eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey
ARCADIS U.S., Inc.
28550 Cabot Drive
Suite 500
Novi, Michigan 48377

Generated 12/2/2022 8:21:42 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-176621-1

Eurofins Canton
180 S. Van Buren Avenue
Barberton OH 44203

See page two for job notes and contact information.

my EOL

Job Notes

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

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

Authorization

Generated
12/2/2022 8:21:42 AM

Authorized for release by
Opal Johnson, Project Manager II
Opal.Johnson@et.eurofinsus.com
Designee for
Michael DelMonico, Project Manager I
Michael.DelMonico@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 15
Lab Chronicle 16
Certification Summary 17
Chain of Custody 18

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.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

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

Job ID: 240-176621-1

Job ID: 240-176621-1

Laboratory: Eurofins Canton

Narrative

Job Narrative
240-176621-1

Comments
No additional comments.

Receipt
The samples were received on 11/17/2022 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 1.1º C and 1.6º C.

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

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

Method Summary

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

Job ID: 240-176621-1

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

Protocol References:

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

Laboratory References:

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

Sample Summary

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

Job ID: 240-176621-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-176621-1	TRIP BLANK_196	Water	11/15/22 00:00	11/17/22 08:00
240-176621-2	MW-136S_111522	Water	11/15/22 11:20	11/17/22 08:00

Detection Summary

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

Job ID: 240-176621-1

Client Sample ID: TRIP BLANK_196 — Lab Sample ID: 240-176621-1

No Detections.

Client Sample ID: MW-136S_111522 — Lab Sample ID: 240-176621-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	3.2		1.0	0.45	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

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

Job ID: 240-176621-1

Client Sample ID: TRIP BLANK_196
Date Collected: 11/15/22 00:00
Date Received: 11/17/22 08:00

Lab Sample ID: 240-176621-1
Matrix: Water

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			11/25/22 14:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/22 14:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 14:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/22 14:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 14:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/25/22 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*11/25/22 14:19*	*1*
4-Bromofluorobenzene (Surr)	*78*		*56 - 136*		*11/25/22 14:19*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*11/25/22 14:19*	*1*
Dibromofluoromethane (Surr)	*92*		*73 - 120*		*11/25/22 14:19*	*1*

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

Job ID: 240-176621-1

Client Sample ID: MW-136S_111522
Date Collected: 11/15/22 11:20
Date Received: 11/17/22 08:00

Lab Sample ID: 240-176621-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/23/22 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*		*11/23/22 15:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/25/22 18:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/22 18:29	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 18:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/22 18:29	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 18:29	1
Vinyl chloride	**3.2**		1.0	0.45	ug/L			11/25/22 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*11/25/22 18:29*	*1*
4-Bromofluorobenzene (Surr)	*73*		*56 - 136*		*11/25/22 18:29*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*11/25/22 18:29*	*1*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*11/25/22 18:29*	*1*

Surrogate Summary

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

Job ID: 240-176621-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-176621-1	TRIP BLANK_196	97	78	91	92
240-176621-2	MW-136S_111522	100	73	91	97
240-176621-2 MS	MW-136S_111522	84	95	95	84
240-176621-2 MSD	MW-136S_111522	85	94	96	85
LCS 240-553445/5	Lab Control Sample	86	92	97	88
MB 240-553445/8	Method Blank	89	77	91	88

Surrogate Legend

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

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		DCA
Lab Sample ID	Client Sample ID	(66-120)
240-176555-B-1 MS	Matrix Spike	77
240-176555-B-1 MSD	Matrix Spike Duplicate	81
240-176621-2	MW-136S_111522	76
LCS 240-553221/3	Lab Control Sample	76
MB 240-553221/4	Method Blank	76

Surrogate Legend

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

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

Lab Sample ID: MB 240-553445/8
Matrix: Water
Analysis Batch: 553445

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/25/22 13:03	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/22 13:03	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 13:03	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/22 13:03	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 13:03	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/25/22 13:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*89*		*62 - 137*		*11/25/22 13:03*	*1*
4-Bromofluorobenzene (Surr)	*77*		*56 - 136*		*11/25/22 13:03*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*11/25/22 13:03*	*1*
Dibromofluoromethane (Surr)	*88*		*73 - 120*		*11/25/22 13:03*	*1*

Lab Sample ID: LCS 240-553445/5
Matrix: Water
Analysis Batch: 553445

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	25.0	28.1		ug/L		112	63 - 134
cis-1,2-Dichloroethene	25.0	24.6		ug/L		98	77 - 123
Tetrachloroethene	25.0	22.9		ug/L		92	76 - 123
trans-1,2-Dichloroethene	25.0	23.7		ug/L		95	75 - 124
Trichloroethene	25.0	21.7		ug/L		87	70 - 122
Vinyl chloride	12.5	13.5		ug/L		108	60 - 144

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*86*		*62 - 137*
4-Bromofluorobenzene (Surr)	*92*		*56 - 136*
Toluene-d8 (Surr)	*97*		*78 - 122*
Dibromofluoromethane (Surr)	*88*		*73 - 120*

Lab Sample ID: 240-176621-2 MS
Matrix: Water
Analysis Batch: 553445

Client Sample ID: MW-136S_111522
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	1.0	U	25.0	24.1		ug/L		97	56 - 135
cis-1,2-Dichloroethene	1.0	U	25.0	21.7		ug/L		87	66 - 128
Tetrachloroethene	1.0	U	25.0	21.4		ug/L		85	62 - 131
trans-1,2-Dichloroethene	1.0	U	25.0	21.1		ug/L		84	56 - 136
Trichloroethene	1.0	U	25.0	19.6		ug/L		78	61 - 124
Vinyl chloride	3.2		12.5	15.5		ug/L		99	43 - 157

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*84*		*62 - 137*
4-Bromofluorobenzene (Surr)	*95*		*56 - 136*
Toluene-d8 (Surr)	*95*		*78 - 122*

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

Lab Sample ID: 240-176621-2 MS
Matrix: Water
Analysis Batch: 553445

Client Sample ID: MW-136S_111522
Prep Type: Total/NA

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*84*		*73 - 120*

Lab Sample ID: 240-176621-2 MSD
Matrix: Water
Analysis Batch: 553445

Client Sample ID: MW-136S_111522
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1-Dichloroethene	1.0	U	25.0	23.9		ug/L		95	56 - 135	1	26
cis-1,2-Dichloroethene	1.0	U	25.0	21.3		ug/L		85	66 - 128	2	14
Tetrachloroethene	1.0	U	25.0	22.4		ug/L		90	62 - 131	5	20
trans-1,2-Dichloroethene	1.0	U	25.0	20.3		ug/L		81	56 - 136	4	15
Trichloroethene	1.0	U	25.0	19.7		ug/L		79	61 - 124	0	15
Vinyl chloride	3.2		12.5	14.4		ug/L		90	43 - 157	8	24

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*85*		*62 - 137*
4-Bromofluorobenzene (Surr)	*94*		*56 - 136*
Toluene-d8 (Surr)	*96*		*78 - 122*
Dibromofluoromethane (Surr)	*85*		*73 - 120*

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

Lab Sample ID: MB 240-553221/4
Matrix: Water
Analysis Batch: 553221

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/23/22 06:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*		*11/23/22 06:09*	*1*

Lab Sample ID: LCS 240-553221/3
Matrix: Water
Analysis Batch: 553221

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	10.0	9.27		ug/L		93	80 - 122

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*

Lab Sample ID: 240-176555-B-1 MS
Matrix: Water
Analysis Batch: 553221

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dioxane	14		10.0	26.1		ug/L		116	51 - 153

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

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*77*		*66 - 120*

Lab Sample ID: 240-176555-B-1 MSD
Matrix: Water
Analysis Batch: 553221

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

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dioxane	14		10.0	27.3		ug/L		128	51 - 153	4	16

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	*81*		*66 - 120*

QC Association Summary

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

Job ID: 240-176621-1

GC/MS VOA

Analysis Batch: 553221

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176621-2	MW-136S_111522	Total/NA	Water	8260D SIM	
MB 240-553221/4	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-553221/3	Lab Control Sample	Total/NA	Water	8260D SIM	
240-176555-B-1 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-176555-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

Analysis Batch: 553445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-176621-1	TRIP BLANK_196	Total/NA	Water	8260D	
240-176621-2	MW-136S_111522	Total/NA	Water	8260D	
MB 240-553445/8	Method Blank	Total/NA	Water	8260D	
LCS 240-553445/5	Lab Control Sample	Total/NA	Water	8260D	
240-176621-2 MS	MW-136S_111522	Total/NA	Water	8260D	
240-176621-2 MSD	MW-136S_111522	Total/NA	Water	8260D	

Lab Chronicle

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

Job ID: 240-176621-1

Client Sample ID: TRIP BLANK_196

Lab Sample ID: 240-176621-1

Date Collected: 11/15/22 00:00

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553445	LEE	EET CAN	11/25/22 14:19

Client Sample ID: MW-136S_111522

Lab Sample ID: 240-176621-2

Date Collected: 11/15/22 11:20

Matrix: Water

Date Received: 11/17/22 08:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	553445	LEE	EET CAN	11/25/22 18:29
Total/NA	Analysis	8260D SIM		1	553221	CS	EET CAN	11/23/22 15:27

Laboratory References:

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

Accreditation/Certification Summary

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

Job ID: 240-176621-1

Laboratory: Eurofins Canton

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

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

MICHIGAN
190

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact			
Company Name: Arcadis	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico
Address: 28550 Cabot Drive, Suite 500	Telephone: 248-994-2240	Telephone: 248-994-2293	Telephone: 330-497-9396
City/State/Zip: Novi, MI, 48377	Email: kristoffer.hinskey@arcadis.com		
Phone: 248-994-2240	Sampler Name: Samantha Szpaichler		
Project Name: Ford LTP Off-Site	Method of Shipment/Carrier:		
Project Number: 30146655.402.04	Shipping/Tracking No:		
PO # 30146655.402.04			

COC No:

1 of 1 COCs

For lab use only

Walk-in client

Lab sampling

Job/SDG No:

Analysis Turnaround Time

TAT if different from below

10 day ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day

Sample Identification	Sample Date	Sample Time	Matrix: Air	Matrix: Aqueous	Matrix: Sediment	Matrix: Solid	Matrix: Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	Analyses: 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					Sample Specific Notes / Special Instructions:
TRIP BLANK_ 196	11/15/22	---		1						1					N	G	X	X	X	X	X	X						1 Trip Blank
MW-136S_111522	11/15/22	1120		6						6					N	G	X	X	X	X	X	X	X					3 VOAs for 8260B 3 VOAs for 8260B SIM

240-176621 Chain of Custody

Possible Hazard Identification
☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☑ Disposal By Lab ☐ Archive For ☐ Months

Special Instructions/QC Requirements & Comments:
Sample Address:
Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631
Level IV Reporting requested.

Capitol Row

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	Arcadis	11/15/22 16:10	Novi gold storage	Arcadis	11/15/22 16:10
[signature]	ARCADIS	11/16/22 1035	[signature]	EETA	11/16/22 1035
[signature]	EETA	11/16/22 10:40	Received in Laboratory by: Rachelle Hardie	EETNC	11-1722 800

©2008 TestAmerica Laboratories, Inc. All rights reserved.
TestAmerica & Design ™ are trademarks of TestAmerica Laboratories, Inc.

Eurofins - Canton Sample Receipt Form/Narrative **Login # :** 176621
Barberton Facility

Client Arcadis Site Name

Cooler Received on 11-17-22 Opened on 11-17-22

Cooler unpacked by: Rachelle Haidet

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

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

Eurofins Cooler # 1A ~~Foam Box~~ Client Cooler Box Other

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

COOLANT: Wet Ice Blue Ice Dry Ice Water None

1. Cooler temperature upon receipt ☒ See Multiple Cooler Form
   IR GUN# IR-13 (CF +0.7 °C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C
   IR GUN #IR-15 (CF 0.0°C) Observed Cooler Temp._____°C Corrected Cooler Temp._____°C

2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_____	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)?	(Y) N
10. Were correct bottle(s) used for the test(s) indicated?	(Yes) No
11. Sufficient quantity received to perform indicated analyses?	(Yes) No
12. Are these work share samples and all listed on the COC?	Yes (No)
If yes, Questions 13-17 have been checked at the originating laboratory.	
13. Were all preserved sample(s) at the correct pH upon receipt?	Yes No (NA) pH Strip Lot# HC286797
14. Were VOAs on the COC?	(Yes) No
15. Were air bubbles >6 mm in any VOA vials? ● ← Larger than this.	Yes (No) NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 010420216	(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

MNR 11-17-22

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: _____

Login # : 176621

Eurofins - Canton Sample Receipt Multiple Cooler Form

Cooler Description (Circle)	IR Gun # (Circle)	Observed Temp °C	Corrected Temp °C	Coolant (Circle)
TA Client Box Other	IR-13 IR-15	1.1	1.1	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15	1.6	1.6	Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None
TA Client Box Other	IR-13 IR-15			Wet Ice Blue Ice Dry Ice Water None

☐ See Temperature Excursion Form

WI-NC-099 Cooler Receipt Form Page 2 – Multiple Coolers

DATA VERIFICATION REPORT

December 03, 2022

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: 30146655.402.04 off-site
Event Specific Scope of Work References: Sample COC
Laboratory: Eurofins Environment Testing LLC - Barberton
Laboratory submittal: 176621-1
Sample date: 2022-11-15
Report received by CADENA: 2022-12-02
Initial Data Verification completed by CADENA: 2022-12-03
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, MS/MSD Recovery, MS/MSD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

Data verification for the report specified above was completed using the Ford Motor Company Environmental Laboratory Technical Specification, the CADENA Standard Operating Procedure for the Verification of Environmental Analytical Data and the associated analytical methods as references for evaluating the batch QC, sample data and report content. The EPA National Functional Guidelines for validating organic and inorganic data were used as guidance when addressing out of control QC results and the associated data qualifiers.

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 contaminates) 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 contaminates) 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 - Barberton
Laboratory Submittal: 176621-1

		Sample Name:	TRIP BLANK_196				MW-136S_111522			
		Lab Sample ID:	2401766211				2401766212			
		Sample Date:	11/15/2022				11/15/2022			
Analyte	Cas No.	Result	Report Limit	Units	Valid Qualifier	Result	Report Limit	Units	Valid Qualifier
GC/MS VOC									
OSW-8260D									
1,1-Dichloroethene	75-35-4	ND	1.0	ug/l	---	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	---	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	---	3.2	1.0	ug/l	---
OSW-8260DSIM									
1,4-Dioxane	123-91-1					ND	2.0	ug/l	---

ARCADIS

Ford Motor Company – Livonia Transmission Project

DATA REVIEW

Livonia, Michigan

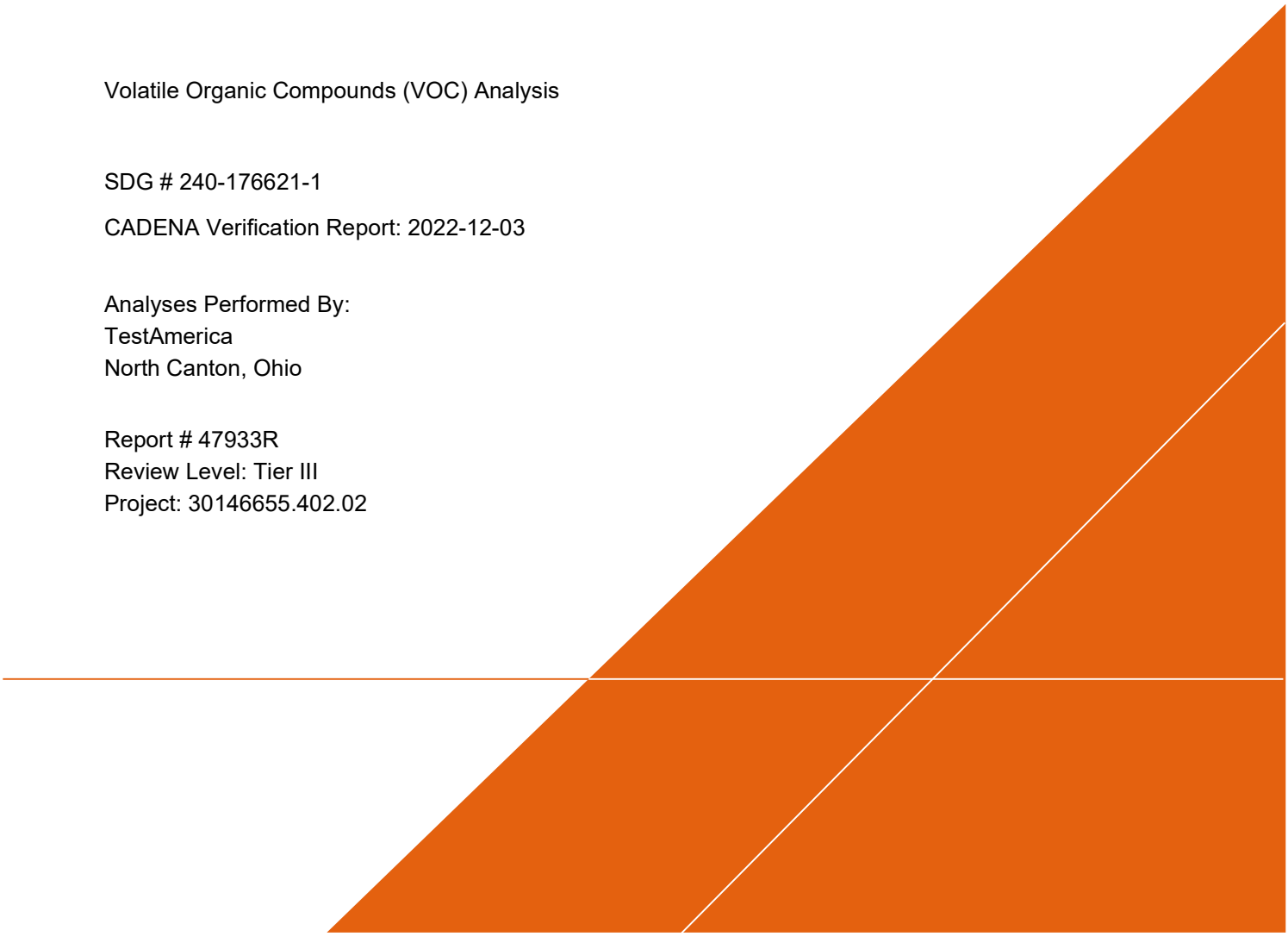
Volatile Organic Compounds (VOC) Analysis

SDG # 240-176621-1

CADENA Verification Report: 2022-12-03

Analyses Performed By:
TestAmerica
North Canton, Ohio

Report # 47933R
Review Level: Tier III
Project: 30146655.402.02



SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-176621-1 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_196	240-176621-1	Water	11/15/2022		X	
MW-136S_111522	240-176621-2	Water	11/15/2022		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 and 8260D SIM. 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.

  J+ The result is an estimated quantity, but the result may be biased high.

  J- The result is an estimated quantity, but the result may be biased low.

  UB Analyte considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  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.

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/8260D-SIM	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 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 is 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.

All identified compounds met the specified criteria.

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 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

VALIDATION PERFORMED BY: Hareesha Naik

SIGNATURE:

DATE: December 14, 2022

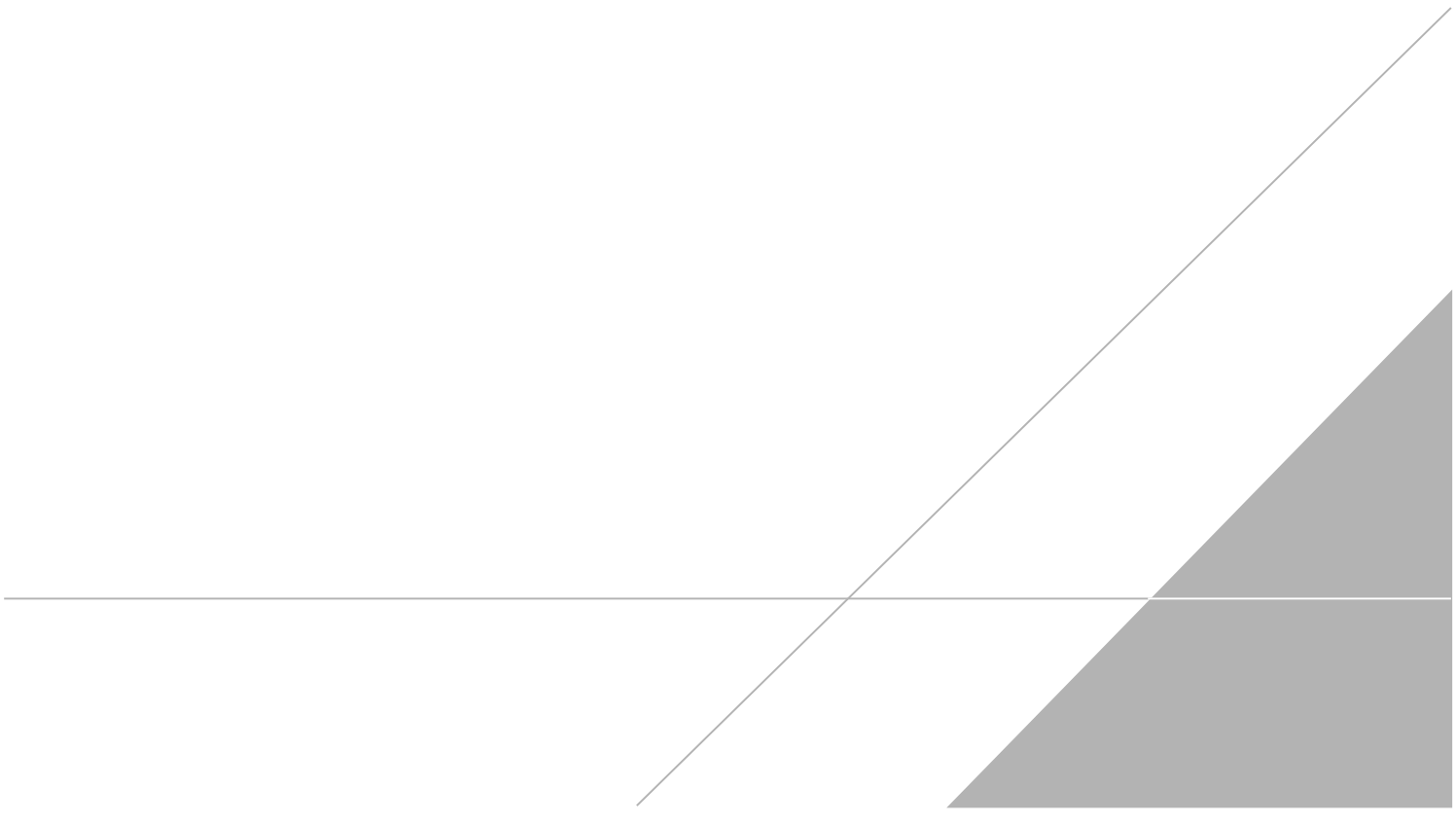
PEER REVIEW: Andrew Korycinski

DATE: December 17, 2022

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS



MICHIGAN
190

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

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

Regulatory program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc.

Client Contact	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike DelMonico	COC No:
Company Name: Arcadis	Telephone: 248-994-2240	Telephone: 248-994-2293	Telephone: 330-497-9396	1 of 1 COCs
Address: 28550 Cabot Drive, Suite 500	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
City/State/Zip: Novi, MI, 48377	Sampler Name: Samantha Szpanchler	TAT if different from below: 10 day; ☐ 3 weeks ☑ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day		Walk-in client: Lab sampling:
Phone: 248-994-2240	Method of Shipment/Carrier:			Job/SDG No:
Project Name: Ford LTP Off-Site	Shipping/Tracking No:			
Project Number: 30146655.402.04				
PO # 30146655.402.04				

Sample Identification	Sample Date	Sample Time	Matrix: Air	Aqueous	Sediment	Solid	Other:	Containers & Preservatives: H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Unpres	Other:	Filtered Sample (Y / N)	Composite=C / Grab=G	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	Sample Specific Notes / Special Instructions:
TRIP BLANK_196	11/15/22	---		1						1					N	G	X	X	X	X	X	X		1 Trip Blank
MW-136S_111522	11/15/22	1120		6						6					N	G	X	X	X	X	X	X	X	3 VOAs for 8260B 3 VOAs for 8260B SIM

240-176621 Chain of Custody

Possible Hazard Identification: ☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return to Client ☑ Disposal By Lab ☐ Archive For ☐ Months

Special Instructions/QC Requirements & Comments:

Sample Address: Capitol Row

Submit all results through Cadena at jtomalia@cadenaco.com, Cadena #E203631

Level IV Reporting requested.

	Company	Date/Time		Company	Date/Time
Relinquished by: Samantha Szpanchler	Arcadis	11/15/22 16:10	Received by: Night drop storage	Arcadis	11/15/22 16:10
Relinquished by:	ARCADIS	11/16/22 1035	Received by:	EETA	11/16/22 1035
Relinquished by:	EETA	11/16/22 10:40	Received in Laboratory by: Rachelle Harris	EETNC	11-17-22 800

©2008 TestAmerica Laboratories, Inc. All rights reserved.
TestAmerica & Design ™ are trademarks of TestAmerica Laboratories, Inc.

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.
¤	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

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

Job ID: 240-176621-1

Client Sample ID: TRIP BLANK_196
Date Collected: 11/15/22 00:00
Date Received: 11/17/22 08:00

Lab Sample ID: 240-176621-1
Matrix: Water

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			11/25/22 14:19	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/22 14:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 14:19	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/22 14:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 14:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			11/25/22 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*62 - 137*		*11/25/22 14:19*	*1*
4-Bromofluorobenzene (Surr)	*78*		*56 - 136*		*11/25/22 14:19*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*11/25/22 14:19*	*1*
Dibromofluoromethane (Surr)	*92*		*73 - 120*		*11/25/22 14:19*	*1*

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

Job ID: 240-176621-1

Client Sample ID: MW-136S_111522
Date Collected: 11/15/22 11:20
Date Received: 11/17/22 08:00

Lab Sample ID: 240-176621-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			11/23/22 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*76*		*66 - 120*		*11/23/22 15:27*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			11/25/22 18:29	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			11/25/22 18:29	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 18:29	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			11/25/22 18:29	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			11/25/22 18:29	1
Vinyl chloride	**3.2**		1.0	0.45	ug/L			11/25/22 18:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*100*		*62 - 137*		*11/25/22 18:29*	*1*
4-Bromofluorobenzene (Surr)	*73*		*56 - 136*		*11/25/22 18:29*	*1*
Toluene-d8 (Surr)	*91*		*78 - 122*		*11/25/22 18:29*	*1*
Dibromofluoromethane (Surr)	*97*		*73 - 120*		*11/25/22 18:29*	*1*