

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-176843-1

Eurofins Canton

Job Notes

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Authorization



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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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/Site: Ford LTP - On Site

Job ID: 240-176843-1

Job ID: 240-176843-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-176843-1

Comments

No additional comments.

Receipt

The samples were received on 11/19/2022 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 was 3.1° C.

GC/MS VOA

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

VOA Prep

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

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Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CAN
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET CAN
5030C	Purge and Trap	SW846	EET CAN

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

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Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176843-1	TRIP BLANK_162	Water	11/17/22 00:00	11/19/22 08:00
240-176843-2	MW-47_111722	Water	11/17/22 11:55	11/19/22 08:00
240-176843-3	MW-68_111722	Water	11/17/22 13:10	11/19/22 08:00
240-176843-4	MW-218S_111722	Water	11/17/22 14:10	11/19/22 08:00
240-176843-5	DUP-03	Water	11/17/22 00:00	11/19/22 08:00

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- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: TRIP BLANK_162

Lab Sample ID: 240-176843-1

No Detections.

Client Sample ID: MW-47_111722

Lab Sample ID: 240-176843-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.9		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.96	J	1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	8.0		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-68_111722

Lab Sample ID: 240-176843-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	25		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.9		1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	27		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-218S_111722

Lab Sample ID: 240-176843-4

No Detections.

Client Sample ID: DUP-03

Lab Sample ID: 240-176843-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	4.8		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.74	J	1.0	0.51	ug/L	1		8260D	Total/NA
Vinyl chloride	5.4		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 - On Site

Job ID: 240-176843-1

Client Sample ID: TRIP BLANK_162

Lab Sample ID: 240-176843-1

Date Collected: 11/17/22 00:00

Matrix: Water

Date Received: 11/19/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 09:00	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 09:00	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 09:00	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 09:00	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 09:00	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 09:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		62 - 137		11/29/22 09:00	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/29/22 09:00	1
Toluene-d8 (Surr)	100		78 - 122		11/29/22 09:00	1
Dibromofluoromethane (Surr)	95		73 - 120		11/29/22 09:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: MW-47_111722

Lab Sample ID: 240-176843-2

Date Collected: 11/17/22 11:55

Matrix: Water

Date Received: 11/19/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/29/22 01:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		66 - 120					11/29/22 01:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 12:23	1
cis-1,2-Dichloroethene	5.9		1.0	0.46	ug/L			11/29/22 12:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 12:23	1
trans-1,2-Dichloroethene	0.96	J	1.0	0.51	ug/L			11/29/22 12:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 12:23	1
Vinyl chloride	8.0		1.0	0.45	ug/L			11/29/22 12:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		62 - 137					11/29/22 12:23	1
4-Bromofluorobenzene (Surr)	99		56 - 136					11/29/22 12:23	1
Toluene-d8 (Surr)	103		78 - 122					11/29/22 12:23	1
Dibromofluoromethane (Surr)	99		73 - 120					11/29/22 12:23	1

Client Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: MW-68_111722

Lab Sample ID: 240-176843-3

Date Collected: 11/17/22 13:10

Matrix: Water

Date Received: 11/19/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/29/22 04:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		66 - 120					11/29/22 04:38	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 12:49	1
cis-1,2-Dichloroethene	25		1.0	0.46	ug/L			11/29/22 12:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 12:49	1
trans-1,2-Dichloroethene	2.9		1.0	0.51	ug/L			11/29/22 12:49	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 12:49	1
Vinyl chloride	27		1.0	0.45	ug/L			11/29/22 12:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					11/29/22 12:49	1
4-Bromofluorobenzene (Surr)	97		56 - 136					11/29/22 12:49	1
Toluene-d8 (Surr)	103		78 - 122					11/29/22 12:49	1
Dibromofluoromethane (Surr)	100		73 - 120					11/29/22 12:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: MW-218S_111722

Lab Sample ID: 240-176843-4

Date Collected: 11/17/22 14:10

Matrix: Water

Date Received: 11/19/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/29/22 07:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 120		11/29/22 07:13	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 13:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 13:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 13:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 13:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		11/29/22 13:14	1
4-Bromofluorobenzene (Surr)	101		56 - 136		11/29/22 13:14	1
Toluene-d8 (Surr)	103		78 - 122		11/29/22 13:14	1
Dibromofluoromethane (Surr)	101		73 - 120		11/29/22 13:14	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: DUP-03

Lab Sample ID: 240-176843-5

Date Collected: 11/17/22 00:00

Matrix: Water

Date Received: 11/19/22 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/29/22 07:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		66 - 120					11/29/22 07:37	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			11/29/22 13:39	1
cis-1,2-Dichloroethene	4.8		1.0	0.46	ug/L			11/29/22 13:39	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:39	1
trans-1,2-Dichloroethene	0.74	J	1.0	0.51	ug/L			11/29/22 13:39	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 13:39	1
Vinyl chloride	5.4		1.0	0.45	ug/L			11/29/22 13:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		62 - 137					11/29/22 13:39	1
4-Bromofluorobenzene (Surr)	100		56 - 136					11/29/22 13:39	1
Toluene-d8 (Surr)	103		78 - 122					11/29/22 13:39	1
Dibromofluoromethane (Surr)	99		73 - 120					11/29/22 13:39	1

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (62-137)	BFB (56-136)	TOL (78-122)	DBFM (73-120)
240-176843-1	TRIP BLANK_162	86	96	100	95
240-176843-2	MW-47_111722	91	99	103	99
240-176843-3	MW-68_111722	92	97	103	100
240-176843-4	MW-218S_111722	93	101	103	101
240-176843-5	DUP-03	92	100	103	99
240-176843-5 MS	DUP-03	85	99	104	99
240-176843-5 MSD	DUP-03	83	98	104	96
LCS 240-553659/3	Lab Control Sample	84	101	105	97
MB 240-553659/4	Method Blank	91	99	101	97

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

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA
		(66-120)
240-176838-B-2 MS	Matrix Spike	98
240-176838-B-2 MSD	Matrix Spike Duplicate	102
240-176843-2	MW-47_111722	106
240-176843-3	MW-68_111722	103
240-176843-4	MW-218S_111722	104
240-176843-5	DUP-03	99
240-176901-I-2 MS	Matrix Spike	99
240-176901-O-2 MSD	Matrix Spike Duplicate	104
LCS 240-553632/3	Lab Control Sample	96
LCS 240-553633/3	Lab Control Sample	109
MB 240-553632/4	Method Blank	102
MB 240-553633/4	Method Blank	102

Surrogate Legend

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

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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

Lab Sample ID: MB 240-553659/4
Matrix: Water
Analysis Batch: 553659

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 06:53	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/29/22 06:53	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 06:53	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/29/22 06:53	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/29/22 06:53	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/29/22 06:53	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	91		62 - 137		11/29/22 06:53	1
4-Bromofluorobenzene (Surr)	99		56 - 136		11/29/22 06:53	1
Toluene-d8 (Surr)	101		78 - 122		11/29/22 06:53	1
Dibromofluoromethane (Surr)	97		73 - 120		11/29/22 06:53	1

Lab Sample ID: LCS 240-553659/3
Matrix: Water
Analysis Batch: 553659

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	27.3		ug/L		109	63 - 134
cis-1,2-Dichloroethene	25.0	24.4		ug/L		97	77 - 123
Tetrachloroethene	25.0	25.0		ug/L		100	76 - 123
trans-1,2-Dichloroethene	25.0	23.4		ug/L		94	75 - 124
Trichloroethene	25.0	23.4		ug/L		94	70 - 122
Vinyl chloride	25.0	25.3		ug/L		101	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	84		62 - 137
4-Bromofluorobenzene (Surr)	101		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	97		73 - 120

Lab Sample ID: 240-176843-5 MS
Matrix: Water
Analysis Batch: 553659

Client Sample ID: DUP-03
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	1.0	U	25.0	28.4		ug/L		114	56 - 135
cis-1,2-Dichloroethene	4.8		25.0	32.9		ug/L		112	66 - 128
Tetrachloroethene	1.0	U	25.0	24.7		ug/L		99	62 - 131
trans-1,2-Dichloroethene	0.74	J	25.0	24.1		ug/L		93	56 - 136
Trichloroethene	1.0	U	25.0	23.0		ug/L		92	61 - 124
Vinyl chloride	5.4		25.0	32.1		ug/L		107	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	104		78 - 122

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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

Lab Sample ID: 240-176843-5 MS
Matrix: Water
Analysis Batch: 553659

Client Sample ID: DUP-03
Prep Type: Total/NA

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

Lab Sample ID: 240-176843-5 MSD
Matrix: Water
Analysis Batch: 553659

Client Sample ID: DUP-03
Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD		Unit	D	%Rec	%Rec		RPD	Limit
	Result	Qualifier		Result	Qualifier				Limits	RPD		
1,1-Dichloroethene	1.0	U	25.0	27.2		ug/L		109	56 - 135	4	26	
cis-1,2-Dichloroethene	4.8		25.0	31.3		ug/L		106	66 - 128	5	14	
Tetrachloroethene	1.0	U	25.0	24.2		ug/L		97	62 - 131	2	20	
trans-1,2-Dichloroethene	0.74	J	25.0	23.2		ug/L		90	56 - 136	4	15	
Trichloroethene	1.0	U	25.0	22.6		ug/L		90	61 - 124	2	15	
Vinyl chloride	5.4		25.0	30.9		ug/L		102	43 - 157	4	24	

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	83		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	96		73 - 120

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

Lab Sample ID: MB 240-553632/4
Matrix: Water
Analysis Batch: 553632

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dioxane	2.0	U	2.0	0.86	ug/L		11/28/22 16:04	1	

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	102		66 - 120	11/28/22 16:04	1	

Lab Sample ID: LCS 240-553632/3
Matrix: Water
Analysis Batch: 553632

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

Analyte	Spike	LCS LCS		Unit	D	%Rec	%Rec
		Result	Qualifier				
1,4-Dioxane	10.0	9.87		ug/L		99	80 - 122

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	96		66 - 120

Lab Sample ID: 240-176838-B-2 MS
Matrix: Water
Analysis Batch: 553632

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

Analyte	Sample	Sample	Spike	MS MS		Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,4-Dioxane	2.0	U	10.0	9.65		ug/L		96	51 - 153

Eurofins Canton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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

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

Lab Sample ID: 240-176838-B-2 MSD
Matrix: Water
Analysis Batch: 553632

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	2.0	U	10.0	9.68		ug/L		97	51 - 153	0	16

	MSD	MSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		66 - 120

Lab Sample ID: MB 240-553633/4
Matrix: Water
Analysis Batch: 553633

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/29/22 03:25	1

	MB	MB		Prepared	Analyzed	Dil Fac
Surrogate	%Recovery	Qualifier	Limits			
1,2-Dichloroethane-d4 (Surr)	102		66 - 120		11/29/22 03:25	1

Lab Sample ID: LCS 240-553633/3
Matrix: Water
Analysis Batch: 553633

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	9.98		ug/L		100	80 - 122

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	109		66 - 120

Lab Sample ID: 240-176901-I-2 MS
Matrix: Water
Analysis Batch: 553633

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	2.1		10.0	12.7		ug/L		107	51 - 153

	MS	MS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		66 - 120

Lab Sample ID: 240-176901-O-2 MSD
Matrix: Water
Analysis Batch: 553633

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	2.1		10.0	12.5		ug/L		104	51 - 153	2	16

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

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

Lab Sample ID: 240-176901-O-2 MSD
Matrix: Water
Analysis Batch: 553633

Client Sample ID: Matrix Spike Duplicate
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)	104		66 - 120

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QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

GC/MS VOA

Analysis Batch: 553632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176843-2	MW-47_111722	Total/NA	Water	8260D SIM	
MB 240-553632/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553632/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176838-B-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176838-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553633

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176843-3	MW-68_111722	Total/NA	Water	8260D SIM	
240-176843-4	MW-218S_111722	Total/NA	Water	8260D SIM	
240-176843-5	DUP-03	Total/NA	Water	8260D SIM	
MB 240-553633/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553633/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176901-I-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176901-O-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553659

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176843-1	TRIP BLANK_162	Total/NA	Water	8260D	
240-176843-2	MW-47_111722	Total/NA	Water	8260D	
240-176843-3	MW-68_111722	Total/NA	Water	8260D	
240-176843-4	MW-218S_111722	Total/NA	Water	8260D	
240-176843-5	DUP-03	Total/NA	Water	8260D	
MB 240-553659/4	Method Blank	Total/NA	Water	8260D	
LCS 240-553659/3	Lab Control Sample	Total/NA	Water	8260D	
240-176843-5 MS	DUP-03	Total/NA	Water	8260D	
240-176843-5 MSD	DUP-03	Total/NA	Water	8260D	

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Client Sample ID: TRIP BLANK_162

Lab Sample ID: 240-176843-1

Date Collected: 11/17/22 00:00

Matrix: Water

Date Received: 11/19/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553659	CS	EET CAN	11/29/22 09:00

Client Sample ID: MW-47_111722

Lab Sample ID: 240-176843-2

Date Collected: 11/17/22 11:55

Matrix: Water

Date Received: 11/19/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553659	CS	EET CAN	11/29/22 12:23
Total/NA	Analysis	8260D SIM		1	553632	CS	EET CAN	11/29/22 01:24

Client Sample ID: MW-68_111722

Lab Sample ID: 240-176843-3

Date Collected: 11/17/22 13:10

Matrix: Water

Date Received: 11/19/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553659	CS	EET CAN	11/29/22 12:49
Total/NA	Analysis	8260D SIM		1	553633	CS	EET CAN	11/29/22 04:38

Client Sample ID: MW-218S_111722

Lab Sample ID: 240-176843-4

Date Collected: 11/17/22 14:10

Matrix: Water

Date Received: 11/19/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553659	CS	EET CAN	11/29/22 13:14
Total/NA	Analysis	8260D SIM		1	553633	CS	EET CAN	11/29/22 07:13

Client Sample ID: DUP-03

Lab Sample ID: 240-176843-5

Date Collected: 11/17/22 00:00

Matrix: Water

Date Received: 11/19/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553659	CS	EET CAN	11/29/22 13:39
Total/NA	Analysis	8260D SIM		1	553633	CS	EET CAN	11/29/22 07:37

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Ford LTP - On Site

Job ID: 240-176843-1

Laboratory: Eurofins Canton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
California	State	2927	02-27-23
Connecticut	State	PH-0590	12-31-23
Florida	NELAP	E87225	06-30-23
Georgia	State	4062	02-27-23
Illinois	NELAP	200004	07-31-23
Iowa	State	421	06-01-23
Kentucky (UST)	State	112225	02-27-23
Kentucky (WW)	State	KY98016	12-31-22
Minnesota	NELAP	039-999-348	12-31-22
Minnesota (Petrofund)	State	3506	08-01-23
New Jersey	NELAP	OH001	06-30-23
New York	NELAP	10975	04-01-23
Ohio	State	8303	02-27-23
Ohio VAP	State	CL0024	02-27-23
Oregon	NELAP	4062	02-27-23
Pennsylvania	NELAP	68-00340	08-31-23
Texas	NELAP	T104704517-22-17	08-31-23
Virginia	NELAP	460175	09-14-23
Washington	State	C971	01-12-23
West Virginia DEP	State	210	12-31-22

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

Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford I, TP On-Site
 Project Number: 30146655.401.03
 PO # 30146655.401.03

Client Project Manager: Kris Hinsky
 Telephone: 248-994-2240
 Email: kris@hinky.hinsky@arcadis.com
 Sample Name: **Sommer Guy**
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Site Contact: Christina Weaver
 Telephone: 248-994-2293
 Analysis Turnaround Time
 TAT if different from below:
 3 weeks
 2 weeks
 1 week
 2 days
 1 day

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives						Filtered Sample (Y / N)	Composite C / Grab G	Analyses					Sample Specific Notes / Special Instructions	
			Air	Aqueous	Solid	Other	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH			Other	1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B		TCE 8260B
TRIP BLANK_162		---	1													X	X	X	X	X	1 Trip Blank
MW-47-111722	11/17/22	1155	6													X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-68-111722	11/17/22	1310	6													X	X	X	X	X	
MW-218S-111722	11/17/22	1410	6													X	X	X	X	X	
DUP-03	11/17/22	---	6													X	X	X	X	X	



Possible Hazard Identification
 Non-Hazard Flammable Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:
 Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>Sommer Guy</i>	Arcadis	11/17/22 1510	Nony Cold Storage	Arcadis	11/17/22 1510
<i>Christina Weaver</i>	ARCADIS	11/18/22 0945	<i>J. Hinkle</i>	EGTA	11/18/22 0945
<i>Jenni Hinkle</i>	EGTA	11-18-22 1002	<i>M. J. Hinkle</i>	EEC	11/19/22 8:00

TestAmerica Laboratories, Inc.
 COC No:
 For lab use only:
 Walk-in client
 Lab sampling
 Job/SDG No:
 Sample Specific Notes / Special Instructions

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Eurofins - Canton Sample Receipt Form/Narrative Login # : 1716843
Barberton Facility

Client ARCADIS Site Name _____ Cooler unpacked by: M. S. S.
Cooler Received on 11/19/22 Opened on 11/19/22
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins Courier Other _____
Receipt After-hours: Drop-off Date/Time _____ **Storage Location** _____

Eurofins Cooler # EC Foam Box _____ Client Cooler _____ Box _____ Other _____
Packing material used: Bubble Wrap Foam Plastic Bag None Other _____
COOLANT: Wet Ice Blue Ice Dry Ice Water None _____

1. Cooler temperature upon receipt See Multiple Cooler Form
IR GUN# IR-13 (CF +0.7°C) Observed Cooler Temp. 2.4 °C Corrected Cooler Temp. 3.1 °C
IR GUN #IR-15 (CF 0.0°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
-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)? 11-21-22
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# HC286797
14. Were VOAs on the COC? Yes No NA
15. Were air bubbles >6 mm in any VOA vials? Yes No NA **● ← Larger than this.**
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0104201G Yes No NA
17. Was a LL Hg or Me Hg trip blank present? Yes No

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

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

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

19. SAMPLE CONDITION
Sample(s) _____ were received after the recommended holding time had expired.
Sample(s) _____ were received in a broken container.
Sample(s) _____ were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION
Sample(s) _____ were further preserved in the laboratory.
Time preserved: _____ Preservative(s) added/Lot number(s): _____
VOA Sample Preservation - Date/Time VOAs Frozen: _____

DATA VERIFICATION REPORT



December 06, 2022

Kris Hinskey
Arcadis of Michigan
28550 Cabot Drive
Suite 500
Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE -Soil Gas, Ground water and Soil

Project number: 30146655.401.03- onsite groundwater

Event Specific Scope of Work References: Sample COC

Laboratory: Eurofins Environment Testing LLC - Barberton

Laboratory submittal: 176843-1

Sample date: 2022-11-17

Report received by CADENA: 2022-12-06

Initial Data Verification completed by CADENA: 2022-12-06

Number of Samples:5

Sample Matrices:Water

Test Categories:GCMS VOC

Please see attached criteria report or sample result/qualified analytical result summary for qualifier flags assigned to sample data.

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 - Barberton

Laboratory Submittal: 176843-1

Analyte	Cas No.	Sample Name: TRIP BLANK_162				Sample Name: MW-47_111722				Sample Name: MW-68_111722				Sample Name: MW-218S_111722				Sample Name: DUP-03			
		Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid
GC/MS VOC																					
<u>OSW-8260D</u>																					
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	5.9	1.0	ug/l	---	25	1.0	ug/l	---	ND	1.0	ug/l	---	4.8	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	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	0.96	1.0	ug/l	J	2.9	1.0	ug/l	---	ND	1.0	ug/l	---	0.74	1.0	ug/l	J
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	8.0	1.0	ug/l	---	27	1.0	ug/l	---	ND	1.0	ug/l	---	5.4	1.0	ug/l	---
<u>OSW-8260DSIM</u>																					
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---	ND	2.0	ug/l	---