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ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-200247-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



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Job Notes

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Authorization

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Client: Arcadis U.S., Inc.

Laboratory Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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Definitions/Glossary

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Qualifiers

GC/MS V	OA
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Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
n	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

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Case Narrative

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

Job ID: 240-200247-1 Eurofins Cleveland

Job Narrative 240-200247-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- · Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 2/29/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.2°C and 2.8°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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Job ID: 240-200247-1

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Method Summary

Client: Arcadis U.S., Inc.

Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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

Protocol References:

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

Laboratory References:

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

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Sample Summary

Client: Arcadis U.S., Inc.

Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-200247-1	TRIP BLANK_122	Water	02/23/24 00:00	02/29/24 08:00
240-200247-2	MW-21_022324	Water	02/23/24 09:35	02/29/24 08:00
240-200247-3	M\V/-65_022324	Water	02/23/24 11:20	02/29/24 08:00

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Detection Summary

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK_122 Lab Sample ID: 240-200247-1

No Detections.

Client Sample ID: MW-21_022324 Lab Sample ID: 240-200247-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D Meth	od	Prep Type
1,4-Dioxane	1.3	J	2.0	0.86	ug/L	1	8260	D SIM	Total/NA
cis-1,2-Dichloroethene	210		4.0	1.8	ug/L	4	8260	D	Total/NA
trans-1,2-Dichloroethene	3.7	J	4.0	2.0	ug/L	4	8260	D	Total/NA
Vinyl chloride	330		10	4.5	ug/L	10	8260	D	Total/NA

Client Sample ID: MW-65_022324 Lab Sample ID: 240-200247-3

Analyte	Result Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.7	2.0	0.86	ug/L	1	_	8260D SIM	Total/NA
cis-1,2-Dichloroethene	4.1	1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	9.3	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample Results

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Client Sample ID: TRIP BLANK_122

Lab Sample ID: 240-200247-1 Date Collected: 02/23/24 00:00

Matrix: Water

Date Received: 02/29/24 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			03/01/24 19:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/01/24 19:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 19:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/01/24 19:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 19:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/01/24 19:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137			_		03/01/24 19:52	1
4-Bromofluorobenzene (Surr)	108		56 ₋ 136					03/01/24 19:52	1
Toluene-d8 (Surr)	94		78 - 122					03/01/24 19:52	1
Dibromofluoromethane (Surr)	86		73 - 120					03/01/24 19:52	1

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Client Sample Results

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Client Sample ID: MW-21_022324

Lab Sample ID: 240-200247-2 Date Collected: 02/23/24 09:35

Matrix: Water

03/01/24 20:16

03/05/24 13:18

Date	Received:	02/29/24	08:00

Dibromofluoromethane (Surr)

Dibromofluoromethane (Surr)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.3	J	2.0	0.86	ug/L			03/04/24 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		68 - 127			-		03/04/24 19:21	1
Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	4.0	U	4.0	2.0	ug/L			03/01/24 20:16	4
cis-1,2-Dichloroethene	210		4.0	1.8	ug/L			03/01/24 20:16	4
Tetrachloroethene	4.0	U	4.0	1.8	ug/L			03/01/24 20:16	4
trans-1,2-Dichloroethene	3.7	J	4.0	2.0	ug/L			03/01/24 20:16	4
Trichloroethene	4.0	U	4.0	1.8	ug/L			03/01/24 20:16	4
Vinyl chloride	330		10	4.5	ug/L			03/05/24 13:18	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		62 - 137			-		03/01/24 20:16	4
1,2-Dichloroethane-d4 (Surr)	89		62 - 137					03/05/24 13:18	10
4-Bromofluorobenzene (Surr)	104		56 ₋ 136					03/01/24 20:16	4
4-Bromofluorobenzene (Surr)	107		56 ₋ 136					03/05/24 13:18	10
Toluene-d8 (Surr)	91		78 - 122					03/01/24 20:16	4
Toluene-d8 (Surr)	92		78 - 122					03/05/24 13:18	10

73 - 120

73 - 120

86

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Client Sample Results

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Date Received: 02/29/24 08:00

Client Sample ID: MW-65_022324

Lab Sample ID: 240-200247-3 Date Collected: 02/23/24 11:20

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.7		2.0	0.86	ug/L			03/04/24 19:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		68 - 127			-		03/04/24 19:45	1
Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			03/01/24 20:40	1
cis-1,2-Dichloroethene	4.1		1.0	0.46	ug/L			03/01/24 20:40	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 20:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/01/24 20:40	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 20:40	1
Vinyl chloride	9.3		1.0	0.45	ug/L			03/01/24 20:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		62 - 137			-		03/01/24 20:40	1
4-Bromofluorobenzene (Surr)	108		56 ₋ 136					03/01/24 20:40	1
Toluene-d8 (Surr)	95		78 - 122					03/01/24 20:40	1
Dibromofluoromethane (Surr)	88		73 - 120					03/01/24 20:40	1

Surrogate Summary

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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

Matrix: Water Prep Type: Total/NA

				Percent Sui	rogate Rec
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-200247-1	TRIP BLANK_122	90	108	94	86
240-200247-2	MW-21_022324	89	104	91	86
240-200247-2	MW-21_022324	89	107	92	87
240-200247-2 MS	MW-21_022324	90	111	92	89
240-200247-2 MS	MW-21_022324	86	107	88	85
240-200247-2 MSD	MW-21_022324	88	107	90	86
240-200247-2 MSD	MW-21_022324	85	110	91	86
240-200247-3	MW-65_022324	90	108	95	88
LCS 240-604673/6	Lab Control Sample	86	105	90	85
LCS 240-604952/6	Lab Control Sample	84	105	89	85
MB 240-604673/12	Method Blank	88	106	94	86
MB 240-604952/12	Method Blank	86	103	91	86

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)
		DCA	
Lab Sample ID	Client Sample ID	(68-127)	
240-200104-F-2 MS	Matrix Spike	97	
240-200104-F-2 MSD	Matrix Spike Duplicate	103	
240-200247-2	MW-21_022324	99	
240-200247-3	MW-65_022324	108	
LCS 240-604855/4	Lab Control Sample	105	
MB 240-604855/6	Method Blank	101	
Surrogate Legend			
DCA = 1,2-Dichloroetha	ne-d4 (Surr)		

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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

Lab Sample ID: MB 240-604673/12

Matrix: Water

Analysis Batch: 604673

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

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			03/01/24 13:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/01/24 13:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 13:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/01/24 13:49	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 13:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/01/24 13:49	1

MB MB

Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	88	62 - 137		03/01/24 13:49	1
4-Bromofluorobenzene (Surr)	106	56 ₋ 136		03/01/24 13:49	1
Toluene-d8 (Surr)	94	78 - 122		03/01/24 13:49	1
Dibromofluoromethane (Surr)	86	73 - 120		03/01/24 13:49	1

Lab Sample ID: LCS 240-604673/6

Matrix: Water

Analysis Batch: 604673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

%Rec Spike LCS LCS Analyte Added Result Qualifier Unit %Rec Limits 1,1-Dichloroethene 20.0 24.4 122 63 - 134 ug/L 20.0 22.7 cis-1,2-Dichloroethene ug/L 113 77 - 123 Tetrachloroethene 20.0 22.7 113 76 - 123 ug/L trans-1,2-Dichloroethene 20.0 23.0 ug/L 115 75 - 124 Trichloroethene 20.0 23.3 ug/L 116 70 - 122 Vinyl chloride 20.0 16.3 ug/L 82 60 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	86		62 - 137
4-Bromofluorobenzene (Surr)	105		56 ₋ 136
Toluene-d8 (Surr)	90		78 - 122
Dibromofluoromethane (Surr)	85		73 - 120

Lab Sample ID: 240-200247-2 MS

Matrix: Water

Analysis Batch: 604673

Client Sample ID: MW-21_022324 Prep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	4.0	U	80.0	87.3		ug/L		109	56 - 135	
cis-1,2-Dichloroethene	210		80.0	292	E	ug/L		105	66 - 128	
Tetrachloroethene	4.0	U	80.0	76.9		ug/L		96	62 - 131	
trans-1,2-Dichloroethene	3.7	J	80.0	84.7		ug/L		101	56 - 136	
Trichloroethene	4.0	U	80.0	82.0		ug/L		102	61 - 124	

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	90		62 _ 137
4-Bromofluorobenzene (Surr)	111		56 ₋ 136
Toluene-d8 (Surr)	92		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

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Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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

Lab Sample ID: 240-200247-2 MSD

Matrix: Water

Analysis Batch: 604673

Allalysis Datell. 004010											
	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	4.0	U	80.0	93.5		ug/L		117	56 - 135	7	26
cis-1,2-Dichloroethene	210		80.0	292	E	ug/L		105	66 - 128	0	14
Tetrachloroethene	4.0	U	80.0	83.8		ug/L		105	62 - 131	9	20
trans-1,2-Dichloroethene	3.7	J	80.0	91.3		ug/L		109	56 - 136	7	15
Trichloroethene	4 0	11	80 N	90.2		ua/l		113	61 124	10	15

MSD MSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	88		62 - 137
4-Bromofluorobenzene (Surr)	107		56 ₋ 136
Toluene-d8 (Surr)	90		78 - 122
Dibromofluoromethane (Surr)	86		73 - 120

Lab Sample ID: MB 240-604952/12

Matrix: Water

Analysis Batch: 604952

Client Sample ID: Method Blank

Client Sample ID: MW-21_022324

Prep Type: Total/NA

Prep Type: Total/NA

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			03/05/24 12:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/05/24 12:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/05/24 12:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/05/24 12:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/05/24 12:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/05/24 12:54	1

мв мв

Surrogate	%Recovery (Qualifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86	62 - 137		03/05/24 12:54	1
4-Bromofluorobenzene (Surr)	103	56 - 136		03/05/24 12:54	1
Toluene-d8 (Surr)	91	78 - 122		03/05/24 12:54	1
Dibromofluoromethane (Surr)	86	73 - 120		03/05/24 12:54	1

Lab Sample ID: LCS 240-604952/6

Matrix: Water

Analysis Batch: 604952

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

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	20.0	23.8		ug/L		119	63 - 134	
cis-1,2-Dichloroethene	20.0	21.9		ug/L		109	77 - 123	
Tetrachloroethene	20.0	21.4		ug/L		107	76 - 123	
trans-1,2-Dichloroethene	20.0	22.3		ug/L		112	75 - 124	
Trichloroethene	20.0	22.2		ug/L		111	70 - 122	
Vinyl chloride	20.0	19.7		ug/L		99	60 - 144	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	84		62 - 137
4-Bromofluorobenzene (Surr)	105		56 ₋ 136
Toluene-d8 (Surr)	89		78 - 122
Dibromofluoromethane (Surr)	85		73 - 120

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Job ID: 240-200247-1

%Rec

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

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

Sample Sample

85

Lab Sample ID: 240-200247-2 MS	Client Sample ID: MW-21_022324
Matrix: Water	Prep Type: Total/NA
Analysis Ratch: 604952	

MS MS

Analysis Batch: 604952

	•	•	•							
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Vinyl chloride	330		200	501		ug/L		86	43 - 157	
	MS	MS								
Surrogate	%Recovery	Qualifier	Limits							
1,2-Dichloroethane-d4 (Surr)	86		62 - 137							
4-Bromofluorobenzene (Surr)	107		56 ₋ 136							
Toluene-d8 (Surr)	88		78 ₋ 122							

Spike

73 - 120

Lab Sample ID: 240-200247-2 MSD Client Sample ID: MW-21_022324 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 604952

Dibromofluoromethane (Surr)

•	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Vinyl chloride	330		200	473		ug/L		72	43 - 157	6	24

MSD MSD Surrogate %Recovery Qualifier Limits 62 - 137 1,2-Dichloroethane-d4 (Surr) 85 4-Bromofluorobenzene (Surr) 110 56 - 136 78 - 122 Toluene-d8 (Surr) 91 Dibromofluoromethane (Surr) 86 73 - 120

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

Lab Sample ID: MB 240-604855/6 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 604855

	MB	MB							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			03/04/24 12:37	1
	MB	MB							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127			_		03/04/24 12:37	1

Client Sample ID: Lab Control Sample Lab Sample ID: LCS 240-604855/4 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 604855

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,4-Dioxane	10.0	8.69		ug/L		87	75 - 121	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		68 - 127

10

QC Sample Results

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

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

Lab Sample ID: 240-200104-F-2 MS **Matrix: Water**

Analysis Batch: 604855

Sample Sample Spike MS MS %Rec Result Qualifier Added Analyte Result Qualifier Unit %Rec Limits 1,4-Dioxane 2.0 U 10.0 9.20 ug/L 92 20 - 180

MS MS

Surrogate %Recovery Qualifier Limits 68 - 127 1,2-Dichloroethane-d4 (Surr) 97

Lab Sample ID: 240-200104-F-2 MSD

Matrix: Water

Analysis Batch: 604855

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	8.42		ug/L		84	20 - 180	9	20

MSD MSD

Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 103 68 - 127

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Matrix Spike

Client Sample ID: Matrix Spike Duplicate

QC Association Summary

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

GC/MS VOA

Analysis Batch: 604673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Bate
240-200247-1	TRIP BLANK_122	Total/NA	Water	8260D	
240-200247-2	MW-21_022324	Total/NA	Water	8260D	
240-200247-3	MW-65_022324	Total/NA	Water	8260D	
MB 240-604673/12	Method Blank	Total/NA	Water	8260D	
LCS 240-604673/6	Lab Control Sample	Total/NA	Water	8260D	
240-200247-2 MS	MW-21_022324	Total/NA	Water	8260D	
240-200247-2 MSD	MW-21_022324	Total/NA	Water	8260D	

Analysis Batch: 604855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200247-2	MW-21_022324	Total/NA	Water	8260D SIM	
240-200247-3	MW-65_022324	Total/NA	Water	8260D SIM	
MB 240-604855/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-604855/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-200104-F-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-200104-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 604952

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200247-2	MW-21_022324	Total/NA	Water	8260D	
MB 240-604952/12	Method Blank	Total/NA	Water	8260D	
LCS 240-604952/6	Lab Control Sample	Total/NA	Water	8260D	
240-200247-2 MS	MW-21_022324	Total/NA	Water	8260D	
240-200247-2 MSD	MW-21 022324	Total/NA	Water	8260D	

Lab Chronicle

Client: Arcadis U.S., Inc. Job ID: 240-200247-1

Project/Site: Ford LTP - On Site

Date Received: 02/29/24 08:00

Client Sample ID: TRIP BLANK_122

Lab Sample ID: 240-200247-1 Date Collected: 02/23/24 00:00

Matrix: Water

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number Analyst Lab or Analyzed 8260D EET CLE 03/01/24 19:52 Total/NA Analysis 604673 HMB

Lab Sample ID: 240-200247-2 Client Sample ID: MW-21_022324

Date Collected: 02/23/24 09:35 **Matrix: Water**

Date Received: 02/29/24 08:00

Batch Batch Dilution Batch Prepared Prep Type Туре Method Run Factor Number Analyst or Analyzed Lab Total/NA 8260D HMB EET CLE 03/01/24 20:16 Analysis 4 604673 Total/NA 8260D 604952 03/05/24 13:18 Analysis 10 HMB **EET CLE** Total/NA 8260D SIM EET CLE 03/04/24 19:21 Analysis 1 604855 MDH

Client Sample ID: MW-65_022324 Lab Sample ID: 240-200247-3

Date Collected: 02/23/24 11:20 **Matrix: Water** Date Received: 02/29/24 08:00

Dilution Batch Batch Batch Prepared Prep Type Туре Method Run Factor Number Analyst Lab or Analyzed Total/NA 8260D 604673 НМВ 03/01/24 20:40 Analysis EET CLE 8260D SIM Total/NA Analysis 604855 MDH EET CLE 03/04/24 19:45

Laboratory References:

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

Eurofins Cleveland

Accreditation/Certification Summary

Client: Arcadis U.S., Inc. Job ID: 240-200247-1 Project/Site: Ford LTP - On Site

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date		
California	State	2927	02-27-24 *		
Illinois	NELAP	200004	07-31-24		
Iowa	State	421	06-01-25		
Kentucky (WW)	State	KY98016	12-30-24		
Minnesota	NELAP	039-999-348	12-31-24		
New Jersey NELAP		OH001	07-01-24		
New York	NELAP	10975	04-01-24		
Oregon	NELAP	4062	02-27-25		
Pennsylvania	NELAP	68-00340	08-31-24		
Texas	NELAP	T104704517-22-19	08-31-24		
USDA	US Federal Programs	P330-18-00281	01-05-27		
Virginia	NELAP	460175	09-14-24		
West Virginia DEP	State	210	12-31-24		

 $^{^{\}star}\,\text{Accreditation/Certification renewal pending - accreditation/certification considered valid}.$

Chain of Custody Record

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company regue. Aregues	Client Project Manager: Kris Hinskey						Site Contact: Christina Weaver Lab Contact: Mike DelMonico												_			stAmerica Laboratories, I C No:				
Address: 28550 Cabot Drive, Suite 500		_																	COC No.							
City/State/Zip: Novi, MI, 48377	Telephone: 248	Telephone: 248-994-2240					Telephone: 248-994-2240								Telephone: 330-497-9396							1 of 1 COC3				
	fer.hiuskey@areadis.com				Auglysis I				sis Turaground Time					Analyses								For lab use only				
Phone: 248-994-2240						TAT	TAT if different from below						П										w.	dk-in client		
Project Name: Ford LTP On-Site	Sampler Name	Ellen Redner				TAT if different from below 3 weeks																1"	ar-m chem			
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3/7/2024

VOA Sample Preservation - Date/Time VOAs Frozen.
Sample(s) were further preserved in the laboratory Time preserved Preservative(s) added/Lot number(s)
19 SAMPLE CONDITION Sample(s) were received after the recommended holding time had expired Sample(s) were received urith bubble >6 mm in diameter (Notify PM) 20 SAMPLE PRESERVATION
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by
Contacted PMDatebyvia Verbal Voice Mail Other Concerning
If yes, Questions 13-17 have been checked at the originating laboratory If yes, Questions 13-17 have been checked at the originating laboratory If were all preserved sample(s) at the correct pH upon receipt? Yes No No pH Strip Lott HC316719 Were air bubbles >6 mm in any VOA vials? Larger than this Yes No NA If Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Yes No Yes No
0
-Were the seals on the outside of the cooler(s) signed & dated? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? -Were tamper/custody seals intact and uncompromised? Shippers' packing slip attached to the cooler(s)? Did custody papers accompany the sample(s)? Were the custody papers relinquished & signed in the appropriate place? Was/were the nerson(s) who collected the samples clearly identified on the COC?
rial used Bubble Wast Foam Plastic Bag None Other NT: Wetter Blue Ice Dry Ice Water None atture upon receipt CF °C) Observed Cooler Temp. "Character of the cooler of the
Cooler Received on Cooler Receipt After-horns Drop-off Date/Time Cooler Receipt After-horns Drop-off Date/Time Cooler Receipt After-horns Drop-off Date/Time Cooler Roce Other
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fa Form Page 2 - Multiple Co

Page 22 of 23

3/7/2024

Login Sample Receipt Checklist

Client: Arcadis U.S., Inc. Job Number: 240-200247-1

Login Number: 200247 List Source: Eurofins Cleveland

List Number: 1 Creator: Loar, Malissa

Question Answer Comment

Radioactivity wasn't checked or is </= background as measured by a survey

The cooler's custody seal, if present, is intact.

Sample custody seals, if present, are intact.

The cooler or samples do not appear to have been compromised or

tampered with.

Samples were received on ice.

Cooler Temperature is acceptable.

Cooler Temperature is recorded.

COC is present.

COC is filled out in ink and legible.

COC is filled out with all pertinent information.

Is the Field Sampler's name present on COC?

There are no discrepancies between the containers received and the COC.

Samples are received within Holding Time (excluding tests with immediate

HTs)

Sample containers have legible labels.

Containers are not broken or leaking.

Sample collection date/times are provided.

Appropriate sample containers are used.

Sample bottles are completely filled.

Sample Preservation Verified.

There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs

Containers requiring zero headspace have no headspace or bubble is

<6mm (1/4").

Multiphasic samples are not present.

Samples do not require splitting or compositing.

Residual Chlorine Checked.

DATA VERIFICATION REPORT



March 07, 2024

Kris Hinskey Arcadis of Michigan 28550 Cabot Drive Suite 500 Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil

Project number: 30167538.401.03

Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 200247-1 Sample date: 2024-02-23

Report received by CADENA: 2024-03-07

Initial Data Verification completed by CADENA: 2024-03-07

Number of Samples:3 Sample Matrices:Water Test Categories:GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

There were no significant QC anomalies or exceptions to report.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, MS/MSD Recovery, MS/MSD RPD, 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.
В	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 contaminates) 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.
Е	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 contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 200247-1

		Sample Name:	TRIP BLA	NK_122			MW-21_	022324			MW-65_	022324		
		Lab Sample ID:	2402002	2402002471			2402002	2472						
		Sample Date:	2/23/202	24			2/23/202	24			2/23/202	24		
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSW-826	<u>0D</u>													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	4.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		210	4.0	ug/l		4.1	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	4.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		3.7	4.0	ug/l	J	ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	4.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		330	10	ug/l		9.3	1.0	ug/l	
OSW-826	<u>ODSIM</u>													
	1,4-Dioxane	123-91-1					1.3	2.0	ug/l	J	3.7	2.0	ug/l	