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ANALYTICAL REPORT

PREPARED FOR

Attn: Ms. Megan Meckley
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28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 12/4/2024 7:07:40 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-215504-1

Eurofins Cleveland
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization

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Table of Contents

Definitions/Glossary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

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.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job Narrative
240-215504-1

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 and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided 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 11/22/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2°C.

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

Method Summary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-215504-1	TRIP BLANK_87	Water	11/20/24 00:00	11/22/24 08:00
240-215504-2	MW-210S_112024	Water	11/20/24 11:00	11/22/24 08:00
240-215504-3	MW-209S_112024	Water	11/20/24 12:10	11/22/24 08:00
240-215504-4	MW-208S_112024	Water	11/20/24 13:25	11/22/24 08:00

Detection Summary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: TRIP BLANK_87 — Lab Sample ID: 240-215504-1

No Detections.

Client Sample ID: MW-210S_112024 — Lab Sample ID: 240-215504-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.2	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	20		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.8		1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	14		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-209S_112024 — Lab Sample ID: 240-215504-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.3		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-208S_112024 — Lab Sample ID: 240-215504-4

No Detections.

This Detection Summary does not include radiochemical test results.

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: TRIP BLANK_87
Date Collected: 11/20/24 00:00
Date Received: 11/22/24 08:00

Lab Sample ID: 240-215504-1
Matrix: Water

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			11/26/24 02:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/26/24 02:35	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 02:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/26/24 02:35	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 02:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/26/24 02:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*11/26/24 02:35*	*1*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*		*11/26/24 02:35*	*1*
Toluene-d8 (Surr)	*99*		*78 - 122*		*11/26/24 02:35*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*11/26/24 02:35*	*1*

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: MW-210S_112024
Date Collected: 11/20/24 11:00
Date Received: 11/22/24 08:00

Lab Sample ID: 240-215504-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	**1.2**	**J**	2.0	0.86	ug/L			11/28/24 06:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*68 - 127*		*11/28/24 06:29*	*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			11/26/24 02:58	1
cis-1,2-Dichloroethene	**20**		1.0	0.46	ug/L			11/26/24 02:58	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 02:58	1
trans-1,2-Dichloroethene	**2.8**		1.0	0.51	ug/L			11/26/24 02:58	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 02:58	1
Vinyl chloride	**14**		1.0	0.45	ug/L			11/26/24 02:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*106*		*62 - 137*		*11/26/24 02:58*	*1*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*11/26/24 02:58*	*1*
Toluene-d8 (Surr)	*102*		*78 - 122*		*11/26/24 02:58*	*1*
Dibromofluoromethane (Surr)	*99*		*73 - 120*		*11/26/24 02:58*	*1*

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: MW-209S_112024
Date Collected: 11/20/24 12:10
Date Received: 11/22/24 08:00

Lab Sample ID: 240-215504-3
Matrix: Water

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			11/28/24 03:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*107*		*68 - 127*		*11/28/24 03:45*	*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			11/26/24 03:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/26/24 03:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 03:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/26/24 03:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 03:21	1
Vinyl chloride	**2.3**		1.0	0.45	ug/L			11/26/24 03:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*11/26/24 03:21*	*1*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*		*11/26/24 03:21*	*1*
Toluene-d8 (Surr)	*100*		*78 - 122*		*11/26/24 03:21*	*1*
Dibromofluoromethane (Surr)	*96*		*73 - 120*		*11/26/24 03:21*	*1*

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: MW-208S_112024
Date Collected: 11/20/24 13:25
Date Received: 11/22/24 08:00

Lab Sample ID: 240-215504-4
Matrix: Water

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			12/02/24 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*68 - 127*		*12/02/24 16:49*	*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			11/26/24 03:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/26/24 03:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 03:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/26/24 03:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/26/24 03:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/26/24 03:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*108*		*62 - 137*		*11/26/24 03:44*	*1*
4-Bromofluorobenzene (Surr)	*97*		*56 - 136*		*11/26/24 03:44*	*1*
Toluene-d8 (Surr)	*102*		*78 - 122*		*11/26/24 03:44*	*1*
Dibromofluoromethane (Surr)	*98*		*73 - 120*		*11/26/24 03:44*	*1*

Surrogate Summary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-215503-B-2 MS	Matrix Spike	100	103	102	95
240-215503-C-2 MSD	Matrix Spike Duplicate	101	103	104	95
240-215504-1	TRIP BLANK_87	105	94	99	98
240-215504-2	MW-210S_112024	106	95	102	99
240-215504-3	MW-209S_112024	105	95	100	96
240-215504-4	MW-208S_112024	108	97	102	98
LCS 240-636698/4	Lab Control Sample	99	103	103	93
MB 240-636698/7	Method Blank	105	101	101	94

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)
		DCA
Lab Sample ID	Client Sample ID	(68-127)
240-215504-2	MW-210S_112024	108
240-215504-3	MW-209S_112024	107
240-215504-4	MW-208S_112024	108
240-215598-B-2 MS	Matrix Spike	106
240-215598-B-2 MSD	Matrix Spike Duplicate	97
240-215601-B-2 MS	Matrix Spike	111
240-215601-B-2 MSD	Matrix Spike Duplicate	107
LCS 240-637038/5	Lab Control Sample	99
LCS 240-637230/5	Lab Control Sample	111
MB 240-637038/7	Method Blank	106
MB 240-637230/7	Method Blank	107

Surrogate Legend

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

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

Lab Sample ID: MB 240-636698/7
Matrix: Water
Analysis Batch: 636698

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			11/25/24 22:46	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/24 22:46	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/24 22:46	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/24 22:46	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/24 22:46	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/25/24 22:46	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*62 - 137*		*11/25/24 22:46*	*1*
4-Bromofluorobenzene (Surr)	*101*		*56 - 136*		*11/25/24 22:46*	*1*
Toluene-d8 (Surr)	*101*		*78 - 122*		*11/25/24 22:46*	*1*
Dibromofluoromethane (Surr)	*94*		*73 - 120*		*11/25/24 22:46*	*1*

Lab Sample ID: LCS 240-636698/4
Matrix: Water
Analysis Batch: 636698

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			25.0	24.5		ug/L		98	63 - 134		
cis-1,2-Dichloroethene			25.0	25.2		ug/L		101	77 - 123		
Tetrachloroethene			25.0	23.7		ug/L		95	76 - 123		
trans-1,2-Dichloroethene			25.0	23.4		ug/L		93	75 - 124		
Trichloroethene			25.0	23.2		ug/L		93	70 - 122		
Vinyl chloride			12.5	12.4		ug/L		99	60 - 144		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*62 - 137*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*
Toluene-d8 (Surr)	*103*		*78 - 122*
Dibromofluoromethane (Surr)	*93*		*73 - 120*

Lab Sample ID: 240-215503-B-2 MS
Matrix: Water
Analysis Batch: 636698

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	1.0	U	25.0	20.8		ug/L		83	56 - 135		
cis-1,2-Dichloroethene	1.0	U	25.0	22.6		ug/L		90	66 - 128		
Tetrachloroethene	1.0	U	25.0	18.2		ug/L		73	62 - 131		
trans-1,2-Dichloroethene	1.0	U	25.0	20.0		ug/L		80	56 - 136		
Trichloroethene	1.0	U	25.0	18.8		ug/L		75	61 - 124		
Vinyl chloride	1.5		12.5	12.4		ug/L		87	43 - 157		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*
Toluene-d8 (Surr)	*102*		*78 - 122*

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

Lab Sample ID: 240-215503-B-2 MS
Matrix: Water
Analysis Batch: 636698

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

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	*95*		*73 - 120*

Lab Sample ID: 240-215503-C-2 MSD
Matrix: Water
Analysis Batch: 636698

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	25.0	21.1		ug/L		85	56 - 135	2	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.7		ug/L		91	66 - 128	0	14
Tetrachloroethene	1.0	U	25.0	18.9		ug/L		76	62 - 131	4	20
trans-1,2-Dichloroethene	1.0	U	25.0	20.5		ug/L		82	56 - 136	3	15
Trichloroethene	1.0	U	25.0	19.3		ug/L		77	61 - 124	2	15
Vinyl chloride	1.5		12.5	13.8		ug/L		98	43 - 157	11	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*101*		*62 - 137*
4-Bromofluorobenzene (Surr)	*103*		*56 - 136*
Toluene-d8 (Surr)	*104*		*78 - 122*
Dibromofluoromethane (Surr)	*95*		*73 - 120*

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

Lab Sample ID: MB 240-637038/7
Matrix: Water
Analysis Batch: 637038

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			11/27/24 22:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	*106*		*68 - 127*		*11/27/24 22:16*	*1*

Lab Sample ID: LCS 240-637038/5
Matrix: Water
Analysis Batch: 637038

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	7.60		ug/L		76	75 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*99*		*68 - 127*

Lab Sample ID: 240-215598-B-2 MS
Matrix: Water
Analysis Batch: 637038

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	2.0	U	10.0	8.33		ug/L		83	20 - 180

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		68 - 127

Lab Sample ID: 240-215598-B-2 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 637038

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	9.06		ug/L		91	20 - 180	8	20

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

Lab Sample ID: MB 240-637230/7 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 637230

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			12/02/24 14:29	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		68 - 127		12/02/24 14:29	1

Lab Sample ID: LCS 240-637230/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 637230

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane			10.0	8.80		ug/L		88	75 - 121		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		68 - 127

Lab Sample ID: 240-215601-B-2 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 637230

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,4-Dioxane	2.0	U	10.0	8.96		ug/L		90	20 - 180		

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		68 - 127

Lab Sample ID: 240-215601-B-2 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 637230

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	2.0	U	10.0	7.84		ug/L		78	20 - 180	13	20

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

Lab Sample ID: 240-215601-B-2 MSD
Matrix: Water
Analysis Batch: 637230

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

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*107*		*68 - 127*

GC/MS VOA

Analysis Batch: 636698

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215504-1	TRIP BLANK_87	Total/NA	Water	8260D	
240-215504-2	MW-210S_112024	Total/NA	Water	8260D	
240-215504-3	MW-209S_112024	Total/NA	Water	8260D	
240-215504-4	MW-208S_112024	Total/NA	Water	8260D	
MB 240-636698/7	Method Blank	Total/NA	Water	8260D	
LCS 240-636698/4	Lab Control Sample	Total/NA	Water	8260D	
240-215503-B-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-215503-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 637038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215504-2	MW-210S_112024	Total/NA	Water	8260D SIM	
240-215504-3	MW-209S_112024	Total/NA	Water	8260D SIM	
MB 240-637038/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-637038/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-215598-B-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-215598-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 637230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-215504-4	MW-208S_112024	Total/NA	Water	8260D SIM	
MB 240-637230/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-637230/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-215601-B-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-215601-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Client Sample ID: TRIP BLANK_87

Lab Sample ID: 240-215504-1

Date Collected: 11/20/24 00:00

Matrix: Water

Date Received: 11/22/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	636698	LEE	EET CLE	11/26/24 02:35

Client Sample ID: MW-210S_112024

Lab Sample ID: 240-215504-2

Date Collected: 11/20/24 11:00

Matrix: Water

Date Received: 11/22/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	636698	LEE	EET CLE	11/26/24 02:58
Total/NA	Analysis	8260D SIM		1	637038	R5XG	EET CLE	11/28/24 06:29

Client Sample ID: MW-209S_112024

Lab Sample ID: 240-215504-3

Date Collected: 11/20/24 12:10

Matrix: Water

Date Received: 11/22/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	636698	LEE	EET CLE	11/26/24 03:21
Total/NA	Analysis	8260D SIM		1	637038	R5XG	EET CLE	11/28/24 03:45

Client Sample ID: MW-208S_112024

Lab Sample ID: 240-215504-4

Date Collected: 11/20/24 13:25

Matrix: Water

Date Received: 11/22/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	636698	LEE	EET CLE	11/26/24 03:44
Total/NA	Analysis	8260D SIM		1	637230	R5XG	EET CLE	12/02/24 16:49

Laboratory References:

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

Accreditation/Certification Summary

Client: Arcadis US Inc.
Project/Site: Ford LTP

Job ID: 240-215504-1

Laboratory: Eurofins Cleveland

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

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-28-25
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Hampshire	NELAP	225024	09-30-25
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-25
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-25
West Virginia DEP	State	210	12-31-24

Chain of Custody Record

TestAmerica

TestAmerica Laboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis				
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	1 of 1 COCs
City/State/Zip: Novi, MI, 48377	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240	Sampler Name: Nolan Schendel	TAT if different from below 10 day 3 weeks ✓ 2 weeks 1 week 2 days 1 day		Walk-in client Lab sampling
Project Name: Ford LTP	Method of Shipment/Carrier:			Job/SDG No:
Project Number: 30206169.0401.03	Shipping/Tracking No:			
PO # US3410018772				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y/N)	Composite=C/Grab=G	1,1-DCE 8260D	cis-1,2-DCE 8260D	Trans-1,2-DCE 8260D	PCE 8260D	TCE 8260D	Vinyl Chloride 8260D	1,4-Dioxane 8260D SIM	Sample Specific Notes / Special Instructions:
✓ TRIP BLANK_87	----	---		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
✓ MW-210S_112024	11/20/24	11:00		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260D 3 VOAs for 8260D SIM
✓ MW-209S_112024	11/20/24	12:10		6						6					N	G	X	X	X	X	X	X	X	
✓ MW-208S_112024	11/20/24	13:25		6						6					N	G	X	X	X	X	X	X	X	

240-215504 COC

MICHIGAN 190

Possible Hazard Identification
✓ Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Return to Client ✓ Disposal By Lab Archive For Months

Special Instructions/QC Requirements & Comments: On site

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

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
	Arcadis	11/20/24 16:30	Novi cold storage	Arcadis	11/20/24 16:30
	Arcadis	11/21/24 1225		EETA	11/21/24 12:20
	EETA	11/21/24 12:30	Received in Laboratory by: JESSE MOROSKO	Eurofins	11/22/24 0840

Eurofins – Cleveland Sample Receipt Form/Narrative **Login # :** _____
Barberton Facility

Client ARCADIS Site Name _____ Cooler unpacked by: JMOROSKO

Cooler Received on 11/22/24 Opened on 11/22/24

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

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

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1 Cooler temperature upon receipt ☐ See Multiple Cooler Form

IR GUN # 17 (CF +0.1 °C) Observed Cooler Temp. 3.1 °C Corrected Cooler Temp 3.2 °C

2.	*Were tamper/custody seals on the outside of the cooler(s)?* If Yes Quantity 1	(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# HC448976
14	Were VOAs on the COC?	(Yes) No
15	Were air bubbles >6 mm in any VOA vials? ● ⬅ Larger than this	Yes (No) NA
16.	Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 63271	(Yes) No
17	Was a LL Hg or Me Hg trip blank present? _____	Yes (No)

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

Contacted PM _____ Date _____ by _____ via Verbal Voice Mail Other

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page | Samples processed by:

_____

_____

_____

_____

19 SAMPLE CONDITION

Sample(s) _____ were received after the recommended holding time had expired.

Sample(s) _____ were received in a broken container

Sample(s) _____ 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 _____

11/22/2024

Login Container Summary Report

240-215504

12/4/2024

Temperature readings _____

Client Sample ID	Lab ID	Container Type	Container pH	Container Temp	Preservation Added	Preservation Lot Number
TRIP BLANK_87	240-215504-A-1	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-A-2	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-B-2	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-C-2	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-D-2	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-E-2	Voa Vial 40ml - Hydrochloric Acid				
MW-210S_112024	240-215504-G-2	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-A-3	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-B-3	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-C-3	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-D-3	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-E-3	Voa Vial 40ml - Hydrochloric Acid				
MW-209S_112024	240-215504-F-3	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-A-4	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-B-4	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-C-4	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-D-4	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-E-4	Voa Vial 40ml - Hydrochloric Acid				
MW-208S_112024	240-215504-F-4	Voa Vial 40ml - Hydrochloric Acid				

DATA VERIFICATION REPORT

December 05, 2024

Megan Meckley
Arcadis
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728
Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil
Project number: 30206169.0401.04_WA-03
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 215504-1
Sample date: 2024-11-20
Report received by CADENA: 2024-12-04
Initial Data Verification completed by CADENA: 2024-12-05
Number of Samples:4
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, 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 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.
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 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: 215504-1

		Sample Name:	TRIP BLANK_87				MW-210S_112024				MW-209S_112024				MW-208S_112024			
		Lab Sample ID:	2402155041				2402155042				2402155043				2402155044			
		Sample Date:	11/20/2024				11/20/2024				11/20/2024				11/20/2024			
Analyte	Cas No.		Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC																		
OSW-8260D																		
1,1-Dichloroethene	75-35-4		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2		ND	1.0	ug/l	---	20	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5		ND	1.0	ug/l	---	2.8	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6		ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4		ND	1.0	ug/l	---	14	1.0	ug/l	---	2.3	1.0	ug/l	---	ND	1.0	ug/l	---
OSW-8260DSIM																		
1,4-Dioxane	123-91-1						1.2	2.0	ug/l	J	ND	2.0	ug/l	---	ND	2.0	ug/l	---