

# ANALYTICAL REPORT

## PREPARED FOR

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## JOB DESCRIPTION

Ford LTP - On Site

## JOB NUMBER

240-200450-1

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## Job Notes

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## Authorization



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# Definitions/Glossary

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

Job ID: 240-200450-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
S1+	Surrogate recovery exceeds control limits, high biased.
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
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Case Narrative

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

Job ID: 240-200450-1

**Job ID: 240-200450-1**

**Eurofins Cleveland**

## Job Narrative 240-200450-1

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 3/5/2024 9:50 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 2.6°C.

### GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 240-605392 recovered above the upper control limit for Vinyl chloride. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is impacted: TRIP BLANK\_90 (240-200450-1).

Method 8260D: Surrogate recovery for the following sample was outside the upper control limit: TRIP BLANK\_90 (240-200450-1). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Method 8260D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with analytical batch 240-605392.

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

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# Method Summary

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

Job ID: 240-200450-1

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



# Sample Summary

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

Job ID: 240-200450-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-200450-1	TRIP BLANK_90	Water	03/01/24 00:00	03/05/24 09:50
240-200450-2	MW-25_030124	Water	03/01/24 10:00	03/05/24 09:50
240-200450-3	MW-201_030124	Water	03/01/24 12:05	03/05/24 09:50
240-200450-4	MW-201S_030124	Water	03/01/24 12:55	03/05/24 09:50

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

# Detection Summary

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

Job ID: 240-200450-1

**Client Sample ID: TRIP BLANK\_90**

**Lab Sample ID: 240-200450-1**

No Detections.

**Client Sample ID: MW-25\_030124**

**Lab Sample ID: 240-200450-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA

**Client Sample ID: MW-201\_030124**

**Lab Sample ID: 240-200450-3**

No Detections.

**Client Sample ID: MW-201S\_030124**

**Lab Sample ID: 240-200450-4**

No Detections.

This Detection Summary does not include radiochemical test results.

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# Client Sample Results

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

Job ID: 240-200450-1

**Client Sample ID: TRIP BLANK\_90**

**Lab Sample ID: 240-200450-1**

Date Collected: 03/01/24 00:00

Matrix: Water

Date Received: 03/05/24 09:50

**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			03/08/24 13:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/08/24 13:15	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 13:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/08/24 13:15	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 13:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/08/24 13:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137		03/08/24 13:15	1
4-Bromofluorobenzene (Surr)	83		56 - 136		03/08/24 13:15	1
Toluene-d8 (Surr)	103		78 - 122		03/08/24 13:15	1
Dibromofluoromethane (Surr)	121	S1+	73 - 120		03/08/24 13:15	1

# Client Sample Results

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

Job ID: 240-200450-1

**Client Sample ID: MW-25\_030124**

**Lab Sample ID: 240-200450-2**

Date Collected: 03/01/24 10:00

Matrix: Water

Date Received: 03/05/24 09:50

**Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.4		2.0	0.86	ug/L			03/08/24 18:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		68 - 127					03/08/24 18:27	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			03/09/24 00:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/09/24 00:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/09/24 00:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/09/24 00:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137					03/09/24 00:09	1
4-Bromofluorobenzene (Surr)	83		56 - 136					03/09/24 00:09	1
Toluene-d8 (Surr)	99		78 - 122					03/09/24 00:09	1
Dibromofluoromethane (Surr)	117		73 - 120					03/09/24 00:09	1

# Client Sample Results

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

Job ID: 240-200450-1

**Client Sample ID: MW-201\_030124**

**Lab Sample ID: 240-200450-3**

Date Collected: 03/01/24 12:05

Matrix: Water

Date Received: 03/05/24 09:50

**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			03/08/24 18:51	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)	107		68 - 127					03/08/24 18:51	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			03/09/24 00:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/09/24 00:33	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/09/24 00:33	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/09/24 00:33	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)	104		62 - 137					03/09/24 00:33	1
4-Bromofluorobenzene (Surr)	77		56 - 136					03/09/24 00:33	1
Toluene-d8 (Surr)	93		78 - 122					03/09/24 00:33	1
Dibromofluoromethane (Surr)	115		73 - 120					03/09/24 00:33	1

# Client Sample Results

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

Job ID: 240-200450-1

**Client Sample ID: MW-201S\_030124**

**Lab Sample ID: 240-200450-4**

Date Collected: 03/01/24 12:55

Matrix: Water

Date Received: 03/05/24 09:50

**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			03/08/24 19:15	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)	108		68 - 127					03/08/24 19:15	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			03/09/24 00:56	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/09/24 00:56	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/09/24 00:56	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/09/24 00:56	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/09/24 00:56	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)	103		62 - 137					03/09/24 00:56	1
4-Bromofluorobenzene (Surr)	81		56 - 136					03/09/24 00:56	1
Toluene-d8 (Surr)	97		78 - 122					03/09/24 00:56	1
Dibromofluoromethane (Surr)	111		73 - 120					03/09/24 00:56	1

# Surrogate Summary

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

Job ID: 240-200450-1

## 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)
240-200450-1	TRIP BLANK_90	109	83	103	121 S1+
240-200450-2	MW-25_030124	109	83	99	117
240-200450-3	MW-201_030124	104	77	93	115
240-200450-4	MW-201S_030124	103	81	97	111
240-200468-C-1 MS	Matrix Spike	95	91	99	103
240-200468-C-1 MSD	Matrix Spike Duplicate	90	86	96	100
LCS 240-605392/5	Lab Control Sample	100	102	105	109
LCS 240-605500/5	Lab Control Sample	97	94	101	105
MB 240-605392/9	Method Blank	106	87	103	116
MB 240-605500/9	Method Blank	106	80	96	113

### 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 (68-127)
240-200381-C-4 MS	Matrix Spike	107
240-200381-C-4 MSD	Matrix Spike Duplicate	107
240-200450-2	MW-25_030124	107
240-200450-3	MW-201_030124	107
240-200450-4	MW-201S_030124	108
LCS 240-605526/3	Lab Control Sample	108
MB 240-605526/5	Method Blank	84

### Surrogate Legend

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

## QC Sample Results

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

Job ID: 240-200450-1

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

Lab Sample ID: MB 240-605392/9

Matrix: Water

Analysis Batch: 605392

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			03/08/24 12:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/08/24 12:05	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 12:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/08/24 12:05	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 12:05	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/08/24 12:05	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/08/24 12:05	1
4-Bromofluorobenzene (Surr)	87		56 - 136		03/08/24 12:05	1
Toluene-d8 (Surr)	103		78 - 122		03/08/24 12:05	1
Dibromofluoromethane (Surr)	116		73 - 120		03/08/24 12:05	1

Lab Sample ID: LCS 240-605392/5

Matrix: Water

Analysis Batch: 605392

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	21.7		ug/L		109	77 - 123
Tetrachloroethene	20.0	21.6		ug/L		108	76 - 123
trans-1,2-Dichloroethene	20.0	21.0		ug/L		105	75 - 124
Trichloroethene	20.0	19.9		ug/L		100	70 - 122
Vinyl chloride	20.0	22.0		ug/L		110	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120

Lab Sample ID: MB 240-605500/9

Matrix: Water

Analysis Batch: 605500

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			03/08/24 23:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/08/24 23:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 23:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/08/24 23:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/08/24 23:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/08/24 23:22	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		03/08/24 23:22	1
4-Bromofluorobenzene (Surr)	80		56 - 136		03/08/24 23:22	1
Toluene-d8 (Surr)	96		78 - 122		03/08/24 23:22	1

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# QC Sample Results

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

Job ID: 240-200450-1

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

Lab Sample ID: MB 240-605500/9

Matrix: Water

Analysis Batch: 605500

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Dibromofluoromethane (Surr)	113		73 - 120		03/08/24 23:22	1

Lab Sample ID: LCS 240-605500/5

Matrix: Water

Analysis Batch: 605500

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	20.0	22.9		ug/L		115	63 - 134
cis-1,2-Dichloroethene	20.0	21.0		ug/L		105	77 - 123
Tetrachloroethene	20.0	20.1		ug/L		101	76 - 123
trans-1,2-Dichloroethene	20.0	20.4		ug/L		102	75 - 124
Trichloroethene	20.0	18.8		ug/L		94	70 - 122
Vinyl chloride	20.0	20.8		ug/L		104	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120

Lab Sample ID: 240-200468-C-1 MS

Matrix: Water

Analysis Batch: 605500

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				
Trichloroethene	1100	F1	400	797	F1	ug/L		-82	61 - 124

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-200468-C-1 MSD

Matrix: Water

Analysis Batch: 605500

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	Limit
				Result	Qualifier						
Trichloroethene	1100	F1	400	836	F1	ug/L		-73	61 - 124	5	15

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120

# QC Sample Results

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

Job ID: 240-200450-1

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

**Lab Sample ID: MB 240-605526/5**  
**Matrix: Water**  
**Analysis Batch: 605526**

**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			03/08/24 17:27	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		68 - 127					03/08/24 17:27	1

**Lab Sample ID: LCS 240-605526/3**  
**Matrix: Water**  
**Analysis Batch: 605526**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	10.5		ug/L		105	75 - 121
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	108		68 - 127				

**Lab Sample ID: 240-200381-C-4 MS**  
**Matrix: Water**  
**Analysis Batch: 605526**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	11.6		ug/L		116	20 - 180
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	107		68 - 127						

**Lab Sample ID: 240-200381-C-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 605526**

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	11.2		ug/L		112	20 - 180	3	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	107		68 - 127								



# QC Association Summary

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

Job ID: 240-200450-1

## GC/MS VOA

### Analysis Batch: 605392

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200450-1	TRIP BLANK_90	Total/NA	Water	8260D	
MB 240-605392/9	Method Blank	Total/NA	Water	8260D	
LCS 240-605392/5	Lab Control Sample	Total/NA	Water	8260D	

### Analysis Batch: 605500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200450-2	MW-25_030124	Total/NA	Water	8260D	
240-200450-3	MW-201_030124	Total/NA	Water	8260D	
240-200450-4	MW-201S_030124	Total/NA	Water	8260D	
MB 240-605500/9	Method Blank	Total/NA	Water	8260D	
LCS 240-605500/5	Lab Control Sample	Total/NA	Water	8260D	
240-200468-C-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-200468-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

### Analysis Batch: 605526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200450-2	MW-25_030124	Total/NA	Water	8260D SIM	
240-200450-3	MW-201_030124	Total/NA	Water	8260D SIM	
240-200450-4	MW-201S_030124	Total/NA	Water	8260D SIM	
MB 240-605526/5	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-605526/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-200381-C-4 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-200381-C-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

# Lab Chronicle

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

Job ID: 240-200450-1

**Client Sample ID: TRIP BLANK\_90**

**Lab Sample ID: 240-200450-1**

Date Collected: 03/01/24 00:00

Matrix: Water

Date Received: 03/05/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	605392	AJS	EET CLE	03/08/24 13:15

**Client Sample ID: MW-25\_030124**

**Lab Sample ID: 240-200450-2**

Date Collected: 03/01/24 10:00

Matrix: Water

Date Received: 03/05/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	605500	AJS	EET CLE	03/09/24 00:09
Total/NA	Analysis	8260D SIM		1	605526	MDH	EET CLE	03/08/24 18:27

**Client Sample ID: MW-201\_030124**

**Lab Sample ID: 240-200450-3**

Date Collected: 03/01/24 12:05

Matrix: Water

Date Received: 03/05/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	605500	AJS	EET CLE	03/09/24 00:33
Total/NA	Analysis	8260D SIM		1	605526	MDH	EET CLE	03/08/24 18:51

**Client Sample ID: MW-201S\_030124**

**Lab Sample ID: 240-200450-4**

Date Collected: 03/01/24 12:55

Matrix: Water

Date Received: 03/05/24 09:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	605500	AJS	EET CLE	03/09/24 00:56
Total/NA	Analysis	8260D SIM		1	605526	MDH	EET CLE	03/08/24 19:15

**Laboratory References:**

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

# Accreditation/Certification Summary

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

Job ID: 240-200450-1

## 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 *
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	06-30-24
New York	NELAP	10975	04-01-24
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

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



Eurofins - Cleveland Sample Receipt Form/Narrative Login # \_\_\_\_\_  
 Barberion Facility Cooler unpacked by: AMH/ter

Client Alca.d.s Site Name \_\_\_\_\_  
 Cooler Received on 3 5 24 Opened on 5 5 24

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 Room Box Client Cooler Box Other \_\_\_\_\_  
 Packing material used Bubble Wrap Foam Plastic Bag None Other \_\_\_\_\_  
 COOLANT: Me/Ice Blue Ice Dry Ice Water None  
 1 Cooler temperature upon receipt  See Multiple Cooler Form  
 IR GUN # 17 (CF) 10.0 °C Observed Cooler Temp 2.7 °C Corrected Cooler Temp 2.7 °C

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

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1
  - Were the seals on the outside of the cooler(s) signed & dated? Yes NO No NA
  - Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes NO No NA
  - Were tamper/custody seals intact and uncompromised? Yes NO No NA
- 3 Shippers' packing slip attached to the cooler(s)? Yes NO No NA
- 4 Did custody papers accompany the sample(s)? Yes NO No NA
- 5 Were the custody papers relinquished & signed in the appropriate place? Yes NO No NA
6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes NO No NA
- 7 Did all bottles arrive in good condition (Unbroken)? Yes NO No NA
- 8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes NO No NA
- 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 No NA
- 10 Were correct bottle(s) used for the test(s) indicated? Yes NO No NA
- 11 Sufficient quantity received to perform indicated analyses? Yes NO No NA
- 12 Are these work share samples and all listed on the COC? Yes NO No NA
- 13 If yes, Questions 13-17 have been checked at the originating laboratory
- 14 Were all preserved sample(s) at the correct pH upon receipt? Yes NO No NA
- 15 Were VOAs on the COC? Yes NO No NA
- 16 Were air bubbles >6 mm in any VOA vials? Yes NO No NA
- 17 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 00413012 Yes NO No NA
- 17 Was a LL Hg or Me Hg trip blank present? Yes NO No NA

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 \_\_\_\_\_

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

Part # 159470-434 MTRV EXP 08/24

**eurofins**  
 Environment Testing  
 TestAmerica

ORIGIN TO:CAKA  
 SALTER HINSH  
 TENNESSEE VALL  
 815 CUMBERLAND  
 CUMBERLAND CT  
 UNITED STATES

SHIP DATE: 06FEB24  
 WEIGHT: 10.00 LB 15.00 OZ  
 ID: 0792304/CSEF3755

10 SHIPPING

EUROFIN

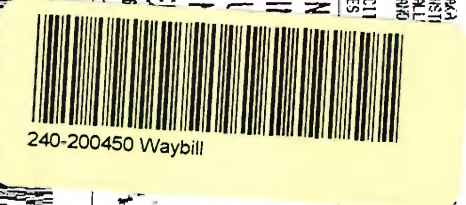
180 SOL

RETURN

BARBE

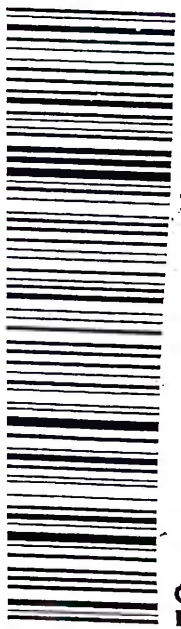
330 312-9176

REF: \$180-



**FedEx**  
 TRK# 7180 5076 4484  
 0221  
 TUE - 05 MAR: AA  
 PRIORITY OVERNIGHT

**NX CAKA**  
 44203  
 OH-US  
 CLE





# DATA VERIFICATION REPORT



March 13, 2024

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  
Event Specific Scope of Work References: Sample COC  
Laboratory: Eurofins Environment Testing LLC - Cleveland  
Laboratory submittal: 200450-1  
Sample date: 2024-03-01  
Report received by CADENA: 2024-03-12  
Initial Data Verification completed by CADENA: 2024-03-13  
Number of Samples:4  
Sample Matrices: Water and trip blank  
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:

GCMS VOC surrogate recoveries were outside of laboratory control limits biased HIGH for at least 1 surrogate. These client sample results that were detected for the analytical fraction specified should be considered estimated and qualified with J flags (non-detect results do not require qualification): GCMS VOC sample -01 - all results non-detect (trip blank) so qualifications not required.

GCMS VOC CCV STANDARD response outliers 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, 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>.

Sincerely,

Jim Tomalia

Project Scientist

## 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: 200450-1

Analyte	Cas No.	Sample Name: TRIP BLANK_90				Sample Name: MW-25_030124				Sample Name: MW-201_030124				Sample Name: MW-201S_030124			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier

### GC/MS VOC

#### OSW-8260D

1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	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	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	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	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	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	---	ND	1.0	ug/l	---

#### OSW-8260DSIM

1,4-Dioxane	123-91-1					2.4	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
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