

ANALYTICAL REPORT

PREPARED FOR

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Generated 12/5/2023 5:39:04 AM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-195679-1

Eurofins Cleveland

Job Notes

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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

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	13
QC Sample Results	14
QC Association Summary	17
Lab Chronicle	18
Certification Summary	19
Chain of Custody	20

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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 US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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Laboratory: Eurofins Cleveland

Narrative

**Job Narrative
240-195679-1**

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 11/17/2023 9:40 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.7°C, 2.9°C and 3.5°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 - On Site

Job ID: 240-195679-1

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

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

Sample Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195679-1	TRIP BLANK_77	Water	11/14/23 00:00	11/17/23 09:40
240-195679-2	MW-35_111423	Water	11/14/23 10:20	11/17/23 09:40
240-195679-3	MW-43_111423	Water	11/14/23 11:20	11/17/23 09:40
240-195679-4	MW-52_111423	Water	11/14/23 12:40	11/17/23 09:40

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- 2
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- 14

Detection Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: TRIP BLANK_77

Lab Sample ID: 240-195679-1

No Detections.

Client Sample ID: MW-35_111423

Lab Sample ID: 240-195679-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.5		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-43_111423

Lab Sample ID: 240-195679-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-52_111423

Lab Sample ID: 240-195679-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	2.6		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.5		1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: TRIP BLANK_77

Lab Sample ID: 240-195679-1

Date Collected: 11/14/23 00:00

Matrix: Water

Date Received: 11/17/23 09:40

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/24/23 13:28	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 13:28	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 13:28	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 13:28	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 13:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/24/23 13:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137		11/24/23 13:28	1
4-Bromofluorobenzene (Surr)	92		56 - 136		11/24/23 13:28	1
Toluene-d8 (Surr)	102		78 - 122		11/24/23 13:28	1
Dibromofluoromethane (Surr)	88		73 - 120		11/24/23 13:28	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: MW-35_111423

Lab Sample ID: 240-195679-2

Date Collected: 11/14/23 10:20

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0		2.0	0.86	ug/L			11/27/23 21:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		66 - 120					11/27/23 21:23	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			11/24/23 13:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 13:53	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 13:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 13:53	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 13:53	1
Vinyl chloride	1.5		1.0	0.45	ug/L			11/24/23 13:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		62 - 137					11/24/23 13:53	1
4-Bromofluorobenzene (Surr)	95		56 - 136					11/24/23 13:53	1
Toluene-d8 (Surr)	103		78 - 122					11/24/23 13:53	1
Dibromofluoromethane (Surr)	84		73 - 120					11/24/23 13:53	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: MW-43_111423

Lab Sample ID: 240-195679-3

Date Collected: 11/14/23 11:20

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.4		2.0	0.86	ug/L			11/27/23 21:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120					11/27/23 21:47	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			11/24/23 14:18	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 14:18	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 14:18	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 14:18	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 14:18	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/24/23 14:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		62 - 137					11/24/23 14:18	1
4-Bromofluorobenzene (Surr)	91		56 - 136					11/24/23 14:18	1
Toluene-d8 (Surr)	105		78 - 122					11/24/23 14:18	1
Dibromofluoromethane (Surr)	89		73 - 120					11/24/23 14:18	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: MW-52_111423

Lab Sample ID: 240-195679-4

Date Collected: 11/14/23 12:40

Matrix: Water

Date Received: 11/17/23 09:40

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.6		2.0	0.86	ug/L			11/27/23 22:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	95		66 - 120					11/27/23 22:11	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			11/24/23 14:43	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 14:43	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 14:43	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 14:43	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 14:43	1
Vinyl chloride	1.5		1.0	0.45	ug/L			11/24/23 14:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137					11/24/23 14:43	1
4-Bromofluorobenzene (Surr)	91		56 - 136					11/24/23 14:43	1
Toluene-d8 (Surr)	110		78 - 122					11/24/23 14:43	1
Dibromofluoromethane (Surr)	86		73 - 120					11/24/23 14:43	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-195679-1	TRIP BLANK_77	94	92	102	88
240-195679-2	MW-35_111423	94	95	103	84
240-195679-3	MW-43_111423	95	91	105	89
240-195679-4	MW-52_111423	93	91	110	86
240-195684-E-2 MS	Matrix Spike	90	101	110	88
240-195684-F-2 MSD	Matrix Spike Duplicate	93	104	107	89
LCS 240-595675/4	Lab Control Sample	89	98	110	92
MB 240-595675/7	Method Blank	87	96	104	81

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

Lab Sample ID	Client Sample ID	DCA
		(66-120)
240-195679-2	MW-35_111423	93
240-195679-3	MW-43_111423	95
240-195679-4	MW-52_111423	95
240-195686-L-5 MS	Matrix Spike	94
240-195686-Q-5 MSD	Matrix Spike Duplicate	94
LCS 240-595844/4	Lab Control Sample	98
MB 240-595844/6	Method Blank	98

Surrogate Legend

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

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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

Lab Sample ID: MB 240-595675/7

Matrix: Water

Analysis Batch: 595675

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/24/23 10:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/24/23 10:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/24/23 10:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/24/23 10:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/24/23 10:07	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	87		62 - 137		11/24/23 10:07	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/24/23 10:07	1
Toluene-d8 (Surr)	104		78 - 122		11/24/23 10:07	1
Dibromofluoromethane (Surr)	81		73 - 120		11/24/23 10:07	1

Lab Sample ID: LCS 240-595675/4

Matrix: Water

Analysis Batch: 595675

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	25.0	25.0		ug/L		100	77 - 123
Tetrachloroethene	25.0	28.9		ug/L		116	76 - 123
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	75 - 124
Trichloroethene	25.0	24.3		ug/L		97	70 - 122
Vinyl chloride	12.5	13.4		ug/L		107	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	110		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

Lab Sample ID: 240-195684-E-2 MS

Matrix: Water

Analysis Batch: 595675

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	25.0	25.6		ug/L		102	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	25.9		ug/L		104	66 - 128
Tetrachloroethene	1.0	U	25.0	23.4		ug/L		94	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	25.1		ug/L		101	56 - 136
Trichloroethene	1.0	U	25.0	23.9		ug/L		96	61 - 124
Vinyl chloride	0.93	J	12.5	13.8		ug/L		103	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	90		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	110		78 - 122

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QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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

Lab Sample ID: 240-195684-E-2 MS
Matrix: Water
Analysis Batch: 595675

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	88		73 - 120

Lab Sample ID: 240-195684-F-2 MSD
Matrix: Water
Analysis Batch: 595675

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

Analyte	Sample		Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
1,1-Dichloroethene	1.0	U	25.0	27.5		ug/L		110	56 - 135	7	26	
cis-1,2-Dichloroethene	1.0	U	25.0	26.5		ug/L		106	66 - 128	2	14	
Tetrachloroethene	1.0	U	25.0	27.0		ug/L		108	62 - 131	14	20	
trans-1,2-Dichloroethene	1.0	U	25.0	23.0		ug/L		92	56 - 136	9	15	
Trichloroethene	1.0	U	25.0	24.3		ug/L		97	61 - 124	2	15	
Vinyl chloride	0.93	J	12.5	15.0		ug/L		113	43 - 157	8	24	

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	104		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

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

Lab Sample ID: MB 240-595844/6
Matrix: Water
Analysis Batch: 595844

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/27/23 17:47	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	98		66 - 120		11/27/23 17:47	1

Lab Sample ID: LCS 240-595844/4
Matrix: Water
Analysis Batch: 595844

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	
1,4-Dioxane	10.0	10.2		ug/L		102	80 - 122	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		66 - 120

Lab Sample ID: 240-195686-L-5 MS
Matrix: Water
Analysis Batch: 595844

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

Analyte	Sample		Spike Added	MS		Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
1,4-Dioxane	2.0	U	10.0	11.1		ug/L		111	51 - 153	

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QC Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	94		66 - 120

Lab Sample ID: 240-195686-Q-5 MSD
Matrix: Water
Analysis Batch: 595844

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	2.0	U	10.0	10.8		ug/L		108	51 - 153	3	16

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	94		66 - 120

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

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

GC/MS VOA

Analysis Batch: 595675

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195679-1	TRIP BLANK_77	Total/NA	Water	8260D	
240-195679-2	MW-35_111423	Total/NA	Water	8260D	
240-195679-3	MW-43_111423	Total/NA	Water	8260D	
240-195679-4	MW-52_111423	Total/NA	Water	8260D	
MB 240-595675/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595675/4	Lab Control Sample	Total/NA	Water	8260D	
240-195684-E-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-195684-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 595844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195679-2	MW-35_111423	Total/NA	Water	8260D SIM	
240-195679-3	MW-43_111423	Total/NA	Water	8260D SIM	
240-195679-4	MW-52_111423	Total/NA	Water	8260D SIM	
MB 240-595844/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-595844/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-195686-L-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-195686-Q-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

Client: ARCADIS US Inc
 Project/Site: Ford LTP - On Site

Job ID: 240-195679-1

Client Sample ID: TRIP BLANK_77

Lab Sample ID: 240-195679-1

Date Collected: 11/14/23 00:00

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 13:28

Client Sample ID: MW-35_111423

Lab Sample ID: 240-195679-2

Date Collected: 11/14/23 10:20

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 13:53
Total/NA	Analysis	8260D SIM		1	595844	CS	EET CLE	11/27/23 21:23

Client Sample ID: MW-43_111423

Lab Sample ID: 240-195679-3

Date Collected: 11/14/23 11:20

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 14:18
Total/NA	Analysis	8260D SIM		1	595844	CS	EET CLE	11/27/23 21:47

Client Sample ID: MW-52_111423

Lab Sample ID: 240-195679-4

Date Collected: 11/14/23 12:40

Matrix: Water

Date Received: 11/17/23 09:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595675	LEE	EET CLE	11/24/23 14:43
Total/NA	Analysis	8260D SIM		1	595844	CS	EET CLE	11/27/23 22:11

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 - On Site

Job ID: 240-195679-1

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	02-27-24
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Chain of Custody Record

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

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240 Project Name: Ford I, TP On-Site Project Number: 30167538.401.03 PO # 30167538.401.03		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinsky Telephone: 248-994-2240 Email: kris@arcadis.com		Lab Contact: Mike DeMonico Telephone: 330-497-9396	
Sampler Name: S. Sider Method of Shipment/Carrier: Shipping/Tracking No:		Analysis Turnaround Time TAT if different from below: 10 day <input checked="" type="checkbox"/> 3 weeks <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day	
Matrix Aqueous <input type="checkbox"/> Sediment <input type="checkbox"/> Solid <input type="checkbox"/> Other:		Containers & Preservatives HCl <input type="checkbox"/> NaOH <input type="checkbox"/> ZnO <input type="checkbox"/> Uprts <input type="checkbox"/> Other:	
Sample Date Sample Time		Filtered Sample (Y/N) Composite C / Grab C	
Sample Identification TRIP BLANK_ 77 MW-35-111423 MW-43-111423 MW-52-111423		Analyses cis-1,2-DCE 8260B X Trans-1,2-DCE 8260B X PCE 8260B X TCE 8260B X Vinyl Chloride 8260B X 1,4-Dioxane 8260B SIM X	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728 Level IV Reporting requested.		MICHIGAN 150 240-195679 Chain of Custody	
Relinquished by: <i>[Signature]</i> Date/Time: 11/14/2023 1320 Company: Arcadis		Received by: <i>[Signature]</i> Date/Time: 11/16/23 10:15 Company: Arcadis	
Relinquished by: <i>[Signature]</i> Date/Time: 11/16/23 10:20 Company: Arcadis		Received in Laboratory by: <i>[Signature]</i> Date/Time: 11-17-23 9:00 Company: Arcadis	

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Eurofins - Cleveland Sample Receipt Form/Narrative
 Barberton Facility

Client Arcadis Site Name _____ Login # : 195629
 Cooler Received on 11-17-23 Opened on 11-17-23 Cooler unpacked by: [Signature]
 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 # 21 (CF +0.2 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C
 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 3 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# HC316719
 14. Were VOAs on the COC? Yes No
 15. Were air bubbles >6 mm in any VOA vials? Yes No NA Larger than this.
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ 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 _____

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

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: _____

DATA VERIFICATION REPORT



December 05, 2023

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- onsite groundwater
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 195679-1
Sample date: 2023-11-14
Report received by CADENA: 2023-12-05
Initial Data Verification completed by CADENA: 2023-12-05
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.

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at <http://clms.cadenaco.com/index.cfm>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
B	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
E	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminants) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Analytical Results Summary

CADENA Project ID: E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195679-1

Analyte	Cas No.	Sample Name: TRIP BLANK_77				MW-35_111423				MW-43_111423				MW-52_111423			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
		Lab Sample ID: 2401956791				2401956792				2401956793				2401956794			
		Sample Date: 11/14/2023				11/14/2023				11/14/2023				11/14/2023			

GC/MS VOC

OSW-8260D

1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	1.5	1.0	ug/l	---	ND	1.0	ug/l	---	1.5	1.0	ug/l	---

OSW-8260DSIM

1,4-Dioxane	123-91-1					4.0	2.0	ug/l	---	3.4	2.0	ug/l	---	2.6	2.0	ug/l	---
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