

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 11/29/2022 7:39:06 AM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-176482-1

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



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

Generated
11/29/2022 7:39:06 AM



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	15
QC Sample Results	16
QC Association Summary	19
Lab Chronicle	20
Certification Summary	21
Chain of Custody	22

Definitions/Glossary

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

Job ID: 240-176482-1

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: 240-176482-1

Job ID: 240-176482-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-176482-1

Comments

No additional comments.

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

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

VOA Prep

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

Method Summary

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

Job ID: 240-176482-1

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: 240-176482-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176482-1	TRIP BLANK_211	Water	11/12/22 00:00	11/15/22 10:00
240-176482-2	MW-40_111222	Water	11/12/22 09:46	11/15/22 10:00
240-176482-3	MW-31_111222	Water	11/12/22 10:43	11/15/22 10:00
240-176482-4	MW-208S_111222	Water	11/12/22 11:37	11/15/22 10:00
240-176482-5	MW-30_111222	Water	11/12/22 12:31	11/15/22 10:00
240-176482-6	MW-209S_111222	Water	11/12/22 13:47	11/15/22 10:00

Detection Summary

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

Job ID: 240-176482-1

Client Sample ID: TRIP BLANK_211

Lab Sample ID: 240-176482-1

No Detections.

Client Sample ID: MW-40_111222

Lab Sample ID: 240-176482-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	2.4		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	1.8		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-31_111222

Lab Sample ID: 240-176482-3

No Detections.

Client Sample ID: MW-208S_111222

Lab Sample ID: 240-176482-4

No Detections.

Client Sample ID: MW-30_111222

Lab Sample ID: 240-176482-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	12		2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-209S_111222

Lab Sample ID: 240-176482-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.1		1.0	0.45	ug/L	1		8260D	Total/NA

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: 240-176482-1

Client Sample ID: TRIP BLANK_211

Lab Sample ID: 240-176482-1

Date Collected: 11/12/22 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 17:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 17:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 17:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 17:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 17:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		11/22/22 17:22	1
4-Bromofluorobenzene (Surr)	102		56 - 136		11/22/22 17:22	1
Toluene-d8 (Surr)	102		78 - 122		11/22/22 17:22	1
Dibromofluoromethane (Surr)	87		73 - 120		11/22/22 17:22	1

Client Sample Results

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

Job ID: 240-176482-1

Client Sample ID: MW-40_111222

Lab Sample ID: 240-176482-2

Date Collected: 11/12/22 09:46

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 02:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120					11/18/22 02:56	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 17:46	1
cis-1,2-Dichloroethene	2.4		1.0	0.46	ug/L			11/22/22 17:46	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 17:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 17:46	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 17:46	1
Vinyl chloride	1.8		1.0	0.45	ug/L			11/22/22 17:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137					11/22/22 17:46	1
4-Bromofluorobenzene (Surr)	95		56 - 136					11/22/22 17:46	1
Toluene-d8 (Surr)	97		78 - 122					11/22/22 17:46	1
Dibromofluoromethane (Surr)	87		73 - 120					11/22/22 17:46	1

Client Sample Results

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

Job ID: 240-176482-1

Client Sample ID: MW-31_111222

Lab Sample ID: 240-176482-3

Date Collected: 11/12/22 10:43

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 03:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120					11/18/22 03:22	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			11/22/22 18:09	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 18:09	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:09	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 18:09	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:09	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 18:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					11/22/22 18:09	1
4-Bromofluorobenzene (Surr)	90		56 - 136					11/22/22 18:09	1
Toluene-d8 (Surr)	95		78 - 122					11/22/22 18:09	1
Dibromofluoromethane (Surr)	83		73 - 120					11/22/22 18:09	1

Client Sample Results

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

Job ID: 240-176482-1

Client Sample ID: MW-208S_111222

Lab Sample ID: 240-176482-4

Date Collected: 11/12/22 11:37

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 03:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	80		66 - 120					11/18/22 03:47	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 18:32	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 18:32	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:32	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 18:32	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:32	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 18:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		62 - 137					11/22/22 18:32	1
4-Bromofluorobenzene (Surr)	89		56 - 136					11/22/22 18:32	1
Toluene-d8 (Surr)	92		78 - 122					11/22/22 18:32	1
Dibromofluoromethane (Surr)	77		73 - 120					11/22/22 18:32	1

Client Sample Results

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

Job ID: 240-176482-1

Client Sample ID: MW-30_111222

Lab Sample ID: 240-176482-5

Date Collected: 11/12/22 12:31

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	12		2.0	0.86	ug/L			11/18/22 04:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	77		66 - 120					11/18/22 04:38	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 18:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 18:55	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 18:55	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 18:55	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/22/22 18:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137					11/22/22 18:55	1
4-Bromofluorobenzene (Surr)	97		56 - 136					11/22/22 18:55	1
Toluene-d8 (Surr)	99		78 - 122					11/22/22 18:55	1
Dibromofluoromethane (Surr)	88		73 - 120					11/22/22 18:55	1

Client Sample Results

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

Job ID: 240-176482-1

Client Sample ID: MW-209S_111222

Lab Sample ID: 240-176482-6

Date Collected: 11/12/22 13:47

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 05:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	79		66 - 120					11/18/22 05:04	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 19:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/22/22 19:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 19:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/22/22 19:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/22/22 19:18	1
Vinyl chloride	1.1		1.0	0.45	ug/L			11/22/22 19:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137					11/22/22 19:18	1
4-Bromofluorobenzene (Surr)	96		56 - 136					11/22/22 19:18	1
Toluene-d8 (Surr)	98		78 - 122					11/22/22 19:18	1
Dibromofluoromethane (Surr)	88		73 - 120					11/22/22 19:18	1

Surrogate Summary

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

Job ID: 240-176482-1

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	DCA	BFB	TOL	DBFM
		(62-137)	(56-136)	(78-122)	(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
240-176482-1	TRIP BLANK_211	95	102	102	87
240-176482-2	MW-40_111222	94	95	97	87
240-176482-3	MW-31_111222	92	90	95	83
240-176482-4	MW-208S_111222	87	89	92	77
240-176482-5	MW-30_111222	95	97	99	88
240-176482-6	MW-209S_111222	96	96	98	88
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)
240-176482-2	MW-40_111222	79
240-176482-3	MW-31_111222	79
240-176482-4	MW-208S_111222	80
240-176482-5	MW-30_111222	77
240-176482-6	MW-209S_111222	79
240-176484-G-4 MS	Matrix Spike	78
240-176484-O-4 MSD	Matrix Spike Duplicate	80
LCS 240-552560/3	Lab Control Sample	78
MB 240-552560/4	Method Blank	79

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-176482-1

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 Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
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 %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
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 Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
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 %Recovery	LCS Qualifier	Limits
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 Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
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 %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		62 - 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	97		78 - 122

Eurofins Canton

QC Sample Results

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

Job ID: 240-176482-1

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
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 Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
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

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
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 240-552560/4

Matrix: Water

Analysis Batch: 552560

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			11/17/22 23:06	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
1,2-Dichloroethane-d4 (Surr)	79		66 - 120		11/17/22 23:06	1			

Lab Sample ID: LCS 240-552560/3

Matrix: Water

Analysis Batch: 552560

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	9.29		ug/L		93	80 - 122

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	78		66 - 120

Lab Sample ID: 240-176484-G-4 MS

Matrix: Water

Analysis Batch: 552560

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	1.5	J	10.0	12.5		ug/L		110	51 - 153

Eurofins Canton

QC Sample Results

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

Job ID: 240-176482-1

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

		MS	MS									
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	78		66 - 120									
Lab Sample ID: 240-176484-O-4 MSD				Client Sample ID: Matrix Spike Duplicate								
Matrix: Water				Prep Type: Total/NA								
Analysis Batch: 552560												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
1,4-Dioxane	1.5	J	10.0	12.2		ug/L		108	51 - 153	2	16	
		MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	80		66 - 120									

QC Association Summary

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

Job ID: 240-176482-1

GC/MS VOA

Analysis Batch: 552560

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176482-2	MW-40_111222	Total/NA	Water	8260D SIM	
240-176482-3	MW-31_111222	Total/NA	Water	8260D SIM	
240-176482-4	MW-208S_111222	Total/NA	Water	8260D SIM	
240-176482-5	MW-30_111222	Total/NA	Water	8260D SIM	
240-176482-6	MW-209S_111222	Total/NA	Water	8260D SIM	
MB 240-552560/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-552560/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176484-G-4 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176484-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
240-176482-1	TRIP BLANK_211	Total/NA	Water	8260D	
240-176482-2	MW-40_111222	Total/NA	Water	8260D	
240-176482-3	MW-31_111222	Total/NA	Water	8260D	
240-176482-4	MW-208S_111222	Total/NA	Water	8260D	
240-176482-5	MW-30_111222	Total/NA	Water	8260D	
240-176482-6	MW-209S_111222	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: 240-176482-1

Client Sample ID: TRIP BLANK_211

Lab Sample ID: 240-176482-1

Date Collected: 11/12/22 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 17:22

Client Sample ID: MW-40_111222

Lab Sample ID: 240-176482-2

Date Collected: 11/12/22 09:46

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 17:46
Total/NA	Analysis	8260D SIM		1	552560	CS	EET CAN	11/18/22 02:56

Client Sample ID: MW-31_111222

Lab Sample ID: 240-176482-3

Date Collected: 11/12/22 10:43

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 18:09
Total/NA	Analysis	8260D SIM		1	552560	CS	EET CAN	11/18/22 03:22

Client Sample ID: MW-208S_111222

Lab Sample ID: 240-176482-4

Date Collected: 11/12/22 11:37

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 18:32
Total/NA	Analysis	8260D SIM		1	552560	CS	EET CAN	11/18/22 03:47

Client Sample ID: MW-30_111222

Lab Sample ID: 240-176482-5

Date Collected: 11/12/22 12:31

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 18:55
Total/NA	Analysis	8260D SIM		1	552560	CS	EET CAN	11/18/22 04:38

Client Sample ID: MW-209S_111222

Lab Sample ID: 240-176482-6

Date Collected: 11/12/22 13:47

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 19:18
Total/NA	Analysis	8260D SIM		1	552560	CS	EET CAN	11/18/22 05:04

Laboratory References:

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

Eurofins Canton

Accreditation/Certification Summary

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

Job ID: 240-176482-1

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

© 2008, TestAmerica Laboratories, Inc. All rights reserved.
TestAmerica & Design 16 are trademarks of TestAmerica Laboratories, Inc.

Eurofins - Canton Sample Receipt Form/Narrative Login #: 176482
Barberton Facility

Client Ascadis Site Name _____ Cooler unpacked by: Charlie
Cooler Received on 11-15-22 Opened on 11-15-22
FedEx: 1st Grd ☒ UPS FAS Clipper Client Drop Off Eurofins Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # 711 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

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# HC286791
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 # Col 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: _____

WT-NC-099

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

WT-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

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: 176482-1
Sample date: 2022-11-12
Report received by CADENA: 2022-11-29
Initial Data Verification completed by CADENA: 2022-11-29
Number of Samples:6
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.

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 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: 176482-1

Analyte	Cas No.	Sample Name: TRIP BLANK_211				MW-40_111222				MW-31_111222				MW-208S_111222				MW-30_111222				MW-209S_111222			
		Lab Sample ID: 2401764821				2401764822				2401764823				2401764824				2401764825				2401764826			
		Sample Date: 11/12/2022				11/12/2022				11/12/2022				11/12/2022				11/12/2022				11/12/2022			
		Report	Limit	Units	Valid	Report	Limit	Units	Valid	Report	Limit	Units	Valid	Report	Limit	Units	Valid	Report	Limit	Units	Valid	Report	Limit	Units	Valid
					Qualifier				Qualifier				Qualifier				Qualifier				Qualifier				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	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	2.4	1.0	ug/l	---	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	---	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	---	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	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	1.8	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	1.1	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	12	2.0	ug/l	---	ND	2.0	ug/l	---