

ANALYTICAL REPORT

PREPARED FOR

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Generated 8/28/2024 6:33:09 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-209725-1

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Job Notes

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Authorization



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Definitions/Glossary

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

Job ID: 240-209725-1

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

Job ID: 240-209725-1

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Job Narrative 240-209725-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

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

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

Receipt

The samples were received on 8/17/2024 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.5°C and 1.9°C.

GC/MS VOA

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

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Method Summary

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

Job ID: 240-209725-1

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

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- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-209725-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-209725-1	TRIP BLANK_74	Water	08/15/24 00:00	08/17/24 08:00
240-209725-2	MW-50_081524	Water	08/15/24 12:45	08/17/24 08:00
240-209725-3	MW-62_081524	Water	08/15/24 13:40	08/17/24 08:00

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- 2
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- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-209725-1

Client Sample ID: TRIP BLANK_74

Lab Sample ID: 240-209725-1

No Detections.

Client Sample ID: MW-50_081524

Lab Sample ID: 240-209725-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	4.2		1.0	0.46	ug/L	1		8260D	Total/NA
Vinyl chloride	160		5.0	2.3	ug/L	5		8260D	Total/NA

Client Sample ID: MW-62_081524

Lab Sample ID: 240-209725-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.9	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
Vinyl chloride	0.90	J	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 U.S., Inc.
Project/Site: Ford LTP

Job ID: 240-209725-1

Client Sample ID: TRIP BLANK_74

Lab Sample ID: 240-209725-1

Date Collected: 08/15/24 00:00

Matrix: Water

Date Received: 08/17/24 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			08/24/24 20:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/24 20:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 20:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/24 20:30	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 20:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/24/24 20:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		08/24/24 20:30	1
4-Bromofluorobenzene (Surr)	87		56 - 136		08/24/24 20:30	1
Toluene-d8 (Surr)	96		78 - 122		08/24/24 20:30	1
Dibromofluoromethane (Surr)	101		73 - 120		08/24/24 20:30	1

Client Sample Results

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

Job ID: 240-209725-1

Client Sample ID: MW-50_081524

Lab Sample ID: 240-209725-2

Date Collected: 08/15/24 12:45

Matrix: Water

Date Received: 08/17/24 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	1.9	J	2.0	0.86	ug/L			08/27/24 01:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					08/27/24 01:11	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			08/24/24 23:00	1
cis-1,2-Dichloroethene	4.2		1.0	0.46	ug/L			08/24/24 23:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 23:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/24 23:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 23:00	1
Vinyl chloride	160		5.0	2.3	ug/L			08/26/24 17:20	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		62 - 137					08/24/24 23:00	1
1,2-Dichloroethane-d4 (Surr)	110		62 - 137					08/26/24 17:20	5
4-Bromofluorobenzene (Surr)	83		56 - 136					08/24/24 23:00	1
4-Bromofluorobenzene (Surr)	76		56 - 136					08/26/24 17:20	5
Toluene-d8 (Surr)	95		78 - 122					08/24/24 23:00	1
Toluene-d8 (Surr)	90		78 - 122					08/26/24 17:20	5
Dibromofluoromethane (Surr)	95		73 - 120					08/24/24 23:00	1
Dibromofluoromethane (Surr)	97		73 - 120					08/26/24 17:20	5

Client Sample Results

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

Job ID: 240-209725-1

Client Sample ID: MW-62_081524

Lab Sample ID: 240-209725-3

Date Collected: 08/15/24 13:40

Matrix: Water

Date Received: 08/17/24 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	1.9	J	2.0	0.86	ug/L			08/27/24 01:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					08/27/24 01:34	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			08/24/24 22:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/24 22:10	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 22:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/24 22:10	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 22:10	1
Vinyl chloride	0.90	J	1.0	0.45	ug/L			08/24/24 22:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137					08/24/24 22:10	1
4-Bromofluorobenzene (Surr)	97		56 - 136					08/24/24 22:10	1
Toluene-d8 (Surr)	106		78 - 122					08/24/24 22:10	1
Dibromofluoromethane (Surr)	102		73 - 120					08/24/24 22:10	1

Surrogate Summary

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

Job ID: 240-209725-1

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)
240-209662-A-6 MS	Matrix Spike	93	102	98	93
240-209662-A-6 MSD	Matrix Spike Duplicate	102	109	108	105
240-209725-1	TRIP BLANK_74	111	87	96	101
240-209725-2	MW-50_081524	105	83	95	95
240-209725-2	MW-50_081524	110	76	90	97
240-209725-2 MS	MW-50_081524	95	104	100	98
240-209725-2 MSD	MW-50_081524	100	105	103	102
240-209725-3	MW-62_081524	114	97	106	102
LCS 240-624626/5	Lab Control Sample	95	102	100	97
LCS 240-624673/5	Lab Control Sample	94	103	100	99
MB 240-624626/9	Method Blank	111	83	95	99
MB 240-624673/7	Method Blank	110	91	99	101

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)
240-209725-2	MW-50_081524	101
240-209725-3	MW-62_081524	101
240-209728-E-5 MS	Matrix Spike	91
240-209728-F-5 MSD	Matrix Spike Duplicate	99
LCS 240-624836/3	Lab Control Sample	91
MB 240-624836/5	Method Blank	92

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-209725-1

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

Lab Sample ID: MB 240-624626/9

Matrix: Water

Analysis Batch: 624626

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			08/24/24 19:15	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/24/24 19:15	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 19:15	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/24/24 19:15	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/24/24 19:15	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/24/24 19:15	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		62 - 137		08/24/24 19:15	1
4-Bromofluorobenzene (Surr)	83		56 - 136		08/24/24 19:15	1
Toluene-d8 (Surr)	95		78 - 122		08/24/24 19:15	1
Dibromofluoromethane (Surr)	99		73 - 120		08/24/24 19:15	1

Lab Sample ID: LCS 240-624626/5

Matrix: Water

Analysis Batch: 624626

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	26.3		ug/L		105	77 - 123
Tetrachloroethene	25.0	27.4		ug/L		110	76 - 123
trans-1,2-Dichloroethene	25.0	26.8		ug/L		107	75 - 124
Trichloroethene	25.0	24.9		ug/L		100	70 - 122
Vinyl chloride	12.5	12.2		ug/L		97	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-209662-A-6 MS

Matrix: Water

Analysis Batch: 624626

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	24.2		ug/L		97	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	25.8		ug/L		103	66 - 128
Tetrachloroethene	1.0	U	25.0	25.6		ug/L		102	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	25.4		ug/L		101	56 - 136
Trichloroethene	1.0	U	25.0	23.1		ug/L		92	61 - 124
Vinyl chloride	1.0	U	12.5	11.6		ug/L		92	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	102		56 - 136
Toluene-d8 (Surr)	98		78 - 122

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QC Sample Results

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

Job ID: 240-209725-1

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

Lab Sample ID: 240-209662-A-6 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624626

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	93		73 - 120

Lab Sample ID: 240-209662-A-6 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624626

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	25.0	23.8		ug/L		95	56 - 135	2	26
cis-1,2-Dichloroethene	1.0	U	25.0	24.9		ug/L		99	66 - 128	4	14
Tetrachloroethene	1.0	U	25.0	24.7		ug/L		99	62 - 131	4	20
trans-1,2-Dichloroethene	1.0	U	25.0	24.3		ug/L		97	56 - 136	4	15
Trichloroethene	1.0	U	25.0	22.4		ug/L		90	61 - 124	3	15
Vinyl chloride	1.0	U	12.5	11.6		ug/L		92	43 - 157	0	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	109		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	105		73 - 120

Lab Sample ID: MB 240-624673/7

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624673

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			08/26/24 10:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/26/24 10:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 10:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/26/24 10:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 10:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/26/24 10:41	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		08/26/24 10:41	1
4-Bromofluorobenzene (Surr)	91		56 - 136		08/26/24 10:41	1
Toluene-d8 (Surr)	99		78 - 122		08/26/24 10:41	1
Dibromofluoromethane (Surr)	101		73 - 120		08/26/24 10:41	1

Lab Sample ID: LCS 240-624673/5

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624673

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	26.4		ug/L		105	63 - 134
cis-1,2-Dichloroethene	25.0	27.3		ug/L		109	77 - 123
Tetrachloroethene	25.0	27.0		ug/L		108	76 - 123
trans-1,2-Dichloroethene	25.0	27.2		ug/L		109	75 - 124
Trichloroethene	25.0	25.8		ug/L		103	70 - 122

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QC Sample Results

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

Job ID: 240-209725-1

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

Lab Sample ID: LCS 240-624673/5

Matrix: Water

Analysis Batch: 624673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	12.7		ug/L		102	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
4-Bromofluorobenzene (Surr)	103		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: 240-209725-2 MS

Matrix: Water

Analysis Batch: 624673

Client Sample ID: MW-50_081524

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	5.0	U	125	119		ug/L		95	56 - 135
cis-1,2-Dichloroethene	3.8	J	125	129		ug/L		100	66 - 128
Tetrachloroethene	5.0	U	125	118		ug/L		95	62 - 131
trans-1,2-Dichloroethene	5.0	U	125	126		ug/L		101	56 - 136
Trichloroethene	5.0	U	125	109		ug/L		87	61 - 124
Vinyl chloride	160		62.5	185		ug/L		48	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	95		62 - 137
4-Bromofluorobenzene (Surr)	104		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: 240-209725-2 MSD

Matrix: Water

Analysis Batch: 624673

Client Sample ID: MW-50_081524

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	5.0	U	125	129		ug/L		103	56 - 135	8	26
cis-1,2-Dichloroethene	3.8	J	125	137		ug/L		106	66 - 128	6	14
Tetrachloroethene	5.0	U	125	128		ug/L		102	62 - 131	8	20
trans-1,2-Dichloroethene	5.0	U	125	132		ug/L		105	56 - 136	5	15
Trichloroethene	5.0	U	125	119		ug/L		95	61 - 124	9	15
Vinyl chloride	160		62.5	192		ug/L		59	43 - 157	4	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	105		56 - 136
Toluene-d8 (Surr)	103		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

QC Sample Results

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

Job ID: 240-209725-1

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

Lab Sample ID: MB 240-624836/5

Matrix: Water

Analysis Batch: 624836

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			08/26/24 21:16	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		68 - 127					08/26/24 21:16	1

Lab Sample ID: LCS 240-624836/3

Matrix: Water

Analysis Batch: 624836

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	10.2		ug/L		102	75 - 121
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	91		68 - 127				

Lab Sample ID: 240-209728-E-5 MS

Matrix: Water

Analysis Batch: 624836

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	1.7	J	10.0	11.5		ug/L		98	20 - 180
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	91		68 - 127						

Lab Sample ID: 240-209728-F-5 MSD

Matrix: Water

Analysis Batch: 624836

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	1.7	J	10.0	12.9		ug/L		112	20 - 180	12	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	99		68 - 127								

QC Association Summary

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

Job ID: 240-209725-1

GC/MS VOA

Analysis Batch: 624626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209725-1	TRIP BLANK_74	Total/NA	Water	8260D	
240-209725-2	MW-50_081524	Total/NA	Water	8260D	
240-209725-3	MW-62_081524	Total/NA	Water	8260D	
MB 240-624626/9	Method Blank	Total/NA	Water	8260D	
LCS 240-624626/5	Lab Control Sample	Total/NA	Water	8260D	
240-209662-A-6 MS	Matrix Spike	Total/NA	Water	8260D	
240-209662-A-6 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 624673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209725-2	MW-50_081524	Total/NA	Water	8260D	
MB 240-624673/7	Method Blank	Total/NA	Water	8260D	
LCS 240-624673/5	Lab Control Sample	Total/NA	Water	8260D	
240-209725-2 MS	MW-50_081524	Total/NA	Water	8260D	
240-209725-2 MSD	MW-50_081524	Total/NA	Water	8260D	

Analysis Batch: 624836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209725-2	MW-50_081524	Total/NA	Water	8260D SIM	
240-209725-3	MW-62_081524	Total/NA	Water	8260D SIM	
MB 240-624836/5	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-624836/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-209728-E-5 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-209728-F-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-209725-1

Client Sample ID: TRIP BLANK_74

Lab Sample ID: 240-209725-1

Date Collected: 08/15/24 00:00

Matrix: Water

Date Received: 08/17/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	624626	MS	EET CLE	08/24/24 20:30

Client Sample ID: MW-50_081524

Lab Sample ID: 240-209725-2

Date Collected: 08/15/24 12:45

Matrix: Water

Date Received: 08/17/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	624626	MS	EET CLE	08/24/24 23:00
Total/NA	Analysis	8260D		5	624673	MS	EET CLE	08/26/24 17:20
Total/NA	Analysis	8260D SIM		1	624836	MDH	EET CLE	08/27/24 01:11

Client Sample ID: MW-62_081524

Lab Sample ID: 240-209725-3

Date Collected: 08/15/24 13:40

Matrix: Water

Date Received: 08/17/24 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	624626	MS	EET CLE	08/24/24 22:10
Total/NA	Analysis	8260D SIM		1	624836	MDH	EET CLE	08/27/24 01:34

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: 240-209725-1

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	08-31-25
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-27-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-03-25
New York	NELAP	10975	04-02-25
Ohio VAP	State	ORELAP 4062	02-27-25
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-25
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

Eurofins - Cleveland Sample Receipt Form/Narrative Login # :
 Barberon Facility

Client Arcadis Site Name _____ Cooler unpacked by: Jmorosko
 Cooler Received on 08/17/24 Opened on 08/17/24

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____
 Receipt After-hours Drop-off Date/Time _____ Storage Location _____

Eurofins Cooler # EC Foam Box Client Cooler Box Other _____
 Packing material used. Bubble Wrap Foam Plastic Bag None Other _____

COOLANT W/ Ice Blue Ice Dry Ice Water None
 Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 92 (CF -0 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 1 Yes No NA
 -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 (LHG/MeHg)? Yes No NA
 -Were tamper/custody seals intact and uncompromised? Yes No NA

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

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
13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC442471
14. Were VOAs on the COC? Yes No
15. Were air bubbles >6 mm in any VOA vials? 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

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 _____

Temperature readings.

<u>Client Sample ID</u>	<u>Lab ID</u>	<u>Container Type</u>	<u>Container</u> pH	<u>Preservation</u> Temp	<u>Preservation</u> Added	<u>Preservation</u> Lot Number
TRIP BLANK_74	240-209725-A-1	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-A-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-B-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-C-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-D-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-E-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-50_081524	240-209725-G-2	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-A-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-B-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-C-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-D-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-E-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____
MW-62_081524	240-209725-F-3	Voa Vial 40ml - Hydrochloric Acid	_____	_____	_____	_____

DATA VERIFICATION REPORT



August 28, 2024

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

CADENA project ID: E203728
Project: Ford Livonia Transmission Plant - Soil Gas, Ground Water and Soil
Project number: 30206169.0401.04_WA-02
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 209725-1
Sample date: 2024-08-15
Report received by CADENA: 2024-08-28
Initial Data Verification completed by CADENA: 2024-08-28
Number of Samples:3
Sample Matrices:Water
Test Categories:GCMS VOC
Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

There were no significant QC anomalies or exceptions to report.

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

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

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

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

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

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

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
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: 209725-1

Sample Name: TRIP BLANK_74	MW-50_081524	MW-62_081524
Lab Sample ID: 2402097251	2402097252	2402097253
Sample Date: 8/15/2024	8/15/2024	8/15/2024

Analyte	Cas No.	TRIP BLANK_74				MW-50_081524				MW-62_081524			
		Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier	Result	Limit	Units	Valid Qualifier

GC/MS VOC

OSW-8260D

1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	4.2	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	---
trans-1,2-Dichloroethene	156-60-5	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	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	160	5.0	ug/l	---	0.90	1.0	ug/l	J

OSW-8260DSIM

1,4-Dioxane	123-91-1					1.9	2.0	ug/l	J	1.9	2.0	ug/l	J
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