

ANALYTICAL REPORT

PREPARED FOR

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JOB DESCRIPTION

Ford LTP - On Site

JOB NUMBER

240-176712-1

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: 240-176712-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F2	MS/MSD RPD 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.
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: 240-176712-1

Job ID: 240-176712-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-176712-1

Receipt

The samples were received on 11/18/2022 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 time was 1.8°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) for analytical batch 553748 exceeded control criteria for multiple compounds. The samples associated with this CCV were non-detect for the affected analytes. In accordance with the laboratory SOP, a low level CCV at the reporting limit (labeled as an MRL) was analyzed and the affected compounds were detected; therefore the data has been reported. No further corrective action was required.(240-176831-A-11)

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



Method Summary

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

Job ID: 240-176712-1

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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- 10
- 11
- 12
- 13
- 14

Sample Summary

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

Job ID: 240-176712-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176712-1	TRIP BLANK_201	Water	11/16/22 00:00	11/18/22 08:00
240-176712-2	MW-196S_111622	Water	11/16/22 10:10	11/18/22 08:00
240-176712-3	MW-196_111622	Water	11/16/22 10:43	11/18/22 08:00
240-176712-4	MW-195S_111622	Water	11/16/22 11:30	11/18/22 08:00
240-176712-5	MW-194S_111622	Water	11/16/22 12:20	11/18/22 08:00
240-176712-6	MW-194_111622	Water	11/16/22 13:00	11/18/22 08:00

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- 7
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- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

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

Job ID: 240-176712-1

Client Sample ID: TRIP BLANK_201

Lab Sample ID: 240-176712-1

No Detections.

Client Sample ID: MW-196S_111622

Lab Sample ID: 240-176712-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	70		2.0	0.92	ug/L	2		8260D	Total/NA
trans-1,2-Dichloroethene	1.4	J	2.0	1.0	ug/L	2		8260D	Total/NA
Trichloroethene	98		2.0	0.88	ug/L	2		8260D	Total/NA

Client Sample ID: MW-196_111622

Lab Sample ID: 240-176712-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	370		10	4.6	ug/L	10		8260D	Total/NA
trans-1,2-Dichloroethene	110		10	5.1	ug/L	10		8260D	Total/NA
Trichloroethene	590		10	4.4	ug/L	10		8260D	Total/NA

Client Sample ID: MW-195S_111622

Lab Sample ID: 240-176712-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethene	1.2		1.0	0.49	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	130		100	46	ug/L	100		8260D	Total/NA
trans-1,2-Dichloroethene	230		100	51	ug/L	100		8260D	Total/NA
Trichloroethene	2600		100	44	ug/L	100		8260D	Total/NA
Vinyl chloride	4.1		1.0	0.45	ug/L	1		8260D	Total/NA

Client Sample ID: MW-194S_111622

Lab Sample ID: 240-176712-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	2.3		1.0	0.44	ug/L	1		8260D	Total/NA

Client Sample ID: MW-194_111622

Lab Sample ID: 240-176712-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dioxane	1.0	J	2.0	0.86	ug/L	1		8260D SIM	Total/NA
Trichloroethene	1.0		1.0	0.44	ug/L	1		8260D	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: 240-176712-1

Client Sample ID: TRIP BLANK_201

Lab Sample ID: 240-176712-1

Date Collected: 11/16/22 00:00

Matrix: Water

Date Received: 11/18/22 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			11/28/22 16:59	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 16:59	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:59	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 16:59	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 16:59	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 16:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137		11/28/22 16:59	1
4-Bromofluorobenzene (Surr)	87		56 - 136		11/28/22 16:59	1
Toluene-d8 (Surr)	100		78 - 122		11/28/22 16:59	1
Dibromofluoromethane (Surr)	90		73 - 120		11/28/22 16:59	1

Client Sample Results

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

Job ID: 240-176712-1

Client Sample ID: MW-196S_111622

Lab Sample ID: 240-176712-2

Date Collected: 11/16/22 10:10

Matrix: Water

Date Received: 11/18/22 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			11/27/22 21:43	1
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		66 - 120					11/27/22 21:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	2.0	U	2.0	0.98	ug/L			11/28/22 22:24	2
cis-1,2-Dichloroethene	70		2.0	0.92	ug/L			11/28/22 22:24	2
Tetrachloroethene	2.0	U	2.0	0.88	ug/L			11/28/22 22:24	2
trans-1,2-Dichloroethene	1.4	J	2.0	1.0	ug/L			11/28/22 22:24	2
Trichloroethene	98		2.0	0.88	ug/L			11/28/22 22:24	2
Vinyl chloride	2.0	U	2.0	0.90	ug/L			11/28/22 22:24	2
Surrogate									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		62 - 137					11/28/22 22:24	2
4-Bromofluorobenzene (Surr)	86		56 - 136					11/28/22 22:24	2
Toluene-d8 (Surr)	97		78 - 122					11/28/22 22:24	2
Dibromofluoromethane (Surr)	86		73 - 120					11/28/22 22:24	2

Client Sample Results

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

Job ID: 240-176712-1

Client Sample ID: MW-196_111622

Lab Sample ID: 240-176712-3

Date Collected: 11/16/22 10:43

Matrix: Water

Date Received: 11/18/22 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			11/27/22 22:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		66 - 120		11/27/22 22:07	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	10	U	10	4.9	ug/L			11/28/22 22:49	10
cis-1,2-Dichloroethene	370		10	4.6	ug/L			11/28/22 22:49	10
Tetrachloroethene	10	U	10	4.4	ug/L			11/28/22 22:49	10
trans-1,2-Dichloroethene	110		10	5.1	ug/L			11/28/22 22:49	10
Trichloroethene	590		10	4.4	ug/L			11/28/22 22:49	10
Vinyl chloride	10	U	10	4.5	ug/L			11/28/22 22:49	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		11/28/22 22:49	10
4-Bromofluorobenzene (Surr)	86		56 - 136		11/28/22 22:49	10
Toluene-d8 (Surr)	99		78 - 122		11/28/22 22:49	10
Dibromofluoromethane (Surr)	88		73 - 120		11/28/22 22:49	10

Client Sample Results

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

Job ID: 240-176712-1

Client Sample ID: MW-195S_111622

Lab Sample ID: 240-176712-4

Date Collected: 11/16/22 11:30

Matrix: Water

Date Received: 11/18/22 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			11/27/22 22:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		66 - 120					11/27/22 22:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.2		1.0	0.49	ug/L			11/28/22 23:14	1
cis-1,2-Dichloroethene	130		100	46	ug/L			11/29/22 14:04	100
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 23:14	1
trans-1,2-Dichloroethene	230		100	51	ug/L			11/29/22 14:04	100
Trichloroethene	2600		100	44	ug/L			11/29/22 14:04	100
Vinyl chloride	4.1		1.0	0.45	ug/L			11/28/22 23:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		62 - 137					11/28/22 23:14	1
1,2-Dichloroethane-d4 (Surr)	99		62 - 137					11/29/22 14:04	100
4-Bromofluorobenzene (Surr)	86		56 - 136					11/28/22 23:14	1
4-Bromofluorobenzene (Surr)	88		56 - 136					11/29/22 14:04	100
Toluene-d8 (Surr)	98		78 - 122					11/28/22 23:14	1
Toluene-d8 (Surr)	101		78 - 122					11/29/22 14:04	100
Dibromofluoromethane (Surr)	90		73 - 120					11/28/22 23:14	1
Dibromofluoromethane (Surr)	89		73 - 120					11/29/22 14:04	100

Client Sample Results

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

Job ID: 240-176712-1

Client Sample ID: MW-194S_111622

Lab Sample ID: 240-176712-5

Date Collected: 11/16/22 12:20

Matrix: Water

Date Received: 11/18/22 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			11/27/22 22:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		66 - 120		11/27/22 22:56	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			11/28/22 17:24	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 17:24	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 17:24	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 17:24	1
Trichloroethene	2.3		1.0	0.44	ug/L			11/28/22 17:24	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		62 - 137		11/28/22 17:24	1
4-Bromofluorobenzene (Surr)	89		56 - 136		11/28/22 17:24	1
Toluene-d8 (Surr)	100		78 - 122		11/28/22 17:24	1
Dibromofluoromethane (Surr)	90		73 - 120		11/28/22 17:24	1

Client Sample Results

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

Job ID: 240-176712-1

Client Sample ID: MW-194_111622

Lab Sample ID: 240-176712-6

Date Collected: 11/16/22 13:00

Matrix: Water

Date Received: 11/18/22 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	1.0	J	2.0	0.86	ug/L			11/27/22 23:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		66 - 120					11/27/22 23:20	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			11/28/22 17:49	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 17:49	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 17:49	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 17:49	1
Trichloroethene	1.0		1.0	0.44	ug/L			11/28/22 17:49	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 17:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		62 - 137					11/28/22 17:49	1
4-Bromofluorobenzene (Surr)	88		56 - 136					11/28/22 17:49	1
Toluene-d8 (Surr)	100		78 - 122					11/28/22 17:49	1
Dibromofluoromethane (Surr)	89		73 - 120					11/28/22 17:49	1

Surrogate Summary

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

Job ID: 240-176712-1

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)
240-176712-1	TRIP BLANK_201	99	87	100	90
240-176712-2	MW-196S_111622	102	86	97	86
240-176712-3	MW-196_111622	101	86	99	88
240-176712-3 MS	MW-196_111622	97	91	98	91
240-176712-3 MSD	MW-196_111622	97	92	98	93
240-176712-4	MW-195S_111622	102	86	98	90
240-176712-4	MW-195S_111622	99	88	101	89
240-176712-5	MW-194S_111622	101	89	100	90
240-176712-6	MW-194_111622	99	88	100	89
240-176831-D-11 MS	Matrix Spike	98	90	98	92
240-176831-F-11 MSD	Matrix Spike Duplicate	97	89	97	91
LCS 240-553589/4	Lab Control Sample	92	91	97	94
LCS 240-553748/4	Lab Control Sample	95	90	98	92
MB 240-553589/7	Method Blank	96	90	99	90
MB 240-553748/7	Method Blank	98	87	99	88

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 (66-120)
240-176712-2	MW-196S_111622	108
240-176712-3	MW-196_111622	110
240-176712-4	MW-195S_111622	105
240-176712-5	MW-194S_111622	104
240-176712-6	MW-194_111622	113
240-176715-C-2 MS	Matrix Spike	109
240-176715-C-2 MSD	Matrix Spike Duplicate	113
LCS 240-553481/3	Lab Control Sample	98
MB 240-553481/4	Method Blank	97

Surrogate Legend

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

QC Sample Results

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

Job ID: 240-176712-1

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

Lab Sample ID: MB 240-553589/7
Matrix: Water
Analysis Batch: 553589

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			11/28/22 14:54	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/28/22 14:54	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 14:54	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/28/22 14:54	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/28/22 14:54	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/28/22 14:54	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	96		62 - 137		11/28/22 14:54	1
4-Bromofluorobenzene (Surr)	90		56 - 136		11/28/22 14:54	1
Toluene-d8 (Surr)	99		78 - 122		11/28/22 14:54	1
Dibromofluoromethane (Surr)	90		73 - 120		11/28/22 14:54	1

Lab Sample ID: LCS 240-553589/4
Matrix: Water
Analysis Batch: 553589

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	22.9		ug/L		92	63 - 134
cis-1,2-Dichloroethene	25.0	23.7		ug/L		95	77 - 123
Tetrachloroethene	25.0	24.7		ug/L		99	76 - 123
trans-1,2-Dichloroethene	25.0	23.6		ug/L		95	75 - 124
Trichloroethene	25.0	23.4		ug/L		94	70 - 122
Vinyl chloride	12.5	10.1		ug/L		81	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	92		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	94		73 - 120

Lab Sample ID: 240-176712-3 MS
Matrix: Water
Analysis Batch: 553589

Client Sample ID: MW-196_111622
Prep Type: Total/NA

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
1,1-Dichloroethene	10	U	250	207		ug/L		83	56 - 135
cis-1,2-Dichloroethene	370		250	599		ug/L		91	66 - 128
Tetrachloroethene	10	U	250	207		ug/L		83	62 - 131
trans-1,2-Dichloroethene	110		250	358		ug/L		98	56 - 136
Trichloroethene	590		250	885	E	ug/L		118	61 - 124
Vinyl chloride	10	U	125	91.1		ug/L		73	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	97		62 - 137
4-Bromofluorobenzene (Surr)	91		56 - 136
Toluene-d8 (Surr)	98		78 - 122

QC Sample Results

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

Job ID: 240-176712-1

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

Lab Sample ID: 240-176712-3 MS
Matrix: Water
Analysis Batch: 553589

Client Sample ID: MW-196_111622
Prep Type: Total/NA

<i>Surrogate</i>	<i>%Recovery</i>	<i>MS MS Qualifier</i>	<i>Limits</i>
<i>Dibromofluoromethane (Surr)</i>	91		73 - 120

Lab Sample ID: 240-176712-3 MSD
Matrix: Water
Analysis Batch: 553589

Client Sample ID: MW-196_111622
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>
1,1-Dichloroethene	10	U	250	229		ug/L		91	56 - 135	10	26
cis-1,2-Dichloroethene	370		250	603		ug/L		93	66 - 128	1	14
Tetrachloroethene	10	U	250	217		ug/L		87	62 - 131	5	20
trans-1,2-Dichloroethene	110		250	356		ug/L		97	56 - 136	1	15
Trichloroethene	590		250	816	E	ug/L		90	61 - 124	8	15
Vinyl chloride	10	U	125	104		ug/L		83	43 - 157	13	24

<i>Surrogate</i>	<i>%Recovery</i>	<i>MSD MSD Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	97		62 - 137
<i>4-Bromofluorobenzene (Surr)</i>	92		56 - 136
<i>Toluene-d8 (Surr)</i>	98		78 - 122
<i>Dibromofluoromethane (Surr)</i>	93		73 - 120

Lab Sample ID: MB 240-553748/7
Matrix: Water
Analysis Batch: 553748

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>
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/29/22 13:39	1
cis-1,2-Dichloroethene	1.0	U	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	1.0	U	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	1.0	U	1.0	0.45	ug/L			11/29/22 13:39	1

<i>Surrogate</i>	<i>%Recovery</i>	<i>MB MB Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	98		62 - 137		11/29/22 13:39	1
<i>4-Bromofluorobenzene (Surr)</i>	87		56 - 136		11/29/22 13:39	1
<i>Toluene-d8 (Surr)</i>	99		78 - 122		11/29/22 13:39	1
<i>Dibromofluoromethane (Surr)</i>	88		73 - 120		11/29/22 13:39	1

Lab Sample ID: LCS 240-553748/4
Matrix: Water
Analysis Batch: 553748

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>
1,1-Dichloroethene	25.0	23.4		ug/L		94	63 - 134
cis-1,2-Dichloroethene	25.0	24.0		ug/L		96	77 - 123
Tetrachloroethene	25.0	24.2		ug/L		97	76 - 123
trans-1,2-Dichloroethene	25.0	24.0		ug/L		96	75 - 124
Trichloroethene	25.0	23.8		ug/L		95	70 - 122

Eurofins Canton

QC Sample Results

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

Job ID: 240-176712-1

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

Lab Sample ID: LCS 240-553748/4
Matrix: Water
Analysis Batch: 553748

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	12.5	10.1		ug/L		81	60 - 144
Surrogate							
	LCS %Recovery	LCS Qualifier	Limits				
1,2-Dichloroethane-d4 (Surr)	95		62 - 137				
4-Bromofluorobenzene (Surr)	90		56 - 136				
Toluene-d8 (Surr)	98		78 - 122				
Dibromofluoromethane (Surr)	92		73 - 120				

Lab Sample ID: 240-176831-D-11 MS
Matrix: Water
Analysis Batch: 553748

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
1,1-Dichloroethene	1.0	U	25.0	20.7		ug/L		83	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	22.4		ug/L		90	66 - 128
Tetrachloroethene	1.0	U	25.0	23.0		ug/L		92	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	22.4		ug/L		89	56 - 136
Trichloroethene	1.0	U	25.0	21.7		ug/L		87	61 - 124
Vinyl chloride	1.0	U F2	12.5	7.27		ug/L		58	43 - 157
Surrogate									
	MS %Recovery	MS Qualifier	Limits						
1,2-Dichloroethane-d4 (Surr)	98		62 - 137						
4-Bromofluorobenzene (Surr)	90		56 - 136						
Toluene-d8 (Surr)	98		78 - 122						
Dibromofluoromethane (Surr)	92		73 - 120						

Lab Sample ID: 240-176831-F-11 MSD
Matrix: Water
Analysis Batch: 553748

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
1,1-Dichloroethene	1.0	U	25.0	22.3		ug/L		89	56 - 135	8	26
cis-1,2-Dichloroethene	1.0	U	25.0	22.9		ug/L		92	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	24.2		ug/L		97	62 - 131	5	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.1		ug/L		92	56 - 136	3	15
Trichloroethene	1.0	U	25.0	22.4		ug/L		90	61 - 124	3	15
Vinyl chloride	1.0	U F2	12.5	10.9	F2	ug/L		87	43 - 157	40	24
Surrogate											
	MSD %Recovery	MSD Qualifier	Limits								
1,2-Dichloroethane-d4 (Surr)	97		62 - 137								
4-Bromofluorobenzene (Surr)	89		56 - 136								
Toluene-d8 (Surr)	97		78 - 122								
Dibromofluoromethane (Surr)	91		73 - 120								

QC Sample Results

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

Job ID: 240-176712-1

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

Lab Sample ID: MB 240-553481/4
Matrix: Water
Analysis Batch: 553481

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			11/27/22 19:42	1
Surrogate	MB MB		Limits			Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier								
1,2-Dichloroethane-d4 (Surr)	97		66 - 120				11/27/22 19:42	1	

Lab Sample ID: LCS 240-553481/3
Matrix: Water
Analysis Batch: 553481

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
Surrogate	LCS LCS		Limits			Prepared	Analyzed	Dil Fac
%Recovery	Qualifier							
1,2-Dichloroethane-d4 (Surr)	98		66 - 120					

Lab Sample ID: 240-176715-C-2 MS
Matrix: Water
Analysis Batch: 553481

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
Surrogate	MS MS		Limits			Prepared	Analyzed	Dil Fac	
%Recovery	Qualifier								
1,2-Dichloroethane-d4 (Surr)	109		66 - 120						

Lab Sample ID: 240-176715-C-2 MSD
Matrix: Water
Analysis Batch: 553481

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	Limit
Surrogate	MSD MSD		Limits			Prepared	Analyzed	Dil Fac			
%Recovery	Qualifier										
1,2-Dichloroethane-d4 (Surr)	113		66 - 120								

QC Association Summary

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

Job ID: 240-176712-1

GC/MS VOA

Analysis Batch: 553481

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176712-2	MW-196S_111622	Total/NA	Water	8260D SIM	
240-176712-3	MW-196_111622	Total/NA	Water	8260D SIM	
240-176712-4	MW-195S_111622	Total/NA	Water	8260D SIM	
240-176712-5	MW-194S_111622	Total/NA	Water	8260D SIM	
240-176712-6	MW-194_111622	Total/NA	Water	8260D SIM	
MB 240-553481/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553481/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176715-C-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176715-C-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553589

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176712-1	TRIP BLANK_201	Total/NA	Water	8260D	
240-176712-2	MW-196S_111622	Total/NA	Water	8260D	
240-176712-3	MW-196_111622	Total/NA	Water	8260D	
240-176712-4	MW-195S_111622	Total/NA	Water	8260D	
240-176712-5	MW-194S_111622	Total/NA	Water	8260D	
240-176712-6	MW-194_111622	Total/NA	Water	8260D	
MB 240-553589/7	Method Blank	Total/NA	Water	8260D	
LCS 240-553589/4	Lab Control Sample	Total/NA	Water	8260D	
240-176712-3 MS	MW-196_111622	Total/NA	Water	8260D	
240-176712-3 MSD	MW-196_111622	Total/NA	Water	8260D	

Analysis Batch: 553748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176712-4	MW-195S_111622	Total/NA	Water	8260D	
MB 240-553748/7	Method Blank	Total/NA	Water	8260D	
LCS 240-553748/4	Lab Control Sample	Total/NA	Water	8260D	
240-176831-D-11 MS	Matrix Spike	Total/NA	Water	8260D	
240-176831-F-11 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-176712-1

Client Sample ID: TRIP BLANK_201

Lab Sample ID: 240-176712-1

Date Collected: 11/16/22 00:00

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 16:59

Client Sample ID: MW-196S_111622

Lab Sample ID: 240-176712-2

Date Collected: 11/16/22 10:10

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		2	553589	LEE	EET CAN	11/28/22 22:24
Total/NA	Analysis	8260D SIM		1	553481	CS	EET CAN	11/27/22 21:43

Client Sample ID: MW-196_111622

Lab Sample ID: 240-176712-3

Date Collected: 11/16/22 10:43

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	553589	LEE	EET CAN	11/28/22 22:49
Total/NA	Analysis	8260D SIM		1	553481	CS	EET CAN	11/27/22 22:07

Client Sample ID: MW-195S_111622

Lab Sample ID: 240-176712-4

Date Collected: 11/16/22 11:30

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 23:14
Total/NA	Analysis	8260D		100	553748	LEE	EET CAN	11/29/22 14:04
Total/NA	Analysis	8260D SIM		1	553481	CS	EET CAN	11/27/22 22:32

Client Sample ID: MW-194S_111622

Lab Sample ID: 240-176712-5

Date Collected: 11/16/22 12:20

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 17:24
Total/NA	Analysis	8260D SIM		1	553481	CS	EET CAN	11/27/22 22:56

Client Sample ID: MW-194_111622

Lab Sample ID: 240-176712-6

Date Collected: 11/16/22 13:00

Matrix: Water

Date Received: 11/18/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553589	LEE	EET CAN	11/28/22 17:49
Total/NA	Analysis	8260D SIM		1	553481	CS	EET CAN	11/27/22 23:20

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: 240-176712-1

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

INDUSTRIAL
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Chain of Custody Record

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



Client Contact Company Name: Arcadis Address: 26550 Cabot Drive, Suite 500 City/State/Zip: Novi, MI, 48377 Phone: 248-994-2240			Regulatory program: DW NPDES RCRA Other Site Contact: Christina Weaver Telephone: 248-994-2293			Lab Contact: Mike DeMonico Telephone: 330-497-9396			TestAmerica Laboratories, Inc. COC No:					
Project Name: Ford LTP On-Site Project Number: 30146655.401.03 PO # 30146655.401.03			Email: kristoffer.hinskey@arcadis.com Telephone: 248-994-2240			Analysis Turnaround Time TAT, if different from below:			of COCs					
Sampler Name: <i>Christian Crawls</i> Method of Shipment/Carrier: Shipping/Tracking No:			Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc Other:			Walk-in client Lab sampling Job/SDG No:			Sample Specific Notes / Special Instructions:					
Sample Identification Sample Date Sample Time Matrix Other:			Air Aqueous Sediment Solid Other:			Filtered Sample (Y/N) Composite=C / Grab=G			Analyses					
TRIP BLANK_201			1			X			TCE 8260B PCE 8260B Trans-1,2-DCE 8260B cis-1,2-DCE 8260B 1,1-DCE 8260B			1 Trip Blank 3 VOAs for 8260B 3 VOAs for 8260B SIM		
MW-1965-111621			6			X			X					
MW-1968-111621			6			X			X					
MW-1955-111622			6			X			X					
MW-1945-111621			6			X			X					
MW-194-111621			6			X			X					
									1,4-Dioxane 8260B SIM					
									Barcode 240-176712 Chain of Custody					
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Irritant <input type="checkbox"/> Corrosive <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown			Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client Disposal By Lab 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: <i>Christian Crawls</i> Relinquished by: <i>Mike DeMonico</i> Relinquished by: <i>Mike DeMonico</i>			Date/Time: 11/16/21 Date/Time: 11/17/21 Date/Time: 11/17/21			Company: Arcadis Company: Arcadis Company: Arcadis			Date/Time: 11/16/21 Date/Time: 11/17/21 Date/Time: 11/18/21			Company: Arcadis Company: Arcadis Company: Arcadis		

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Eurofins - Canton Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client ARCADIS Site Name _____

Cooler unpacked by:

Cooler Received on 11/18/22 Opened on 11/18/22

M. S. S.

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. 1.8 °C Corrected Cooler Temp. 1.8 °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
 -Were tamper/custody seals intact and uncompromised? Yes No NA

Tests that are not checked for pH by Receiving:

VOAs
Oil and Grease
TOC

3. Shippers' packing slip attached to the cooler(s)? Yes No
 4. Did custody papers accompany the sample(s)? Yes No
 5. Were the custody papers relinquished & signed in the appropriate place? Yes No
 6. Was/were the person(s) who collected the samples clearly identified on the COC? Yes No
 7. Did all bottles arrive in good condition (Unbroken)? Yes No
 8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? Yes No
 9. For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)?
 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
 16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0104201G Yes No
 17. Was a LL Hg or Me Hg trip blank present? Yes No

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

Concerning _____

18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional next page

Samples processed by:

19. SAMPLE CONDITION

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

20. SAMPLE PRESERVATION

Sample(s) _____ were further preserved in the laboratory.
 Time preserved: _____ Preservative(s) added/Lot number(s): _____

VOA Sample Preservation - Date/Time VOAs Frozen: _____

DATA VERIFICATION REPORT



December 02, 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: 176712-1

Sample date: 2022-11-16

Report received by CADENA: 2022-12-01

Initial Data Verification completed by CADENA: 2022-12-02

Number of Samples:6

Sample Matrices:Water

Test Categories:GCMS VOC

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

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch CCV response outliers as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

GCMS VOC QC batch MS/MSD recovery outliers were not determined using a client sample so qualification was not required based on these sample-specific QC outliers.

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: 176712-1

Analyte	Cas No.	Sample Name: TRIP BLANK_201				MW-196S_111622				MW-196_111622				MW-195S_111622				MW-194S_111622				MW-194_111622			
		Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid	Report	Valid		
		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	2.0	ug/l	---	ND	10	ug/l	---	1.2	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	---	70	2.0	ug/l	---	370	10	ug/l	---	130	100	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---	ND	2.0	ug/l	---	ND	10	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	---	1.4	2.0	ug/l	J	110	10	ug/l	---	230	100	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	98	2.0	ug/l	---	590	10	ug/l	---	2600	100	ug/l	---	2.3	1.0	ug/l	---	1.0	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	2.0	ug/l	---	ND	10	ug/l	---	4.1	1.0	ug/l	---	ND	1.0	ug/l	---	ND	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	---	1.0	2.0	ug/l	J