

1
2
3
4
5
6
7
8
9
10
11
12
13
14

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS US Inc
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 11/20/2023 5:08:09 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-195190-1

Eurofins Cleveland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



Generated
11/20/2023 5:08:09 AM

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



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	14
Lab Chronicle	15
Certification Summary	16
Chain of Custody	17

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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 US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Job ID: 240-195190-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-195190-1

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 11/10/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7°C and 2.9°C

GC/MS VOA

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

Method Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by 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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195190-1	TRIP BLANK_48	Water	11/08/23 00:00	11/10/23 08:00
240-195190-2	MW-202_110823	Water	11/08/23 14:45	11/10/23 08:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Client Sample ID: TRIP BLANK_48

Lab Sample ID: 240-195190-1

No Detections.

Client Sample ID: MW-202_110823

Lab Sample ID: 240-195190-2

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Client Sample ID: TRIP BLANK_48

Lab Sample ID: 240-195190-1

Date Collected: 11/08/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 16:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 16:56	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 16:56	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137		11/17/23 16:56	1
4-Bromofluorobenzene (Surr)	87		56 - 136		11/17/23 16:56	1
Toluene-d8 (Surr)	104		78 - 122		11/17/23 16:56	1
Dibromofluoromethane (Surr)	88		73 - 120		11/17/23 16:56	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Client Sample ID: MW-202_110823

Lab Sample ID: 240-195190-2

Date Collected: 11/08/23 14:45

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 17:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 17:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 17:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137		11/17/23 17:22	1
4-Bromofluorobenzene (Surr)	74		56 - 136		11/17/23 17:22	1
Toluene-d8 (Surr)	100		78 - 122		11/17/23 17:22	1
Dibromofluoromethane (Surr)	87		73 - 120		11/17/23 17:22	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

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	DCA	BFB	TOL	DBFM
		(62-137)	(56-136)	(78-122)	(73-120)
240-195190-1	TRIP BLANK_48	85	87	104	88
240-195190-2	MW-202_110823	83	74	100	87
240-195483-B-5 MS	Matrix Spike	85	94	111	92
240-195483-B-5 MSD	Matrix Spike Duplicate	82	86	104	90
LCS 240-594979/6	Lab Control Sample	81	89	108	89
MB 240-594979/10	Method Blank	84	87	104	88

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

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

Lab Sample ID: MB 240-594979/10

Matrix: Water

Analysis Batch: 594979

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 12:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 12:40	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 12:40	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 12:40	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	84		62 - 137		11/17/23 12:40	1
4-Bromofluorobenzene (Surr)	87		56 - 136		11/17/23 12:40	1
Toluene-d8 (Surr)	104		78 - 122		11/17/23 12:40	1
Dibromofluoromethane (Surr)	88		73 - 120		11/17/23 12:40	1

Lab Sample ID: LCS 240-594979/6

Matrix: Water

Analysis Batch: 594979

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
cis-1,2-Dichloroethene	20.0	18.5		ug/L		93	77 - 123
trans-1,2-Dichloroethene	20.0	18.9		ug/L		95	75 - 124
Trichloroethene	20.0	17.8		ug/L		89	70 - 122
Vinyl chloride	20.0	17.8		ug/L		89	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	81		62 - 137
4-Bromofluorobenzene (Surr)	89		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	89		73 - 120

Lab Sample ID: 240-195483-B-5 MS

Matrix: Water

Analysis Batch: 594979

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				
cis-1,2-Dichloroethene	24		160	181		ug/L		98	66 - 128
trans-1,2-Dichloroethene	8.0	U	160	156		ug/L		97	56 - 136
Trichloroethene	8.0	U	160	145		ug/L		91	61 - 124
Vinyl chloride	8.0	U	160	141		ug/L		88	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	85		62 - 137
4-Bromofluorobenzene (Surr)	94		56 - 136
Toluene-d8 (Surr)	111		78 - 122
Dibromofluoromethane (Surr)	92		73 - 120

QC Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

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

Lab Sample ID: 240-195483-B-5 MSD

Matrix: Water

Analysis Batch: 594979

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
cis-1,2-Dichloroethene	24		160	182		ug/L		99	66 - 128	1	14
trans-1,2-Dichloroethene	8.0	U	160	158		ug/L		99	56 - 136	1	15
Trichloroethene	8.0	U	160	147		ug/L		92	61 - 124	1	15
Vinyl chloride	8.0	U	160	150		ug/L		94	43 - 157	6	24

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	82		62 - 137
4-Bromofluorobenzene (Surr)	86		56 - 136
Toluene-d8 (Surr)	104		78 - 122
Dibromofluoromethane (Surr)	90		73 - 120

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

GC/MS VOA

Analysis Batch: 594979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195190-1	TRIP BLANK_48	Total/NA	Water	8260D	
240-195190-2	MW-202_110823	Total/NA	Water	8260D	
MB 240-594979/10	Method Blank	Total/NA	Water	8260D	
LCS 240-594979/6	Lab Control Sample	Total/NA	Water	8260D	
240-195483-B-5 MS	Matrix Spike	Total/NA	Water	8260D	
240-195483-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Client Sample ID: TRIP BLANK_48

Lab Sample ID: 240-195190-1

Date Collected: 11/08/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594979	HMB	EET CLE	11/17/23 16:56

Client Sample ID: MW-202_110823

Lab Sample ID: 240-195190-2

Date Collected: 11/08/23 14:45

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	594979	HMB	EET CLE	11/17/23 17:22

Laboratory References:

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



Accreditation/Certification Summary

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

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
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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



Chain of Custody Record

TestAmerica Laboratory location: Brighton --- 10448 Cilation Drive, Suite 200 / Brighton, MI 48116 / 810-225-2763

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 Hinsley Telephone: 248-994-2240 Email: kristoffer.hinsley@arcadis.com		Lab Contact: Mike DeMonico Telephone: 330-497-9396	
Sample Name: Garrett Link Method of Shipment/Carrier: Shipping/Tracking No:		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 Composite C / Grab-C Filtered Sample (Y / N)	
Sample Identification TRIP BLANK_ 48 MW-202-110823		TAT, if different from below 10 day <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	
Sample Date Sample Time 11/08/23 --- 11/09/23 1445		Containers & Preservatives H2SO4 HNO3 HCl NaOH ZnAc NaOH Upters Other:	
Matrix Air Aqueous Sediment Solid Other:		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	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Date/Time: 11/08/23 15:35 Date/Time: 11/09/23 0850 Date/Time: 11/09/23 1015	
Special Instructions/QC Requirements & Comments: Submit all results through Cadena at jformala@cadenaco.com. Cadena #E203631 Level IV Reporting requested.		Company: ARCADIS Company: Arcadis Company: EETA	
Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i>		Received by: Novi Cold Storage Received by: <i>[Signature]</i> Received by: <i>[Signature]</i>	
Date/Time: 11/08/23 15:35 Date/Time: 11/09/23 1015 Date/Time: 11-10-23 0800		Company: ARCADIS Company: EETA Company: EETA	



MICHIGAN
190



1
2
3
4
5
6
7
8
9
10
11
12
13
14

Eurofins - Cleveland Sample Receipt Form/Narrative Login # : 195190
Barberton Facility

Client Arcadis Site Name _____ Cooler unpacked by: Alissa Atherton
Cooler Received on 11.10.23 Opened on 11/10/23
FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other _____

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


Eurofins Cooler # _____ 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 # 22 (CF +1.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea 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)? Yes No
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# HC316719
14. Were VOAs on the COC? Yes No
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 # N/A 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) _____ 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



November 20, 2023

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: 30167538.402.04 off-site
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 195190-1
Sample date: 2023-11-08
Report received by CADENA: 2023-11-20
Initial Data Verification completed by CADENA: 2023-11-20
Number of Samples:2
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.

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 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: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195190-1

Sample Name: TRIP BLANK_48 MW-202_110823
Lab Sample ID: 2401951901 2401951902
Sample Date: 11/8/2023 11/8/2023

Analyte	Cas No.	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier	
		Result	Limit			Result	Limit			
GC/MS VOC										
<u>OSW-8260D</u>										
cis-1,2-Dichloroethene	156-59-2	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	---	
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---	
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---	

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS US Inc
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 11/20/2023 5:08:12 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-195194-1

Eurofins Cleveland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



Generated
11/20/2023 5:08:12 AM

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



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	14
QC Sample Results	15
QC Association Summary	18
Lab Chronicle	19
Certification Summary	20
Chain of Custody	21

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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 US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Job ID: 240-195194-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-195194-1

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 11/10/2023 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.7°C and 2.9°C

GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): MW-203_110723 (240-195194-5).

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

Method Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by 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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Sample Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195194-1	TRIP BLANK_33	Water	11/07/23 00:00	11/10/23 08:00
240-195194-2	MW-206_110723	Water	11/07/23 11:05	11/10/23 08:00
240-195194-3	MW-206S_110723	Water	11/07/23 12:07	11/10/23 08:00
240-195194-4	MW-203S_110723	Water	11/07/23 13:50	11/10/23 08:00
240-195194-5	MW-203_110723	Water	11/07/23 14:40	11/10/23 08:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: TRIP BLANK_33

Lab Sample ID: 240-195194-1

No Detections.

Client Sample ID: MW-206_110723

Lab Sample ID: 240-195194-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	25	J	33	15	ug/L	33.3333		8260D	Total/NA
trans-1,2-Dichloroethene	70		33	17	ug/L	33.3333		8260D	Total/NA
Trichloroethene	860		33	15	ug/L	33.3333		8260D	Total/NA

Client Sample ID: MW-206S_110723

Lab Sample ID: 240-195194-3

No Detections.

Client Sample ID: MW-203S_110723

Lab Sample ID: 240-195194-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.0		1.0	0.46	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	2.8		1.0	0.51	ug/L	1		8260D	Total/NA
Trichloroethene	51		1.0	0.44	ug/L	1		8260D	Total/NA

Client Sample ID: MW-203_110723

Lab Sample ID: 240-195194-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	90		20	9.2	ug/L	20		8260D	Total/NA
trans-1,2-Dichloroethene	230		20	10	ug/L	20		8260D	Total/NA
Trichloroethene	1600		40	18	ug/L	40		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: TRIP BLANK_33

Lab Sample ID: 240-195194-1

Date Collected: 11/07/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 22:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 22:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 22:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		62 - 137		11/17/23 22:52	1
4-Bromofluorobenzene (Surr)	109		56 - 136		11/17/23 22:52	1
Toluene-d8 (Surr)	109		78 - 122		11/17/23 22:52	1
Dibromofluoromethane (Surr)	109		73 - 120		11/17/23 22:52	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: MW-206_110723

Lab Sample ID: 240-195194-2

Date Collected: 11/07/23 11:05

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	25	J	33	15	ug/L			11/17/23 23:40	33.3333
trans-1,2-Dichloroethene	70		33	17	ug/L			11/17/23 23:40	33.3333
Trichloroethene	860		33	15	ug/L			11/17/23 23:40	33.3333
Vinyl chloride	33	U	33	15	ug/L			11/17/23 23:40	33.3333

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137		11/17/23 23:40	33.3333
4-Bromofluorobenzene (Surr)	109		56 - 136		11/17/23 23:40	33.3333
Toluene-d8 (Surr)	110		78 - 122		11/17/23 23:40	33.3333
Dibromofluoromethane (Surr)	108		73 - 120		11/17/23 23:40	33.3333

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: MW-206S_110723

Lab Sample ID: 240-195194-3

Date Collected: 11/07/23 12:07

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/23 00:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/23 00:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/23 00:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/23 00:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		11/18/23 00:04	1
4-Bromofluorobenzene (Surr)	110		56 - 136		11/18/23 00:04	1
Toluene-d8 (Surr)	111		78 - 122		11/18/23 00:04	1
Dibromofluoromethane (Surr)	110		73 - 120		11/18/23 00:04	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: MW-203S_110723

Lab Sample ID: 240-195194-4

Date Collected: 11/07/23 13:50

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0		1.0	0.46	ug/L			11/18/23 00:28	1
trans-1,2-Dichloroethene	2.8		1.0	0.51	ug/L			11/18/23 00:28	1
Trichloroethene	51		1.0	0.44	ug/L			11/18/23 00:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/23 00:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		11/18/23 00:28	1
4-Bromofluorobenzene (Surr)	111		56 - 136		11/18/23 00:28	1
Toluene-d8 (Surr)	111		78 - 122		11/18/23 00:28	1
Dibromofluoromethane (Surr)	110		73 - 120		11/18/23 00:28	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: MW-203_110723

Lab Sample ID: 240-195194-5

Date Collected: 11/07/23 14:40

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	90		20	9.2	ug/L			11/18/23 00:53	20
trans-1,2-Dichloroethene	230		20	10	ug/L			11/18/23 00:53	20
Trichloroethene	1600		40	18	ug/L			11/18/23 17:41	40
Vinyl chloride	20	U	20	9.0	ug/L			11/18/23 00:53	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		11/18/23 00:53	20
1,2-Dichloroethane-d4 (Surr)	117		62 - 137		11/18/23 17:41	40
4-Bromofluorobenzene (Surr)	107		56 - 136		11/18/23 00:53	20
4-Bromofluorobenzene (Surr)	112		56 - 136		11/18/23 17:41	40
Toluene-d8 (Surr)	107		78 - 122		11/18/23 00:53	20
Toluene-d8 (Surr)	112		78 - 122		11/18/23 17:41	40
Dibromofluoromethane (Surr)	105		73 - 120		11/18/23 00:53	20
Dibromofluoromethane (Surr)	111		73 - 120		11/18/23 17:41	40

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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	DCA	BFB	TOL	DBFM
		(62-137)	(56-136)	(78-122)	(73-120)
240-195156-C-52 MS	Matrix Spike	110	109	108	106
240-195156-C-52 MSD	Matrix Spike Duplicate	109	112	108	106
240-195194-1	TRIP BLANK_33	115	109	109	109
240-195194-2	MW-206_110723	114	109	110	108
240-195194-3	MW-206S_110723	112	110	111	110
240-195194-4	MW-203S_110723	113	111	111	110
240-195194-5	MW-203_110723	110	107	107	105
240-195194-5	MW-203_110723	117	112	112	111
240-195197-E-4 MS	Matrix Spike	111	114	113	109
240-195197-H-4 MSD	Matrix Spike Duplicate	112	115	114	109
LCS 240-595093/5	Lab Control Sample	100	106	105	99
LCS 240-595129/5	Lab Control Sample	116	122	117	114
MB 240-595093/8	Method Blank	106	108	107	102
MB 240-595129/8	Method Blank	123	118	117	115

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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

Lab Sample ID: MB 240-595093/8

Matrix: Water

Analysis Batch: 595093

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 18:27	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 18:27	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 18:27	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 18:27	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		11/17/23 18:27	1
4-Bromofluorobenzene (Surr)	108		56 - 136		11/17/23 18:27	1
Toluene-d8 (Surr)	107		78 - 122		11/17/23 18:27	1
Dibromofluoromethane (Surr)	102		73 - 120		11/17/23 18:27	1

Lab Sample ID: LCS 240-595093/5

Matrix: Water

Analysis Batch: 595093

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
cis-1,2-Dichloroethene	25.0	22.9		ug/L		92	77 - 123
trans-1,2-Dichloroethene	25.0	23.2		ug/L		93	75 - 124
Trichloroethene	25.0	22.6		ug/L		91	70 - 122
Vinyl chloride	12.5	10.7		ug/L		86	60 - 144

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	100		62 - 137
4-Bromofluorobenzene (Surr)	106		56 - 136
Toluene-d8 (Surr)	105		78 - 122
Dibromofluoromethane (Surr)	99		73 - 120

Lab Sample ID: 240-195197-E-4 MS

Matrix: Water

Analysis Batch: 595093

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				
cis-1,2-Dichloroethene	1.0	U	25.0	21.9		ug/L		88	66 - 128
trans-1,2-Dichloroethene	1.0	U	25.0	21.4		ug/L		86	56 - 136
Trichloroethene	1.0	U	25.0	20.9		ug/L		83	61 - 124
Vinyl chloride	1.0	U	12.5	10.6		ug/L		85	43 - 157

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	111		62 - 137
4-Bromofluorobenzene (Surr)	114		56 - 136
Toluene-d8 (Surr)	113		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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

Lab Sample ID: 240-195197-H-4 MSD

Matrix: Water

Analysis Batch: 595093

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
cis-1,2-Dichloroethene	1.0	U	25.0	21.6		ug/L		86	66 - 128	1	14
trans-1,2-Dichloroethene	1.0	U	25.0	21.7		ug/L		87	56 - 136	2	15
Trichloroethene	1.0	U	25.0	20.5		ug/L		82	61 - 124	2	15
Vinyl chloride	1.0	U	12.5	10.3		ug/L		82	43 - 157	3	24

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		62 - 137
4-Bromofluorobenzene (Surr)	115		56 - 136
Toluene-d8 (Surr)	114		78 - 122
Dibromofluoromethane (Surr)	109		73 - 120

Lab Sample ID: MB 240-595129/8

Matrix: Water

Analysis Batch: 595129

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/23 14:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/23 14:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/23 14:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/23 14:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	123		62 - 137		11/18/23 14:52	1
4-Bromofluorobenzene (Surr)	118		56 - 136		11/18/23 14:52	1
Toluene-d8 (Surr)	117		78 - 122		11/18/23 14:52	1
Dibromofluoromethane (Surr)	115		73 - 120		11/18/23 14:52	1

Lab Sample ID: LCS 240-595129/5

Matrix: Water

Analysis Batch: 595129

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	25.0	23.5		ug/L		94	77 - 123
trans-1,2-Dichloroethene	25.0	23.7		ug/L		95	75 - 124
Trichloroethene	25.0	22.9		ug/L		92	70 - 122
Vinyl chloride	12.5	10.8		ug/L		86	60 - 144

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	116		62 - 137
4-Bromofluorobenzene (Surr)	122		56 - 136
Toluene-d8 (Surr)	117		78 - 122
Dibromofluoromethane (Surr)	114		73 - 120

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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

Lab Sample ID: 240-195156-C-52 MS

Client Sample ID: Matrix Spike

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595129

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
cis-1,2-Dichloroethene	2400		2500	4550		ug/L		86		66 - 128
trans-1,2-Dichloroethene	100	U	2500	2240		ug/L		90		56 - 136
Trichloroethene	440		2500	2480		ug/L		82		61 - 124
Vinyl chloride	50	J	1250	1060		ug/L		81		43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	110		62 - 137
4-Bromofluorobenzene (Surr)	109		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120

Lab Sample ID: 240-195156-C-52 MSD

Client Sample ID: Matrix Spike Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 595129

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
cis-1,2-Dichloroethene	2400		2500	4500		ug/L		84		66 - 128	1	14
trans-1,2-Dichloroethene	100	U	2500	2160		ug/L		87		56 - 136	4	15
Trichloroethene	440		2500	2390		ug/L		78		61 - 124	4	15
Vinyl chloride	50	J	1250	1050		ug/L		80		43 - 157	1	24

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	109		62 - 137
4-Bromofluorobenzene (Surr)	112		56 - 136
Toluene-d8 (Surr)	108		78 - 122
Dibromofluoromethane (Surr)	106		73 - 120

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

GC/MS VOA

Analysis Batch: 595093

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195194-1	TRIP BLANK_33	Total/NA	Water	8260D	
240-195194-2	MW-206_110723	Total/NA	Water	8260D	
240-195194-3	MW-206S_110723	Total/NA	Water	8260D	
240-195194-4	MW-203S_110723	Total/NA	Water	8260D	
240-195194-5	MW-203_110723	Total/NA	Water	8260D	
MB 240-595093/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595093/5	Lab Control Sample	Total/NA	Water	8260D	
240-195197-E-4 MS	Matrix Spike	Total/NA	Water	8260D	
240-195197-H-4 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Analysis Batch: 595129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195194-5	MW-203_110723	Total/NA	Water	8260D	
MB 240-595129/8	Method Blank	Total/NA	Water	8260D	
LCS 240-595129/5	Lab Control Sample	Total/NA	Water	8260D	
240-195156-C-52 MS	Matrix Spike	Total/NA	Water	8260D	
240-195156-C-52 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: TRIP BLANK_33

Lab Sample ID: 240-195194-1

Date Collected: 11/07/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595093	CDG	EET CLE	11/17/23 22:52

Client Sample ID: MW-206_110723

Lab Sample ID: 240-195194-2

Date Collected: 11/07/23 11:05

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		33.3333	595093	CDG	EET CLE	11/17/23 23:40

Client Sample ID: MW-206S_110723

Lab Sample ID: 240-195194-3

Date Collected: 11/07/23 12:07

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595093	CDG	EET CLE	11/18/23 00:04

Client Sample ID: MW-203S_110723

Lab Sample ID: 240-195194-4

Date Collected: 11/07/23 13:50

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595093	CDG	EET CLE	11/18/23 00:28

Client Sample ID: MW-203_110723

Lab Sample ID: 240-195194-5

Date Collected: 11/07/23 14:40

Matrix: Water

Date Received: 11/10/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		20	595093	CDG	EET CLE	11/18/23 00:53
Total/NA	Analysis	8260D		40	595129	CDG	EET CLE	11/18/23 17:41

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

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
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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



Chain of Custody Record

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


Regulatory program: DW NPDES RCRA Other

Client Contact: Arcadis
 Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Nov4, MI, 48377
 Phone: 248-994-2240
 Project Name: Ford L.I. ~~offsite~~ offsite
 Project Number: 30167538-~~402.04~~ 402.04
 PO # 30167538-~~402.04~~ 402.04

Client Project Manager: Kris Hinskey
 Telephone: 248-994-2240
 Email: kristoffer.hinskey@arcadis.com
 Site Contact: Christina Weaver
 Telephone: 248-994-2240
 Lab Contact: Mike DeMunico
 Telephone: 330-497-9396

Sampler Name: Garrett Wink
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Identification	Sample Date	Sample Time	Matrix				Containers & Preservatives				Filtered Sample (Y/N)	Composite=C/Grab=G	Analyses						Sample Specific Notes / Special Instructions:						
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl			NaOH	ZnAc	LiPrs	Other:	1,1-DCE 8260B	cis-1,2-DCE 8260B		Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	
TRIP BLANK_ 33		---	1																						1 Trip Blank
MW-206-110723	11/07/2023	1105	6																						3VOA6 for 8260B-SG 3VOA6 for 8260B-SIM
MW-206s-110723	11/07/2023	1207	3																						3 VOAs, HCL VOAs Rough Estimate Contaminants
MW-203s-110723	11/07/2023	1350	3																						I
MW-203-110723	11/07/2023	1440	3																						



240-195194 Chain of Custody

Possible Hazard Identification
 Non-Hazard Irritant Poison B Inknown

Special Instructions/OC Requirements & Comments:
 Sample address: 12447 LEVAN
 Submit all results through Cadena at jomaliala@cadenaco.com. Cadena #E203728
 Level IV Reporting requested.

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
<i>[Signature]</i>	ARCADIS	11/07/23 15:35	Nov. Cold Storage	ARCADIS	11/07/23 15:35
<i>[Signature]</i>	Arcadis	11/9/23 0850	<i>[Signature]</i>	EETA	11/9/23 10:00
<i>[Signature]</i>	EETA	11/9/23 10:15	<i>[Signature]</i>	EETA	11-10-23 0800



Eurofins - Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login # : 195194

Client Arcadis Site Name _____

Cooler unpacked by:
Alissa Atkinson

Cooler Received on 11-10-23 Opened on 11/10/23

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

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


Eurofins Cooler # _____ 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 # 22 (CF +1.1 °C) Observed Cooler Temp. _____ °C Corrected Cooler Temp. _____ °C

- 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity 1 ea
 - 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)? Yes No
- 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
- 13. Were all preserved sample(s) at the correct pH upon receipt? Yes No NA pH Strip Lot# HC316719
- 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 # N/A Covered Yes No
- 17. Was a LL Hg or Me Hg trip blank present? Yes No

Tests that are not checked for pH by Receiving:

VOAs
 Oil and Grease
 TOC

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: _____

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)				IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)		
EC	Client	Box	Other	IR GUN #: 72	1.8	2.9	Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: 72	1.6	2.7	Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice
EC	Client	Box	Other	IR GUN #: _____			Wet Ice	Blue Ice	Dry Ice

See Temperature Excursion Form

DATA VERIFICATION REPORT



November 20, 2023

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: 30167538.402.04 off-site
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 195194-1
Sample date: 2023-11-07
Report received by CADENA: 2023-11-20
Initial Data Verification completed by CADENA: 2023-11-20
Number of Samples:5
Sample Matrices:Water
Test Categories:GCMS VOC

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

The following minor QC exceptions or missing information were noted:

SRN - Sample Receipt Non-conformance(headspace) - Sample -005 results for GCMS VOC should be considered to be estimated and qualified with UJ flags if non-detect due to sample receipt non-conformance that affects the integrity of the sample. See laboratory submittal sample receipt forms for details.

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.

Qualified Results Summary

CADENA Project ID: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195194-1

Sample Name: MW-203_110723

Lab Sample ID: 2401951945

Sample Date: 11/7/2023

Analyte	Cas No.	Report		Units	Valid Qualifier
		Result	Limit		
GC/MS VOC					
<u>OSW-8260D</u>					
cis-1,2-Dichloroethene	156-59-2	90	20	ug/l	UJ
trans-1,2-Dichloroethene	156-60-5	230	20	ug/l	UJ
Trichloroethene	79-01-6	1600	40	ug/l	UJ
Vinyl chloride	75-01-4	ND	20	ug/l	UJ

Analytical Results Summary

CADENA Project ID: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195194-1

Analyte	Cas No.	Sample Name: TRIP BLANK_33				Sample Name: MW-206_110723				Sample Name: MW-206S_110723				Sample Name: MW-203S_110723				Sample Name: MW-203_110723			
		Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid	Result	Limit	Units	Valid
GC/MS VOC																					
<u>OSW-8260D</u>																					
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	25	33	ug/l	J	ND	1.0	ug/l	---	1.0	1.0	ug/l	---	90	20	ug/l	---
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	70	33	ug/l	---	ND	1.0	ug/l	---	2.8	1.0	ug/l	---	230	20	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	860	33	ug/l	---	ND	1.0	ug/l	---	51	1.0	ug/l	---	1600	40	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	33	ug/l	---	ND	1.0	ug/l	---	ND	1.0	ug/l	---	ND	20	ug/l	---

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS US Inc
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 11/21/2023 5:30:06 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-195294-1

Eurofins Cleveland

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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



Generated
11/21/2023 5:30:06 AM

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



Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	14
Lab Chronicle	15
Certification Summary	16
Chain of Custody	17

Definitions/Glossary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
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 US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Job ID: 240-195294-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-195294-1

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 11/11/2023 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 3.3°C

GC/MS VOA

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



Method Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by 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 US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-195294-1	TRIP BLANK_36	Water	11/09/23 00:00	11/11/23 08:00
240-195294-2	MW-202S_110923	Water	11/09/23 10:05	11/11/23 08:00

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Detection Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Client Sample ID: TRIP BLANK_36

Lab Sample ID: 240-195294-1

No Detections.

Client Sample ID: MW-202S_110923

Lab Sample ID: 240-195294-2

No Detections.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

This Detection Summary does not include radiochemical test results.

Eurofins Cleveland

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Client Sample ID: TRIP BLANK_36

Lab Sample ID: 240-195294-1

Date Collected: 11/09/23 00:00

Matrix: Water

Date Received: 11/11/23 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			11/19/23 21:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 21:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 21:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		11/19/23 21:07	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/19/23 21:07	1
Toluene-d8 (Surr)	100		78 - 122		11/19/23 21:07	1
Dibromofluoromethane (Surr)	94		73 - 120		11/19/23 21:07	1

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Client Sample ID: MW-202S_110923

Lab Sample ID: 240-195294-2

Date Collected: 11/09/23 10:05

Matrix: Water

Date Received: 11/11/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 21:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 21:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:31	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 21:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		11/19/23 21:31	1
4-Bromofluorobenzene (Surr)	97		56 - 136		11/19/23 21:31	1
Toluene-d8 (Surr)	98		78 - 122		11/19/23 21:31	1
Dibromofluoromethane (Surr)	96		73 - 120		11/19/23 21:31	1

Surrogate Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

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	DCA	BFB	TOL	DBFM
		(62-137)	(56-136)	(78-122)	(73-120)
240-195260-A-5 MS	Matrix Spike	106	100	100	103
240-195260-B-5 MSD	Matrix Spike Duplicate	107	101	98	103
240-195294-1	TRIP BLANK_36	103	96	100	94
240-195294-2	MW-202S_110923	106	97	98	96
LCS 240-595149/4	Lab Control Sample	103	98	97	101
MB 240-595149/7	Method Blank	103	95	99	96

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)
DBFM = Dibromofluoromethane (Surr)

QC Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

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

Lab Sample ID: MB 240-595149/7

Matrix: Water

Analysis Batch: 595149

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			11/19/23 14:57	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 14:57	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 14:57	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 14:57	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 14:57	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 14:57	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		11/19/23 14:57	1
4-Bromofluorobenzene (Surr)	95		56 - 136		11/19/23 14:57	1
Toluene-d8 (Surr)	99		78 - 122		11/19/23 14:57	1
Dibromofluoromethane (Surr)	96		73 - 120		11/19/23 14:57	1

Lab Sample ID: LCS 240-595149/4

Matrix: Water

Analysis Batch: 595149

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	25.7		ug/L		103	63 - 134
cis-1,2-Dichloroethene	25.0	25.4		ug/L		102	77 - 123
Tetrachloroethene	25.0	24.1		ug/L		96	76 - 123
trans-1,2-Dichloroethene	25.0	25.1		ug/L		100	75 - 124
Trichloroethene	25.0	25.4		ug/L		102	70 - 122
Vinyl chloride	12.5	10.2		ug/L		81	60 - 144

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	103		62 - 137
4-Bromofluorobenzene (Surr)	98		56 - 136
Toluene-d8 (Surr)	97		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: 240-195260-A-5 MS

Matrix: Water

Analysis Batch: 595149

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	0.74	J	25.0	22.2		ug/L		86	56 - 135
cis-1,2-Dichloroethene	120	E	25.0	143	E 4	ug/L		98	66 - 128
trans-1,2-Dichloroethene	4.0		25.0	26.6		ug/L		90	56 - 136
Trichloroethene	41		25.0	61.4		ug/L		81	61 - 124
Vinyl chloride	1.3		12.5	10.4		ug/L		73	43 - 157

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	106		62 - 137
4-Bromofluorobenzene (Surr)	100		56 - 136
Toluene-d8 (Surr)	100		78 - 122
Dibromofluoromethane (Surr)	103		73 - 120

Eurofins Cleveland

QC Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

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

Lab Sample ID: 240-195260-B-5 MSD

Matrix: Water

Analysis Batch: 595149

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits			
1,1-Dichloroethene	0.74	J	25.0	24.7		ug/L		96	56 - 135	11		26
cis-1,2-Dichloroethene	120	E	25.0	145	E 4	ug/L		105	66 - 128	1		14
trans-1,2-Dichloroethene	4.0		25.0	27.6		ug/L		94	56 - 136	4		15
Trichloroethene	41		25.0	63.4	E	ug/L		88	61 - 124	3		15
Vinyl chloride	1.3		12.5	12.1		ug/L		86	43 - 157	15		24
MSD MSD												
Surrogate	%Recovery	Qualifier	Limits									
1,2-Dichloroethane-d4 (Surr)	107		62 - 137									
4-Bromofluorobenzene (Surr)	101		56 - 136									
Toluene-d8 (Surr)	98		78 - 122									
Dibromofluoromethane (Surr)	103		73 - 120									

QC Association Summary

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

GC/MS VOA

Analysis Batch: 595149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-195294-1	TRIP BLANK_36	Total/NA	Water	8260D	
240-195294-2	MW-202S_110923	Total/NA	Water	8260D	
MB 240-595149/7	Method Blank	Total/NA	Water	8260D	
LCS 240-595149/4	Lab Control Sample	Total/NA	Water	8260D	
240-195260-A-5 MS	Matrix Spike	Total/NA	Water	8260D	
240-195260-B-5 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D	

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Lab Chronicle

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Client Sample ID: TRIP BLANK_36

Lab Sample ID: 240-195294-1

Date Collected: 11/09/23 00:00

Matrix: Water

Date Received: 11/11/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595149	LEE	EET CLE	11/19/23 21:07

Client Sample ID: MW-202S_110923

Lab Sample ID: 240-195294-2

Date Collected: 11/09/23 10:05

Matrix: Water

Date Received: 11/11/23 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	595149	LEE	EET CLE	11/19/23 21:31

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

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
Georgia	State	4062	02-27-24
Illinois	NELAP	200004	07-31-24
Iowa	State	421	06-01-25
Kentucky (UST)	State	112225	02-28-24
Kentucky (WW)	State	KY98016	12-31-23
Michigan	State	9135	02-27-24
Minnesota	NELAP	039-999-348	12-31-23
Minnesota (Petrofund)	State	3506	08-01-23 *
New Jersey	NELAP	OH001	07-01-24
New York	NELAP	10975	04-02-24
Ohio	State	8303	02-27-24
Ohio VAP	State	ORELAP 4062	02-27-24
Oregon	NELAP	4062	02-27-24
Pennsylvania	NELAP	68-00340	08-31-24
Texas	NELAP	T104704517-22-19	08-31-24
Virginia	NELAP	460175	09-14-24
West Virginia DEP	State	210	12-31-23

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



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

Regulatory program: DW NPDES RCRA Other

Client Project Manager: Kris Hinskey
 Telephone: 248-994-2240
 Email: kristoffer.hinskey@arcadis.com

Site Contact: Christina Weaver
 Telephone: 248-994-2240

Lab Contact: Mike DelMonico
 Telephone: 330-497-9396

Company Name: Arcadis
 Address: 28550 Cabot Drive, Suite 500
 City/State/Zip: Novi, MI, 48377
 Phone: 248-994-2240

Project Name: Ford LTP One-off-site
 Project Number: 30167538-402-04
 PO # 30167538-402-04

Sampler Name: Garrett Wink
 Method of Shipment/Carrier:
 Shipping/Tracking No:

Sample Date	Sample Time	Matrix										Filtered Sample (Y/N)	Composite C/Grab G	Analyses						Sample Specific Notes / Special Instructions:						
		Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnO			NaOH	Upters	Other:	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B		PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM		
11/09/23	---	1																								1 Trip Blank
11/09/23	1005	3																								3 VOAs for 0260B 3 VOAs for 0260B-GM ↳ 3 VOAs Rough Enterprises

Barcode: 240-195294 Chain of Custody

Possible Hazard Identification:
 Non-Hazard Irritant Poison B Unknown

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

Relinquished by: [Signature]
 Relinquished by: Jennifer Shuy
 Relinquished by: [Signature]

Received by: Nov: Cold Storage
 Received by: [Signature]
 Received in Laboratory by: Anna Harrison

Company: ARCADIS
 Company: Arcadis
 Company: BVA

Date/Time: 11/09/23 15:00
 Date/Time: 11/10/23 1335
 Date/Time: 11/09/23 1340

Company: ARCADIS
 Company: BVA
 Company: EETNC

Date/Time: 11/09/23 15:00
 Date/Time: 11/09/23 1335
 Date/Time: 11.11.23 0800



Eurofins - Cleveland Sample Receipt Form/Narrative
Barberton Facility

Login # : _____

Client Aicad:s

Site Name _____

Cooler unpacked by:

Cooler Received on 11-11-23

Opened on 11-11-23

Missa A. Thomas

FedEx: 1st Grd Exp UPS FAS Waypoint Client Drop Off Eurofins Courier Other

Receipt After-hours: Drop-off Date/Time

Storage Location

Eurofins Cooler # EC Foam Box 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 # 21 (CF +0.2 °C) Observed Cooler Temp. 3.1 °C Corrected Cooler Temp. 3.3 °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

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# HC316719

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 # N/A - 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 _____

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



November 21, 2023

Kris Hinskey
Arcadis Inc
10559 Citation Ave
Suite 100
Brighton, MI 48116

CADENA project ID: E203631
Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater
Project number: 30167538.402.04 off-site
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Cleveland
Laboratory submittal: 195294-1
Sample date: 2023-11-09
Report received by CADENA: 2023-11-21
Initial Data Verification completed by CADENA: 2023-11-21
Number of Samples:2
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 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, 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.

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: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 195294-1

Sample Name: TRIP BLANK_36 MW-202S_110923
 Lab Sample ID: 2401952941 2401952942
 Sample Date: 11/9/2023 11/9/2023

Analyte	Cas No.	Report		Units	Valid Qualifier	Report		Units	Valid Qualifier
		Result	Limit			Result	Limit		
GC/MS VOC									
<u>OSW-8260D</u>									
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---				
cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Tetrachloroethene	127-18-4	ND	1.0	ug/l	---				
trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Trichloroethene	79-01-6	ND	1.0	ug/l	---	ND	1.0	ug/l	---
Vinyl chloride	75-01-4	ND	1.0	ug/l	---	ND	1.0	ug/l	---

Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-195190-1

CADENA Verification Report: 2023-11-20

Analyses Performed By:
Eurofins Cleveland
Barberton, Ohio

Report # 52119R
Review Level: Tier III
Project: 30167538.402.02

DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-195190-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					VOC
TRIP BLANK_48	240-195190-1	Water	11/08/2023		X
MW-202_110823	240-195190-2	Water	11/08/2023		X

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), as appropriate.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

DATA REVIEW

6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Preservation		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Field Duplicate RPD	X				X
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW

VALIDATION PERFORMED BY: Bindu Sree M B

SIGNATURE: 

DATE: December 14, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 15, 2023

**NO CORRECTIONS/QUALIFIERS ADDED
TO SAMPLE ANALYSIS DATA SHEETS**




**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



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 Hinskey				Site Contact: Christina Weaver				Lab Contact: Mike DelMonico				COC No:																		
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240				Telephone: 248-994-2240				Telephone: 330-497-9396				1 of 1 COCs																		
City/State/Zip: Novi, MI, 48377		Email: kristoffer.hinskey@arcadis.com				Analysis Turnaround Time				Analyses				For lab use only																		
Phone: 248-994-2240		Sample Name: Garrett Link				TAT if different from below				<table border="1" style="width: 100%; text-align: center; font-size: x-small;"> <tr> <td>1,1-DCE 8260B</td> <td>cis-1,2-DCE 8260B</td> <td>Trans-1,2-DCE 8260B</td> <td>PCE 8260B</td> <td>TCE 8260B</td> <td>Vinyl Chloride 8260B</td> <td>1,4-Dioxane 8260B SIM</td> </tr> </table>				1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM	Walk-in client		Lab sampling									
1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM																										
Project Name: Ford LTP Off-Site		<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																														
Project Number: 30167538.402.04		Method of Shipment/Carrier:				<table border="1" style="width: 100%; text-align: center; font-size: x-small;"> <tr> <td colspan="2">Matrix</td> <td colspan="6">Containers & Preservatives</td> </tr> <tr> <td>Air</td> <td>Aqueous</td> <td>Sediment</td> <td>Solid</td> <td>Other:</td> <td>H2SO4</td> <td>HNO3</td> <td>HCl</td> <td>NaOH</td> <td>ZnAc2</td> <td>NaOH</td> <td>Uppres</td> <td>Other:</td> </tr> </table>				Matrix		Containers & Preservatives						Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc2	NaOH	Uppres	Other:	Job/SDG No:	
Matrix		Containers & Preservatives																														
Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc2	NaOH	Uppres	Other:																				
PO # 30167538.402.04		Shipping/Tracking No:																														
Sample Identification		Sample Date	Sample Time	Matrix			Containers & Preservatives						Sample Specific Notes / Special Instructions:																			
				Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH			ZnAc2	NaOH	Uppres	Other:														
TRIP BLANK_ 48		11/08/23	---	1							1							1 Trip Blank														
MW-202-110823		11/08/23	1445	3							3							2 VOAs for 8260B 3 VOAs for 8260B SIM ↳ 3 VOAs Roush enterprises														
Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)										<div style="border: 1px solid black; padding: 5px; display: inline-block;">  240-195190 Chain of Custody </div> <div style="font-size: 2em; font-weight: bold; margin-top: 20px;">MICHIGAN</div> <div style="font-size: 2em; font-weight: bold; margin-top: 10px;">190</div>																				
<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin 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 <input type="text"/> Months																														
Special Instructions/QC Requirements & Comments: Sample Address: 12447 LeVan Submit all results through Cadena at jtomalia@cadenco.com. Cadena #E203631 Level IV Reporting requested.																																
Relinquished by: <i>[Signature]</i>		Company: ARCADIS		Date/Time: 11/08/23 15:35		Received by: Nov: Cold Storage		Company: ARCADIS		Date/Time: 11/08/23 15:35																						
Relinquished by: <i>[Signature]</i>		Company: Arcadis		Date/Time: 11/9/23 0850		Received by: <i>[Signature]</i>		Company: EETA		Date/Time: 11/9/23 1010																						
Relinquished by: <i>[Signature]</i>		Company: EETA		Date/Time: 11/9/23 1015		Received in Laboratory by: <i>[Signature]</i>		Company: EETA		Date/Time: 11-10-23 0800																						

Page 324 of 326

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195190-1

Client Sample ID: TRIP BLANK_48

Lab Sample ID: 240-195190-1

Date Collected: 11/08/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 16:56	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 16:56	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 16:56	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 16:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	85		62 - 137		11/17/23 16:56	1
4-Bromofluorobenzene (Surr)	87		56 - 136		11/17/23 16:56	1
Toluene-d8 (Surr)	104		78 - 122		11/17/23 16:56	1
Dibromofluoromethane (Surr)	88		73 - 120		11/17/23 16:56	1

Client Sample ID: MW-202_110823

Lab Sample ID: 240-195190-2

Date Collected: 11/08/23 14:45

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 17:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 17:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 17:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 17:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	83		62 - 137		11/17/23 17:22	1
4-Bromofluorobenzene (Surr)	74		56 - 136		11/17/23 17:22	1
Toluene-d8 (Surr)	100		78 - 122		11/17/23 17:22	1
Dibromofluoromethane (Surr)	87		73 - 120		11/17/23 17:22	1

Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-195194-1

CADENA Verification Report: 2023-11-20

Analyses Performed By:

Eurofins Cleveland

Barberton, Ohio

Report # 52121R

Review Level: Tier III

Project: 30167538.402.02

DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-195194-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis
					VOC
TRIP BLANK_33	240-195194-1	Water	11/07/2023		X
MW-206_110723	240-195194-2	Water	11/07/2023		X
MW-206S_110723	240-195194-3	Water	11/07/2023		X
MW-203S_110723	240-195194-4	Water	11/07/2023		X
MW-203_110723	240-195194-5	Water	11/07/2023		X

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), as appropriate.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Sample Receipt Condition

The laboratory received VOC vials with significant headspace for sample MW-203_110723 (240-195194-5). In case of any deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
Bubbles in VOC vials < 6 mm	Non-detect	No Action
	Detect	No Action
Bubbles in VOC vials > 6 mm	Non-detect	UJ
	Detect	J

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

DATA REVIEW

5. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

6. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

7. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

All identified compounds met the specified criteria.

8. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Preservation		X	X		
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Field Duplicate RPD	X				X
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW

VALIDATION PERFORMED BY: Bindu Sree M B

SIGNATURE: 

DATE: December 07, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 7, 2023

**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**

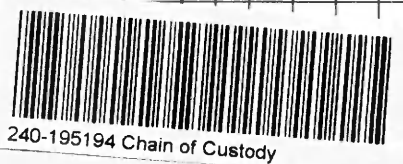


Chain of Custody Record

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			
Company Name: Arcadis		Client Project Manager: Kris Hinskey		Site Contact: Christina Weaver	
Address: 28550 Cabot Drive, Suite 500		Telephone: 248-994-2240		Telephone: 248-994-2240	
City/State/Zip: Novi, MI, 48377		Email: kristoffer.hinskey@arcadis.com		Lab Contact: Mike DelMonico	
Phone: 248-994-2240		Sampler Name: Garrett Link		Telephone: 330-497-9396	
Project Name: Ford LTP On-site ^{offsite}				Analysis Turnaround Time	
Project Number: 30167538- 401.05 ⁵⁶ 402.04		Method of Shipment/Carrier:		Analyses	
PO # 30167538- 401.05 ⁵⁶ 402.04		Shipping/Tracking No:		For lab use only	

Sample Identification	Sample Date	Sample Time	Matrix					Containers & Preservatives							Filtered Sample (Y/N)	Composite=C/Grab=C	Analyses										Sample Specific Notes / Special Instructions:	
			Air	Aqueous	Sediment	Solid	Other:	H2SO4	HNO3	HCl	NaOH	ZnAc	NaOH	Unpres			Other:	1,1-DCE 8260B	cis-1,2-DCE 8260B	Trans-1,2-DCE 8260B	PCE 8260B	TCE 8260B	Vinyl Chloride 8260B	1,4-Dioxane 8260B SIM				
TRIP BLANK - 33	---	---	1							1						NG	X	X	X	X	X	X						1 Trip Blank
MW-206-110723	11/07/2023	1105	6							6						NG	X	X		X	X						3 VOAs for 8260B - 56 3 VOAs for 8260B SIM	
MW-206s-110723	11/07/2023	1207	3/6							3/6						NG	X	X		X	X						3 aqueous, HCL VOAs Rough Estimate conc. wats	
MW-203s-110723	11/07/2023	1350	3							3						NG	X	X		X	X							
MW-203-110723	11/07/2023	1440	3							3						NG	X	X		X	X							



MICHIGAN
190

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:
 Sample address: 12447 Levan
 Submit all results through Cadena at jtomialia@cadenaco.com. Cadena #E203728
 Level IV Reporting requested.

Relinquished by: <i>[Signature]</i>	Company: ARCADIS	Date/Time: 11/07/23 15:35	Received by: <i>[Signature]</i>	Company: ARCADIS	Date/Time: 11/07/23 15:35
Relinquished by: <i>[Signature]</i>	Company: ARCADIS	Date/Time: 11/9/23 0850	Received by: <i>[Signature]</i>	Company: EETA	Date/Time: 11/9/23 10:00
Relinquished by: <i>[Signature]</i>	Company: EETA	Date/Time: 11/9/23 1015	Received in Laboratory by: <i>[Signature]</i>	Company: EETA	Date/Time: 11.10.23 0800

Client Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: TRIP BLANK_33

Lab Sample ID: 240-195194-1

Date Collected: 11/07/23 00:00

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/17/23 22:52	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/17/23 22:52	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/17/23 22:52	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/17/23 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		62 - 137		11/17/23 22:52	1
4-Bromofluorobenzene (Surr)	109		56 - 136		11/17/23 22:52	1
Toluene-d8 (Surr)	109		78 - 122		11/17/23 22:52	1
Dibromofluoromethane (Surr)	109		73 - 120		11/17/23 22:52	1

Client Sample ID: MW-206_110723

Lab Sample ID: 240-195194-2

Date Collected: 11/07/23 11:05

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	25	J	33	15	ug/L			11/17/23 23:40	33.3333
trans-1,2-Dichloroethene	70		33	17	ug/L			11/17/23 23:40	33.3333
Trichloroethene	860		33	15	ug/L			11/17/23 23:40	33.3333
Vinyl chloride	33	U	33	15	ug/L			11/17/23 23:40	33.3333

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		62 - 137		11/17/23 23:40	33.3333
4-Bromofluorobenzene (Surr)	109		56 - 136		11/17/23 23:40	33.3333
Toluene-d8 (Surr)	110		78 - 122		11/17/23 23:40	33.3333
Dibromofluoromethane (Surr)	108		73 - 120		11/17/23 23:40	33.3333

Client Sample ID: MW-206S_110723

Lab Sample ID: 240-195194-3

Date Collected: 11/07/23 12:07

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/18/23 00:04	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/18/23 00:04	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/18/23 00:04	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/23 00:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		62 - 137		11/18/23 00:04	1
4-Bromofluorobenzene (Surr)	110		56 - 136		11/18/23 00:04	1
Toluene-d8 (Surr)	111		78 - 122		11/18/23 00:04	1
Dibromofluoromethane (Surr)	110		73 - 120		11/18/23 00:04	1

Client Sample ID: MW-203S_110723

Lab Sample ID: 240-195194-4

Date Collected: 11/07/23 13:50

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0		1.0	0.46	ug/L			11/18/23 00:28	1

Euofins Cleveland

Client Sample Results

Client: ARCADIS US Inc
 Project/Site: Ford LTP - Off Site

Job ID: 240-195194-1

Client Sample ID: MW-203S_110723

Lab Sample ID: 240-195194-4

Date Collected: 11/07/23 13:50

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	2.8		1.0	0.51	ug/L			11/18/23 00:28	1
Trichloroethene	51		1.0	0.44	ug/L			11/18/23 00:28	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/18/23 00:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		62 - 137		11/18/23 00:28	1
4-Bromofluorobenzene (Surr)	111		56 - 136		11/18/23 00:28	1
Toluene-d8 (Surr)	111		78 - 122		11/18/23 00:28	1
Dibromofluoromethane (Surr)	110		73 - 120		11/18/23 00:28	1

Client Sample ID: MW-203_110723

Lab Sample ID: 240-195194-5

Date Collected: 11/07/23 14:40

Matrix: Water

Date Received: 11/10/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	90	J	20	9.2	ug/L			11/18/23 00:53	20
trans-1,2-Dichloroethene	230	J	20	10	ug/L			11/18/23 00:53	20
Trichloroethene	1600	J	40	18	ug/L			11/18/23 17:41	40
Vinyl chloride	20	UJ	20	9.0	ug/L			11/18/23 00:53	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		62 - 137		11/18/23 00:53	20
1,2-Dichloroethane-d4 (Surr)	117		62 - 137		11/18/23 17:41	40
4-Bromofluorobenzene (Surr)	107		56 - 136		11/18/23 00:53	20
4-Bromofluorobenzene (Surr)	112		56 - 136		11/18/23 17:41	40
Toluene-d8 (Surr)	107		78 - 122		11/18/23 00:53	20
Toluene-d8 (Surr)	112		78 - 122		11/18/23 17:41	40
Dibromofluoromethane (Surr)	105		73 - 120		11/18/23 00:53	20
Dibromofluoromethane (Surr)	111		73 - 120		11/18/23 17:41	40

Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-195294-1

CADENA Verification Report: 2023-11-21

Analyses Performed By:
Eurofins Cleveland
Barberton, Ohio

Report # 52131R
Review Level: Tier III
Project: 30167538.402.02

DATA REVIEW

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-195294-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis	
					VOC	VOC SIM
TRIP BLANK_36	240-195294-1	Water	11/09/2023		X	
MW-202S_110923	240-195294-2	Water	11/09/2023		X	X

DATA REVIEW

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Method 8260D. Data were reviewed in accordance with USEPA National Functional Guidelines for Organic Superfund Methods Data Review, EPA 540-R-20-005, November 2020 (with reference to the historical USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, October 1999), as appropriate.

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
 - U The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
 - B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.
- Quantitation (Q) Qualifiers
 - E The compound was quantitated above the calibration range.
 - D Concentration is based on a diluted sample analysis.
- Validation Qualifiers
 - J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 - UJ The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
 - UB Analyte considered non-detect at the listed value due to associated blank contamination.
 - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

DATA REVIEW

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260D	Water	14 days from collection to analysis	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and all analyses were performed within a 12-hour tune clock.

System performance and column resolution were acceptable.

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

All compounds associated with the initial calibrations were within the specified control limits.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the continuing calibrations were within the specified control limits.

4. Internal Standard Performance

Internal standard performance criteria ensure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within control limits.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to 5 times the RL, a control limit of two times the RL is applied for water matrices.

A field duplicate sample was not collected for samples from this SDG.

DATA REVIEW

6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

No compounds were detected in the samples within this SDG.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA REVIEW

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (GC/MS)					
Tier II Validation					
Holding times/Preservation		X		X	
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X		X	
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Field Duplicate RPD	X				X
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

DATA REVIEW

VALIDATION PERFORMED BY: Bindu Sree M B

SIGNATURE: 

DATE: December 15, 2023

PEER REVIEW: Andrew Korycinski

DATE: December 15, 2023

**NO CORRECTIONS/QUALIFIERS ADDED
TO SAMPLE ANALYSIS DATA SHEETS**



**CHAIN OF CUSTODY
CORRECTED SAMPLE ANALYSIS DATA
SHEETS**



Client Sample Results

Client: ARCADIS US Inc
Project/Site: Ford LTP - Off Site

Job ID: 240-195294-1

Client Sample ID: TRIP BLANK_36

Lab Sample ID: 240-195294-1

Date Collected: 11/09/23 00:00

Matrix: Water

Date Received: 11/11/23 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			11/19/23 21:07	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 21:07	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:07	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 21:07	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:07	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 21:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		62 - 137		11/19/23 21:07	1
4-Bromofluorobenzene (Surr)	96		56 - 136		11/19/23 21:07	1
Toluene-d8 (Surr)	100		78 - 122		11/19/23 21:07	1
Dibromofluoromethane (Surr)	94		73 - 120		11/19/23 21:07	1

Client Sample ID: MW-202S_110923

Lab Sample ID: 240-195294-2

Date Collected: 11/09/23 10:05

Matrix: Water

Date Received: 11/11/23 08:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/19/23 21:31	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/19/23 21:31	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/19/23 21:31	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/19/23 21:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		62 - 137		11/19/23 21:31	1
4-Bromofluorobenzene (Surr)	97		56 - 136		11/19/23 21:31	1
Toluene-d8 (Surr)	98		78 - 122		11/19/23 21:31	1
Dibromofluoromethane (Surr)	96		73 - 120		11/19/23 21:31	1