

ANALYTICAL REPORT

PREPARED FOR

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Generated 8/29/2024 6:53:41 AM

JOB DESCRIPTION

Ford LTP

JOB NUMBER

240-209726-1

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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: 240-209726-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
U	Indicates the analyte was analyzed for but not detected.

Glossary

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

Case Narrative

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

Job ID: 240-209726-1

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Job Narrative 240-209726-1

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

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 240-624714 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: 240-209726-1

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: 240-209726-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-209726-1	TRIP BLANK_9	Water	08/15/24 00:00	08/17/24 08:00
240-209726-2	MW-48R_081524	Water	08/15/24 10:56	08/17/24 08:00
240-209726-3	MW-68_081524	Water	08/15/24 12:29	08/17/24 08:00
240-209726-4	MW-46_081524	Water	08/15/24 14:06	08/17/24 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: 240-209726-1

Client Sample ID: TRIP BLANK_9

Lab Sample ID: 240-209726-1

No Detections.

Client Sample ID: MW-48R_081524

Lab Sample ID: 240-209726-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	9.0		2.0	0.86	ug/L	1			8260D SIM	Total/NA

Client Sample ID: MW-68_081524

Lab Sample ID: 240-209726-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	2.0		2.0	0.86	ug/L	1			8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.78	J	1.0	0.46	ug/L	1			8260D	Total/NA
Vinyl chloride	3.4		1.0	0.45	ug/L	1			8260D	Total/NA

Client Sample ID: MW-46_081524

Lab Sample ID: 240-209726-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
1,4-Dioxane	3.3		2.0	0.86	ug/L	1			8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.84	J	1.0	0.46	ug/L	1			8260D	Total/NA
Vinyl chloride	4.1		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: 240-209726-1

Client Sample ID: TRIP BLANK_9

Lab Sample ID: 240-209726-1

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			08/26/24 16:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/26/24 16:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 16:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/26/24 16:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 16:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/26/24 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	135		62 - 137		08/26/24 16:54	1
4-Bromofluorobenzene (Surr)	93		56 - 136		08/26/24 16:54	1
Toluene-d8 (Surr)	102		78 - 122		08/26/24 16:54	1
Dibromofluoromethane (Surr)	114		73 - 120		08/26/24 16:54	1

Client Sample Results

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

Job ID: 240-209726-1

Client Sample ID: MW-48R_081524

Lab Sample ID: 240-209726-2

Date Collected: 08/15/24 10:56

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	9.0		2.0	0.86	ug/L			08/27/24 01:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		68 - 127					08/27/24 01:58	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			08/27/24 15:52	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/27/24 15:52	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/27/24 15:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/27/24 15:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/27/24 15:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/27/24 15:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137					08/27/24 15:52	1
4-Bromofluorobenzene (Surr)	102		56 - 136					08/27/24 15:52	1
Toluene-d8 (Surr)	97		78 - 122					08/27/24 15:52	1
Dibromofluoromethane (Surr)	90		73 - 120					08/27/24 15:52	1

Client Sample Results

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

Job ID: 240-209726-1

Client Sample ID: MW-68_081524

Lab Sample ID: 240-209726-3

Date Collected: 08/15/24 12:29

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	2.0		2.0	0.86	ug/L			08/27/24 02:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		68 - 127					08/27/24 02:21	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			08/25/24 16:01	1
cis-1,2-Dichloroethene	0.78	J	1.0	0.46	ug/L			08/25/24 16:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 16:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/25/24 16:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 16:01	1
Vinyl chloride	3.4		1.0	0.45	ug/L			08/25/24 16:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		62 - 137					08/25/24 16:01	1
4-Bromofluorobenzene (Surr)	95		56 - 136					08/25/24 16:01	1
Toluene-d8 (Surr)	97		78 - 122					08/25/24 16:01	1
Dibromofluoromethane (Surr)	97		73 - 120					08/25/24 16:01	1

Client Sample Results

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

Job ID: 240-209726-1

Client Sample ID: MW-46_081524

Lab Sample ID: 240-209726-4

Date Collected: 08/15/24 14:06

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	3.3		2.0	0.86	ug/L			08/27/24 02:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		68 - 127					08/27/24 02:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			08/25/24 16:23	1
cis-1,2-Dichloroethene	0.84	J	1.0	0.46	ug/L			08/25/24 16:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 16:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/25/24 16:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 16:23	1
Vinyl chloride	4.1		1.0	0.45	ug/L			08/25/24 16:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		62 - 137					08/25/24 16:23	1
4-Bromofluorobenzene (Surr)	92		56 - 136					08/25/24 16:23	1
Toluene-d8 (Surr)	97		78 - 122					08/25/24 16:23	1
Dibromofluoromethane (Surr)	99		73 - 120					08/25/24 16:23	1

Surrogate Summary

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

Job ID: 240-209726-1

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)
240-209547-B-1 MS	Matrix Spike	115	99	99	102
240-209547-B-1 MSD	Matrix Spike Duplicate	120	106	107	106
240-209726-1	TRIP BLANK_9	135	93	102	114
240-209726-2	MW-48R_081524	112	102	97	90
240-209726-3	MW-68_081524	102	95	97	97
240-209726-4	MW-46_081524	104	92	97	99
240-209728-A-5 MSD	Matrix Spike Duplicate	93	97	96	101
240-209728-F-5 MS	Matrix Spike	96	100	98	104
240-209971-A-2 MS	Matrix Spike	116	118	103	104
240-209971-A-2 MSD	Matrix Spike Duplicate	116	116	103	101
LCS 240-624633/5	Lab Control Sample	89	95	92	96
LCS 240-624714/4	Lab Control Sample	111	98	98	98
LCS 240-624849/5	Lab Control Sample	103	106	96	92
MB 240-624633/9	Method Blank	100	94	96	96
MB 240-624714/7	Method Blank	128	97	103	109
MB 240-624849/10	Method Blank	107	103	98	90

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)
240-209726-2	MW-48R_081524	93
240-209726-3	MW-68_081524	93
240-209726-4	MW-46_081524	98
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: 240-209726-1

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

Lab Sample ID: MB 240-624633/9

Matrix: Water

Analysis Batch: 624633

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			08/25/24 09:42	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/25/24 09:42	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 09:42	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/25/24 09:42	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/25/24 09:42	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/25/24 09:42	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	100		62 - 137		08/25/24 09:42	1
4-Bromofluorobenzene (Surr)	94		56 - 136		08/25/24 09:42	1
Toluene-d8 (Surr)	96		78 - 122		08/25/24 09:42	1
Dibromofluoromethane (Surr)	96		73 - 120		08/25/24 09:42	1

Lab Sample ID: LCS 240-624633/5

Matrix: Water

Analysis Batch: 624633

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	23.4		ug/L		94	63 - 134
cis-1,2-Dichloroethene	25.0	22.5		ug/L		90	77 - 123
Tetrachloroethene	25.0	24.1		ug/L		96	76 - 123
trans-1,2-Dichloroethene	25.0	22.6		ug/L		90	75 - 124
Trichloroethene	25.0	23.7		ug/L		95	70 - 122
Vinyl chloride	12.5	11.9		ug/L		96	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	89		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	92		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

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

Matrix: Water

Analysis Batch: 624633

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	22.5		ug/L		90	56 - 135	0	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.5		ug/L		90	66 - 128	1	14
Tetrachloroethene	1.0	U	25.0	23.2		ug/L		93	62 - 131	1	20
trans-1,2-Dichloroethene	1.0	U	25.0	22.2		ug/L		89	56 - 136	0	15
Trichloroethene	1.0	U	25.0	22.4		ug/L		90	61 - 124	2	15
Vinyl chloride	0.61	J	12.5	12.0		ug/L		92	43 - 157	0	24

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	96		78 - 122

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QC Sample Results

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

Job ID: 240-209726-1

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

Lab Sample ID: 240-209728-A-5 MSD
Matrix: Water
Analysis Batch: 624633

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

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: 240-209728-F-5 MS
Matrix: Water
Analysis Batch: 624633

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

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier	Added	Result	Qualifier				
1,1-Dichloroethene	1.0	U	25.0	22.6		ug/L		90	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.4		ug/L		90	66 - 128
Tetrachloroethene	1.0	U	25.0	23.5		ug/L		94	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.2		ug/L		89	56 - 136
Trichloroethene	1.0	U	25.0	22.8		ug/L		91	61 - 124
Vinyl chloride	0.61	J	12.5	12.0		ug/L		91	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	104		73 - 120

Lab Sample ID: MB 240-624714/7
Matrix: Water
Analysis Batch: 624714

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			08/26/24 12:34	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/26/24 12:34	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 12:34	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/26/24 12:34	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/26/24 12:34	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/26/24 12:34	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	128		62 - 137		08/26/24 12:34	1
4-Bromofluorobenzene (Surr)	97		56 - 136		08/26/24 12:34	1
Toluene-d8 (Surr)	103		78 - 122		08/26/24 12:34	1
Dibromofluoromethane (Surr)	109		73 - 120		08/26/24 12:34	1

Lab Sample ID: LCS 240-624714/4
Matrix: Water
Analysis Batch: 624714

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	26.9		ug/L		108	63 - 134
cis-1,2-Dichloroethene	25.0	25.9		ug/L		104	77 - 123
Tetrachloroethene	25.0	25.2		ug/L		101	76 - 123
trans-1,2-Dichloroethene	25.0	26.9		ug/L		108	75 - 124
Trichloroethene	25.0	24.4		ug/L		98	70 - 122

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-209726-1

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

Lab Sample ID: LCS 240-624714/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624714

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	14.0		ug/L		112	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	98		73 - 120

Lab Sample ID: 240-209547-B-1 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624714

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	500	U	12500	13900		ug/L		111	56 - 135
cis-1,2-Dichloroethene	12000		12500	25000		ug/L		103	66 - 128
Tetrachloroethene	12000		12500	25100		ug/L		102	62 - 131
trans-1,2-Dichloroethene	350	J	12500	14300		ug/L		112	56 - 136
Trichloroethene	27000		12500	39600	E	ug/L		100	61 - 124
Vinyl chloride	3500		6250	9530		ug/L		97	43 - 157

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	115		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	102		73 - 120

Lab Sample ID: 240-209547-B-1 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 624714

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	500	U	12500	14800		ug/L		119	56 - 135	7	26
cis-1,2-Dichloroethene	12000		12500	25100		ug/L		103	66 - 128	0	14
Tetrachloroethene	12000		12500	26100		ug/L		110	62 - 131	4	20
trans-1,2-Dichloroethene	350	J	12500	14500		ug/L		113	56 - 136	1	15
Trichloroethene	27000		12500	39500	E	ug/L		99	61 - 124	0	15
Vinyl chloride	3500		6250	10000		ug/L		105	43 - 157	5	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	120		62 - 137
4-Bromofluorobenzene (Surr)	106		56 - 136
Toluene-d8 (Surr)	107		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120

QC Sample Results

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

Job ID: 240-209726-1

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

Lab Sample ID: MB 240-624849/10

Matrix: Water

Analysis Batch: 624849

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			08/27/24 12:33	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/27/24 12:33	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/27/24 12:33	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/27/24 12:33	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/27/24 12:33	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/27/24 12:33	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		62 - 137		08/27/24 12:33	1
4-Bromofluorobenzene (Surr)	103		56 - 136		08/27/24 12:33	1
Toluene-d8 (Surr)	98		78 - 122		08/27/24 12:33	1
Dibromofluoromethane (Surr)	90		73 - 120		08/27/24 12:33	1

Lab Sample ID: LCS 240-624849/5

Matrix: Water

Analysis Batch: 624849

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	50.0	44.3		ug/L		89	77 - 123
Tetrachloroethene	50.0	42.5		ug/L		85	76 - 123
trans-1,2-Dichloroethene	50.0	42.3		ug/L		85	75 - 124
Trichloroethene	50.0	42.8		ug/L		86	70 - 122
Vinyl chloride	50.0	39.8		ug/L		80	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	106		56 - 136
Toluene-d8 (Surr)	96		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

Lab Sample ID: 240-209971-A-2 MS

Matrix: Water

Analysis Batch: 624849

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	50.0	40.8		ug/L		82	56 - 135
cis-1,2-Dichloroethene	1.0	U	50.0	46.8		ug/L		94	66 - 128
Tetrachloroethene	1.0	U	50.0	41.5		ug/L		83	62 - 131
trans-1,2-Dichloroethene	1.0	U	50.0	40.7		ug/L		81	56 - 136
Trichloroethene	1.4		50.0	44.1		ug/L		86	61 - 124
Vinyl chloride	1.0	U	50.0	40.5		ug/L		81	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	116		62 - 137
4-Bromofluorobenzene (Surr)	118		56 - 136
Toluene-d8 (Surr)	103		78 - 122

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-209726-1

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

Lab Sample ID: 240-209971-A-2 MS
Matrix: Water
Analysis Batch: 624849

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

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	104		73 - 120

Lab Sample ID: 240-209971-A-2 MSD
Matrix: Water
Analysis Batch: 624849

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

Analyte	Sample		Spike Added	MSD		Unit	D	%Rec	%Rec		RPD	
	Result	Qualifier		Result	Qualifier				Limits	RPD	Limit	
1,1-Dichloroethene	1.0	U	50.0	41.0		ug/L		82	56 - 135	0	26	
cis-1,2-Dichloroethene	1.0	U	50.0	46.9		ug/L		94	66 - 128	0	14	
Tetrachloroethene	1.0	U	50.0	39.9		ug/L		80	62 - 131	4	20	
trans-1,2-Dichloroethene	1.0	U	50.0	39.8		ug/L		80	56 - 136	2	15	
Trichloroethene	1.4		50.0	43.2		ug/L		84	61 - 124	2	15	
Vinyl chloride	1.0	U	50.0	40.4		ug/L		81	43 - 157	0	24	

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	116		62 - 137
4-Bromofluorobenzene (Surr)	116		56 - 136
Toluene-d8 (Surr)	103		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

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		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			08/26/24 21:16	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
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		Unit	D	%Rec	%Rec	
		Result	Qualifier				Limits	
1,4-Dioxane	10.0	10.2		ug/L		102	75 - 121	

	LCS	LCS	
Surrogate	%Recovery	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		Spike Added	MS		Unit	D	%Rec	%Rec	
	Result	Qualifier		Result	Qualifier				Limits	
1,4-Dioxane	1.7	J	10.0	11.5		ug/L		98	20 - 180	

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-209726-1

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

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MSD Result</i>	<i>MSD Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>	<i>RPD</i>	<i>RPD Limit</i>
1,4-Dioxane	1.7	J	10.0	12.9		ug/L		112	20 - 180	12	20

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	99		68 - 127



QC Association Summary

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

Job ID: 240-209726-1

GC/MS VOA

Analysis Batch: 624633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209726-3	MW-68_081524	Total/NA	Water	8260D	
240-209726-4	MW-46_081524	Total/NA	Water	8260D	
MB 240-624633/9	Method Blank	Total/NA	Water	8260D	
LCS 240-624633/5	Lab Control Sample	Total/NA	Water	8260D	
240-209728-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	
240-209728-F-5 MS	Matrix Spike	Total/NA	Water	8260D	

Analysis Batch: 624714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209726-1	TRIP BLANK_9	Total/NA	Water	8260D	
MB 240-624714/7	Method Blank	Total/NA	Water	8260D	
LCS 240-624714/4	Lab Control Sample	Total/NA	Water	8260D	
240-209547-B-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-209547-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 624836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209726-2	MW-48R_081524	Total/NA	Water	8260D SIM	
240-209726-3	MW-68_081524	Total/NA	Water	8260D SIM	
240-209726-4	MW-46_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	

Analysis Batch: 624849

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-209726-2	MW-48R_081524	Total/NA	Water	8260D	
MB 240-624849/10	Method Blank	Total/NA	Water	8260D	
LCS 240-624849/5	Lab Control Sample	Total/NA	Water	8260D	
240-209971-A-2 MS	Matrix Spike	Total/NA	Water	8260D	
240-209971-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-209726-1

Client Sample ID: TRIP BLANK_9

Lab Sample ID: 240-209726-1

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	624714	LEE	EET CLE	08/26/24 16:54

Client Sample ID: MW-48R_081524

Lab Sample ID: 240-209726-2

Date Collected: 08/15/24 10:56

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	624849	MDH	EET CLE	08/27/24 15:52
Total/NA	Analysis	8260D SIM		1	624836	MDH	EET CLE	08/27/24 01:58

Client Sample ID: MW-68_081524

Lab Sample ID: 240-209726-3

Date Collected: 08/15/24 12:29

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	624633	MDH	EET CLE	08/25/24 16:01
Total/NA	Analysis	8260D SIM		1	624836	MDH	EET CLE	08/27/24 02:21

Client Sample ID: MW-46_081524

Lab Sample ID: 240-209726-4

Date Collected: 08/15/24 14:06

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	624633	MDH	EET CLE	08/25/24 16:23
Total/NA	Analysis	8260D SIM		1	624836	MDH	EET CLE	08/27/24 02:45

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: 240-209726-1

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

Chain of Custody Record

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

THE LEADER IN ENVIRONMENTAL TESTING

Client Contact		Regulatory program: DW NPDES RCRA Other		TestAmerica Laboratories, Inc.															
Company Name: Arcadis		Client Project Manager: Kris Hinskey			Site Contact: Christina Weaver			Lab Contact: Mike DelMonico				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>Rebecca Costigan</i>			TAT is different from below			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				Walk-in client							
Project Name: Ford LTP		Method of Shipment/Carrier:			10 day							3 weeks		Lab sampling					
Project Number: 30206169.0401.03		Shipping/Tracking No:			2 weeks			1 week		Job/SDG No:									
PO # US3410018772					2 days			2 days		Sample Specific Notes / Special Instructions:									
					1 day			1 day											
Sample Identification		Sample Date	Sample Time	Matrix			Containers & Preservatives												
				Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH			ZnAc	NaOH	Unpres	Other:	
✓ TRIP BLANK_9		---	---	1					1										1 Trip Blank
✓ MW-48-081524		8/15/24	1056	6					6										3 VOAs for 8260D 3 VOAs for 8260D SIM
✓ MW-68-081524		8/15/24	1229	6					6										
✓ MW-46-081524		8/15/24	1406	6					6										
RC 8/15/24																			
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"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown				Return to Client <input type="checkbox"/> Disposal By Lab <input checked="" type="checkbox"/> Archive For: _____ Months															
Special Instructions/OC Requirements & Comments: <i>Onsite</i>																			
Submit all results through Cadena at jtomalia@cadenaco.com Cadena #E203726 Level IV Reporting requested																			
Relinquished by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 8/15/24 1805		Received by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 8/15/24 1805									
Relinquished by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 8/16/24 1240		Received by: <i>[Signature]</i>		Company: EETA		Date/Time: 8/16/24 81240									
Relinquished by: <i>[Signature]</i>		Company: EETA		Date/Time: 8/16/24 1245		Received in Laboratory by: <i>[Signature]</i>		Company: EETA		Date/Time: 08/17/24 0500									



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Eurofins - Cleveland Sample Receipt Form/Narrative Login # _____
Barberton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Jmorosko
 Cooler Received on 08/11/24 Opened on 08/11/24

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 W Client Cooler W Box W Other _____
 Packing material used. Bubble Wrap W Foam W Plastic Bag None Other _____
 COOLANT: Wet Ice W Blue Ice W Dry Ice None Water None
 I Cooler temperature upon receipt See Multiple Cooler Form

IR GUN # 22 (CF - D 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 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 NA
 4. Did custody papers accompany the sample(s)? Yes No NA
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No NA
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No NA
 7. Did all bottles arrive in good condition (Unbroken)? Yes No NA
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No NA
 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 NA
 10. Were correct bottle(s) used for the test(s) indicated? Yes No NA
 11. Sufficient quantity received to perform indicated analyses? Yes No NA
 12. Are these work share samples and all listed on the COC? Yes No NA
 If Yes, Questions 13-17 have been checked at the originating laboratory

Tests that are not checked for pH by Receiving: VOA's Oil and Grease TOC

13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC442471
 14. Were VOA's on the COC? Yes No NA
 15. Were air bubbles >6 mm in any VOA vials? Yes Larger than this. NO NA
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # covered Yes No NO
 17. Was a LL Hg or Me Hg trip blank present? Yes No 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 VOA's Frozen _____



Temperature readings

Client Sample ID	Lab ID	Container Type	Container	Preservation	Preservation
			pH	Temp	Added
					Lot Number
TRIP BLANK_9	240-209726-A-1	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-A-2	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-B-2	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-C-2	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-D-2	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-E-2	Voa Vial 40ml - Hydrochloric Acid			
MW-48R_081524	240-209726-G-2	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-A-3	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-B-3	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-C-3	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-D-3	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-E-3	Voa Vial 40ml - Hydrochloric Acid			
MW-68_081524	240-209726-F-3	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-A-4	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-B-4	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-C-4	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-D-4	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-E-4	Voa Vial 40ml - Hydrochloric Acid			
MW-46_081524	240-209726-F-4	Voa Vial 40ml - Hydrochloric Acid			

DATA VERIFICATION REPORT



August 30, 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: 209726-1

Sample date: 2024-08-15

Report received by CADENA: 2024-08-29

Initial Data Verification completed by CADENA: 2024-08-30

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, 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: 209726-1

Sample Name: TRIP BLANK_9	MW-48R_081524	MW-68_081524	MW-46_081524
Lab Sample ID: 2402097261	2402097262	2402097263	2402097264
Sample Date: 8/15/2024	8/15/2024	8/15/2024	8/15/2024

Analyte	Cas No.	TRIP BLANK_9				MW-48R_081524				MW-68_081524				MW-46_081524			
		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	---	0.78	1.0	ug/l	J	0.84	1.0	ug/l	J
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	---	3.4	1.0	ug/l	---	4.1	1.0	ug/l	---

OSW-8260DSIM

1,4-Dioxane	123-91-1					9.0	2.0	ug/l	---	2.0	2.0	ug/l	---	3.3	2.0	ug/l	---
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