

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-176477-1

Eurofins Canton

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	14
QC Sample Results	15
QC Association Summary	18
Lab Chronicle	19
Certification Summary	20
Chain of Custody	21

Definitions/Glossary

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

Job ID: 240-176477-1

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.
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.
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: 240-176477-1

Job ID: 240-176477-1

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-176477-1**

Receipt

The samples were received on 11/15/2022 10:00 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 1.6°C, 2.0°C and 3.6°C

GC/MS VOA

Method 8260D_SIM: Surrogate recovery for the following samples was outside the upper control limit: MW-57_111122 (240-176477-2), MW-64_111122 (240-176477-3), MW-71_111122 (240-176477-4) and MW-220S_111122 (240-176477-5). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

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



Method Summary

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

Job ID: 240-176477-1

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

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- 2
- 3
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- 5
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- 8
- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-176477-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176477-1	TRIP BLANK_66	Water	11/11/22 00:00	11/15/22 10:00
240-176477-2	MW-57_111122	Water	11/11/22 08:55	11/15/22 10:00
240-176477-3	MW-64_111122	Water	11/11/22 09:55	11/15/22 10:00
240-176477-4	MW-71_111122	Water	11/11/22 10:45	11/15/22 10:00
240-176477-5	MW-220S_111122	Water	11/11/22 11:35	11/15/22 10:00

- 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: 240-176477-1

Client Sample ID: TRIP BLANK_66

Lab Sample ID: 240-176477-1

No Detections.

Client Sample ID: MW-57_111122

Lab Sample ID: 240-176477-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.6	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	0.61	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-64_111122

Lab Sample ID: 240-176477-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.56	J	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	4.0		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-71_111122

Lab Sample ID: 240-176477-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	0.89	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.89	J	1.0	0.46	ug/L	1		8260D	Total/NA

Client Sample ID: MW-220S_111122

Lab Sample ID: 240-176477-5

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: 240-176477-1

Client Sample ID: TRIP BLANK_66

Lab Sample ID: 240-176477-1

Date Collected: 11/11/22 00:00

Matrix: Water

Date Received: 11/15/22 10:00

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			11/22/22 13:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 13:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 13:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 13:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 13:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 13:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/22/22 13:32	1
4-Bromofluorobenzene (Surr)	97		56 - 136		11/22/22 13:32	1
Toluene-d8 (Surr)	99		78 - 122		11/22/22 13:32	1
Dibromofluoromethane (Surr)	87		73 - 120		11/22/22 13:32	1

Client Sample Results

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

Job ID: 240-176477-1

Client Sample ID: MW-57_111122

Lab Sample ID: 240-176477-2

Date Collected: 11/11/22 08:55

Matrix: Water

Date Received: 11/15/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.6	J	2.0	0.86	ug/L			11/18/22 01:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	124	S1+	66 - 120					11/18/22 01:12	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			11/22/22 13:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 13:55	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 13:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 13:55	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 13:55	1
Vinyl chloride	0.61	J	1.0	0.45	ug/L			11/22/22 13:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137					11/22/22 13:55	1
4-Bromofluorobenzene (Surr)	93		56 - 136					11/22/22 13:55	1
Toluene-d8 (Surr)	96		78 - 122					11/22/22 13:55	1
Dibromofluoromethane (Surr)	83		73 - 120					11/22/22 13:55	1

Client Sample Results

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

Job ID: 240-176477-1

Client Sample ID: MW-64_111122

Lab Sample ID: 240-176477-3

Date Collected: 11/11/22 09:55

Matrix: Water

Date Received: 11/15/22 10:00

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			11/18/22 01:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	135	S1+	66 - 120					11/18/22 01:36	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			11/22/22 14:18	1
cis-1,2-Dichloroethene	0.56	J	1.0	0.46	ug/L			11/22/22 14:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 14:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 14:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 14:18	1
Vinyl chloride	4.0		1.0	0.45	ug/L			11/22/22 14:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137					11/22/22 14:18	1
4-Bromofluorobenzene (Surr)	96		56 - 136					11/22/22 14:18	1
Toluene-d8 (Surr)	98		78 - 122					11/22/22 14:18	1
Dibromofluoromethane (Surr)	86		73 - 120					11/22/22 14:18	1

Client Sample Results

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

Job ID: 240-176477-1

Client Sample ID: MW-71_111122

Lab Sample ID: 240-176477-4

Date Collected: 11/11/22 10:45

Matrix: Water

Date Received: 11/15/22 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	0.89	J	2.0	0.86	ug/L			11/18/22 02:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	132	S1+	66 - 120					11/18/22 02:01	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			11/22/22 14:41	1
cis-1,2-Dichloroethene	0.89	J	1.0	0.46	ug/L			11/22/22 14:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 14:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 14:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 14:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 14:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137					11/22/22 14:41	1
4-Bromofluorobenzene (Surr)	86		56 - 136					11/22/22 14:41	1
Toluene-d8 (Surr)	92		78 - 122					11/22/22 14:41	1
Dibromofluoromethane (Surr)	81		73 - 120					11/22/22 14:41	1

Client Sample Results

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

Job ID: 240-176477-1

Client Sample ID: MW-220S_111122

Lab Sample ID: 240-176477-5

Date Collected: 11/11/22 11:35

Matrix: Water

Date Received: 11/15/22 10:00

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			11/18/22 02:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	136	S1+	66 - 120					11/18/22 02:25	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			11/22/22 15:04	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 15:04	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 15:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 15:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 15:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 15:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137					11/22/22 15:04	1
4-Bromofluorobenzene (Surr)	93		56 - 136					11/22/22 15:04	1
Toluene-d8 (Surr)	96		78 - 122					11/22/22 15:04	1
Dibromofluoromethane (Surr)	82		73 - 120					11/22/22 15:04	1

Surrogate Summary

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

Job ID: 240-176477-1

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)
240-176369-B-11 MS	Matrix Spike	84	96	97	77
240-176369-B-11 MSD	Matrix Spike Duplicate	88	100	100	81
240-176477-1	TRIP BLANK_66	96	97	99	87
240-176477-2	MW-57_111122	90	93	96	83
240-176477-3	MW-64_111122	95	96	98	86
240-176477-4	MW-71_111122	85	86	92	81
240-176477-5	MW-220S_111122	91	93	96	82
LCS 240-553103/5	Lab Control Sample	85	103	101	85
MB 240-553103/9	Method Blank	90	91	95	82

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)
240-176475-I-4 MS	Matrix Spike	119
240-176475-O-4 MSD	Matrix Spike Duplicate	123 S1+
240-176477-2	MW-57_111122	124 S1+
240-176477-3	MW-64_111122	135 S1+
240-176477-4	MW-71_111122	132 S1+
240-176477-5	MW-220S_111122	136 S1+
LCS 240-552553/4	Lab Control Sample	124 S1+
MB 240-552553/5	Method Blank	116

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-176477-1

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

Lab Sample ID: MB 240-553103/9
Matrix: Water
Analysis Batch: 553103

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			11/22/22 12:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 12:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 12:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 12:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 12:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 12:22	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	90		62 - 137		11/22/22 12:22	1
4-Bromofluorobenzene (Surr)	91		56 - 136		11/22/22 12:22	1
Toluene-d8 (Surr)	95		78 - 122		11/22/22 12:22	1
Dibromofluoromethane (Surr)	82		73 - 120		11/22/22 12:22	1

Lab Sample ID: LCS 240-553103/5
Matrix: Water
Analysis Batch: 553103

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	20.5		ug/L		102	63 - 134
cis-1,2-Dichloroethene	20.0	18.2		ug/L		91	77 - 123
Tetrachloroethene	20.0	18.7		ug/L		93	76 - 123
trans-1,2-Dichloroethene	20.0	20.7		ug/L		103	75 - 124
Trichloroethene	20.0	17.3		ug/L		86	70 - 122
Vinyl chloride	20.0	17.7		ug/L		88	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		62 - 137
4-Bromofluorobenzene (Surr)	103		56 - 136
Toluene-d8 (Surr)	101		78 - 122
Dibromofluoromethane (Surr)	85		73 - 120

Lab Sample ID: 240-176369-B-11 MS
Matrix: Water
Analysis Batch: 553103

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	4.0	U	80.0	76.6		ug/L		96	56 - 135
cis-1,2-Dichloroethene	96		80.0	158		ug/L		78	66 - 128
Tetrachloroethene	4.0	U	80.0	66.3		ug/L		83	62 - 131
trans-1,2-Dichloroethene	4.0	U	80.0	79.8		ug/L		100	56 - 136
Trichloroethene	31		80.0	91.7		ug/L		76	61 - 124
Vinyl chloride	3.0	J	80.0	73.2		ug/L		88	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	97		78 - 122

QC Sample Results

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

Job ID: 240-176477-1

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

Lab Sample ID: 240-176369-B-11 MS
Matrix: Water
Analysis Batch: 553103

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	77		73 - 120

Lab Sample ID: 240-176369-B-11 MSD
Matrix: Water
Analysis Batch: 553103

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

Analyte	Sample	Sample	Spike	MSD MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
1,1-Dichloroethene	4.0	U	80.0	76.1		ug/L		95	56 - 135	1	26	
cis-1,2-Dichloroethene	96		80.0	159		ug/L		79	66 - 128	0	14	
Tetrachloroethene	4.0	U	80.0	67.5		ug/L		84	62 - 131	2	20	
trans-1,2-Dichloroethene	4.0	U	80.0	79.6		ug/L		100	56 - 136	0	15	
Trichloroethene	31		80.0	90.8		ug/L		75	61 - 124	1	15	
Vinyl chloride	3.0	J	80.0	70.7		ug/L		85	43 - 157	3	24	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	81		73 - 120

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

Lab Sample ID: MB 240-552553/5
Matrix: Water
Analysis Batch: 552553

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/17/22 19:08	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	116		66 - 120		11/17/22 19:08	1

Lab Sample ID: LCS 240-552553/4
Matrix: Water
Analysis Batch: 552553

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

Analyte	Spike	LCS LCS		Unit	D	%Rec	%Rec
		Result	Qualifier				
1,4-Dioxane	10.0	9.20		ug/L		92	80 - 122

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	124	S1+	66 - 120

Lab Sample ID: 240-176475-I-4 MS
Matrix: Water
Analysis Batch: 552553

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

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,4-Dioxane	2.0	U	10.0	9.04		ug/L		90	51 - 153

Eurofins Canton

QC Sample Results

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

Job ID: 240-176477-1

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

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: 240-176475-O-4 MSD
Matrix: Water
Analysis Batch: 552553

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

<i>Analyte</i>	<i>Sample</i> <i>Result</i>	<i>Sample</i> <i>Qualifier</i>	<i>Spike</i> <i>Added</i>	<i>MSD</i> <i>Result</i>	<i>MSD</i> <i>Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec</i> <i>Limits</i>	<i>RPD</i>	<i>RPD</i> <i>Limit</i>
1,4-Dioxane	2.0	U	10.0	9.56		ug/L		96	51 - 153	6	16

<i>Surrogate</i>	<i>MSD</i> <i>%Recovery</i>	<i>MSD</i> <i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	123	S1+	66 - 120

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QC Association Summary

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

Job ID: 240-176477-1

GC/MS VOA

Analysis Batch: 552553

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176477-2	MW-57_111122	Total/NA	Water	8260D SIM	
240-176477-3	MW-64_111122	Total/NA	Water	8260D SIM	
240-176477-4	MW-71_111122	Total/NA	Water	8260D SIM	
240-176477-5	MW-220S_111122	Total/NA	Water	8260D SIM	
MB 240-552553/5	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-552553/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176475-I-4 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176475-O-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176477-1	TRIP BLANK_66	Total/NA	Water	8260D	
240-176477-2	MW-57_111122	Total/NA	Water	8260D	
240-176477-3	MW-64_111122	Total/NA	Water	8260D	
240-176477-4	MW-71_111122	Total/NA	Water	8260D	
240-176477-5	MW-220S_111122	Total/NA	Water	8260D	
MB 240-553103/9	Method Blank	Total/NA	Water	8260D	
LCS 240-553103/5	Lab Control Sample	Total/NA	Water	8260D	
240-176369-B-11 MS	Matrix Spike	Total/NA	Water	8260D	
240-176369-B-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-176477-1

Client Sample ID: TRIP BLANK_66

Lab Sample ID: 240-176477-1

Date Collected: 11/11/22 00:00

Matrix: Water

Date Received: 11/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553103	TJL1	EET CAN	11/22/22 13:32

Client Sample ID: MW-57_111122

Lab Sample ID: 240-176477-2

Date Collected: 11/11/22 08:55

Matrix: Water

Date Received: 11/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553103	TJL1	EET CAN	11/22/22 13:55
Total/NA	Analysis	8260D SIM		1	552553	CS	EET CAN	11/18/22 01:12

Client Sample ID: MW-64_111122

Lab Sample ID: 240-176477-3

Date Collected: 11/11/22 09:55

Matrix: Water

Date Received: 11/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553103	TJL1	EET CAN	11/22/22 14:18
Total/NA	Analysis	8260D SIM		1	552553	CS	EET CAN	11/18/22 01:36

Client Sample ID: MW-71_111122

Lab Sample ID: 240-176477-4

Date Collected: 11/11/22 10:45

Matrix: Water

Date Received: 11/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553103	TJL1	EET CAN	11/22/22 14:41
Total/NA	Analysis	8260D SIM		1	552553	CS	EET CAN	11/18/22 02:01

Client Sample ID: MW-220S_111122

Lab Sample ID: 240-176477-5

Date Collected: 11/11/22 11:35

Matrix: Water

Date Received: 11/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553103	TJL1	EET CAN	11/22/22 15:04
Total/NA	Analysis	8260D SIM		1	552553	CS	EET CAN	11/18/22 02:25

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: 240-176477-1

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

Client Contact
 Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240

Regulatory program: DW NPDES RCRA Other

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

Site Contact: Christina Weaver
 Telephone: 248-994-2293

Lab Contact: Mike DeMonico
 Telephone: 330-497-9396

TestAmerica Laboratories, Inc.
 COC No. _____ of _____ COCs

Analysis Turnaround Time
 TAT if different from below:
 3 weeks
 2 weeks **10 day**
 1 week
 2 days
 1 day

Containers & Preservatives
 HCl
 NaOH
 NaAc
 NaOH
 Other:

Matrix
 Air
 Aqueous
 Sediment
 Solid
 Other:

Sample Identification	Sample Date	Sample Time	Containers & Preservatives						Filtered Sample (Y/N)	Composite=C / Grab=G	Analyses						Sample Specific Notes / Special Instructions:
			H2SO4	HNO3	HCl	NaOH	NaAc	Other:			1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	
TRIP BLANK-66		---							NG	X	X	X	X	X	X	1 Trip Blank	
MW-57-111122	11/11/22	855							N	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM	
MW-64-111122	11/11/22	955							N	X	X	X	X	X	X		
MW-71-111122	11/11/22	1045							N	X	X	X	X	X	X		
MW-2205-111122	11/11/22	1135							N	X	X	X	X	X	X		



Possible Hazard Identification
 Non-Hazard Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if any):
 Return to Client Disposal By Lab Archive For _____ Months

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cadenasco.com. Cadena #E203728
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>Christina Weaver</i>	Arcadis	11/11/22 1245	<i>Novi Cold Storage</i>	Arcadis	11/11/22 1245
<i>Christina Weaver</i>	Arcadis	11/14/22 0950	<i>Novi Cold Storage</i>	Arcadis	11/14/22 0950
<i>Christina Weaver</i>	Arcadis	11/14/22 0945	<i>Novi Cold Storage</i>	Arcadis	11/14/22 0950

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Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : 176477

Client Ascadi's Site Name _____ Cooler unpacked by: Charlene
Cooler Received on 11-15-22 Opened on 11-15-22

FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____

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

Eurofins Cooler # 777 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 _____ 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
-Were tamper/custody seals intact and uncompromised? Yes No NA

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

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? OK 11/15/22

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# HC286797

14. Were VOAs on the COC? Yes No

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

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Car Med 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 _____

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: _____

Login #: 176477

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Eurofins - Canton Sample Receipt Multiple Cooler Form									
Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
<input checked="" type="radio"/> TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 <input checked="" type="radio"/> IR-15	3.6	3.6	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
<input checked="" type="radio"/> TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 <input checked="" type="radio"/> IR-15	2.0	2.0	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
<input checked="" type="radio"/> TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 <input checked="" type="radio"/> IR-15	1.6	1.6	<input checked="" type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
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TA	<input type="radio"/> Client	<input type="radio"/> Box	<input type="radio"/> Other	IR-13 IR-15			<input type="radio"/> Wet Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice
<input type="checkbox"/> See Temperature Excursion Form									



DATA VERIFICATION REPORT

November 29, 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: 176477-1

Sample date: 2022-11-11

Report received by CADENA: 2022-11-29

Initial Data Verification completed by CADENA: 2022-11-29

Number of Samples:5

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:

SURROGATE recoveries were outside of laboratory control limits biased HIGH for 1 of 1 surrogates in the tests/samples noted. Associated results were either non-detect so were not affected by the high bias or detected below the RL so already qualified as estimated so qualification of results was not required. GCMS-SIM VOC samples -02, -03, -04, -05 and QC batch LCS.

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.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

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 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: 176477-1

Analyte	Cas No.	Sample Name: TRIP BLANK_66				Sample Name: MW-57_111122				Sample Name: MW-64_111122				Sample Name: MW-71_111122				Sample Name: MW-220S_111122			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC																					
<u>OSW-8260D</u>																					
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	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	---	0.56	1.0	ug/l	J	0.89	1.0	ug/l	J	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	---	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	---	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	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	0.61	1.0	ug/l	J	4.0	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
<u>OSW-8260DSIM</u>																					
1,4-Dioxane	123-91-1					1.6	2.0	ug/l	J	ND	2.0	ug/l	---	0.89	2.0	ug/l	J	ND	2.0	ug/l	---