections.

## Client Sample ID: MW-120\_112319

Lab Sample ID: 460-197748-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	4.8		1.0	0.31	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-52\_112319

Lab Sample ID: 460-197748-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.64	J	2.0	0.33	ug/L	1		8260C SIM	Total/NA
Vinyl chloride	4.7		1.0	0.17	ug/L	1		8260C	Total/NA

## Client Sample ID: MW-43\_112319

Lab Sample ID: 460-197748-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.6		2.0	0.33	ug/L	1		8260C SIM	Total/NA
Vinyl chloride	0.33	J	1.0	0.17	ug/L	1		8260C	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Edison

# Client Sample Results

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

Job ID: 460-197748-1

## Client Sample ID: Trip Blank

Lab Sample ID: 460-197748-1

Date Collected: 11/23/19 13:36

Matrix: Water

Date Received: 11/26/19 09:05

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/04/19 09:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/04/19 09:20	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/04/19 09:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/04/19 09:20	1
Trichloroethene	1.0	U	1.0	0.31	ug/L	-		12/04/19 09:20	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L	-		12/04/19 09:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		74 - 132		12/04/19 09:20	1
Toluene-d8 (Surr)	100		80 - 120		12/04/19 09:20	1
Dibromofluoromethane (Surr)	95		72 - 131		12/04/19 09:20	1
4-Bromofluorobenzene	81		77 - 124		12/04/19 09:20	1

## Client Sample ID: MW-120\_112319

Lab Sample ID: 460-197748-2

Date Collected: 11/23/19 13:36

Matrix: Water

Date Received: 11/26/19 09:05

### Method: 8260C 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	0.33	ug/L	-		12/06/19 05:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	86		72 - 133		12/06/19 05:08	1

### Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L	-		12/04/19 11:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L	-		12/04/19 11:41	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L	-		12/04/19 11:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L	-		12/04/19 11:41	1
<b>Trichloroethene</b>	<b>4.8</b>		1.0	0.31	ug/L	-		12/04/19 11:41	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L	-		12/04/19 11:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		74 - 132		12/04/19 11:41	1
Toluene-d8 (Surr)	99		80 - 120		12/04/19 11:41	1
Dibromofluoromethane (Surr)	96		72 - 131		12/04/19 11:41	1
4-Bromofluorobenzene	81		77 - 124		12/04/19 11:41	1

## Client Sample ID: MW-52\_112319

Lab Sample ID: 460-197748-3

Date Collected: 11/23/19 12:00

Matrix: Water

Date Received: 11/26/19 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>0.64</b>	<b>J</b>	2.0	0.33	ug/L	-		12/06/19 05:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	89		72 - 133		12/06/19 05:33	1

# Client Sample Results

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

Job ID: 460-197748-1

**Client Sample ID: MW-52\_112319**

**Lab Sample ID: 460-197748-3**

Date Collected: 11/23/19 12:00

Matrix: Water

Date Received: 11/26/19 09:05

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L			12/04/19 10:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L			12/04/19 10:54	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			12/04/19 10:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			12/04/19 10:54	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			12/04/19 10:54	1
<b>Vinyl chloride</b>	<b>4.7</b>		1.0	0.17	ug/L			12/04/19 10:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		74 - 132		12/04/19 10:54	1
Toluene-d8 (Surr)	99		80 - 120		12/04/19 10:54	1
Dibromofluoromethane (Surr)	95		72 - 131		12/04/19 10:54	1
4-Bromofluorobenzene	81		77 - 124		12/04/19 10:54	1

**Client Sample ID: MW-43\_112319**

**Lab Sample ID: 460-197748-4**

Date Collected: 11/23/19 10:40

Matrix: Water

Date Received: 11/26/19 09:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,4-Dioxane</b>	<b>3.6</b>		2.0	0.33	ug/L			12/06/19 05:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	89		72 - 133		12/06/19 05:58	1

**Method: 8260C - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.26	ug/L			12/04/19 11:17	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L			12/04/19 11:17	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			12/04/19 11:17	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			12/04/19 11:17	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			12/04/19 11:17	1
<b>Vinyl chloride</b>	<b>0.33</b>	<b>J</b>	1.0	0.17	ug/L			12/04/19 11:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		74 - 132		12/04/19 11:17	1
Toluene-d8 (Surr)	99		80 - 120		12/04/19 11:17	1
Dibromofluoromethane (Surr)	95		72 - 131		12/04/19 11:17	1
4-Bromofluorobenzene	81		77 - 124		12/04/19 11:17	1

# Surrogate Summary

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

Job ID: 460-197748-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (74-132)	TOL (80-120)	DBFM (72-131)	BFB (77-124)
460-197748-1	Trip Blank	94	100	95	81
460-197748-2	MW-120_112319	96	99	96	81
460-197748-3	MW-52_112319	97	99	95	81
460-197748-3 MS	MW-52-MS_112319	97	101	97	
460-197748-3 MSD	MW-52-MSD_112319	97	101	98	
460-197748-4	MW-43_112319	95	99	95	81
460-197748-4 MS	MW-43-MS_112319	101	108	102	
460-197748-4 MSD	MW-43-MSD_112319	99	104	101	
LCS 460-659878/4	Lab Control Sample	95	99	97	82
MB 460-659878/8	Method Blank	95	100	95	81

#### Surrogate Legend

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

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

BFB = 4-Bromofluorobenzene

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (72-133)
460-197748-2	MW-120_112319	86
460-197748-3	MW-52_112319	89
460-197748-3 MS	MW-52-MS_112319	88
460-197748-3 MSD	MW-52-MSD_112319	84
460-197748-4	MW-43_112319	89
460-197748-4 MS	MW-43-MS_112319	88
460-197748-4 MSD	MW-43-MSD_112319	87
LCS 460-660269/4	Lab Control Sample	84
MB 460-660269/7	Method Blank	94

#### Surrogate Legend

BFB = 4-Bromofluorobenzene



# QC Sample Results

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

Job ID: 460-197748-1

## Method: 8260C - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 460-659878/8**  
**Matrix: Water**  
**Analysis Batch: 659878**

**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	0.26	ug/L			12/04/19 08:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.22	ug/L			12/04/19 08:56	1
Tetrachloroethene	1.0	U	1.0	0.25	ug/L			12/04/19 08:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.24	ug/L			12/04/19 08:56	1
Trichloroethene	1.0	U	1.0	0.31	ug/L			12/04/19 08:56	1
Vinyl chloride	1.0	U	1.0	0.17	ug/L			12/04/19 08:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		74 - 132		12/04/19 08:56	1
Toluene-d8 (Surr)	100		80 - 120		12/04/19 08:56	1
Dibromofluoromethane (Surr)	95		72 - 131		12/04/19 08:56	1
4-Bromofluorobenzene	81		77 - 124		12/04/19 08:56	1

**Lab Sample ID: LCS 460-659878/4**  
**Matrix: Water**  
**Analysis Batch: 659878**

**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	23.4		ug/L		117	74 - 123
cis-1,2-Dichloroethene	20.0	19.7		ug/L		99	80 - 120
Tetrachloroethene	20.0	19.5		ug/L		98	78 - 122
trans-1,2-Dichloroethene	20.0	19.8		ug/L		99	79 - 120
Trichloroethene	20.0	19.0		ug/L		95	77 - 120
Vinyl chloride	20.0	20.9		ug/L		104	62 - 138

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		74 - 132
Toluene-d8 (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131
4-Bromofluorobenzene	82		77 - 124

**Lab Sample ID: 460-197748-3 MS**  
**Matrix: Water**  
**Analysis Batch: 659878**

**Client Sample ID: MW-52-MS\_112319**  
**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	20.0	23.9		ug/L		119	74 - 123
cis-1,2-Dichloroethene	1.0	U	20.0	19.4		ug/L		97	80 - 120
Tetrachloroethene	1.0	U	20.0	19.1		ug/L		95	78 - 122
trans-1,2-Dichloroethene	1.0	U	20.0	20.3		ug/L		102	79 - 120
Trichloroethene	1.0	U	20.0	19.3		ug/L		97	77 - 120
Vinyl chloride	4.7		20.0	27.0		ug/L		112	62 - 138

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	97		74 - 132
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	97		72 - 131

# QC Sample Results

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

Job ID: 460-197748-1

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

**Lab Sample ID: 460-197748-3 MSD**

**Matrix: Water**  
**Analysis Batch: 659878**

**Client Sample ID: MW-52-MSD\_112319**

**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	20.0	23.9		ug/L		120	74 - 123	0	30
cis-1,2-Dichloroethene	1.0	U	20.0	19.9		ug/L		100	80 - 120	3	30
Tetrachloroethene	1.0	U	20.0	19.3		ug/L		96	78 - 122	1	30
trans-1,2-Dichloroethene	1.0	U	20.0	20.5		ug/L		103	79 - 120	1	30
Trichloroethene	1.0	U	20.0	19.3		ug/L		97	77 - 120	0	30
Vinyl chloride	4.7		20.0	27.9		ug/L		116	62 - 138	3	30

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	97		74 - 132
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	98		72 - 131

**Lab Sample ID: 460-197748-4 MS**

**Matrix: Water**  
**Analysis Batch: 659878**

**Client Sample ID: MW-43-MS\_112319**

**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	20.0	24.1		ug/L		120	74 - 123		
cis-1,2-Dichloroethene	1.0	U	20.0	21.1		ug/L		106	80 - 120		
Tetrachloroethene	1.0	U	20.0	20.2		ug/L		101	78 - 122		
trans-1,2-Dichloroethene	1.0	U	20.0	21.6		ug/L		108	79 - 120		
Trichloroethene	1.0	U	20.0	20.1		ug/L		101	77 - 120		
Vinyl chloride	0.33	J	20.0	25.8		ug/L		127	62 - 138		

Surrogate	MS %Recovery	MS Qualifier	MS Limits
1,2-Dichloroethane-d4 (Surr)	101		74 - 132
Toluene-d8 (Surr)	108		80 - 120
Dibromofluoromethane (Surr)	102		72 - 131

**Lab Sample ID: 460-197748-4 MSD**

**Matrix: Water**  
**Analysis Batch: 659878**

**Client Sample ID: MW-43-MSD\_112319**

**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	20.0	23.5		ug/L		118	74 - 123	2	30
cis-1,2-Dichloroethene	1.0	U	20.0	19.6		ug/L		98	80 - 120	8	30
Tetrachloroethene	1.0	U	20.0	18.7		ug/L		93	78 - 122	8	30
trans-1,2-Dichloroethene	1.0	U	20.0	21.3		ug/L		106	79 - 120	1	30
Trichloroethene	1.0	U	20.0	19.5		ug/L		97	77 - 120	3	30
Vinyl chloride	0.33	J	20.0	27.0		ug/L		133	62 - 138	4	30

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
1,2-Dichloroethane-d4 (Surr)	99		74 - 132
Toluene-d8 (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	101		72 - 131

# QC Sample Results

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

Job ID: 460-197748-1

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

**Lab Sample ID: MB 460-660269/7**  
**Matrix: Water**  
**Analysis Batch: 660269**

**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	0.33	ug/L			12/06/19 01:47	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		72 - 133					12/06/19 01:47	1

**Lab Sample ID: LCS 460-660269/4**  
**Matrix: Water**  
**Analysis Batch: 660269**

**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	5.00	5.35		ug/L		107	66 - 135
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene	84		72 - 133				

**Lab Sample ID: 460-197748-3 MS**  
**Matrix: Water**  
**Analysis Batch: 660269**

**Client Sample ID: MW-52-MS\_112319**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	0.64	J	5.00	5.09		ug/L		89	66 - 135
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene	88		72 - 133						

**Lab Sample ID: 460-197748-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 660269**

**Client Sample ID: MW-52-MSD\_112319**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
1,4-Dioxane	0.64	J	5.00	4.99		ug/L		87	66 - 135	2	30
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene	84		72 - 133								

**Lab Sample ID: 460-197748-4 MS**  
**Matrix: Water**  
**Analysis Batch: 660269**

**Client Sample ID: MW-43-MS\_112319**  
**Prep Type: Total/NA**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dioxane	3.6		5.00	8.23		ug/L		92	66 - 135
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene	88		72 - 133						

# QC Sample Results

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

Job ID: 460-197748-1

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

Lab Sample ID: 460-197748-4 MSD

Matrix: Water

Analysis Batch: 660269

Client Sample ID: MW-43-MSD\_112319

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	3.6		5.00	7.56		ug/L		78	66 - 135	8	30
<b>Surrogate</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
4-Bromofluorobenzene	87		72 - 133								

# QC Association Summary

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

Job ID: 460-197748-1

## GC/MS VOA

### Analysis Batch: 659878

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-197748-1	Trip Blank	Total/NA	Water	8260C	
460-197748-2	MW-120_112319	Total/NA	Water	8260C	
460-197748-3	MW-52_112319	Total/NA	Water	8260C	
460-197748-4	MW-43_112319	Total/NA	Water	8260C	
MB 460-659878/8	Method Blank	Total/NA	Water	8260C	
LCS 460-659878/4	Lab Control Sample	Total/NA	Water	8260C	
460-197748-3 MS	MW-52-MS_112319	Total/NA	Water	8260C	
460-197748-3 MSD	MW-52-MSD_112319	Total/NA	Water	8260C	
460-197748-4 MS	MW-43-MS_112319	Total/NA	Water	8260C	
460-197748-4 MSD	MW-43-MSD_112319	Total/NA	Water	8260C	

### Analysis Batch: 660269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-197748-2	MW-120_112319	Total/NA	Water	8260C SIM	
460-197748-3	MW-52_112319	Total/NA	Water	8260C SIM	
460-197748-4	MW-43_112319	Total/NA	Water	8260C SIM	
MB 460-660269/7	Method Blank	Total/NA	Water	8260C SIM	
LCS 460-660269/4	Lab Control Sample	Total/NA	Water	8260C SIM	
460-197748-3 MS	MW-52-MS_112319	Total/NA	Water	8260C SIM	
460-197748-3 MSD	MW-52-MSD_112319	Total/NA	Water	8260C SIM	
460-197748-4 MS	MW-43-MS_112319	Total/NA	Water	8260C SIM	
460-197748-4 MSD	MW-43-MSD_112319	Total/NA	Water	8260C SIM	

# Lab Chronicle

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

Job ID: 460-197748-1

**Client Sample ID: Trip Blank**

**Date Collected: 11/23/19 13:36**

**Date Received: 11/26/19 09:05**

**Lab Sample ID: 460-197748-1**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	659878	12/04/19 09:20	CJM	TAL EDI

**Client Sample ID: MW-120\_112319**

**Date Collected: 11/23/19 13:36**

**Date Received: 11/26/19 09:05**

**Lab Sample ID: 460-197748-2**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	659878	12/04/19 11:41	CJM	TAL EDI
Total/NA	Analysis	8260C SIM		1	660269	12/06/19 05:08	KLB	TAL EDI

**Client Sample ID: MW-52\_112319**

**Date Collected: 11/23/19 12:00**

**Date Received: 11/26/19 09:05**

**Lab Sample ID: 460-197748-3**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	659878	12/04/19 10:54	CJM	TAL EDI
Total/NA	Analysis	8260C SIM		1	660269	12/06/19 05:33	KLB	TAL EDI

**Client Sample ID: MW-43\_112319**

**Date Collected: 11/23/19 10:40**

**Date Received: 11/26/19 09:05**

**Lab Sample ID: 460-197748-4**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	659878	12/04/19 11:17	CJM	TAL EDI
Total/NA	Analysis	8260C SIM		1	660269	12/06/19 05:58	KLB	TAL EDI

## Laboratory References:

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

# Accreditation/Certification Summary

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

Job ID: 460-197748-1

## Laboratory: Eurofins TestAmerica, Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0200	09-30-20
DE Haz. Subst. Cleanup Act (HSCA)	State	<cert No.>	12-31-21
Georgia	State	12028 (NJ)	06-30-20
Massachusetts	State	M-NJ312	06-30-20
Massachusetts	State Program	M-NJ312	06-30-20
New Jersey	NELAP	12028	06-30-20
New York	NELAP	11452	04-01-20
Pennsylvania	NELAP	68-00522	02-28-20
Rhode Island	State	LAO00132	12-30-19
USDA	US Federal Programs	P330-18-00135	05-03-21

## 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	06-01-20
Kansas	NELAP	E-10336	04-30-20
Kentucky (UST)	State	112225	02-23-20
Kentucky (WW)	State	KY98016	12-31-19
Minnesota	NELAP	OH00048	12-31-19
Minnesota (Petrofund)	State Program	3506	07-31-21
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	01-12-20
West Virginia DEP	State	210	12-31-19

# Method Summary

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

Job ID: 460-197748-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL EDI
8260C SIM	Volatile Organic Compounds (GC/MS)	SW846	TAL EDI
5030C	Purge and Trap	SW846	TAL EDI

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL EDI = Eurofins TestAmerica, Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900





# Sample Summary

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

Job ID: 460-197748-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
460-197748-1	Trip Blank	Water	11/23/19 13:36	11/26/19 09:05	
460-197748-2	MW-120_112319	Water	11/23/19 13:36	11/26/19 09:05	
460-197748-3	MW-52_112319	Water	11/23/19 12:00	11/26/19 09:05	
460-197748-4	MW-43_112319	Water	11/23/19 10:40	11/26/19 09:05	

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

Chain of Custody Record



TestAmerica  
THE LEADER IN ENVIRONMENTAL TESTING

Company Name: Arcadis		Client Contact:		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other															
Address: 2860 Cabot Drive, Suite 500		Client Project Manager: Kris Hinkey		Site Contact: Rachel Bielek															
City/State/Zip: Novi, MI, 48377		Telephone: 248-994-2240		Telephone: 248-946-6331															
Phone: 248-994-2240		Email: kris.hinkey@arcadis.com		Lab Contact: Mike DeLorenzo															
Project Name: Ford LTP On-Site		Sampler Name: RACHEL BIELEK		Analyses															
Project Number: 30016346-0001B		Method of Shipment/Carrier:		<input type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day															
PC # 30016346-0001B		Shipping/Tracking No:		<input type="checkbox"/> TAT if different from below															
Sample Identification	Sample Date	Sample Time	Matrix					Containers & Preservatives							Filtered Sample (Y/N)	Composite-C/Grab-G	Sample Specific Notes / Special Instructions		
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Unpres				Other:	
TRIP BLANK	11/23/19	---	X																1 TRIP BLANK
MW-120 - 112319		1316	X				X												3 Vials for 8260B 2.3 Vials for 8260B-SM
MW-52 - 112319		1200	X				X												3
MW-52 - MS - 112319		1200	X				X												3
MW-52 - MSD - 112319		1200	X				X												3
MW-43 - 112319		1040	X				X												4
MW-43 - MS - 112319		1040	X				X												4
MW-43 - MSD - 112319		1040	X				X												4

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

Relinquished by: **ARCADIS**  
Relinquished by: **ARCADIS**  
Relinquished by: **ARCADIS**

Received by: **NOVI COLDS STORAGE**  
Received by: **NOVI COLDS STORAGE**  
Received in Laboratory by: **NOVI COLDS STORAGE**

Date/Time: 11/23/19 1600  
Date/Time: 11/23/19 1600  
Date/Time: 11/23/19 1600



# Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 460-197748-1

**Login Number: 197748**

**List Source: Eurofins TestAmerica, Edison**

**List Number: 1**

**Creator: DiGuardia, Joseph L**

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

