

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-200149-1

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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 - On Site

Job ID: 240-200149-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
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 - On Site

Job ID: 240-200149-1

Job ID: 240-200149-1

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Job Narrative 240-200149-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt

The samples were received on 2/28/2024 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.3°C, 2.6°C, 3.1°C and 4.2°C.

GC/MS VOA

Method 8260D_SIM: The following sample(s) was unable to be prepared and/or analyzed due to machine error : MS/MSD.

Method 8260D_SIM: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-44_022224 (240-200149-4). Elevated reporting limits (RLs) are provided.

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: 240-200149-1

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 - On Site

Job ID: 240-200149-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-200149-1	TRIP BLANK_123	Water	02/22/24 00:00	02/28/24 10:00
240-200149-2	MW-195S_022224	Water	02/22/24 09:55	02/28/24 10:00
240-200149-3	MW-51_022224	Water	02/22/24 11:35	02/28/24 10:00
240-200149-4	MW-44_022224	Water	02/22/24 12:40	02/28/24 10:00
240-200149-5	MW-23_022224	Water	02/22/24 13:50	02/28/24 10:00
240-200149-6	MW-66_022224	Water	02/22/24 15:00	02/28/24 10:00

- 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 - On Site

Job ID: 240-200149-1

Client Sample ID: TRIP BLANK_123

Lab Sample ID: 240-200149-1

No Detections.

Client Sample ID: MW-195S_022224

Lab Sample ID: 240-200149-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	110		50	23	ug/L	50		8260D	Total/NA
trans-1,2-Dichloroethene	180		50	26	ug/L	50		8260D	Total/NA
Trichloroethene	2400		50	22	ug/L	50		8260D	Total/NA

Client Sample ID: MW-51_022224

Lab Sample ID: 240-200149-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.7	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA

Client Sample ID: MW-44_022224

Lab Sample ID: 240-200149-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	3.8	J	6.0	2.6	ug/L	3		8260D SIM	Total/NA
Vinyl chloride	86		5.0	2.3	ug/L	5		8260D	Total/NA

Client Sample ID: MW-23_022224

Lab Sample ID: 240-200149-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.4	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
cis-1,2-Dichloroethene	11000		500	230	ug/L	500		8260D	Total/NA
trans-1,2-Dichloroethene	570		500	260	ug/L	500		8260D	Total/NA
Trichloroethene	1000		500	220	ug/L	500		8260D	Total/NA
Vinyl chloride	330	J	500	230	ug/L	500		8260D	Total/NA

Client Sample ID: MW-66_022224

Lab Sample ID: 240-200149-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	1.9		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: 240-200149-1

Client Sample ID: TRIP BLANK_123

Lab Sample ID: 240-200149-1

Date Collected: 02/22/24 00:00

Matrix: Water

Date Received: 02/28/24 10:00

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			03/01/24 16:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/01/24 16:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 16:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/01/24 16:49	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 16:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/01/24 16:49	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		03/01/24 16:49	1
4-Bromofluorobenzene (Surr)	88		56 - 136		03/01/24 16:49	1
Toluene-d8 (Surr)	94		78 - 122		03/01/24 16:49	1
Dibromofluoromethane (Surr)	105		73 - 120		03/01/24 16:49	1

Client Sample Results

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

Job ID: 240-200149-1

Client Sample ID: MW-195S_022224

Lab Sample ID: 240-200149-2

Date Collected: 02/22/24 09:55

Matrix: Water

Date Received: 02/28/24 10:00

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			03/02/24 00:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	118		68 - 127					03/02/24 00:48	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	50	U	50	25	ug/L			03/04/24 13:36	50
cis-1,2-Dichloroethene	110		50	23	ug/L			03/04/24 13:36	50
Tetrachloroethene	50	U	50	22	ug/L			03/04/24 13:36	50
trans-1,2-Dichloroethene	180		50	26	ug/L			03/04/24 13:36	50
Trichloroethene	2400		50	22	ug/L			03/04/24 13:36	50
Vinyl chloride	50	U	50	23	ug/L			03/04/24 13:36	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137					03/04/24 13:36	50
4-Bromofluorobenzene (Surr)	88		56 - 136					03/04/24 13:36	50
Toluene-d8 (Surr)	92		78 - 122					03/04/24 13:36	50
Dibromofluoromethane (Surr)	109		73 - 120					03/04/24 13:36	50

Client Sample Results

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

Job ID: 240-200149-1

Client Sample ID: MW-51_022224

Lab Sample ID: 240-200149-3

Date Collected: 02/22/24 11:35

Matrix: Water

Date Received: 02/28/24 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.7	J	2.0	0.86	ug/L			03/05/24 12:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		68 - 127					03/05/24 12:56	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			03/04/24 13:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/04/24 13:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 13:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/04/24 13:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 13:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/04/24 13:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		62 - 137					03/04/24 13:59	1
4-Bromofluorobenzene (Surr)	89		56 - 136					03/04/24 13:59	1
Toluene-d8 (Surr)	92		78 - 122					03/04/24 13:59	1
Dibromofluoromethane (Surr)	108		73 - 120					03/04/24 13:59	1

Client Sample Results

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

Job ID: 240-200149-1

Client Sample ID: MW-44_022224

Lab Sample ID: 240-200149-4

Date Collected: 02/22/24 12:40

Matrix: Water

Date Received: 02/28/24 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	3.8	J	6.0	2.6	ug/L			03/04/24 18:09	3
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	119		68 - 127					03/04/24 18:09	3

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	5.0	U	5.0	2.5	ug/L			03/04/24 14:23	5
cis-1,2-Dichloroethene	5.0	U	5.0	2.3	ug/L			03/04/24 14:23	5
Tetrachloroethene	5.0	U	5.0	2.2	ug/L			03/04/24 14:23	5
trans-1,2-Dichloroethene	5.0	U	5.0	2.6	ug/L			03/04/24 14:23	5
Trichloroethene	5.0	U	5.0	2.2	ug/L			03/04/24 14:23	5
Vinyl chloride	86		5.0	2.3	ug/L			03/04/24 14:23	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137					03/04/24 14:23	5
4-Bromofluorobenzene (Surr)	89		56 - 136					03/04/24 14:23	5
Toluene-d8 (Surr)	93		78 - 122					03/04/24 14:23	5
Dibromofluoromethane (Surr)	105		73 - 120					03/04/24 14:23	5

Client Sample Results

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

Job ID: 240-200149-1

Client Sample ID: MW-23_022224

Lab Sample ID: 240-200149-5

Date Collected: 02/22/24 13:50

Matrix: Water

Date Received: 02/28/24 10:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	1.4	J	2.0	0.86	ug/L			03/04/24 18:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		68 - 127					03/04/24 18:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	500	U	500	250	ug/L			03/04/24 14:46	500
cis-1,2-Dichloroethene	11000		500	230	ug/L			03/04/24 14:46	500
Tetrachloroethene	500	U	500	220	ug/L			03/04/24 14:46	500
trans-1,2-Dichloroethene	570		500	260	ug/L			03/04/24 14:46	500
Trichloroethene	1000		500	220	ug/L			03/04/24 14:46	500
Vinyl chloride	330	J	500	230	ug/L			03/04/24 14:46	500
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		62 - 137					03/04/24 14:46	500
4-Bromofluorobenzene (Surr)	87		56 - 136					03/04/24 14:46	500
Toluene-d8 (Surr)	92		78 - 122					03/04/24 14:46	500
Dibromofluoromethane (Surr)	108		73 - 120					03/04/24 14:46	500

Client Sample Results

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

Job ID: 240-200149-1

Client Sample ID: MW-66_022224

Lab Sample ID: 240-200149-6

Date Collected: 02/22/24 15:00

Matrix: Water

Date Received: 02/28/24 10:00

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			03/04/24 18:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		68 - 127					03/04/24 18:57	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			03/04/24 15:10	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/04/24 15:10	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 15:10	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/04/24 15:10	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 15:10	1
Vinyl chloride	1.9		1.0	0.45	ug/L			03/04/24 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137					03/04/24 15:10	1
4-Bromofluorobenzene (Surr)	86		56 - 136					03/04/24 15:10	1
Toluene-d8 (Surr)	91		78 - 122					03/04/24 15:10	1
Dibromofluoromethane (Surr)	106		73 - 120					03/04/24 15:10	1

Surrogate Summary

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

Job ID: 240-200149-1

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)
240-200067-A-1 MS	Matrix Spike	110	95	94	104
240-200067-A-1 MSD	Matrix Spike Duplicate	108	97	95	101
240-200149-1	TRIP BLANK_123	112	88	94	105
240-200149-2	MW-195S_022224	112	88	92	109
240-200149-3	MW-51_022224	119	89	92	108
240-200149-4	MW-44_022224	114	89	93	105
240-200149-5	MW-23_022224	111	87	92	108
240-200149-6	MW-66_022224	108	86	91	106
240-200153-E-3 MS	Matrix Spike	104	98	95	100
240-200153-E-3 MSD	Matrix Spike Duplicate	104	95	95	98
LCS 240-604683/4	Lab Control Sample	102	99	99	100
LCS 240-604807/4	Lab Control Sample	103	98	98	101
MB 240-604683/7	Method Blank	113	89	91	105
MB 240-604807/7	Method Blank	108	89	93	105

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)
240-200101-E-2 MS	Matrix Spike	102
240-200101-E-2 MSD	Matrix Spike Duplicate	106
240-200104-F-2 MS	Matrix Spike	97
240-200104-F-2 MSD	Matrix Spike Duplicate	103
240-200149-2	MW-195S_022224	118
240-200149-3	MW-51_022224	90
240-200149-4	MW-44_022224	119
240-200149-5	MW-23_022224	100
240-200149-6	MW-66_022224	115
LCS 240-604761/4	Lab Control Sample	102
LCS 240-604855/4	Lab Control Sample	105
LCS 240-604941/4	Lab Control Sample	100
MB 240-604761/6	Method Blank	104
MB 240-604855/6	Method Blank	101
MB 240-604941/7	Method Blank	112

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-200149-1

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

Lab Sample ID: MB 240-604683/7

Matrix: Water

Analysis Batch: 604683

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			03/01/24 11:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/01/24 11:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 11:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/01/24 11:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/01/24 11:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/01/24 11:45	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		03/01/24 11:45	1
4-Bromofluorobenzene (Surr)	89		56 - 136		03/01/24 11:45	1
Toluene-d8 (Surr)	91		78 - 122		03/01/24 11:45	1
Dibromofluoromethane (Surr)	105		73 - 120		03/01/24 11:45	1

Lab Sample ID: LCS 240-604683/4

Matrix: Water

Analysis Batch: 604683

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	24.0		ug/L		96	63 - 134
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	77 - 123
Tetrachloroethene	25.0	26.3		ug/L		105	76 - 123
trans-1,2-Dichloroethene	25.0	26.4		ug/L		105	75 - 124
Trichloroethene	25.0	25.0		ug/L		100	70 - 122
Vinyl chloride	12.5	9.27		ug/L		74	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		62 - 137
4-Bromofluorobenzene (Surr)	99		56 - 136
Toluene-d8 (Surr)	99		78 - 122
Dibromofluoromethane (Surr)	100		73 - 120

Lab Sample ID: 240-200067-A-1 MS

Matrix: Water

Analysis Batch: 604683

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	29	U	714	554		ug/L		78	56 - 135
cis-1,2-Dichloroethene	1400		714	2020	E	ug/L		86	66 - 128
Tetrachloroethene	29	U	714	536		ug/L		75	62 - 131
trans-1,2-Dichloroethene	29	U	714	682		ug/L		96	56 - 136
Trichloroethene	45		714	644		ug/L		84	61 - 124
Vinyl chloride	29	U	357	234		ug/L		66	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	95		56 - 136
Toluene-d8 (Surr)	94		78 - 122

QC Sample Results

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

Job ID: 240-200149-1

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

Lab Sample ID: 240-200067-A-1 MS
Matrix: Water
Analysis Batch: 604683

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

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

Lab Sample ID: 240-200067-A-1 MSD
Matrix: Water
Analysis Batch: 604683

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

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,1-Dichloroethene	29	U	714	639		ug/L		89	56 - 135	14	26
cis-1,2-Dichloroethene	1400		714	1970	E	ug/L		79	66 - 128	2	14
Tetrachloroethene	29	U	714	654		ug/L		92	62 - 131	20	20
trans-1,2-Dichloroethene	29	U	714	704		ug/L		99	56 - 136	3	15
Trichloroethene	45		714	697		ug/L		91	61 - 124	8	15
Vinyl chloride	29	U	357	258		ug/L		72	43 - 157	10	24

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	108		62 - 137
4-Bromofluorobenzene (Surr)	97		56 - 136
Toluene-d8 (Surr)	95		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: MB 240-604807/7
Matrix: Water
Analysis Batch: 604807

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			03/04/24 11:16	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			03/04/24 11:16	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 11:16	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			03/04/24 11:16	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			03/04/24 11:16	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			03/04/24 11:16	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		03/04/24 11:16	1
4-Bromofluorobenzene (Surr)	89		56 - 136		03/04/24 11:16	1
Toluene-d8 (Surr)	93		78 - 122		03/04/24 11:16	1
Dibromofluoromethane (Surr)	105		73 - 120		03/04/24 11:16	1

Lab Sample ID: LCS 240-604807/4
Matrix: Water
Analysis Batch: 604807

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
1,1-Dichloroethene	25.0	24.2		ug/L		97	63 - 134
cis-1,2-Dichloroethene	25.0	25.6		ug/L		102	77 - 123
Tetrachloroethene	25.0	25.2		ug/L		101	76 - 123
trans-1,2-Dichloroethene	25.0	26.3		ug/L		105	75 - 124
Trichloroethene	25.0	25.8		ug/L		103	70 - 122

Eurofins Cleveland

QC Sample Results

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

Job ID: 240-200149-1

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

Lab Sample ID: LCS 240-604807/4

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 604807

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	9.46		ug/L		76	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	98		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: 240-200153-E-3 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 604807

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	100	U	2500	2030		ug/L		81	56 - 135
cis-1,2-Dichloroethene	5300	F1	2500	7180	E	ug/L		74	66 - 128
Tetrachloroethene	100	U	2500	1940		ug/L		78	62 - 131
trans-1,2-Dichloroethene	840		2500	2990		ug/L		86	56 - 136
Trichloroethene	100	U	2500	2150		ug/L		86	61 - 124
Vinyl chloride	300		1250	1120		ug/L		66	43 - 157

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

Lab Sample ID: 240-200153-E-3 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 604807

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	100	U	2500	2250		ug/L		90	56 - 135	10	26
cis-1,2-Dichloroethene	5300	F1	2500	6900	E F1	ug/L		62	66 - 128	4	14
Tetrachloroethene	100	U	2500	2080		ug/L		83	62 - 131	7	20
trans-1,2-Dichloroethene	840		2500	3090		ug/L		90	56 - 136	3	15
Trichloroethene	100	U	2500	2280		ug/L		91	61 - 124	6	15
Vinyl chloride	300		1250	1140		ug/L		67	43 - 157	2	24

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

QC Sample Results

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

Job ID: 240-200149-1

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

Lab Sample ID: MB 240-604761/6
Matrix: Water
Analysis Batch: 604761

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			03/01/24 23:04	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		68 - 127					03/01/24 23:04	1

Lab Sample ID: LCS 240-604761/4
Matrix: Water
Analysis Batch: 604761

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	9.73		ug/L		97	75 - 121
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	102		68 - 127				

Lab Sample ID: MB 240-604855/6
Matrix: Water
Analysis Batch: 604855

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			03/04/24 12:37	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		68 - 127					03/04/24 12:37	1

Lab Sample ID: LCS 240-604855/4
Matrix: Water
Analysis Batch: 604855

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	8.69		ug/L		87	75 - 121
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	105		68 - 127				

Lab Sample ID: 240-200104-F-2 MS
Matrix: Water
Analysis Batch: 604855

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	2.0	U	10.0	9.20		ug/L		92	20 - 180
Surrogate	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	97		68 - 127						

QC Sample Results

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

Job ID: 240-200149-1

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

Lab Sample ID: 240-200104-F-2 MSD
Matrix: Water
Analysis Batch: 604855

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	8.42		ug/L		84	20 - 180	9	20
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	103		68 - 127								

Lab Sample ID: MB 240-604941/7
Matrix: Water
Analysis Batch: 604941

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			03/05/24 09:45	1	
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac				
1,2-Dichloroethane-d4 (Surr)	112		68 - 127		03/05/24 09:45	1				

Lab Sample ID: LCS 240-604941/4
Matrix: Water
Analysis Batch: 604941

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	9.12		ug/L		91	75 - 121
Surrogate	%Recovery	Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	100		68 - 127				

Lab Sample ID: 240-200101-E-2 MS
Matrix: Water
Analysis Batch: 604941

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	2.0	U	10.0	8.46		ug/L		85	20 - 180
Surrogate	%Recovery	Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	102		68 - 127						

Lab Sample ID: 240-200101-E-2 MSD
Matrix: Water
Analysis Batch: 604941

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	9.04		ug/L		90	20 - 180	7	20
Surrogate	%Recovery	Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	106		68 - 127								

QC Association Summary

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

Job ID: 240-200149-1

GC/MS VOA

Analysis Batch: 604683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200149-1	TRIP BLANK_123	Total/NA	Water	8260D	
MB 240-604683/7	Method Blank	Total/NA	Water	8260D	
LCS 240-604683/4	Lab Control Sample	Total/NA	Water	8260D	
240-200067-A-1 MS	Matrix Spike	Total/NA	Water	8260D	
240-200067-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 604761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200149-2	MW-195S_022224	Total/NA	Water	8260D SIM	
MB 240-604761/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-604761/4	Lab Control Sample	Total/NA	Water	8260D SIM	

Analysis Batch: 604807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200149-2	MW-195S_022224	Total/NA	Water	8260D	
240-200149-3	MW-51_022224	Total/NA	Water	8260D	
240-200149-4	MW-44_022224	Total/NA	Water	8260D	
240-200149-5	MW-23_022224	Total/NA	Water	8260D	
240-200149-6	MW-66_022224	Total/NA	Water	8260D	
MB 240-604807/7	Method Blank	Total/NA	Water	8260D	
LCS 240-604807/4	Lab Control Sample	Total/NA	Water	8260D	
240-200153-E-3 MS	Matrix Spike	Total/NA	Water	8260D	
240-200153-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 604855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200149-4	MW-44_022224	Total/NA	Water	8260D SIM	
240-200149-5	MW-23_022224	Total/NA	Water	8260D SIM	
240-200149-6	MW-66_022224	Total/NA	Water	8260D SIM	
MB 240-604855/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-604855/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-200104-F-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-200104-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 604941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-200149-3	MW-51_022224	Total/NA	Water	8260D SIM	
MB 240-604941/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-604941/4	Lab Control Sample	Total/NA	Water	8260D SIM	
240-200101-E-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-200101-E-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Lab Chronicle

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

Job ID: 240-200149-1

Client Sample ID: TRIP BLANK_123

Lab Sample ID: 240-200149-1

Date Collected: 02/22/24 00:00

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	604683	CDG	EET CLE	03/01/24 16:49

Client Sample ID: MW-195S_022224

Lab Sample ID: 240-200149-2

Date Collected: 02/22/24 09:55

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		50	604807	LEE	EET CLE	03/04/24 13:36
Total/NA	Analysis	8260D SIM		1	604761	MDH	EET CLE	03/02/24 00:48

Client Sample ID: MW-51_022224

Lab Sample ID: 240-200149-3

Date Collected: 02/22/24 11:35

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	604807	LEE	EET CLE	03/04/24 13:59
Total/NA	Analysis	8260D SIM		1	604941	MDH	EET CLE	03/05/24 12:56

Client Sample ID: MW-44_022224

Lab Sample ID: 240-200149-4

Date Collected: 02/22/24 12:40

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		5	604807	LEE	EET CLE	03/04/24 14:23
Total/NA	Analysis	8260D SIM		3	604855	MDH	EET CLE	03/04/24 18:09

Client Sample ID: MW-23_022224

Lab Sample ID: 240-200149-5

Date Collected: 02/22/24 13:50

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		500	604807	LEE	EET CLE	03/04/24 14:46
Total/NA	Analysis	8260D SIM		1	604855	MDH	EET CLE	03/04/24 18:33

Client Sample ID: MW-66_022224

Lab Sample ID: 240-200149-6

Date Collected: 02/22/24 15:00

Matrix: Water

Date Received: 02/28/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	604807	LEE	EET CLE	03/04/24 15:10
Total/NA	Analysis	8260D SIM		1	604855	MDH	EET CLE	03/04/24 18:57

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 - On Site

Job ID: 240-200149-1

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	02-27-24 *
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (WW)	State	KY98016	12-30-24
Minnesota	NELAP	039-999-348	12-31-24
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-01-24
Oregon	NELAP	4062	02-27-25
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-24

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Chain of Custody Record

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

Client Contact			Regulatory program: <input type="checkbox"/> DW <input type="checkbox"/> NPDES <input type="checkbox"/> RCRA <input type="checkbox"/> Other													TestAmerica Laboratories, Inc.														
Company Name: Arcadis			Client Project Manager: Kris Hinsley				Site Contact: Christina Weaver				Lab Contact: Mike DeMocio				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.hinsley@arcadis.com				Analysis Turnaround Time				Analyses				For lab use only															
Phone: 248-994-2240			Sampler Name: Ellen Redner				TAT if different from below 10 day				Filtered Sample (Y/N) Composite-C/Grab-G 1,1-DCE 82600 cis-1,2-DCE 82600 Trans-1,2-DCE 82600 FOE 82600 TCE 82600 Vinyl Chloride 82600 1,4-Dioxane 82600 SIM				Walk-in client															
Project Name: Ford LTP On-Site			Method of Shipment/Carrier:				<input type="checkbox"/> 3 weeks <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day								Lab sampling															
Project Number: 30167538.401.03			Shipping/Tracking No:												Job/SDG No:															
PO # 30167538.401.03																Sample Specific Notes / Special Instructions:														
Sample Identification		Sample Date	Sample Time	Matrix					Containers & Preservatives																					
				Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Upres	Other:														
✓	TRIP BLANK_123			X													NG	X	X	X	X	X					1 Trip Blank			
✓	MW-195S_022224	2/22/24	0955	b													NG	X	X	X	X	X	X			3 VOAs for 82600 3 VOAs for 82600 SIM				
✓	MW-51_022224	2/22/24	1135	b													NG	X	X	X	X	X	X							
✓	MW-44_022224	2/22/24	1240	b													NG	X	X	X	X	X	X							
✓	MW-23_022224	2/22/24	1350	b													NG	X	X	X	X	X	X							
✓	MW-66_022224	2/22/24	1500	b													NG	X	X	X	X	X	X							
																 <p>240-200149 Chain of Custody</p>														
Possible Hazard Identification													Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)																	
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown													<input type="checkbox"/> Return to Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months																	
Special Instructions/QC Requirements & Comments:																														
Submit all results through Cadena at jtomalia@cadenaco.com. Cadena #E203728																														
Level IV Reporting requested.																														
Relinquished by:			Company: Arcadis			Date/Time: 2/22/24 @ 1600			Received by: Novi Cold Storage			Company: Arcadis			Date/Time: 2/22/24 @ 1600															
Relinquished by:			Company: Arcadis			Date/Time: 2/27/24 1030			Received by:			Company:			Date/Time:															
Relinquished by:			Company: FEMA			Date/Time: 2/27/24			Received in Laboratory by:			Company:			Date/Time: 2-28-24 10 AM															

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

Barberon Facility Cooler unpacked by M. Moran

Client AKOIS Site Name _____

Cooler Received on 2/28/24 Opened on 2/28/24

FedEx: 1st Qtd Exp 2 UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

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

Eurofins Cooler # 22 Foam Box Client Cooler Box Other _____

Packing material used: Bubble Wrap Foam Plastic Bag None Other _____

COOLANT: ~~Water~~ Blue Ice Dry Ice Water None _____

1 Cooler temperature upon receipt _____ °C

IR GUN # _____ (CF _____ °C) Observed Cooler Temp _____ °C Corrected Cooler Temp. _____ °C

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

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

-Were tamper/custody seals on the bottle(s) or bottle kits (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 preservative(s) (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

13 Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719

14 Were VOA's on the COC? Yes No NA

15 Were air bubbles >6 mm in any VOA vials? Larger than this. Yes No NA

16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # _____ Yes No NA

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

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

Concerning _____

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

MU-1955 - 04 in bottles

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 _____

1
2
3
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14

Login #: _____

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
IC Chem Box Other	IR GUN # 17	21.0	21.0	Water Blue Ice None
IC Chem Box Other	IR GUN # 17	21.3	21.3	Water Blue Ice None
IC Chem Box Other	IR GUN # 17	21.1	21.1	Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # 17	41.2	41.2	Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
IC Chem Box Other	IR GUN # _____			Water Blue Ice Dry Ice
IC Chem Box Other	IR GUN # _____			Water None
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See Temperature Excursion Form

DATA VERIFICATION REPORT



March 07, 2024

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: 30167538.401.03
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 200149-1
Sample date: 2024-02-22
Report received by CADENA: 2024-03-06
Initial Data Verification completed by CADENA: 2024-03-07
Number of Samples:6
Sample Matrices:Water and trip blank
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:

MS/MSD recovery outliers or sample duplicate RPD outliers were not determined using a client sample from this submittal for the test and QC batch noted so qualification was not required based on these sample-specific QC outliers: GCMS VOC QC batch 604807. NOTE: QC batch 604761 for GCMS-SIM VOC testing did not include an MS/MSD due to equipment error as noted in laboratory submittal case narrative.

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>.

Sincerely,

Jim Tomalia

Project Scientist

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: 200149-1

Analyte	Cas No.	Sample Name: TRIP BLANK_123				MW-195S_022224				MW-51_022224				MW-44_022224				MW-23_022224				MW-66_022224			
		Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC																									
<u>OSW-8260D</u>																									
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	ND	50	ug/l	---	ND	1.0	ug/l	---	ND	5.0	ug/l	---	ND	500	ug/l	---	ND	1.0	ug/l	---
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	110	50	ug/l	---	ND	1.0	ug/l	---	ND	5.0	ug/l	---	11000	500	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	50	ug/l	---	ND	1.0	ug/l	---	ND	5.0	ug/l	---	ND	500	ug/l	---	ND	1.0	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	180	50	ug/l	---	ND	1.0	ug/l	---	ND	5.0	ug/l	---	570	500	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	2400	50	ug/l	---	ND	1.0	ug/l	---	ND	5.0	ug/l	---	1000	500	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	50	ug/l	---	ND	1.0	ug/l	---	86	5.0	ug/l	---	330	500	ug/l	J	1.9	1.0	ug/l	---
<u>OSW-8260DSIM</u>																									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---	1.7	2.0	ug/l	J	3.8	6.0	ug/l	J	1.4	2.0	ug/l	J	ND	2.0	ug/l	---