

# ANALYTICAL REPORT

## PREPARED FOR

Attn: Kristoffer Hinskey  
ARCADIS US Inc  
28550 Cabot Drive  
Suite 500  
Novi, Michigan 48377

Generated 12/1/2023 5:22:35 AM

## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-195931-1

# Eurofins Cleveland

## Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

## Authorization



Generated  
12/1/2023 5:22:35 AM

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



# Table of Contents

Cover Page . . . . .	1
Table of Contents . . . . .	3
Definitions/Glossary . . . . .	4
Case Narrative . . . . .	5
Method Summary . . . . .	6
Sample Summary . . . . .	7
Detection Summary . . . . .	8
Client Sample Results . . . . .	9
Surrogate Summary . . . . .	12
QC Sample Results . . . . .	13
QC Association Summary . . . . .	17
Lab Chronicle . . . . .	18
Certification Summary . . . . .	19
Chain of Custody . . . . .	20

# Definitions/Glossary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
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 US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

---

**Job ID: 240-195931-1**

---

**Laboratory: Eurofins Cleveland**

## Narrative

---

### Job Narrative 240-195931-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method. Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

### Receipt

The samples were received on 11/22/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 4.9°C

### GC/MS VOA

Method 8260D: The MSD for batch 240-595975 was analyzed outside of the tune time, due to an instrument fault. This is a batch QC sample; therefore, the data have been reported.

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



# Method Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

**Protocol References:**

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

**Laboratory References:**

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

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

# Sample Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

---

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195931-1	TRIP BLANK_117	Water	11/20/23 00:00	11/22/23 08:00
240-195931-2	MW-38_112023	Water	11/20/23 09:36	11/22/23 08:00
240-195931-3	MW-37_112023	Water	11/20/23 14:38	11/22/23 08:00

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

# Detection Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

**Client Sample ID: TRIP BLANK\_117**

**Lab Sample ID: 240-195931-1**

No Detections.

**Client Sample ID: MW-38\_112023**

**Lab Sample ID: 240-195931-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.8		1.0	0.44	ug/L	1		8260D	Total/NA

**Client Sample ID: MW-37\_112023**

**Lab Sample ID: 240-195931-3**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland





# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

**Client Sample ID: TRIP BLANK\_117**

**Lab Sample ID: 240-195931-1**

Date Collected: 11/20/23 00:00

Matrix: Water

Date Received: 11/22/23 08:00

**Method: SW846 8260D - 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	0.49	ug/L			11/28/23 21:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 21:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 21:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 21:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 21:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 21:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137		11/28/23 21:16	1
4-Bromofluorobenzene (Surr)	82		56 - 136		11/28/23 21:16	1
Toluene-d8 (Surr)	104		78 - 122		11/28/23 21:16	1
Dibromofluoromethane (Surr)	102		73 - 120		11/28/23 21:16	1

# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

**Client Sample ID: MW-38\_112023**

**Lab Sample ID: 240-195931-2**

Date Collected: 11/20/23 09:36

Matrix: Water

Date Received: 11/22/23 08:00

**Method: SW846 8260D 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			11/30/23 16:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120					11/30/23 16:33	1

**Method: SW846 8260D - 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	0.49	ug/L			11/28/23 14:36	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 14:36	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 14:36	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 14:36	1
<b>Trichloroethene</b>	<b>1.8</b>		1.0	0.44	ug/L			11/28/23 14:36	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 14:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/28/23 14:36	1
4-Bromofluorobenzene (Surr)	81		56 - 136					11/28/23 14:36	1
Toluene-d8 (Surr)	103		78 - 122					11/28/23 14:36	1
Dibromofluoromethane (Surr)	99		73 - 120					11/28/23 14:36	1

# Client Sample Results

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

**Client Sample ID: MW-37\_112023**

**Lab Sample ID: 240-195931-3**

Date Collected: 11/20/23 14:38

Matrix: Water

Date Received: 11/22/23 08:00

**Method: SW846 8260D 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			11/30/23 15:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 120					11/30/23 15:21	1

**Method: SW846 8260D - 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	0.49	ug/L			11/28/23 11:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 11:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 11:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 11:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 11:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 11:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		62 - 137					11/28/23 11:16	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/28/23 11:16	1
Toluene-d8 (Surr)	102		78 - 122					11/28/23 11:16	1
Dibromofluoromethane (Surr)	99		73 - 120					11/28/23 11:16	1

# Surrogate Summary

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-195840-C-2 MS	Matrix Spike	103	114	109	108
240-195840-C-2 MSD	Matrix Spike Duplicate	106	109	109	104
240-195931-1	TRIP BLANK_117	114	82	104	102
240-195931-2	MW-38_112023	108	81	103	99
240-195931-3	MW-37_112023	107	83	102	99
240-195931-3 MS	MW-37-MS_112023	101	96	105	97
240-195931-3 MSD	MW-37-MSD_112023	100	98	106	98
LCS 240-595856/4	Lab Control Sample	100	95	105	100
LCS 240-595975/4	Lab Control Sample	107	98	109	103
MB 240-595856/6	Method Blank	107	86	104	97
MB 240-595975/6	Method Blank	112	84	105	101

**Surrogate Legend**

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

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-195931-2	MW-38_112023	97
240-195931-3	MW-37_112023	96
240-195931-3 MS	MW-37-MS_112023	98
240-195931-3 MSD	MW-37-MSD_112023	98
LCS 240-596122/4	Lab Control Sample	98
MB 240-596122/6	Method Blank	99

**Surrogate Legend**

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

# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

Lab Sample ID: MB 240-595856/6

Matrix: Water

Analysis Batch: 595856

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	0.49	ug/L			11/28/23 06:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 06:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 06:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 06:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 06:39	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 06:39	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		62 - 137		11/28/23 06:39	1
4-Bromofluorobenzene (Surr)	86		56 - 136		11/28/23 06:39	1
Toluene-d8 (Surr)	104		78 - 122		11/28/23 06:39	1
Dibromofluoromethane (Surr)	97		73 - 120		11/28/23 06:39	1

Lab Sample ID: LCS 240-595856/4

Matrix: Water

Analysis Batch: 595856

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	25.0	26.6		ug/L		106	63 - 134
cis-1,2-Dichloroethene	25.0	23.7		ug/L		95	77 - 123
Tetrachloroethene	25.0	27.7		ug/L		111	76 - 123
trans-1,2-Dichloroethene	25.0	24.3		ug/L		97	75 - 124
Trichloroethene	25.0	24.6		ug/L		98	70 - 122
Vinyl chloride	12.5	12.3		ug/L		98	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120

Lab Sample ID: 240-195931-3 MS

Matrix: Water

Analysis Batch: 595856

Client Sample ID: MW-37-MS\_112023

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	25.0	22.2		ug/L		89	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	21.9		ug/L		88	66 - 128
Tetrachloroethene	1.0	U	25.0	21.3		ug/L		85	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.0		ug/L		88	56 - 136
Trichloroethene	1.0	U	25.0	21.1		ug/L		84	61 - 124
Vinyl chloride	1.0	U	12.5	10.5		ug/L		84	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	101		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	105		78 - 122

Eurofins Cleveland

# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

Lab Sample ID: 240-195931-3 MS

Matrix: Water

Analysis Batch: 595856

Client Sample ID: MW-37-MS\_112023

Prep Type: Total/NA

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-195931-3 MSD

Matrix: Water

Analysis Batch: 595856

Client Sample ID: MW-37-MSD\_112023

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
1,1-Dichloroethene	1.0	U	25.0	23.3		ug/L		93	56 - 135	5	26	
cis-1,2-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	66 - 128	0	14	
Tetrachloroethene	1.0	U	25.0	22.2		ug/L		89	62 - 131	4	20	
trans-1,2-Dichloroethene	1.0	U	25.0	22.4		ug/L		90	56 - 136	2	15	
Trichloroethene	1.0	U	25.0	22.1		ug/L		88	61 - 124	5	15	
Vinyl chloride	1.0	U	12.5	11.4		ug/L		91	43 - 157	8	24	

  

Surrogate	MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	106		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: MB 240-595975/6

Matrix: Water

Analysis Batch: 595975

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	0.49	ug/L		11/28/23 18:46	1	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		11/28/23 18:46	1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L		11/28/23 18:46	1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		11/28/23 18:46	1	
Trichloroethene	1.0	U	1.0	0.44	ug/L		11/28/23 18:46	1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L		11/28/23 18:46	1	

  

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		11/28/23 18:46	1
4-Bromofluorobenzene (Surr)	84		56 - 136		11/28/23 18:46	1
Toluene-d8 (Surr)	105		78 - 122		11/28/23 18:46	1
Dibromofluoromethane (Surr)	101		73 - 120		11/28/23 18:46	1

Lab Sample ID: LCS 240-595975/4

Matrix: Water

Analysis Batch: 595975

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS		Unit	D	%Rec	%Rec
		Added	Result				
1,1-Dichloroethene	25.0	24.3		ug/L		97	63 - 134
cis-1,2-Dichloroethene	25.0	23.2		ug/L		93	77 - 123
Tetrachloroethene	25.0	26.3		ug/L		105	76 - 123
trans-1,2-Dichloroethene	25.0	23.5		ug/L		94	75 - 124
Trichloroethene	25.0	24.8		ug/L		99	70 - 122

Eurofins Cleveland

# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

Lab Sample ID: LCS 240-595975/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595975

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	11.4		ug/L		91	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-195840-C-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595975

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	20	U	500	510		ug/L		102	56 - 135
cis-1,2-Dichloroethene	170		500	662		ug/L		99	66 - 128
Tetrachloroethene	20	U	500	454		ug/L		91	62 - 131
trans-1,2-Dichloroethene	61		500	561		ug/L		100	56 - 136
Trichloroethene	510		500	885		ug/L		75	61 - 124
Vinyl chloride	20	U	250	207		ug/L		83	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	114		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	108		73 - 120

Lab Sample ID: 240-195840-C-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595975

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	20	U	500	508		ug/L		102	56 - 135	0	26
cis-1,2-Dichloroethene	170		500	632		ug/L		93	66 - 128	5	14
Tetrachloroethene	20	U	500	484		ug/L		97	62 - 131	6	20
trans-1,2-Dichloroethene	61		500	550		ug/L		98	56 - 136	2	15
Trichloroethene	510		500	925		ug/L		83	61 - 124	4	15
Vinyl chloride	20	U	250	233		ug/L		93	43 - 157	12	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		62 - 137
4-Bromofluorobenzene (Surr)	109		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120

# QC Sample Results

Client: ARCADIS US Inc  
Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

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

**Lab Sample ID: MB 240-596122/6**  
**Matrix: Water**  
**Analysis Batch: 596122**

**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			11/30/23 07:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120					11/30/23 07:21	1

**Lab Sample ID: LCS 240-596122/4**  
**Matrix: Water**  
**Analysis Batch: 596122**

**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	10.3		ug/L		103	80 - 122
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	98		66 - 120				

**Lab Sample ID: 240-195931-3 MS**  
**Matrix: Water**  
**Analysis Batch: 596122**

**Client Sample ID: MW-37-MS\_112023**  
**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	10.8		ug/L		108	51 - 153
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		66 - 120						

**Lab Sample ID: 240-195931-3 MSD**  
**Matrix: Water**  
**Analysis Batch: 596122**

**Client Sample ID: MW-37-MSD\_112023**  
**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	2.0	U	10.0	10.4		ug/L		104	51 - 153	4	16
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	98		66 - 120								



# QC Association Summary

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

## GC/MS VOA

### Analysis Batch: 595856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195931-2	MW-38_112023	Total/NA	Water	8260D	
240-195931-3	MW-37_112023	Total/NA	Water	8260D	
MB 240-595856/6	Method Blank	Total/NA	Water	8260D	
LCS 240-595856/4	Lab Control Sample	Total/NA	Water	8260D	
240-195931-3 MS	MW-37-MS_112023	Total/NA	Water	8260D	
240-195931-3 MSD	MW-37-MSD_112023	Total/NA	Water	8260D	

### Analysis Batch: 595975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195931-1	TRIP BLANK_117	Total/NA	Water	8260D	
MB 240-595975/6	Method Blank	Total/NA	Water	8260D	
LCS 240-595975/4	Lab Control Sample	Total/NA	Water	8260D	
240-195840-C-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195840-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 596122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195931-2	MW-38_112023	Total/NA	Water	8260D SIM	
240-195931-3	MW-37_112023	Total/NA	Water	8260D SIM	
MB 240-596122/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-596122/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195931-3 MS	MW-37-MS_112023	Total/NA	Water	8260D SIM	
240-195931-3 MSD	MW-37-MSD_112023	Total/NA	Water	8260D SIM	



# Lab Chronicle

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

**Client Sample ID: TRIP BLANK\_117**

**Lab Sample ID: 240-195931-1**

Date Collected: 11/20/23 00:00

Matrix: Water

Date Received: 11/22/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595975	CDG	EET CLE	11/28/23 21:16

**Client Sample ID: MW-38\_112023**

**Lab Sample ID: 240-195931-2**

Date Collected: 11/20/23 09:36

Matrix: Water

Date Received: 11/22/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595856	TJL2	EET CLE	11/28/23 14:36
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 16:33

**Client Sample ID: MW-37\_112023**

**Lab Sample ID: 240-195931-3**

Date Collected: 11/20/23 14:38

Matrix: Water

Date Received: 11/22/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595856	TJL2	EET CLE	11/28/23 11:16
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 15:21

**Laboratory References:**

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

## Accreditation/Certification Summary

Client: ARCADIS US Inc  
 Project/Site: Ford LTP - On Site

Job ID: 240-195931-1

### Laboratory: Eurofins Cleveland

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	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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



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

<b>Client Contact</b> 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: 30146655-401-03 PO # 30146655-401.03		<b>Regulatory program:</b> NPDES RCRA Other Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kris@arcadis.com Sampler Name: Nolan Scherdel Method of Shipment/Carrier: Shipping/Tracking No:		Site Contact: Christina Weaver Telephone: 248-994-2293 Lab Contact: Mike DeMontico Telephone: 330-497-9396		TestAmerica Laboratories, Inc. COC No: _____ of _____ COCs For lab use only Walk-in client Lab sampling Job/SDG No: _____ Sample Specific Notes / Special Instructions:	
<b>Sample Identification</b> Sample Date Sample Time Sample ID TRIP BLANK_117 MW-38-112023 MW-37-112023 MW-37-MS-112023 MW-37-MSD-112023		<b>Matrix</b> Air Aqueous Sediment Solid Other 1 6 6 6 6		<b>Containers &amp; Preservatives</b> H2SO4 HNO3 HCl NaOH ZnAc/NaOH Ulnpres Other 1 6 6 6 6		<b>Filtered Sample (Y/N)</b> 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	
Sample Specific Notes / Special Instructions: 1 Trip Blank 3 VOAs for 8260B 3 VOAs for 8260B SIM Run MS/MSD Run MS/MSD Run MS/MSD		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For _____ Months		Barcode: 240-195931 Chain of Custody		Relinquished by: Nolan Scherdel Relinquished by: Summer Day Relinquished by: July MP	
Relinquished by: Nolan Scherdel Relinquished by: Summer Day Relinquished by: July MP		Received by: Novi Warehouse Received by: July Mc Received by: Alyssa Anderson		Company: Arcadis Company: Arcadis Company: EENA		Date/Time: 11/21/23 0810 Date/Time: 11/21/23 0935 Date/Time: 11/21/23	

©2008 TestAmerica Laboratories, Inc. All rights reserved. TestAmerica & Design are trademarks of TestAmerica Laboratories, Inc.



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

Eurofins - Cleveland Sample Receipt Form/Narrative  
Barberton Facility

Login # : \_\_\_\_\_

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

Cooler unpacked by:

Cooler Received on 11-22-23 Opened on 11-22-23

Alison Atkinson

FedEx: 1<sup>st</sup> Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time \_\_\_\_\_ Storage Location \_\_\_\_\_

Eurofins Cooler # EC 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 # 22 (CF +1.1 °C) Observed Cooler Temp. 3.8 °C Corrected Cooler Temp. 4.9 °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  NA

-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 (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)?  Yes  No

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# HC316719

14. Were VOAs on the COC?  Yes  No  NA

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

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

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: \_\_\_\_\_

# DATA VERIFICATION REPORT



December 01, 2023

Kris Hinskey  
Arcadis of Michigan  
28550 Cabot Drive  
Suite 500  
Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil

Project number: 30167538.401.03- onsite groundwater

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 195931-1

Sample date: 2023-11-20

Report received by CADENA: 2023-12-01

Initial Data Verification completed by CADENA: 2023-12-01

Number of Samples:3

Sample Matrices:Water

Test Categories:GCMS VOC

**Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.**

The following minor QC exceptions or missing information were noted:

CMS VOC QC batch MS/MSD issues as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, MS/MSD Recovery, MS/MSD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

## CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.



# Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195931-1

<b>Sample Name:</b>	TRIP BLANK_117	MW-38_112023	MW-37_112023
<b>Lab Sample ID:</b>	2401959311	2401959312	2401959313
<b>Sample Date:</b>	11/20/2023	11/20/2023	11/20/2023

Analyte	Cas No.	TRIP BLANK_117				MW-38_112023				MW-37_112023			
		Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
<b>GC/MS VOC</b>													
<u>OSW-8260D</u>													
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	1.8	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
<u>OSW-8260DSIM</u>													
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---