

ANALYTICAL REPORT

PREPARED FOR

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Generated 11/16/2023 7:57:42 AM

JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-194727-1

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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Definitions/Glossary

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

Job ID: 240-194727-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
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: 240-194727-1

Job ID: 240-194727-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-194727-1

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 11/3/2023 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 3 coolers at receipt time were 1.8°C, 2.2°C and 2.9°C

GC/MS VOA

Method 8260D: The MS/MSD was analyzed outside of tune time and will be reanalyzed: DUP-06 (240-194727-4).

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: 240-194727-1

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 - On Site

Job ID: 240-194727-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-194727-1	TRIP BLANK_18	Water	11/01/23 00:00	11/03/23 08:00
240-194727-2	MW-220S_110123	Water	11/01/23 13:16	11/03/23 08:00
240-194727-3	MW-69_110123	Water	11/01/23 14:40	11/03/23 08:00
240-194727-4	DUP-06	Water	11/01/23 00:00	11/03/23 08:00
240-194727-5	MW-22_110123	Water	11/01/23 16:20	11/03/23 08:00

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

Detection Summary

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

Job ID: 240-194727-1

Client Sample ID: TRIP BLANK_18

Lab Sample ID: 240-194727-1

No Detections.

Client Sample ID: MW-220S_110123

Lab Sample ID: 240-194727-2

No Detections.

Client Sample ID: MW-69_110123

Lab Sample ID: 240-194727-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	7.4		2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: DUP-06

Lab Sample ID: 240-194727-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	8.0		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1.1		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-22_110123

Lab Sample ID: 240-194727-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	57		2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	1600		40	18	ug/L	40		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: 240-194727-1

Client Sample ID: TRIP BLANK_18

Lab Sample ID: 240-194727-1

Date Collected: 11/01/23 00:00

Matrix: Water

Date Received: 11/03/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/10/23 02:26	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 02:26	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 02:26	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 02:26	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 02:26	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/23 02:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		11/10/23 02:26	1
4-Bromofluorobenzene (Surr)	91		56 - 136		11/10/23 02:26	1
Toluene-d8 (Surr)	97		78 - 122		11/10/23 02:26	1
Dibromofluoromethane (Surr)	111		73 - 120		11/10/23 02:26	1

Client Sample Results

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

Job ID: 240-194727-1

Client Sample ID: MW-220S_110123

Lab Sample ID: 240-194727-2

Date Collected: 11/01/23 13:16

Matrix: Water

Date Received: 11/03/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/08/23 18:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 120					11/08/23 18:15	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			11/10/23 08:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 08:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 08:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 08:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 08:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/23 08:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137					11/10/23 08:00	1
4-Bromofluorobenzene (Surr)	91		56 - 136					11/10/23 08:00	1
Toluene-d8 (Surr)	93		78 - 122					11/10/23 08:00	1
Dibromofluoromethane (Surr)	118		73 - 120					11/10/23 08:00	1

Client Sample Results

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

Job ID: 240-194727-1

Client Sample ID: MW-69_110123

Lab Sample ID: 240-194727-3

Date Collected: 11/01/23 14:40

Matrix: Water

Date Received: 11/03/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	7.4		2.0	0.86	ug/L			11/08/23 18:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		66 - 120		11/08/23 18:39	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			11/10/23 08:20	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 08:20	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 08:20	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 08:20	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 08:20	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/23 08:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137		11/10/23 08:20	1
4-Bromofluorobenzene (Surr)	90		56 - 136		11/10/23 08:20	1
Toluene-d8 (Surr)	91		78 - 122		11/10/23 08:20	1
Dibromofluoromethane (Surr)	115		73 - 120		11/10/23 08:20	1

Client Sample Results

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

Job ID: 240-194727-1

Client Sample ID: DUP-06

Lab Sample ID: 240-194727-4

Date Collected: 11/01/23 00:00

Matrix: Water

Date Received: 11/03/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	8.0		2.0	0.86	ug/L			11/08/23 19:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		66 - 120					11/08/23 19:03	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			11/10/23 15:39	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 15:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 15:39	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 15:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 15:39	1
Vinyl chloride	1.1		1.0	0.45	ug/L			11/10/23 15:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		62 - 137					11/10/23 15:39	1
4-Bromofluorobenzene (Surr)	98		56 - 136					11/10/23 15:39	1
Toluene-d8 (Surr)	101		78 - 122					11/10/23 15:39	1
Dibromofluoromethane (Surr)	97		73 - 120					11/10/23 15:39	1

Client Sample Results

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

Job ID: 240-194727-1

Client Sample ID: MW-22_110123

Lab Sample ID: 240-194727-5

Date Collected: 11/01/23 16:20

Matrix: Water

Date Received: 11/03/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	57		2.0	0.86	ug/L			11/08/23 19:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	89		66 - 120					11/08/23 19:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	40	U	40	20	ug/L			11/09/23 19:24	40
cis-1,2-Dichloroethene	40	U	40	18	ug/L			11/09/23 19:24	40
Tetrachloroethene	40	U	40	18	ug/L			11/09/23 19:24	40
trans-1,2-Dichloroethene	40	U	40	20	ug/L			11/09/23 19:24	40
Trichloroethene	40	U	40	18	ug/L			11/09/23 19:24	40
Vinyl chloride	1600		40	18	ug/L			11/09/23 19:24	40
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137					11/09/23 19:24	40
4-Bromofluorobenzene (Surr)	76		56 - 136					11/09/23 19:24	40
Toluene-d8 (Surr)	89		78 - 122					11/09/23 19:24	40
Dibromofluoromethane (Surr)	93		73 - 120					11/09/23 19:24	40

Surrogate Summary

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

Job ID: 240-194727-1

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)
240-194693-B-9 MSD	Matrix Spike Duplicate	99	86	89	93
240-194693-C-9 MS	Matrix Spike	99	83	88	92
240-194721-B-10 MS	Matrix Spike	95	89	89	108
240-194721-C-10 MSD	Matrix Spike Duplicate	96	95	92	106
240-194727-1	TRIP BLANK_18	106	91	97	111
240-194727-2	MW-220S_110123	106	91	93	118
240-194727-3	MW-69_110123	105	90	91	115
240-194727-4	DUP-06	97	98	101	97
240-194727-5	MW-22_110123	109	76	89	93
LCS 240-594017/5	Lab Control Sample	105	86	92	98
LCS 240-594095/7	Lab Control Sample	95	94	91	103
LCS 240-594227/5	Lab Control Sample	96	103	106	97
MB 240-594017/8	Method Blank	120	88	104	103
MB 240-594095/13	Method Blank	102	87	93	108
MB 240-594227/9	Method Blank	96	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

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		DCA (66-120)
240-194630-B-3 MS	Matrix Spike	78
240-194630-B-3 MSD	Matrix Spike Duplicate	112
240-194727-2	MW-220S_110123	105
240-194727-3	MW-69_110123	87
240-194727-4	DUP-06	91
240-194727-5	MW-22_110123	89
LCS 240-593888/4	Lab Control Sample	83
MB 240-593888/6	Method Blank	84

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-194727-1

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

Lab Sample ID: MB 240-594017/8
Matrix: Water
Analysis Batch: 594017

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			11/09/23 12:02	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/09/23 12:02	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 12:02	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/09/23 12:02	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/09/23 12:02	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/09/23 12:02	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	120		62 - 137		11/09/23 12:02	1
4-Bromofluorobenzene (Surr)	88		56 - 136		11/09/23 12:02	1
Toluene-d8 (Surr)	104		78 - 122		11/09/23 12:02	1
Dibromofluoromethane (Surr)	103		73 - 120		11/09/23 12:02	1

Lab Sample ID: LCS 240-594017/5
Matrix: Water
Analysis Batch: 594017

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,1-Dichloroethene	25.0	28.4		ug/L		114	63 - 134
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	77 - 123
Tetrachloroethene	25.0	24.3		ug/L		97	76 - 123
trans-1,2-Dichloroethene	25.0	25.5		ug/L		102	75 - 124
Trichloroethene	25.0	23.9		ug/L		96	70 - 122
Vinyl chloride	12.5	12.7		ug/L		102	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	92		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: 240-194693-B-9 MSD
Matrix: Water
Analysis Batch: 594017

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

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier		Result	Qualifier						
1,1-Dichloroethene	1.0	U	25.0	25.2		ug/L		101	56 - 135	5	26
cis-1,2-Dichloroethene	1.0	U	25.0	23.1		ug/L		92	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	23.8		ug/L		95	62 - 131	0	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.7		ug/L		95	56 - 136	1	15
Trichloroethene	1.0	U	25.0	25.2		ug/L		101	61 - 124	6	15
Vinyl chloride	44	F1	12.5	45.8	F1	ug/L		17	43 - 157	7	24

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	89		78 - 122

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QC Sample Results

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

Job ID: 240-194727-1

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

Lab Sample ID: 240-194693-B-9 MSD
Matrix: Water
Analysis Batch: 594017

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

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD Qualifier</i>	<i>MSD Limits</i>
<i>Dibromofluoromethane (Surr)</i>	93		73 - 120

Lab Sample ID: 240-194693-C-9 MS
Matrix: Water
Analysis Batch: 594017

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,1-Dichloroethene	1.0	U	25.0	26.5		ug/L		106	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.6		ug/L		90	66 - 128
Tetrachloroethene	1.0	U	25.0	23.8		ug/L		95	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136
Trichloroethene	1.0	U	25.0	23.8		ug/L		95	61 - 124
Vinyl chloride	44	F1	12.5	49.0	F1	ug/L		42	43 - 157

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS Qualifier</i>	<i>MS Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	99		62 - 137
<i>4-Bromofluorobenzene (Surr)</i>	83		56 - 136
<i>Toluene-d8 (Surr)</i>	88		78 - 122
<i>Dibromofluoromethane (Surr)</i>	92		73 - 120

Lab Sample ID: MB 240-594095/13
Matrix: Water
Analysis Batch: 594095

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/10/23 01:27	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 01:27	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 01:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 01:27	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 01:27	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/23 01:27	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB Qualifier</i>	<i>MB Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	102		62 - 137		11/10/23 01:27	1
<i>4-Bromofluorobenzene (Surr)</i>	87		56 - 136		11/10/23 01:27	1
<i>Toluene-d8 (Surr)</i>	93		78 - 122		11/10/23 01:27	1
<i>Dibromofluoromethane (Surr)</i>	108		73 - 120		11/10/23 01:27	1

Lab Sample ID: LCS 240-594095/7
Matrix: Water
Analysis Batch: 594095

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,1-Dichloroethene	50.0	49.3		ug/L		99	63 - 134
cis-1,2-Dichloroethene	50.0	46.0		ug/L		92	77 - 123
Tetrachloroethene	50.0	53.4		ug/L		107	76 - 123
trans-1,2-Dichloroethene	50.0	45.7		ug/L		91	75 - 124
Trichloroethene	50.0	49.3		ug/L		99	70 - 122

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-194727-1

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

Lab Sample ID: LCS 240-594095/7
Matrix: Water
Analysis Batch: 594095

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	50.0	42.5		ug/L		85	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	91		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Lab Sample ID: 240-194721-B-10 MS
Matrix: Water
Analysis Batch: 594095

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
cis-1,2-Dichloroethene	1.0	U	50.0	47.4		ug/L		95	66 - 128
Trichloroethene	1.0	U	50.0	50.2		ug/L		100	61 - 124
Vinyl chloride	1.0	U	50.0	38.6		ug/L		77	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	89		56 - 136
Toluene-d8 (Surr)	89		78 - 122
Dibromofluoromethane (Surr)	108		73 - 120

Lab Sample ID: 240-194721-C-10 MSD
Matrix: Water
Analysis Batch: 594095

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
cis-1,2-Dichloroethene	1.0	U	50.0	49.7		ug/L		99	66 - 128	5	14
Trichloroethene	1.0	U	50.0	54.0		ug/L		108	61 - 124	7	15
Vinyl chloride	1.0	U	50.0	40.7		ug/L		81	43 - 157	5	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	92		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120

Lab Sample ID: MB 240-594227/9
Matrix: Water
Analysis Batch: 594227

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			11/10/23 15:13	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/10/23 15:13	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 15:13	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/10/23 15:13	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/10/23 15:13	1

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-194727-1

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

Lab Sample ID: MB 240-594227/9
Matrix: Water
Analysis Batch: 594227

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/10/23 15:13	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137					11/10/23 15:13	1
4-Bromofluorobenzene (Surr)	101		56 - 136					11/10/23 15:13	1
Toluene-d8 (Surr)	101		78 - 122					11/10/23 15:13	1
Dibromofluoromethane (Surr)	94		73 - 120					11/10/23 15:13	1

Lab Sample ID: LCS 240-594227/5
Matrix: Water
Analysis Batch: 594227

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	20.0	23.3		ug/L		116	63 - 134
cis-1,2-Dichloroethene	20.0	19.9		ug/L		99	77 - 123
Tetrachloroethene	20.0	21.5		ug/L		107	76 - 123
trans-1,2-Dichloroethene	20.0	21.1		ug/L		105	75 - 124
Trichloroethene	20.0	19.7		ug/L		99	70 - 122
Vinyl chloride	20.0	21.8		ug/L		109	60 - 144
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	96		62 - 137				
4-Bromofluorobenzene (Surr)	103		56 - 136				
Toluene-d8 (Surr)	106		78 - 122				
Dibromofluoromethane (Surr)	97		73 - 120				

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

Lab Sample ID: MB 240-593888/6
Matrix: Water
Analysis Batch: 593888

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			11/08/23 12:17	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	84		66 - 120					11/08/23 12:17	1

Lab Sample ID: LCS 240-593888/4
Matrix: Water
Analysis Batch: 593888

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	10.6		ug/L		106	80 - 122
Surrogate	%Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	83		66 - 120				

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-194727-1

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

Lab Sample ID: 240-194630-B-3 MS
Matrix: Water
Analysis Batch: 593888

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	20	U F1 F2	100	126		ug/L		126	51 - 153
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	78		66 - 120						

Lab Sample ID: 240-194630-B-3 MSD
Matrix: Water
Analysis Batch: 593888

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
1,4-Dioxane	20	U F1 F2	100	177	F1 F2	ug/L		177	51 - 153	33	16
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	112		66 - 120								



QC Association Summary

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

Job ID: 240-194727-1

GC/MS VOA

Analysis Batch: 593888

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-194727-2	MW-220S_110123	Total/NA	Water	8260D SIM	
240-194727-3	MW-69_110123	Total/NA	Water	8260D SIM	
240-194727-4	DUP-06	Total/NA	Water	8260D SIM	
240-194727-5	MW-22_110123	Total/NA	Water	8260D SIM	
MB 240-593888/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-593888/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-194630-B-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-194630-B-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 594017

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-194727-5	MW-22_110123	Total/NA	Water	8260D	
MB 240-594017/8	Method Blank	Total/NA	Water	8260D	
LCS 240-594017/5	Lab Control Sample	Total/NA	Water	8260D	
240-194693-B-9 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-194693-C-9 MS	Matrix Spike	Total/NA	Water	8260D	

Analysis Batch: 594095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-194727-1	TRIP BLANK_18	Total/NA	Water	8260D	
240-194727-2	MW-220S_110123	Total/NA	Water	8260D	
240-194727-3	MW-69_110123	Total/NA	Water	8260D	
MB 240-594095/13	Method Blank	Total/NA	Water	8260D	
LCS 240-594095/7	Lab Control Sample	Total/NA	Water	8260D	
240-194721-B-10 MS	Matrix Spike	Total/NA	Water	8260D	
240-194721-C-10 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 594227

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-194727-4	DUP-06	Total/NA	Water	8260D	
MB 240-594227/9	Method Blank	Total/NA	Water	8260D	
LCS 240-594227/5	Lab Control Sample	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-194727-1

Client Sample ID: TRIP BLANK_18

Lab Sample ID: 240-194727-1

Date Collected: 11/01/23 00:00

Matrix: Water

Date Received: 11/03/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594095	TJL2	EET CLE	11/10/23 02:26

Client Sample ID: MW-220S_110123

Lab Sample ID: 240-194727-2

Date Collected: 11/01/23 13:16

Matrix: Water

Date Received: 11/03/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594095	TJL2	EET CLE	11/10/23 08:00
Total/NA	Analysis	8260D SIM		1	593888	MRL	EET CLE	11/08/23 18:15

Client Sample ID: MW-69_110123

Lab Sample ID: 240-194727-3

Date Collected: 11/01/23 14:40

Matrix: Water

Date Received: 11/03/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594095	TJL2	EET CLE	11/10/23 08:20
Total/NA	Analysis	8260D SIM		1	593888	MRL	EET CLE	11/08/23 18:39

Client Sample ID: DUP-06

Lab Sample ID: 240-194727-4

Date Collected: 11/01/23 00:00

Matrix: Water

Date Received: 11/03/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594227	AJS	EET CLE	11/10/23 15:39
Total/NA	Analysis	8260D SIM		1	593888	MRL	EET CLE	11/08/23 19:03

Client Sample ID: MW-22_110123

Lab Sample ID: 240-194727-5

Date Collected: 11/01/23 16:20

Matrix: Water

Date Received: 11/03/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		40	594017	MRL	EET CLE	11/09/23 19:24
Total/NA	Analysis	8260D SIM		1	593888	MRL	EET CLE	11/08/23 19:27

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: 240-194727-1

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 Cilation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Regulatory program: DW NPDES RCRA Other

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

Site Contact: Christina Weaver
 Telephone: 248-994-2240

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

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

Project Name: Ford LTP (On-Site)
 Project Number: 30167538.401.03
 PO # 30167538.401.03

Sampler Name: SUMATIWA SINGH
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix							Filtered Sample (Y/N)	Composite (C/Grab/C)	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	COC's	
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3											HCl
TRIP BLANK_14	---	---	1											X	X	X	X			
MW-2205_110123	11/12/23	1316	6											X	X	X	X			
MW-69_110123	11/12/23	1440	6											X	X	X	X			
DUP-06	11/12/23	-	6											X	X	X	X			
MW-22_110123	11/12/23	1620	6											X	X	X	X			

Containers & Preservatives: HCl NaOH Freeze Other:

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

Sample Disposal: Return to Client Disposal By Lab Archive For _____ Months

240-194727 Chain of Custody

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

Relinquished by: Sumati Singh Date/Time: 11/23/23 Company: Arcadis
 Relinquished by: Christina Weaver Date/Time: 11/23/23 Company: Arcadis
 Relinquished by: Christina Weaver Date/Time: 11/23/23 Company: Arcadis

Received by: Jai Deere Date/Time: 11/23/23 Company: EETA
 Received by: Jai Deere Date/Time: 11/23/23 Company: EETA
 Received in Laboratory by: Christina Weaver Date/Time: 11-23-23 Company: EETA



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Eurofins - Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login #: 194727

Client Arcadis Site Name _____ Cooler unpacked by: Vandy Peyer
Cooler Received on 11-3-23 Opened on 11-3-23
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 # 22 (CF +1.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity each 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)? Yes NO
- 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?  ← Larger than this. Yes NO NA
- 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # Covered 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: _____

Eurofins - Canton Sample Receipt Multiple Cooler Form						
Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
EC Client Box Other	IR GUN #: 22	1.8	2.2	Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: 22	1.8	2.9	Water	None	
EC Client Box Other	IR GUN #: 22	0.7	1.8	Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	
EC Client Box Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC Client Box Other	IR GUN #: _____			Water	None	

See Temperature Excursion Form

DATA VERIFICATION REPORT



November 16, 2023

Kris Hinskey
Arcadis of Michigan
28550 Cabot Drive
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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: 194727-1

Sample date: 2023-11-01

Report received by CADENA: 2023-11-16

Initial Data Verification completed by CADENA: 2023-11-16

Number of Samples:5

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.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch MS/MSD recovery outliers were not determined using a client sample so qualification was not required based on these sample-specific QC outliers.

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

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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: 194727-1

Analyte	Cas No.	Sample Name: TRIP BLANK_18				Sample Name: MW-2205_110123				Sample Name: MW-69_110123				Sample Name: DUP-06				Sample Name: MW-22_110123			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC																					
<u>OSW-8260D</u>																					
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	40	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	---	ND	40	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	40	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	40	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	40	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	1.1	1.0	ug/l	---	1600	40	ug/l	---
<u>OSW-8260DSIM</u>																					
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	7.4	2.0	ug/l	---	8.0	2.0	ug/l	---	57	2.0	ug/l	---