

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-205318-1

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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 U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-205318-1

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

Case Narrative

Client: Arcadis U.S., Inc.
Project: Ford LTP

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Job Narrative 240-205318-1

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 5/29/2024 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 1.5°C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-615398 was outside the method criteria for the following analyte(s): Vinyl chloride. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

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

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Method Summary

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

Job ID: 240-205318-1

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 U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-205318-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-205318-1	TRIP BLANK_15	Water	05/24/24 00:00	05/29/24 08:00
240-205318-2	MW-33_052424	Water	05/24/24 12:40	05/29/24 08:00
240-205318-3	MW-194_052424	Water	05/24/24 09:55	05/29/24 08:00
240-205318-4	MW-194S_052424	Water	05/24/24 10:50	05/29/24 08:00

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

Detection Summary

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

Job ID: 240-205318-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-205318-1

No Detections.

Client Sample ID: MW-33_052424

Lab Sample ID: 240-205318-2

No Detections.

Client Sample ID: MW-194_052424

Lab Sample ID: 240-205318-3

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

Client Sample ID: MW-194S_052424

Lab Sample ID: 240-205318-4

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

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

Job ID: 240-205318-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-205318-1

Date Collected: 05/24/24 00:00

Matrix: Water

Date Received: 05/29/24 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			06/04/24 14:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/04/24 14:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 14:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/04/24 14:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 14:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/04/24 14:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	116		62 - 137		06/04/24 14:22	1
4-Bromofluorobenzene (Surr)	84		56 - 136		06/04/24 14:22	1
Toluene-d8 (Surr)	96		78 - 122		06/04/24 14:22	1
Dibromofluoromethane (Surr)	109		73 - 120		06/04/24 14:22	1

Client Sample Results

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

Job ID: 240-205318-1

Client Sample ID: MW-33_052424

Lab Sample ID: 240-205318-2

Date Collected: 05/24/24 12:40

Matrix: Water

Date Received: 05/29/24 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			06/05/24 20:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		68 - 127					06/05/24 20:49	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			06/04/24 14:47	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/04/24 14:47	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 14:47	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/04/24 14:47	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 14:47	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/04/24 14:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137					06/04/24 14:47	1
4-Bromofluorobenzene (Surr)	86		56 - 136					06/04/24 14:47	1
Toluene-d8 (Surr)	98		78 - 122					06/04/24 14:47	1
Dibromofluoromethane (Surr)	110		73 - 120					06/04/24 14:47	1

Client Sample Results

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

Job ID: 240-205318-1

Client Sample ID: MW-194_052424

Lab Sample ID: 240-205318-3

Date Collected: 05/24/24 09:55

Matrix: Water

Date Received: 05/29/24 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	1.2	J	2.0	0.86	ug/L			06/04/24 16:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		68 - 127					06/04/24 16:37	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			06/04/24 15:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/04/24 15:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 15:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/04/24 15:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 15:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/04/24 15:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		62 - 137					06/04/24 15:12	1
4-Bromofluorobenzene (Surr)	84		56 - 136					06/04/24 15:12	1
Toluene-d8 (Surr)	99		78 - 122					06/04/24 15:12	1
Dibromofluoromethane (Surr)	111		73 - 120					06/04/24 15:12	1

Client Sample Results

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

Job ID: 240-205318-1

Client Sample ID: MW-194S_052424

Lab Sample ID: 240-205318-4

Date Collected: 05/24/24 10:50

Matrix: Water

Date Received: 05/29/24 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			06/04/24 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		68 - 127					06/04/24 17:00	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			06/04/24 15:38	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/04/24 15:38	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 15:38	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/04/24 15:38	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 15:38	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/04/24 15:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		62 - 137					06/04/24 15:38	1
4-Bromofluorobenzene (Surr)	82		56 - 136					06/04/24 15:38	1
Toluene-d8 (Surr)	97		78 - 122					06/04/24 15:38	1
Dibromofluoromethane (Surr)	110		73 - 120					06/04/24 15:38	1

Surrogate Summary

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

Job ID: 240-205318-1

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)
240-205318-1	TRIP BLANK_15	116	84	96	109
240-205318-2	MW-33_052424	112	86	98	110
240-205318-2 MS	MW-33-MS_052424	103	95	99	99
240-205318-2 MSD	MW-33-MSD_052424	100	92	96	98
240-205318-3	MW-194_052424	117	84	99	111
240-205318-4	MW-194S_052424	115	82	97	110
LCS 240-615398/4	Lab Control Sample	100	94	102	96
MB 240-615398/7	Method Blank	111	89	101	107

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 (68-127)
240-205255-A-3 MS	Matrix Spike	109
240-205255-A-3 MSD	Matrix Spike Duplicate	111
240-205318-2	MW-33_052424	103
240-205318-2 MS	MW-33-MS_052424	104
240-205318-2 MSD	MW-33-MSD_052424	108
240-205318-3	MW-194_052424	111
240-205318-4	MW-194S_052424	100
LCS 240-615386/4	Lab Control Sample	106
LCS 240-615567/4	Lab Control Sample	102
MB 240-615386/8	Method Blank	102
MB 240-615567/6	Method Blank	102

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-205318-1

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

Lab Sample ID: MB 240-615398/7

Matrix: Water

Analysis Batch: 615398

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			06/04/24 12:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			06/04/24 12:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 12:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			06/04/24 12:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			06/04/24 12:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			06/04/24 12:41	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		06/04/24 12:41	1
4-Bromofluorobenzene (Surr)	89		56 - 136		06/04/24 12:41	1
Toluene-d8 (Surr)	101		78 - 122		06/04/24 12:41	1
Dibromofluoromethane (Surr)	107		73 - 120		06/04/24 12:41	1

Lab Sample ID: LCS 240-615398/4

Matrix: Water

Analysis Batch: 615398

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	23.9		ug/L		96	77 - 123
Tetrachloroethene	25.0	27.7		ug/L		111	76 - 123
trans-1,2-Dichloroethene	25.0	23.5		ug/L		94	75 - 124
Trichloroethene	25.0	24.2		ug/L		97	70 - 122
Vinyl chloride	12.5	8.32		ug/L		67	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-205318-2 MS

Matrix: Water

Analysis Batch: 615398

Client Sample ID: MW-33-MS_052424

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	22.8		ug/L		91	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	23.1		ug/L		92	66 - 128
Tetrachloroethene	1.0	U	25.0	22.6		ug/L		90	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	21.8		ug/L		87	56 - 136
Trichloroethene	1.0	U	25.0	22.0		ug/L		88	61 - 124
Vinyl chloride	1.0	U	12.5	6.37		ug/L		51	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	99		78 - 122

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QC Sample Results

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

Job ID: 240-205318-1

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

Lab Sample ID: 240-205318-2 MS
Matrix: Water
Analysis Batch: 615398

Client Sample ID: MW-33-MS_052424
Prep Type: Total/NA

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: 240-205318-2 MSD
Matrix: Water
Analysis Batch: 615398

Client Sample ID: MW-33-MSD_052424
Prep Type: Total/NA

Analyte	Sample		Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
1,1-Dichloroethene	1.0	U	25.0	25.2		ug/L		101	56 - 135	10	26	
cis-1,2-Dichloroethene	1.0	U	25.0	25.4		ug/L		101	66 - 128	9	14	
Tetrachloroethene	1.0	U	25.0	25.7		ug/L		103	62 - 131	13	20	
trans-1,2-Dichloroethene	1.0	U	25.0	24.4		ug/L		98	56 - 136	11	15	
Trichloroethene	1.0	U	25.0	25.3		ug/L		101	61 - 124	14	15	
Vinyl chloride	1.0	U	12.5	6.90		ug/L		55	43 - 157	8	24	

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	92		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

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

Lab Sample ID: MB 240-615386/8
Matrix: Water
Analysis Batch: 615386

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			06/04/24 12:42	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	102		68 - 127		06/04/24 12:42	1

Lab Sample ID: LCS 240-615386/4
Matrix: Water
Analysis Batch: 615386

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

Analyte	Spike Added	LCS		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	RPD
1,4-Dioxane	10.0	9.53		ug/L		95	75 - 121	

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

Lab Sample ID: 240-205255-A-3 MS
Matrix: Water
Analysis Batch: 615386

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

Analyte	Sample		Spike Added	MS		Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	RPD
1,4-Dioxane	1.4	J	10.0	11.8		ug/L		104	20 - 180	

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QC Sample Results

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

Job ID: 240-205318-1

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		68 - 127

Lab Sample ID: 240-205255-A-3 MSD
Matrix: Water
Analysis Batch: 615386

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	1.4	J	10.0	11.8		ug/L		103	20 - 180	1	20

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

Lab Sample ID: MB 240-615567/6
Matrix: Water
Analysis Batch: 615567

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			06/05/24 12:13	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	102		68 - 127		06/05/24 12:13	1

Lab Sample ID: LCS 240-615567/4
Matrix: Water
Analysis Batch: 615567

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	9.74		ug/L		97	75 - 121

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		68 - 127

Lab Sample ID: 240-205318-2 MS
Matrix: Water
Analysis Batch: 615567

Client Sample ID: MW-33-MS_052424
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	9.52		ug/L		95	20 - 180

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		68 - 127

Lab Sample ID: 240-205318-2 MSD
Matrix: Water
Analysis Batch: 615567

Client Sample ID: MW-33-MSD_052424
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	2.0	U	10.0	9.51		ug/L		95	20 - 180	0	20

QC Sample Results

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

Job ID: 240-205318-1

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

Lab Sample ID: 240-205318-2 MSD

Matrix: Water

Analysis Batch: 615567

Client Sample ID: MW-33-MSD_052424

Prep Type: Total/NA

<i>Surrogate</i>	<i>MSD</i>	<i>MSD</i>	<i>Limits</i>
	<i>%Recovery</i>	<i>Qualifier</i>	
1,2-Dichloroethane-d4 (Surr)	108		68 - 127

- 1
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- 14

QC Association Summary

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

Job ID: 240-205318-1

GC/MS VOA

Analysis Batch: 615386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-205318-3	MW-194_052424	Total/NA	Water	8260D SIM	
240-205318-4	MW-194S_052424	Total/NA	Water	8260D SIM	
MB 240-615386/8	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-615386/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-205255-A-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-205255-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 615398

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-205318-1	TRIP BLANK_15	Total/NA	Water	8260D	
240-205318-2	MW-33_052424	Total/NA	Water	8260D	
240-205318-3	MW-194_052424	Total/NA	Water	8260D	
240-205318-4	MW-194S_052424	Total/NA	Water	8260D	
MB 240-615398/7	Method Blank	Total/NA	Water	8260D	
LCS 240-615398/4	Lab Control Sample	Total/NA	Water	8260D	
240-205318-2 MS	MW-33-MS_052424	Total/NA	Water	8260D	
240-205318-2 MSD	MW-33-MSD_052424	Total/NA	Water	8260D	

Analysis Batch: 615567

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-205318-2	MW-33_052424	Total/NA	Water	8260D SIM	
MB 240-615567/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-615567/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-205318-2 MS	MW-33-MS_052424	Total/NA	Water	8260D SIM	
240-205318-2 MSD	MW-33-MSD_052424	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-205318-1

Client Sample ID: TRIP BLANK_15

Lab Sample ID: 240-205318-1

Date Collected: 05/24/24 00:00

Matrix: Water

Date Received: 05/29/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	615398	LEE	EET CLE	06/04/24 14:22

Client Sample ID: MW-33_052424

Lab Sample ID: 240-205318-2

Date Collected: 05/24/24 12:40

Matrix: Water

Date Received: 05/29/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	615398	LEE	EET CLE	06/04/24 14:47
Total/NA	Analysis	8260D SIM		1	615567	MDH	EET CLE	06/05/24 20:49

Client Sample ID: MW-194_052424

Lab Sample ID: 240-205318-3

Date Collected: 05/24/24 09:55

Matrix: Water

Date Received: 05/29/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	615398	LEE	EET CLE	06/04/24 15:12
Total/NA	Analysis	8260D SIM		1	615386	MDH	EET CLE	06/04/24 16:37

Client Sample ID: MW-194S_052424

Lab Sample ID: 240-205318-4

Date Collected: 05/24/24 10:50

Matrix: Water

Date Received: 05/29/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	615398	LEE	EET CLE	06/04/24 15:38
Total/NA	Analysis	8260D SIM		1	615386	MDH	EET CLE	06/04/24 17:00

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-205318-1


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
Georgia	State	4062	02-27-25
Illinois	NELAP	200004	07-31-24
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 Jersey	NELAP	OH001	06-30-24
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	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Chain of Custody Record

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

Client Contact		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other										TestAmerica Laboratories, Inc.						
Company Name: Arcadis		Client Project Manager: Kris Hinskey				Site Contact: Christina Weaver				Lab Contact: Mike DeMonico				COC No:				
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: <i>Kent Kasper</i>				TAT if different from below				<input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day				Walk-in client				
Project Name: Ford LTP		Method of Shipment/Carrier:				10 day								Lab sampling				
Project Number: 30206169.0401.03		Shipping/Tracking No:				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				Job/SDG No:								
PO # US3410018772										Sample Specific Notes / Special Instructions:								
Sample Identification		Sample Date	Sample Time	Matrix					Containers & Preservatives									
				Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Unpres	Other:		
TRIP BLANK_ 15		---	---	1							1						1 Trip Blank ✓	
MW-33_052424		5/24/24	1240	6							6						3 VOAs for 8260D ✓ 3 VOAs for 8260D SIM ✓	
MW-33-MS-052424		5/24/24	1240	6							6						RUN ms/msd ✓	
MW-33-MSD-052424		5/24/24	1240	6							6						RUN ms/msd ✓	
MW-194_052424		5/24/24	0955	6							6						✓	
MW-1945_052424		5/24/24	1050	6							6						✓	
 240-205318 Chain of Custody																		
Possible Hazard Identification										Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)								
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown										<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 request																		
Relinquished by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 5/24/24 1443		Received by: Novi Cold Storage		Company: Arcadis		Date/Time: 5/24/24 1443								
Relinquished by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 5/28/24 1600		Received by: <i>[Signature]</i>		Company: EETA		Date/Time: 5/28/24 1600								
Relinquished by: <i>[Signature]</i>		Company: EETA		Date/Time: 5/28/24 1605		Received in Laboratory by: MALISSA LOAR		Company: EETA		Date/Time: 5/24/24 8pm								

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Eurofins - Cleveland Sample Receipt Form/Narrative Login #: _____

Barberton Facility

Client AKADIS Site Name _____

Cooler unpacked by: MALISSA LOAR

Cooler Received on 5.29.24 Opened on 5.29.24

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

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

Eurofins Cooler # 22 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 # 18 (CF) 5 °C Observed Cooler Temp 15 °C Corrected Cooler Temp 15 °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity _____ Yes No

-Were the seals on the outside of the cooler(s) signed & dated? Yes No NA

-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? Yes No NA

-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# HC339814

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 # _____ Yes No

17 Was a LL Hg or Me Hg trip blank present? Yes No

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page Samples processed by _____

19. SAMPLE CONDITION _____ 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 _____ were further preserved in the laboratory

Sample(s) _____ Time preserved _____ Preservative(s) added/L of number(s) _____

VOA Sample Preservation - Date/Time VOAs Frozen _____ were further preserved in the laboratory

DATA VERIFICATION REPORT



June 07, 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: 30206169.401.03
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 205318-1
Sample date: 2024-05-24
Report received by CADENA: 2024-06-07
Initial Data Verification completed by CADENA: 2024-06-07
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.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, MS/MSD Recovery, MS/MSD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

Analytical results reported between RDL and MDL are flagged 'J' and considered estimated values.

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
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: 205318-1

Sample Name: TRIP BLANK_15	MW-33_052424	MW-194_052424	MW-194S_052424
Lab Sample ID: 2402053181	2402053182	2402053183	2402053184
Sample Date: 5/24/2024	5/24/2024	5/24/2024	5/24/2024

Analyte	Cas No.	TRIP BLANK_15				MW-33_052424				MW-194_052424				MW-194S_052424			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	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	---	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	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---

OSW-8260DSIM

1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	1.2	2.0	ug/l	J	ND	2.0	ug/l	---
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