

 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Kristoffer Hinskey  
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Generated 11/18/2022 8:02:03 AM

**JOB DESCRIPTION**

Ford LTP - On Site

**JOB NUMBER**

240-175894-1



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# Definitions/Glossary

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

Job ID: 240-175894-1

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

Job ID: 240-175894-1

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**Job ID: 240-175894-1**

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**Laboratory: Eurofins Canton**

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**Narrative**

**Job Narrative  
240-175894-1**

**Receipt**

The samples were received on 11/4/2022 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.9°C, 1.2°C and 1.3°C

**GC/MS VOA**

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: 240-175894-1

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

**Protocol References:**

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

**Laboratory References:**

EET CAN = Eurofins Canton, 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: 240-175894-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-175894-1	TRIP BLANK_74	Water	11/03/22 00:00	11/04/22 09:40
240-175894-2	MW-09_110322	Water	11/03/22 08:50	11/04/22 09:40
240-175894-3	MW-14_110322	Water	11/03/22 10:20	11/04/22 09:40
240-175894-4	MW-37_110322	Water	11/03/22 11:45	11/04/22 09:40

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# Detection Summary

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

Job ID: 240-175894-1

**Client Sample ID: TRIP BLANK\_74**

**Lab Sample ID: 240-175894-1**

No Detections.

**Client Sample ID: MW-09\_110322**

**Lab Sample ID: 240-175894-2**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.8		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.2		1.0	0.45	ug/L	1		8260D	Total/NA

**Client Sample ID: MW-14\_110322**

**Lab Sample ID: 240-175894-3**

No Detections.

**Client Sample ID: MW-37\_110322**

**Lab Sample ID: 240-175894-4**

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Canton

# Client Sample Results

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

Job ID: 240-175894-1

**Client Sample ID: TRIP BLANK\_74**

**Lab Sample ID: 240-175894-1**

**Date Collected: 11/03/22 00:00**

**Matrix: Water**

**Date Received: 11/04/22 09:40**

**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			11/15/22 15:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/15/22 15:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 15:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/15/22 15:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 15:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/22 15:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		11/15/22 15:54	1
4-Bromofluorobenzene (Surr)	88		56 - 136		11/15/22 15:54	1
Toluene-d8 (Surr)	103		78 - 122		11/15/22 15:54	1
Dibromofluoromethane (Surr)	97		73 - 120		11/15/22 15:54	1



# Client Sample Results

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

Job ID: 240-175894-1

**Client Sample ID: MW-09\_110322**

**Lab Sample ID: 240-175894-2**

Date Collected: 11/03/22 08:50

Matrix: Water

Date Received: 11/04/22 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.8		2.0	0.86	ug/L			11/15/22 01:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	82		66 - 120					11/15/22 01:22	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			11/15/22 16:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/15/22 16:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 16:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/15/22 16:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 16:18	1
Vinyl chloride	1.2		1.0	0.45	ug/L			11/15/22 16:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137					11/15/22 16:18	1
4-Bromofluorobenzene (Surr)	93		56 - 136					11/15/22 16:18	1
Toluene-d8 (Surr)	103		78 - 122					11/15/22 16:18	1
Dibromofluoromethane (Surr)	100		73 - 120					11/15/22 16:18	1

# Client Sample Results

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

Job ID: 240-175894-1

**Client Sample ID: MW-14\_110322**

**Lab Sample ID: 240-175894-3**

Date Collected: 11/03/22 10:20

Matrix: Water

Date Received: 11/04/22 09:40

**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			11/13/22 12:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		66 - 120		11/13/22 12:22	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			11/15/22 16:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/15/22 16:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 16:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/15/22 16:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 16:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/22 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		62 - 137		11/15/22 16:41	1
4-Bromofluorobenzene (Surr)	91		56 - 136		11/15/22 16:41	1
Toluene-d8 (Surr)	109		78 - 122		11/15/22 16:41	1
Dibromofluoromethane (Surr)	99		73 - 120		11/15/22 16:41	1

# Client Sample Results

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

Job ID: 240-175894-1

**Client Sample ID: MW-37\_110322**

**Lab Sample ID: 240-175894-4**

**Date Collected: 11/03/22 11:45**

**Matrix: Water**

**Date Received: 11/04/22 09:40**

**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			11/13/22 12:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		66 - 120		11/13/22 12:46	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			11/15/22 17:05	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/15/22 17:05	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 17:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/15/22 17:05	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 17:05	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/22 17:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		11/15/22 17:05	1
4-Bromofluorobenzene (Surr)	92		56 - 136		11/15/22 17:05	1
Toluene-d8 (Surr)	103		78 - 122		11/15/22 17:05	1
Dibromofluoromethane (Surr)	98		73 - 120		11/15/22 17:05	1

# Surrogate Summary

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

Job ID: 240-175894-1

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

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-175888-E-5 MS	Matrix Spike	99	98	108	94
240-175888-H-5 MSD	Matrix Spike Duplicate	98	100	109	95
240-175894-1	TRIP BLANK_74	103	88	103	97
240-175894-2	MW-09_110322	106	93	103	100
240-175894-3	MW-14_110322	107	91	109	99
240-175894-4	MW-37_110322	106	92	103	98
LCS 240-551976/5	Lab Control Sample	99	103	108	96
MB 240-551976/8	Method Blank	104	93	106	98

#### 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

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(66-120)
240-175888-I-5 MS	Matrix Spike	84
240-175888-O-5 MSD	Matrix Spike Duplicate	83
240-175891-G-8 MS	Matrix Spike	106
240-175891-O-8 MSD	Matrix Spike Duplicate	112
240-175894-2	MW-09_110322	82
240-175894-3	MW-14_110322	116
240-175894-4	MW-37_110322	117
LCS 240-551689/3	Lab Control Sample	119
LCS 240-551905/3	Lab Control Sample	81
MB 240-551689/4	Method Blank	118
MB 240-551905/4	Method Blank	80

#### Surrogate Legend

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

# QC Sample Results

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

Job ID: 240-175894-1

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

**Lab Sample ID: MB 240-551976/8**  
**Matrix: Water**  
**Analysis Batch: 551976**

**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			11/15/22 11:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/15/22 11:15	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 11:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/15/22 11:15	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/15/22 11:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/15/22 11:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	104		62 - 137		11/15/22 11:15	1
4-Bromofluorobenzene (Surr)	93		56 - 136		11/15/22 11:15	1
Toluene-d8 (Surr)	106		78 - 122		11/15/22 11:15	1
Dibromofluoromethane (Surr)	98		73 - 120		11/15/22 11:15	1

**Lab Sample ID: LCS 240-551976/5**  
**Matrix: Water**  
**Analysis Batch: 551976**

**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	17.2		ug/L		86	63 - 134
cis-1,2-Dichloroethene	20.0	16.9		ug/L		85	77 - 123
Tetrachloroethene	20.0	19.8		ug/L		99	76 - 123
trans-1,2-Dichloroethene	20.0	17.1		ug/L		86	75 - 124
Trichloroethene	20.0	17.4		ug/L		87	70 - 122
Vinyl chloride	20.0	16.7		ug/L		84	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	103		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

**Lab Sample ID: 240-175888-E-5 MS**  
**Matrix: Water**  
**Analysis Batch: 551976**

**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	1.0	U	20.0	15.6		ug/L		78	56 - 135
cis-1,2-Dichloroethene	1.0	U	20.0	15.1		ug/L		75	66 - 128
Tetrachloroethene	1.0	U	20.0	17.6		ug/L		88	62 - 131
trans-1,2-Dichloroethene	1.0	U	20.0	15.4		ug/L		77	56 - 136
Trichloroethene	1.0	U	20.0	15.3		ug/L		77	61 - 124
Vinyl chloride	1.0	U	20.0	15.1		ug/L		76	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	108		78 - 122

# QC Sample Results

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

Job ID: 240-175894-1

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

Lab Sample ID: 240-175888-E-5 MS  
Matrix: Water  
Analysis Batch: 551976

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-175888-H-5 MSD  
Matrix: Water  
Analysis Batch: 551976

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
1,1-Dichloroethene	1.0	U	20.0	16.8		ug/L		84	56 - 135	7	26
cis-1,2-Dichloroethene	1.0	U	20.0	16.2		ug/L		81	66 - 128	7	14
Tetrachloroethene	1.0	U	20.0	18.6		ug/L		93	62 - 131	6	20
trans-1,2-Dichloroethene	1.0	U	20.0	16.5		ug/L		82	56 - 136	7	15
Trichloroethene	1.0	U	20.0	16.2		ug/L		81	61 - 124	6	15
Vinyl chloride	1.0	U	20.0	16.3		ug/L		81	43 - 157	7	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	109		78 - 122
Dibromofluoromethane (Surr)	95		73 - 120

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

Lab Sample ID: MB 240-551689/4  
Matrix: Water  
Analysis Batch: 551689

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			11/13/22 05:54	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		66 - 120		11/13/22 05:54	1

Lab Sample ID: LCS 240-551689/3  
Matrix: Water  
Analysis Batch: 551689

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	9.78		ug/L		98	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: 240-175891-G-8 MS  
Matrix: Water  
Analysis Batch: 551689

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	2.1		10.0	11.7		ug/L		96	51 - 153

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# QC Sample Results

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

Job ID: 240-175894-1

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

**Lab Sample ID: 240-175891-O-8 MSD**  
**Matrix: Water**  
**Analysis Batch: 551689**

**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	2.1		10.0	11.5		ug/L		94	51 - 153	1	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		66 - 120

**Lab Sample ID: MB 240-551905/4**  
**Matrix: Water**  
**Analysis Batch: 551905**

**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			11/14/22 18:37	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		66 - 120		11/14/22 18:37	1

**Lab Sample ID: LCS 240-551905/3**  
**Matrix: Water**  
**Analysis Batch: 551905**

**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	9.34		ug/L		93	80 - 122

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	81		66 - 120

**Lab Sample ID: 240-175888-I-5 MS**  
**Matrix: Water**  
**Analysis Batch: 551905**

**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	10.0		ug/L		100	51 - 153

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		66 - 120

**Lab Sample ID: 240-175888-O-5 MSD**  
**Matrix: Water**  
**Analysis Batch: 551905**

**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	9.97		ug/L		100	51 - 153	0	16

# QC Sample Results

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

Job ID: 240-175894-1

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

Lab Sample ID: 240-175888-O-5 MSD  
Matrix: Water  
Analysis Batch: 551905

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)	83		66 - 120

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# QC Association Summary

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

Job ID: 240-175894-1

## GC/MS VOA

### Analysis Batch: 551689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175894-3	MW-14_110322	Total/NA	Water	8260D SIM	
240-175894-4	MW-37_110322	Total/NA	Water	8260D SIM	
MB 240-551689/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551689/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175891-G-8 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-175891-O-8 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

### Analysis Batch: 551905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175894-2	MW-09_110322	Total/NA	Water	8260D SIM	
MB 240-551905/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551905/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175888-I-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-175888-O-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

### Analysis Batch: 551976

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175894-1	TRIP BLANK_74	Total/NA	Water	8260D	
240-175894-2	MW-09_110322	Total/NA	Water	8260D	
240-175894-3	MW-14_110322	Total/NA	Water	8260D	
240-175894-4	MW-37_110322	Total/NA	Water	8260D	
MB 240-551976/8	Method Blank	Total/NA	Water	8260D	
LCS 240-551976/5	Lab Control Sample	Total/NA	Water	8260D	
240-175888-E-5 MS	Matrix Spike	Total/NA	Water	8260D	
240-175888-H-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

# Lab Chronicle

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

Job ID: 240-175894-1

**Client Sample ID: TRIP BLANK\_74**

**Lab Sample ID: 240-175894-1**

Date Collected: 11/03/22 00:00

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551976	TJL1	EET CAN	11/15/22 15:54

**Client Sample ID: MW-09\_110322**

**Lab Sample ID: 240-175894-2**

Date Collected: 11/03/22 08:50

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551976	TJL1	EET CAN	11/15/22 16:18
Total/NA	Analysis	8260D SIM		1	551905	CS	EET CAN	11/15/22 01:22

**Client Sample ID: MW-14\_110322**

**Lab Sample ID: 240-175894-3**

Date Collected: 11/03/22 10:20

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551976	TJL1	EET CAN	11/15/22 16:41
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 12:22

**Client Sample ID: MW-37\_110322**

**Lab Sample ID: 240-175894-4**

Date Collected: 11/03/22 11:45

Matrix: Water

Date Received: 11/04/22 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551976	TJL1	EET CAN	11/15/22 17:05
Total/NA	Analysis	8260D SIM		1	551689	CS	EET CAN	11/13/22 12:46

**Laboratory References:**

EET CAN = Eurofins Canton, 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: 240-175894-1


## Laboratory: Eurofins Canton

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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		<b>Regulatory program:</b> <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
<b>Client Project Manager: Kris Hinskey</b> Telephone: 248-994-2240 Email: kris@hinskey.com		<b>Lab Contact: Mike DelMontico</b> Telephone: 310-497-9396	
<b>Sampler Name:</b> Sommer Guy <b>Method of Shipment/Carrier:</b> Shipping/Tracking No:		<b>Analysis Turnaround Time</b> TAT if different from below <input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
<b>Sample Identification</b> TRIP BLANK_74 MW-09-110322 MW-14-110322 MW-37-110322		<b>Matrix</b> Air: 1 Aqueous: 6 Sediment: 6 Solid: 6 Other:	
<b>Sample Date</b> --- 11/3/22 0850 11/3/22 1020 11/3/22 1145		<b>Containers &amp; Preservatives</b> H2SO4 HNO3 HCl NaOH Zinc Uprts Other:	
<b>Sample Time</b> --- 0850 1020 1145		<b>Filtered Sample (Y/N)</b> NG NG NG NG	
<b>Composite=C / Grab=G</b> NG NG NG NG		<b>Analyses</b> 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	
<b>Sample Specific Notes / Special Instructions:</b> 1 Trip Blank 3 VOAs for 8260B 3 VOAs for 8260B SIM		COCs For lab use only Walk-in client Lab sampling Job/SDG No:	



240-175894 Chain of Custody

**Possible Hazard Identification**  
 Non-Hazard  Irritant  Poison B  Unknown

**Special Instructions/QC Requirements & Comments:**  
 Return to Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Submit all results through Cadena at jtomalla@cadenaco.com. Cadena #E203728  
 Level IV Reporting requested.

Relinquished by: <i>Sommer Guy</i>	Company: Arcadis	Date/Time: 11/3/22 1500	Received by: <i>[Signature]</i>	Company: EETA	Date/Time: 11/3/22 1800
Relinquished by: <i>[Signature]</i>	Company: EETA	Date/Time: 11/3/22 1530	Received by: <i>[Signature]</i>	Company: EETNC	Date/Time: 11/4/22 0940
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

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Client Accudis Site Name LTP Cooler unpacked by: JWE

Cooler Received on \_\_\_\_\_ Opened on \_\_\_\_\_  
 FedEx: 1<sup>st</sup> Grd  UPS FAS Clipper 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# IR-13 (CF +0.7 °C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C  
 IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp. \_\_\_\_\_ °C Corrected Cooler Temp. \_\_\_\_\_ °C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea  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# HC28677
14. Were VOAs on the COC?  Yes  No
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 # covered  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) 1x40mL TB 74 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: \_\_\_\_\_





# Eurofins Canton

## Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

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



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11/18/2022 8:02:03 AM

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



# DATA VERIFICATION REPORT

November 18, 2022

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: 30146655.401.03- onsite groundwater

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Barberton

Laboratory submittal: 175894-1

Sample date: 2022-11-03

Report received by CADENA: 2022-11-18

Initial Data Verification completed by CADENA: 2022-11-18

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.**

There were no significant QC anomalies or exceptions to report.

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.

## Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Barberton

Laboratory Submittal: 175894-1

Analyte	Cas No.	Sample Name: TRIP BLANK_74				MW-09_110322				MW-14_110322				MW-37_110322			
		Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier
		Lab Sample ID: 2401758941				2401758942				2401758943				2401758944			
		Sample Date: 11/3/2022				11/3/2022				11/3/2022				11/3/2022			

### 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	---	1.2	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---

#### OSW-8260DSIM

1,4-Dioxane	123-91-1					4.8	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---
-------------	----------	--	--	--	--	-----	-----	------	-----	----	-----	------	-----	----	-----	------	-----