

 **ANALYTICAL REPORT****PREPARED FOR**

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-175774-1



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Definitions/Glossary

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

Job ID: 240-175774-1

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: 240-175774-1

Job ID: 240-175774-1

Laboratory: Eurofins Canton

Narrative

**Job Narrative
240-175774-1**

Receipt

The samples were received on 11/3/2022 9:45 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 0.8°C and 1.3°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 - On Site

Job ID: 240-175774-1

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: 240-175774-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-175774-1	TRIP BLANK_45	Water	11/02/22 00:00	11/03/22 09:45
240-175774-2	MW-51_110222	Water	11/02/22 09:05	11/03/22 09:45
240-175774-3	MW-19_110222	Water	11/02/22 09:55	11/03/22 09:45
240-175774-4	MW-69_110222	Water	11/02/22 11:00	11/03/22 09:45

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Detection Summary

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

Job ID: 240-175774-1

Client Sample ID: TRIP BLANK_45

Lab Sample ID: 240-175774-1

No Detections.

Client Sample ID: MW-51_110222

Lab Sample ID: 240-175774-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	4.0		2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.75	J	1.0	0.46	ug/L	1		8260D	Total/NA

Client Sample ID: MW-19_110222

Lab Sample ID: 240-175774-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	240		6.0	2.6	ug/L	3		8260D SIM	Total/NA
cis-1,2-Dichloroethene	0.97	J	1.0	0.46	ug/L	1		8260D	Total/NA
Trichloroethene	0.89	J	1.0	0.44	ug/L	1		8260D	Total/NA
Vinyl chloride	0.89	J	1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-69_110222

Lab Sample ID: 240-175774-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	17		2.0	0.86	ug/L	1		8260D SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Canton

Client Sample Results

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

Job ID: 240-175774-1

Client Sample ID: TRIP BLANK_45

Lab Sample ID: 240-175774-1

Date Collected: 11/02/22 00:00

Matrix: Water

Date Received: 11/03/22 09:45

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			11/14/22 16:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/14/22 16:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 16:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/14/22 16:24	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 16:24	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/14/22 16:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/14/22 16:24	1
4-Bromofluorobenzene (Surr)	79		56 - 136		11/14/22 16:24	1
Toluene-d8 (Surr)	92		78 - 122		11/14/22 16:24	1
Dibromofluoromethane (Surr)	95		73 - 120		11/14/22 16:24	1

Client Sample Results

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

Job ID: 240-175774-1

Client Sample ID: MW-51_110222

Lab Sample ID: 240-175774-2

Date Collected: 11/02/22 09:05

Matrix: Water

Date Received: 11/03/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	4.0		2.0	0.86	ug/L			11/11/22 21:38	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120		11/11/22 21:38	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			11/14/22 18:05	1
cis-1,2-Dichloroethene	0.75	J	1.0	0.46	ug/L			11/14/22 18:05	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 18:05	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/14/22 18:05	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 18:05	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/14/22 18:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		11/14/22 18:05	1
4-Bromofluorobenzene (Surr)	80		56 - 136		11/14/22 18:05	1
Toluene-d8 (Surr)	94		78 - 122		11/14/22 18:05	1
Dibromofluoromethane (Surr)	101		73 - 120		11/14/22 18:05	1

Client Sample Results

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

Job ID: 240-175774-1

Client Sample ID: MW-19_110222

Lab Sample ID: 240-175774-3

Date Collected: 11/02/22 09:55

Matrix: Water

Date Received: 11/03/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	240		6.0	2.6	ug/L			11/13/22 06:43	3
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		66 - 120					11/13/22 06:43	3

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			11/14/22 18:30	1
cis-1,2-Dichloroethene	0.97	J	1.0	0.46	ug/L			11/14/22 18:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 18:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/14/22 18:30	1
Trichloroethene	0.89	J	1.0	0.44	ug/L			11/14/22 18:30	1
Vinyl chloride	0.89	J	1.0	0.45	ug/L			11/14/22 18:30	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		62 - 137					11/14/22 18:30	1
4-Bromofluorobenzene (Surr)	81		56 - 136					11/14/22 18:30	1
Toluene-d8 (Surr)	93		78 - 122					11/14/22 18:30	1
Dibromofluoromethane (Surr)	98		73 - 120					11/14/22 18:30	1

Client Sample Results

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

Job ID: 240-175774-1

Client Sample ID: MW-69_110222

Lab Sample ID: 240-175774-4

Date Collected: 11/02/22 11:00

Matrix: Water

Date Received: 11/03/22 09:45

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	17		2.0	0.86	ug/L			11/11/22 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120		11/11/22 22:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/14/22 18:55	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/14/22 18:55	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 18:55	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/14/22 18:55	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 18:55	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/14/22 18:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/14/22 18:55	1
4-Bromofluorobenzene (Surr)	78		56 - 136		11/14/22 18:55	1
Toluene-d8 (Surr)	93		78 - 122		11/14/22 18:55	1
Dibromofluoromethane (Surr)	98		73 - 120		11/14/22 18:55	1

Surrogate Summary

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

Job ID: 240-175774-1

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)
240-175774-1	TRIP BLANK_45	96	79	92	95
240-175774-2	MW-51_110222	103	80	94	101
240-175774-3	MW-19_110222	100	81	93	98
240-175774-4	MW-69_110222	96	78	93	98
240-175886-L-3 MS	Matrix Spike	93	98	98	96
240-175886-N-3 MSD	Matrix Spike Duplicate	92	96	96	95
LCS 240-551823/5	Lab Control Sample	86	93	98	94
MB 240-551823/8	Method Blank	95	81	93	95

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)
240-175774-2	MW-51_110222	108
240-175774-3	MW-19_110222	110
240-175774-4	MW-69_110222	108
240-175783-J-3 MS	Matrix Spike	106
240-175783-N-3 MSD	Matrix Spike Duplicate	106
240-175891-G-8 MS	Matrix Spike	106
240-175891-O-8 MSD	Matrix Spike Duplicate	112
LCS 240-551642/3	Lab Control Sample	119
LCS 240-551689/3	Lab Control Sample	119
MB 240-551642/4	Method Blank	111
MB 240-551689/4	Method Blank	118

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-175774-1

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

Lab Sample ID: MB 240-551823/8
Matrix: Water
Analysis Batch: 551823

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			11/14/22 15:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/14/22 15:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 15:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/14/22 15:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/14/22 15:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/14/22 15:59	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	95		62 - 137		11/14/22 15:59	1
4-Bromofluorobenzene (Surr)	81		56 - 136		11/14/22 15:59	1
Toluene-d8 (Surr)	93		78 - 122		11/14/22 15:59	1
Dibromofluoromethane (Surr)	95		73 - 120		11/14/22 15:59	1

Lab Sample ID: LCS 240-551823/5
Matrix: Water
Analysis Batch: 551823

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	29.7		ug/L		119	63 - 134
cis-1,2-Dichloroethene	25.0	26.5		ug/L		106	77 - 123
Tetrachloroethene	25.0	24.2		ug/L		97	76 - 123
trans-1,2-Dichloroethene	25.0	26.8		ug/L		107	75 - 124
Trichloroethene	25.0	24.4		ug/L		98	70 - 122
Vinyl chloride	12.5	12.5		ug/L		100	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	86		62 - 137
4-Bromofluorobenzene (Surr)	93		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-175886-L-3 MS
Matrix: Water
Analysis Batch: 551823

Client Sample ID: Matrix Spike
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	27.1		ug/L		108	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	25.2		ug/L		101	66 - 128
Tetrachloroethene	1.0	U	25.0	23.0		ug/L		92	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	24.5		ug/L		98	56 - 136
Trichloroethene	1.0	U	25.0	22.1		ug/L		89	61 - 124
Vinyl chloride	1.0	U	12.5	10.0		ug/L		80	43 - 157

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

QC Sample Results

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

Job ID: 240-175774-1

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

Lab Sample ID: 240-175886-L-3 MS
Matrix: Water
Analysis Batch: 551823

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

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	96		73 - 120

Lab Sample ID: 240-175886-N-3 MSD
Matrix: Water
Analysis Batch: 551823

Client Sample ID: Matrix Spike Duplicate
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	0	26	
cis-1,2-Dichloroethene	1.0	U	25.0	24.3		ug/L		97	66 - 128	4	14	
Tetrachloroethene	1.0	U	25.0	21.9		ug/L		88	62 - 131	5	20	
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136	4	15	
Trichloroethene	1.0	U	25.0	21.1		ug/L		85	61 - 124	5	15	
Vinyl chloride	1.0	U	12.5	10.0		ug/L		80	43 - 157	0	24	

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

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

Lab Sample ID: MB 240-551642/4
Matrix: Water
Analysis Batch: 551642

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			11/11/22 17:29	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	111		66 - 120		11/11/22 17:29	1

Lab Sample ID: LCS 240-551642/3
Matrix: Water
Analysis Batch: 551642

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

Analyte	Spike	LCS		Unit	D	%Rec	%Rec
		Result	Qualifier				
1,4-Dioxane	10.0	9.82		ug/L		98	80 - 122

Surrogate	LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: 240-175783-J-3 MS
Matrix: Water
Analysis Batch: 551642

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

Analyte	Sample	Sample	Spike	MS		Unit	D	%Rec	%Rec
	Result	Qualifier		Result	Qualifier				
1,4-Dioxane	2.0	U	10.0	9.98		ug/L		100	51 - 153

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QC Sample Results

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

Job ID: 240-175774-1

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

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

Lab Sample ID: 240-175783-N-3 MSD
Matrix: Water
Analysis Batch: 551642

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	2.0	U	10.0	9.47		ug/L		95	51 - 153	5	16

	<i>MSD</i>	<i>MSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

Lab Sample ID: MB 240-551689/4
Matrix: Water
Analysis Batch: 551689

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

<i>Analyte</i>	<i>MB Result</i>	<i>MB Qualifier</i>	<i>RL</i>	<i>MDL</i>	<i>Unit</i>	<i>D</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/13/22 05:54	1

	<i>MB</i>	<i>MB</i>		<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>			
1,2-Dichloroethane-d4 (Surr)	118		66 - 120		11/13/22 05:54	1

Lab Sample ID: LCS 240-551689/3
Matrix: Water
Analysis Batch: 551689

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

<i>Analyte</i>	<i>Spike Added</i>	<i>LCS Result</i>	<i>LCS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,4-Dioxane	10.0	9.78		ug/L		98	80 - 122

	<i>LCS</i>	<i>LCS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	119		66 - 120

Lab Sample ID: 240-175891-G-8 MS
Matrix: Water
Analysis Batch: 551689

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

<i>Analyte</i>	<i>Sample Result</i>	<i>Sample Qualifier</i>	<i>Spike Added</i>	<i>MS Result</i>	<i>MS Qualifier</i>	<i>Unit</i>	<i>D</i>	<i>%Rec</i>	<i>%Rec Limits</i>
1,4-Dioxane	2.1		10.0	11.7		ug/L		96	51 - 153

	<i>MS</i>	<i>MS</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
1,2-Dichloroethane-d4 (Surr)	106		66 - 120

Lab Sample ID: 240-175891-O-8 MSD
Matrix: Water
Analysis Batch: 551689

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	2.1		10.0	11.5		ug/L		94	51 - 153	1	16

QC Sample Results

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

Job ID: 240-175774-1

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

Lab Sample ID: 240-175891-O-8 MSD
Matrix: Water
Analysis Batch: 551689

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)	112		66 - 120

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QC Association Summary

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

Job ID: 240-175774-1

GC/MS VOA

Analysis Batch: 551642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175774-2	MW-51_110222	Total/NA	Water	8260D SIM	
240-175774-4	MW-69_110222	Total/NA	Water	8260D SIM	
MB 240-551642/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551642/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175783-J-3 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-175783-N-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 551689

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175774-3	MW-19_110222	Total/NA	Water	8260D SIM	
MB 240-551689/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-551689/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-175891-G-8 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-175891-O-8 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 551823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-175774-1	TRIP BLANK_45	Total/NA	Water	8260D	
240-175774-2	MW-51_110222	Total/NA	Water	8260D	
240-175774-3	MW-19_110222	Total/NA	Water	8260D	
240-175774-4	MW-69_110222	Total/NA	Water	8260D	
MB 240-551823/8	Method Blank	Total/NA	Water	8260D	
LCS 240-551823/5	Lab Control Sample	Total/NA	Water	8260D	
240-175886-L-3 MS	Matrix Spike	Total/NA	Water	8260D	
240-175886-N-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-175774-1

Client Sample ID: TRIP BLANK_45

Lab Sample ID: 240-175774-1

Date Collected: 11/02/22 00:00

Matrix: Water

Date Received: 11/03/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551823	SAM	EET CAN	11/14/22 16:24

Client Sample ID: MW-51_110222

Lab Sample ID: 240-175774-2

Date Collected: 11/02/22 09:05

Matrix: Water

Date Received: 11/03/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551823	SAM	EET CAN	11/14/22 18:05
Total/NA	Analysis	8260D SIM		1	551642	CS	EET CAN	11/11/22 21:38

Client Sample ID: MW-19_110222

Lab Sample ID: 240-175774-3

Date Collected: 11/02/22 09:55

Matrix: Water

Date Received: 11/03/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551823	SAM	EET CAN	11/14/22 18:30
Total/NA	Analysis	8260D SIM		3	551689	CS	EET CAN	11/13/22 06:43

Client Sample ID: MW-69_110222

Lab Sample ID: 240-175774-4

Date Collected: 11/02/22 11:00

Matrix: Water

Date Received: 11/03/22 09:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	551823	SAM	EET CAN	11/14/22 18:55
Total/NA	Analysis	8260D SIM		1	551642	CS	EET CAN	11/11/22 22:27

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: 240-175774-1

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

Client Contact Company Name: Arcadis Address: 28550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240		Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other	
Client Project Manager: Kris Hinskey Telephone: 248-994-2240 Email: kris@hinskey.com		Lab Contact: Mike DelMonico Telephone: 330-497-9396	
Site Contact: Christina Weaver Telephone: 248-994-2293 Email: kris@hinskey.com		Analyses 1,4-Dioxane 8260B SIM Vinyl Chloride 8260B TCE 8260B PCE 8260B Trans-1,2-DCE 8260B Cis-1,2-DCE 8260B 1,1-DCE 8260B	
Sampler Name: Christiana Gamido Method of Shipment/Carrier: Shipping/Tracking No:		Filtered Sample (Y/N) Composite=C / Grab=C TAT if different from below: 10 day <input checked="" type="checkbox"/> 3 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day <input type="checkbox"/>	
Sample Identification TRIP BLANK_45 MW-51-110221 MW-14-110221 MW-69-110221		Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc NaOH Other:	
Matrix Air Aqueous Sediment Solid Other:		Sample Time --- 11/2/22 905 I 955 1100	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Inflammable <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jromalle@cadenaco.com, Cadena #E203728 Level IV Reporting requested.		240-175774 Chain of Custody 	
Relinquished by: Christiana Gamido		Received by: Novi Cold Storage	
Relinquished by: Sommer & Jung		Received by: Arcadis	
Relinquished by: [Signature]		Received in Laboratory by: [Signature]	
Date/Time: 11/2/22 1200		Date/Time: 11/2/22 1200	
Date/Time: 11/2/22 1410		Date/Time: 11/2/22 1400	
Date/Time: 11/2/22 1530		Date/Time: 11/2/22 1500	

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Client Arcadis Site Name _____ Cooler unpacked by: OW

Cooler Received on 11-3-22 Opened on 11-3-22

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. _____ °C Corrected Cooler Temp. _____ °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 Lea 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)?

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

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 # 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 _____

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) 1x40mL for TB-45 were received with bubble >6 mm in diameter. (Notify PM)

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.

Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

Eurofins Canton

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing North Central, LLC and its client. All questions regarding this report should be directed to the Eurofins Environment Testing North Central, LLC Project Manager who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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11/16/2022 3:04:30 PM

Authorized for release by
Michael DeMonico, Project Manager I
Michael.DeMonico@et.eurofinsus.com
(330)497-9396

DATA VERIFICATION REPORT



November 17, 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: 175774-1
Sample date: 2022-11-02
Report received by CADENA: 2022-11-16
Initial Data Verification completed by CADENA: 2022-11-17
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.

There were no significant QC anomalies or exceptions to report.

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 - Barberton

Laboratory Submittal: 175774-1

Analyte	Cas No.	Sample Name: TRIP BLANK_45				MW-51_110222				MW-19_110222				MW-69_110222			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
		2401757741				2401757742				2401757743				2401757744			
		11/2/2022				11/2/2022				11/2/2022				11/2/2022			

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	---	0.75	1.0	ug/l	J	0.97	1.0	ug/l	J	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.89	1.0	ug/l	J	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	0.89	1.0	ug/l	J	ND	1.0	ug/l	---

OSW-8260DSIM

1,4-Dioxane	123-91-1					4.0	2.0	ug/l	---	240	6.0	ug/l	---	17	2.0	ug/l	---
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