

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-195921-1

# Eurofins Cleveland

## Job Notes

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## Authorization



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# 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 . . . . .	15
QC Sample Results . . . . .	16
QC Association Summary . . . . .	23
Lab Chronicle . . . . .	24
Certification Summary . . . . .	25
Chain of Custody . . . . .	26

# Definitions/Glossary

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

Job ID: 240-195921-1

## 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.
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: 240-195921-1

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## Job ID: 240-195921-1

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### Laboratory: Eurofins Cleveland

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#### Narrative

#### Job Narrative 240-195921-1

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 method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container(s): MW-32\_112023 (240-195921-2) and MW-33\_112023 (240-195921-3).

Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-21\_112023 (240-195921-4). Elevated reporting limits (RLs) are provided.

Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container(s): (240-195980-B-4), (240-195980-C-4 MS) and (240-195980-D-4 MSD). The sample container was received with headspace.

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: 240-195921-1

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

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# Sample Summary

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

Job ID: 240-195921-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195921-1	TRIP BLANK_121	Water	11/20/23 00:00	11/22/23 08:00
240-195921-2	MW-32_112023	Water	11/20/23 12:35	11/22/23 08:00
240-195921-3	MW-33_112023	Water	11/20/23 11:25	11/22/23 08:00
240-195921-4	MW-21_112023	Water	11/20/23 10:10	11/22/23 08:00
240-195921-5	MW-195S_112023	Water	11/20/23 14:00	11/22/23 08:00
240-195921-6	DUP-04	Water	11/20/23 00:00	11/22/23 08:00

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# Detection Summary

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

Job ID: 240-195921-1

## Client Sample ID: TRIP BLANK\_121

Lab Sample ID: 240-195921-1

No Detections.

## Client Sample ID: MW-32\_112023

Lab Sample ID: 240-195921-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.48	J	1.0	0.46	ug/L	1		8260D	Total/NA

## Client Sample ID: MW-33\_112023

Lab Sample ID: 240-195921-3

No Detections.

## Client Sample ID: MW-21\_112023

Lab Sample ID: 240-195921-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.9		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	36		4.0	1.8	ug/L	4		8260D	Total/NA
Vinyl chloride	49		4.0	1.8	ug/L	4		8260D	Total/NA

## Client Sample ID: MW-195S\_112023

Lab Sample ID: 240-195921-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	120		50	23	ug/L	50		8260D	Total/NA
trans-1,2-Dichloroethene	230		50	26	ug/L	50		8260D	Total/NA
Trichloroethene	2700		50	22	ug/L	50		8260D	Total/NA

## Client Sample ID: DUP-04

Lab Sample ID: 240-195921-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.3		1.0	0.49	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	110		50	23	ug/L	50		8260D	Total/NA
trans-1,2-Dichloroethene	230		50	26	ug/L	50		8260D	Total/NA
Trichloroethene	2800		50	22	ug/L	50		8260D	Total/NA
Vinyl chloride	3.0		1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: TRIP BLANK\_121**

**Lab Sample ID: 240-195921-1**

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			11/27/23 19:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 19:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 19:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 19:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 19:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 19:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		11/27/23 19:21	1
4-Bromofluorobenzene (Surr)	84		56 - 136		11/27/23 19:21	1
Toluene-d8 (Surr)	103		78 - 122		11/27/23 19:21	1
Dibromofluoromethane (Surr)	100		73 - 120		11/27/23 19:21	1

# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: MW-32\_112023**

**Lab Sample ID: 240-195921-2**

Date Collected: 11/20/23 12:35

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 10:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					11/30/23 10:09	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 11:41	1
<b>cis-1,2-Dichloroethene</b>	<b>0.48</b>	<b>J</b>	1.0	0.46	ug/L			11/28/23 11:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 11:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 11:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 11:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 11:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/28/23 11:41	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/28/23 11:41	1
Toluene-d8 (Surr)	102		78 - 122					11/28/23 11:41	1
Dibromofluoromethane (Surr)	99		73 - 120					11/28/23 11:41	1

# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: MW-33\_112023**

**Lab Sample ID: 240-195921-3**

Date Collected: 11/20/23 11:25

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 10:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					11/30/23 10:33	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 12:06	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/23 12:06	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 12:06	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/23 12:06	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 12:06	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/23 12:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					11/28/23 12:06	1
4-Bromofluorobenzene (Surr)	82		56 - 136					11/28/23 12:06	1
Toluene-d8 (Surr)	104		78 - 122					11/28/23 12:06	1
Dibromofluoromethane (Surr)	101		73 - 120					11/28/23 12:06	1

# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: MW-21\_112023**

**Lab Sample ID: 240-195921-4**

Date Collected: 11/20/23 10:10

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	4.9		2.0	0.86	ug/L			11/30/23 10:57	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					11/30/23 10:57	1

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	4.0	U	4.0	2.0	ug/L			11/28/23 12:31	4
cis-1,2-Dichloroethene	36		4.0	1.8	ug/L			11/28/23 12:31	4
Tetrachloroethene	4.0	U	4.0	1.8	ug/L			11/28/23 12:31	4
trans-1,2-Dichloroethene	4.0	U	4.0	2.0	ug/L			11/28/23 12:31	4
Trichloroethene	4.0	U	4.0	1.8	ug/L			11/28/23 12:31	4
Vinyl chloride	49		4.0	1.8	ug/L			11/28/23 12:31	4
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	110		62 - 137					11/28/23 12:31	4
4-Bromofluorobenzene (Surr)	83		56 - 136					11/28/23 12:31	4
Toluene-d8 (Surr)	105		78 - 122					11/28/23 12:31	4
Dibromofluoromethane (Surr)	101		73 - 120					11/28/23 12:31	4

# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: MW-195S\_112023**

**Lab Sample ID: 240-195921-5**

Date Collected: 11/20/23 14:00

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 11:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		66 - 120					11/30/23 11:21	1

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	50	U	50	25	ug/L			11/28/23 12:56	50
<b>cis-1,2-Dichloroethene</b>	<b>120</b>		50	23	ug/L			11/28/23 12:56	50
Tetrachloroethene	50	U	50	22	ug/L			11/28/23 12:56	50
<b>trans-1,2-Dichloroethene</b>	<b>230</b>		50	26	ug/L			11/28/23 12:56	50
<b>Trichloroethene</b>	<b>2700</b>		50	22	ug/L			11/28/23 12:56	50
Vinyl chloride	50	U	50	23	ug/L			11/28/23 12:56	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137					11/28/23 12:56	50
4-Bromofluorobenzene (Surr)	83		56 - 136					11/28/23 12:56	50
Toluene-d8 (Surr)	103		78 - 122					11/28/23 12:56	50
Dibromofluoromethane (Surr)	100		73 - 120					11/28/23 12:56	50

# Client Sample Results

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

Job ID: 240-195921-1

**Client Sample ID: DUP-04**

**Lab Sample ID: 240-195921-6**

Date Collected: 11/20/23 00:00

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 11:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		66 - 120					11/30/23 11:45	1

**Method: SW846 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.3		1.0	0.49	ug/L			11/28/23 13:21	1
cis-1,2-Dichloroethene	110		50	23	ug/L			11/29/23 12:08	50
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/23 13:21	1
trans-1,2-Dichloroethene	230		50	26	ug/L			11/29/23 12:08	50
Trichloroethene	2800		50	22	ug/L			11/29/23 12:08	50
Vinyl chloride	3.0		1.0	0.45	ug/L			11/28/23 13:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		62 - 137					11/28/23 13:21	1
1,2-Dichloroethane-d4 (Surr)	113		62 - 137					11/29/23 12:08	50
4-Bromofluorobenzene (Surr)	83		56 - 136					11/28/23 13:21	1
4-Bromofluorobenzene (Surr)	83		56 - 136					11/29/23 12:08	50
Toluene-d8 (Surr)	105		78 - 122					11/28/23 13:21	1
Toluene-d8 (Surr)	106		78 - 122					11/29/23 12:08	50
Dibromofluoromethane (Surr)	99		73 - 120					11/28/23 13:21	1
Dibromofluoromethane (Surr)	102		73 - 120					11/29/23 12:08	50

# Surrogate Summary

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

Job ID: 240-195921-1

## 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)
240-195458-D-1 MS	Matrix Spike	101	98	108	98
240-195458-D-1 MSD	Matrix Spike Duplicate	100	98	107	98
240-195749-C-2 MS	Matrix Spike	102	98	109	99
240-195749-C-2 MSD	Matrix Spike Duplicate	101	97	108	99
240-195921-1	TRIP BLANK_121	110	84	103	100
240-195921-2	MW-32_112023	108	83	102	99
240-195921-3	MW-33_112023	108	82	104	101
240-195921-4	MW-21_112023	110	83	105	101
240-195921-5	MW-195S_112023	109	83	103	100
240-195921-6	DUP-04	107	83	105	99
240-195921-6	DUP-04	113	83	106	102
240-195929-F-2 MS	Matrix Spike	103	99	108	99
240-195929-I-2 MSD	Matrix Spike Duplicate	102	97	105	99
240-195980-C-4 MS	Matrix Spike	107	98	109	101
240-195980-D-4 MSD	Matrix Spike Duplicate	105	96	108	101
LCS 240-595841/5	Lab Control Sample	103	97	108	99
LCS 240-595856/4	Lab Control Sample	100	95	105	100
LCS 240-596010/5	Lab Control Sample	107	98	108	102
MB 240-595841/8	Method Blank	107	84	101	98
MB 240-595856/6	Method Blank	107	86	104	97
MB 240-596010/8	Method Blank	113	85	105	103

**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)
240-195921-2	MW-32_112023	98
240-195921-3	MW-33_112023	98
240-195921-4	MW-21_112023	98
240-195921-5	MW-195S_112023	97
240-195921-6	DUP-04	96
240-195929-H-2 MS	Matrix Spike	96
240-195929-O-2 MSD	Matrix Spike Duplicate	96
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: 240-195921-1

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

**Lab Sample ID: MB 240-595841/8**  
**Matrix: Water**  
**Analysis Batch: 595841**

**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			11/27/23 18:31	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/27/23 18:31	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 18:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/27/23 18:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/27/23 18:31	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/27/23 18:31	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		62 - 137		11/27/23 18:31	1
4-Bromofluorobenzene (Surr)	84		56 - 136		11/27/23 18:31	1
Toluene-d8 (Surr)	101		78 - 122		11/27/23 18:31	1
Dibromofluoromethane (Surr)	98		73 - 120		11/27/23 18:31	1

**Lab Sample ID: LCS 240-595841/5**  
**Matrix: Water**  
**Analysis Batch: 595841**

**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	24.4		ug/L		97	63 - 134
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	77 - 123
Tetrachloroethene	25.0	27.1		ug/L		109	76 - 123
trans-1,2-Dichloroethene	25.0	23.2		ug/L		93	75 - 124
Trichloroethene	25.0	23.4		ug/L		94	70 - 122
Vinyl chloride	12.5	10.5		ug/L		84	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

**Lab Sample ID: 240-195749-C-2 MS**  
**Matrix: Water**  
**Analysis Batch: 595841**

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

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	20	U	500	473		ug/L		95	56 - 135
cis-1,2-Dichloroethene	49		500	496		ug/L		89	66 - 128
Tetrachloroethene	20	U	500	494		ug/L		99	62 - 131
trans-1,2-Dichloroethene	20	U	500	447		ug/L		89	56 - 136
Trichloroethene	20	U	500	435		ug/L		87	61 - 124
Vinyl chloride	690		250	900		ug/L		83	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	109		78 - 122



# QC Sample Results

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

Job ID: 240-195921-1

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

Lab Sample ID: 240-195749-C-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595841

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: 240-195749-C-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595841

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
1,1-Dichloroethene	20	U	500	470		ug/L		94	56 - 135	1	26
cis-1,2-Dichloroethene	49		500	482		ug/L		87	66 - 128	3	14
Tetrachloroethene	20	U	500	479		ug/L		96	62 - 131	3	20
trans-1,2-Dichloroethene	20	U	500	445		ug/L		89	56 - 136	0	15
Trichloroethene	20	U	500	431		ug/L		86	61 - 124	1	15
Vinyl chloride	690		250	893		ug/L		80	43 - 157	1	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	101		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: MB 240-595856/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

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

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
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

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# QC Sample Results

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

Job ID: 240-195921-1

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

Lab Sample ID: LCS 240-595856/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	12.3		ug/L		98	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
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: 240-195458-D-1 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	200	U	5000	4950		ug/L		99	56 - 135
cis-1,2-Dichloroethene	4800		5000	9260		ug/L		88	66 - 128
Tetrachloroethene	220		5000	5610		ug/L		108	62 - 131
trans-1,2-Dichloroethene	200	U	5000	4620		ug/L		92	56 - 136
Trichloroethene	1200		5000	5880		ug/L		94	61 - 124
Vinyl chloride	310		2500	2680		ug/L		95	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: 240-195458-D-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	200	U	5000	4790		ug/L		96	56 - 135	3	26
cis-1,2-Dichloroethene	4800		5000	9010		ug/L		83	66 - 128	3	14
Tetrachloroethene	220		5000	5600		ug/L		108	62 - 131	0	20
trans-1,2-Dichloroethene	200	U	5000	4600		ug/L		92	56 - 136	1	15
Trichloroethene	1200		5000	5810		ug/L		93	61 - 124	1	15
Vinyl chloride	310		2500	2630		ug/L		93	43 - 157	2	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

# QC Sample Results

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

Job ID: 240-195921-1

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

Lab Sample ID: 240-195929-F-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
1,1-Dichloroethene	1.0	U	25.0	21.0		ug/L		84		56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	21.0		ug/L		84		66 - 128
Tetrachloroethene	1.0	U	25.0	21.1		ug/L		84		62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	21.2		ug/L		85		56 - 136
Trichloroethene	1.0	U	25.0	21.1		ug/L		84		61 - 124
Vinyl chloride	1.0	U	12.5	9.76		ug/L		78		43 - 157
<b>MS MS</b>										
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	103		62 - 137							
4-Bromofluorobenzene (Surr)	99		56 - 136							
Toluene-d8 (Surr)	108		78 - 122							
Dibromofluoromethane (Surr)	99		73 - 120							

Lab Sample ID: 240-195929-I-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595856

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier						Limit	
1,1-Dichloroethene	1.0	U	25.0	22.2		ug/L		89		56 - 135	6	26
cis-1,2-Dichloroethene	1.0	U	25.0	21.4		ug/L		85		66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	20.4		ug/L		81		62 - 131	3	20
trans-1,2-Dichloroethene	1.0	U	25.0	21.3		ug/L		85		56 - 136	0	15
Trichloroethene	1.0	U	25.0	21.0		ug/L		84		61 - 124	0	15
Vinyl chloride	1.0	U	12.5	11.0		ug/L		88		43 - 157	12	24
<b>MSD MSD</b>												
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	102		62 - 137									
4-Bromofluorobenzene (Surr)	97		56 - 136									
Toluene-d8 (Surr)	105		78 - 122									
Dibromofluoromethane (Surr)	99		73 - 120									

Lab Sample ID: MB 240-596010/8

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596010

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			11/29/23 09:38		1	
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/23 09:38		1	
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/23 09:38		1	
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/23 09:38		1	
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/23 09:38		1	
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/23 09:38		1	
<b>MB MB</b>											
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil	Fac				
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		11/29/23 09:38		1				
4-Bromofluorobenzene (Surr)	85		56 - 136		11/29/23 09:38		1				
Toluene-d8 (Surr)	105		78 - 122		11/29/23 09:38		1				

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# QC Sample Results

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

Job ID: 240-195921-1

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

**Lab Sample ID: MB 240-596010/8**  
**Matrix: Water**  
**Analysis Batch: 596010**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	103		73 - 120		11/29/23 09:38	1

**Lab Sample ID: LCS 240-596010/5**  
**Matrix: Water**  
**Analysis Batch: 596010**

**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	25.6		ug/L		102	63 - 134
cis-1,2-Dichloroethene	25.0	23.1		ug/L		92	77 - 123
Tetrachloroethene	25.0	27.6		ug/L		111	76 - 123
trans-1,2-Dichloroethene	25.0	23.8		ug/L		95	75 - 124
Trichloroethene	25.0	24.4		ug/L		98	70 - 122
Vinyl chloride	12.5	11.3		ug/L		90	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

**Lab Sample ID: 240-195980-C-4 MS**  
**Matrix: Water**  
**Analysis Batch: 596010**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	%Rec Limits
				Result	Qualifier				
1,1-Dichloroethene	1.0	U	25.0	23.2		ug/L		93	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	66 - 128
Tetrachloroethene	1.0	U	25.0	25.1		ug/L		100	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.6		ug/L		90	56 - 136
Trichloroethene	1.0	U	25.0	22.4		ug/L		90	61 - 124
Vinyl chloride	1.0	U	12.5	10.3		ug/L		83	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	107		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

**Lab Sample ID: 240-195980-D-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 596010**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
				Result	Qualifier						
1,1-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	56 - 135	1	26
cis-1,2-Dichloroethene	1.0	U	25.0	21.0		ug/L		84	66 - 128	4	14
Tetrachloroethene	1.0	U	25.0	25.4		ug/L		101	62 - 131	1	20
trans-1,2-Dichloroethene	1.0	U	25.0	21.6		ug/L		86	56 - 136	5	15
Trichloroethene	1.0	U	25.0	21.8		ug/L		87	61 - 124	3	15

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# QC Sample Results

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

Job ID: 240-195921-1

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

Lab Sample ID: 240-195980-D-4 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596010

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Vinyl chloride	1.0	U	12.5	11.3		ug/L		91	43 - 157	9	24
<b>MSD MSD</b>											
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>								
1,2-Dichloroethane-d4 (Surr)	105		62 - 137								
4-Bromofluorobenzene (Surr)	96		56 - 136								
Toluene-d8 (Surr)	108		78 - 122								
Dibromofluoromethane (Surr)	101		73 - 120								

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

Lab Sample ID: MB 240-596122/6

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596122

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

Lab Sample ID: LCS 240-596122/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596122

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	10.3		ug/L		103	80 - 122
<b>LCS LCS</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				
1,2-Dichloroethane-d4 (Surr)	98		66 - 120				

Lab Sample ID: 240-195929-H-2 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596122

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	10.9		ug/L		109	51 - 153
<b>MS MS</b>									
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>						
1,2-Dichloroethane-d4 (Surr)	96		66 - 120						

Lab Sample ID: 240-195929-O-2 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 596122

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	10.5		ug/L		105	51 - 153	4	16

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# QC Sample Results

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

Job ID: 240-195921-1

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

Lab Sample ID: 240-195929-O-2 MSD

Matrix: Water

Analysis Batch: 596122

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	96		66 - 120

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

# QC Association Summary

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

Job ID: 240-195921-1

## GC/MS VOA

### Analysis Batch: 595841

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195921-1	TRIP BLANK_121	Total/NA	Water	8260D	
MB 240-595841/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595841/5	Lab Control Sample	Total/NA	Water	8260D	
240-195749-C-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195749-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 595856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195921-2	MW-32_112023	Total/NA	Water	8260D	
240-195921-3	MW-33_112023	Total/NA	Water	8260D	
240-195921-4	MW-21_112023	Total/NA	Water	8260D	
240-195921-5	MW-195S_112023	Total/NA	Water	8260D	
240-195921-6	DUP-04	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	
240-195458-D-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-195458-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-195929-F-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195929-I-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 596010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195921-6	DUP-04	Total/NA	Water	8260D	
MB 240-596010/8	Method Blank	Total/NA	Water	8260D	
LCS 240-596010/5	Lab Control Sample	Total/NA	Water	8260D	
240-195980-C-4 MS	Matrix Spike	Total/NA	Water	8260D	
240-195980-D-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 596122

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195921-2	MW-32_112023	Total/NA	Water	8260D SIM	
240-195921-3	MW-33_112023	Total/NA	Water	8260D SIM	
240-195921-4	MW-21_112023	Total/NA	Water	8260D SIM	
240-195921-5	MW-195S_112023	Total/NA	Water	8260D SIM	
240-195921-6	DUP-04	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	
240-195929-H-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-195929-O-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

# Lab Chronicle

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

Job ID: 240-195921-1

**Client Sample ID: TRIP BLANK\_121**

**Lab Sample ID: 240-195921-1**

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	595841	CDG	EET CLE	11/27/23 19:21

**Client Sample ID: MW-32\_112023**

**Lab Sample ID: 240-195921-2**

Date Collected: 11/20/23 12:35

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 11:41
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 10:09

**Client Sample ID: MW-33\_112023**

**Lab Sample ID: 240-195921-3**

Date Collected: 11/20/23 11:25

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 12:06
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 10:33

**Client Sample ID: MW-21\_112023**

**Lab Sample ID: 240-195921-4**

Date Collected: 11/20/23 10:10

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		4	595856	TJL2	EET CLE	11/28/23 12:31
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 10:57

**Client Sample ID: MW-195S\_112023**

**Lab Sample ID: 240-195921-5**

Date Collected: 11/20/23 14:00

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		50	595856	TJL2	EET CLE	11/28/23 12:56
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 11:21

**Client Sample ID: DUP-04**

**Lab Sample ID: 240-195921-6**

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	595856	TJL2	EET CLE	11/28/23 13:21
Total/NA	Analysis	8260D		50	596010	TJL2	EET CLE	11/29/23 12:08
Total/NA	Analysis	8260D SIM		1	596122	CS	EET CLE	11/30/23 11:45

**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: 240-195921-1

## 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.



MICHIGAN  
190

38149

Chain of Custody Record

TestAmerica  
LABORATORY SERVICES  
10011 FORTA IN ENVIRONMENTAL TEST INC.

TestAmerica Laboratory location: Brighton -- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-225-2763

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

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

Regulatory program:  DW  NPDES  RCRA  Other  
 Site Contact: Christina Weaver  
 Telephone: 248-994-2293  
 Lab Contact: Mike DelMontico  
 Telephone: 330-497-9396

Sampler Name: Kent Kasper  
 Method of Shipment/Carrier:  
 Shipping/Tracking No:

Analysis & Preservation Time  
 TAT: If different from below  
 10 day  3 weeks   
 1 week  2 days   
 1 day

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservation				Filtered Sample (Y/N)	Composite C/Grab-G	Analyses						Sample Specific Notes / Special Instructions		
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HQ			ZnAc	NOH	Other:	1,1-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B		TCE 8260B	Vinyl Chloride 8260B
TRIP BLANK 121			1																	1 Trip Blank	
MW-32-112023	11/20/23	1235																			3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-33-112023	11/20/23	1125																			
MW-21-112023	11/20/23	1010																			
MW-1955-112023	11/20/23	1400																			
DUP-04	11/20/23																				

Possible Hazard Identification  
 Non-Hazard  Irritable  Corrosive  Inflammable  Toxic  Other  
 Special Instructions/QC Requirements & Comments:  
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Relinquished by: Kent Kasper  
 Relinquished by: Sommer Sky  
 Relinquished by: July Mr  
 Date/Time: 11/20/23 1650  
 Date/Time: 11/21/23 0935  
 Date/Time: 11/21/23  
 Company: Arcadis  
 Company: Arcadis  
 Company: EENA  
 Received by: Nov: Cold Storage  
 Received by: July Mr  
 Received in Laboratory by: Alexia  
 Date/Time: 11/20/23 1650  
 Date/Time: 11/21/23  
 Date/Time: 11-22-23  
 Company: Arcadis  
 Company: EENA  
 Company: EENA

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Eurofins - Cleveland Sample Receipt Form/Narrative

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

Barberton Facility

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)?

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

15. Were air bubbles >6 mm in any VOA vials?  Yes  No  NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # \_\_\_\_\_  Yes  No

17. Was a LL Hg or Me Hg trip blank present? \_\_\_\_\_  Yes  No

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

Concerning \_\_\_\_\_

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

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: 195921-1

Sample date: 2023-11-20

Report received by CADENA: 2023-12-01

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

Number of Samples:6

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:

SRN - Sample Receipt Non-conformance(headspace) - Samples -002, -003, -004, -004MS/MSD results for GCMS VOC should be considered to be estimated and qualified with J flags if detected and UJ flags if non-detect due to sample receipt non-conformance that affects the integrity of the sample. See laboratory submittal sample receipt forms for details.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, 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.

# Qualified Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195921-1

<b>Sample Name:</b>	MW-32_112023	MW-33_112023	MW-21_112023
<b>Lab Sample ID:</b>	2401959212	2401959213	2401959214
<b>Sample Date:</b>	11/20/2023	11/20/2023	11/20/2023

Analyte	Cas No.	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier
		Result	Limit			Result	Limit			Result	Limit		
<b>GC/MS VOC</b>													
<u>OSW-8260D</u>													
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ
cis-1,2-Dichloroethene	156-59-2	0.48	1.0	ug/l	J	ND	1.0	ug/l	UJ	36	4.0	ug/l	J
Tetrachloroethene	127-18-4	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ
Trichloroethene	79-01-6	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ
Vinyl chloride	75-01-4	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	49	4.0	ug/l	J

## Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195921-1

Analyte	Cas No.	Sample Name: TRIP BLANK_121				MW-32_112023				MW-33_112023				MW-21_112023				MW-1955_112023				DUP-04			
		Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid				
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	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	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ	ND	50	ug/l	---	1.3	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	0.48	1.0	ug/l	J	ND	1.0	ug/l	UJ	36	4.0	ug/l	J	120	50	ug/l	---	110	50	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ	ND	50	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ	230	50	ug/l	---	230	50	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	ND	4.0	ug/l	UJ	2700	50	ug/l	---	2800	50	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	UJ	ND	1.0	ug/l	UJ	49	4.0	ug/l	J	ND	50	ug/l	---	3.0	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	4.9	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---