ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 5/17/2023 7:21:41 PM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-184563-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



Eurofins Cleveland

Job Notes

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Authorization

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Authorized for release by Michael DelMonico, Project Manager I <u>Michael.DelMonico@et.eurofinsus.com</u> (330)497-9396

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Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-184563-1

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Definitions/Glossary

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Qualifiers

GC/MS VOA

Qualifier Qualifier Description

U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used	l 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

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Case Narrative

Client: ARCADIS US Inc

Job ID: 240-184563-1 Project/Site: Ford LTP - Off Site

Job ID: 240-184563-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-184563-1

Receipt

The samples were received on 5/3/2023 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 0.2°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: 240-184563-1

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

Protocol References:

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

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: ARCADIS US Inc

Project/Site: Ford LTP - Off Site

Job ID: 240-184563-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-184563-1	TRIP BLANK_04	Water	05/01/23 00:00	05/03/23 08:00
240-184563-2	MW-215S_050123	Water	05/01/23 11:00	05/03/23 08:00
240-184563-3	MW-223S_050123	Water	05/01/23 12:10	05/03/23 08:00

Detection Summary

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_04

No Detections.

Client Sample ID: MW-215S_050123

No Detections.

Client Sample ID: MW-223S_050123

Lab Sample ID: 240-184563-3

Job ID: 240-184563-1

No Detections.

Client: ARCADIS US Inc

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4 4

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This Detection Summary does not include radiochemical test results.

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Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_04

Date Collected: 05/01/23 00:00 Date Received: 05/03/23 08:00 Lab Sample ID: 240-184563-1

Matrix: Water

Method: SW846 8260D - Vo	latile Organic	Compound	ds 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			05/11/23 10:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/11/23 10:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 10:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/11/23 10:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 10:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/11/23 10:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			70 - 128					05/11/23 10:41	1
Dibromofluoromethane (Surr)	98		77 - 124					05/11/23 10:41	1
Toluene-d8 (Surr)	101		80 - 120					05/11/23 10:41	1
4-Bromofluorobenzene	113		76 - 120					05/11/23 10:41	1

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Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-215S_050123

Lab Sample ID: 240-184563-2 Date Collected: 05/01/23 11:00

Matrix: Water Date Received: 05/03/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/07/23 03:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	106		75 - 133					05/07/23 03:47	1
Method: SW846 8260D - Vo	latile Organic	Compound	ds bv GC/MS						
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/11/23 16:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/11/23 16:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/11/23 16:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/11/23 16:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			70 - 128					05/11/23 16:22	1
Dibromofluoromethane (Surr)	98		77 - 124					05/11/23 16:22	1
Toluene-d8 (Surr)	101		80 - 120					05/11/23 16:22	1
4-Bromofluorobenzene	120		76 - 120					05/11/23 16:22	1

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-223S_050123

101

118

Date Collected: 05/01/23 12:10 Date Received: 05/03/23 08:00

Toluene-d8 (Surr)

4-Bromofluorobenzene

Lab Sample ID: 240-184563-3

05/11/23 16:45 05/11/23 16:45

Matrix: Water

Method: SW846 8260D SII	M - Volatile Orga	anic Comp	ounds (GC/M	S)					
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/10/23 00:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	110		75 - 133					05/10/23 00:17	1
Method: SW846 8260D - V	olatile Organic	Compoun	ds 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			05/11/23 16:45	1

Dibromofluoromethane (Surr)	97		77 - 124			05/11/23 16:45	1
1,2-Dichloroethane-d4 (Surr)	110		70 - 128			05/11/23 16:45	1
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
Vinyl chloride	1.0	U	1.0	0.45 ug/L		05/11/23 16:45	1
Trichloroethene	1.0		1.0	0.44 ug/L		05/11/23 16:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51 ug/L		05/11/23 16:45	1
Tetrachloroethene	1.0	U	1.0	0.44 ug/L		05/11/23 16:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46 ug/L		05/11/23 16:45	1
1,1-Dichloroethene	1.0	U	1.0	0.49 ug/L		05/11/23 16:45	1

80 - 120

76 - 120

14

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Surrogate Summary

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

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

Matrix: Water Prep Type: Total/NA

			Pe	rcent Surre	ogate Reco
		DCA	DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-128)	(77-124)	(80-120)	(76-120)
240-184563-1	TRIP BLANK_04	110	98	101	113
240-184563-2	MW-215S_050123	110	98	101	120
240-184563-3	MW-223S_050123	110	97	101	118
LCS 460-908406/3	Lab Control Sample	102	92	101	115
LCSD 460-908406/4	Lab Control Sample Dup	101	92	102	115
MB 460-908406/8	Method Blank	107	96	101	114

Surrogate Legend

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

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr) BFB = 4-Bromofluorobenzene

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

Matrix: Water Prep Type: Total/NA

			Percent Surrogate Recovery (Acceptance Limits)
		BFB	
Lab Sample ID	Client Sample ID	(75-133)	
240-184563-2	MW-215S_050123	106	
240-184563-3	MW-223S_050123	110	
LCS 460-907549/4	Lab Control Sample	107	
LCS 460-908058/4	Lab Control Sample	106	
LCSD 460-907549/5	Lab Control Sample Dup	108	
LCSD 460-908058/5	Lab Control Sample Dup	110	
MB 460-907549/8	Method Blank	105	
MB 460-908058/8	Method Blank	115	

Surrogate Legend

BFB = 4-Bromofluorobenzene

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: MB 460-908406/8

Matrix: Water

Analysis Batch: 908406

Client Samp	le ID:	Meth	od Blank
	Prep	Type:	Total/NA

МВ	MB							
Analyte Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene 1.0	U	1.0	0.49	ug/L			05/11/23 08:58	1
cis-1,2-Dichloroethene 1.0	U	1.0	0.46	ug/L			05/11/23 08:58	1
Tetrachloroethene 1.0	U	1.0	0.44	ug/L			05/11/23 08:58	1
trans-1,2-Dichloroethene 1.0	U	1.0	0.51	ug/L			05/11/23 08:58	1
Trichloroethene 1.0	U	1.0	0.44	ug/L			05/11/23 08:58	1
Vinyl chloride 1.0	U	1.0	0.45	ug/L			05/11/23 08:58	1

	MB MB				
Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107	70 - 128		05/11/23 08:58	1
Dibromofluoromethane (Surr)	96	77 - 124		05/11/23 08:58	1
Toluene-d8 (Surr)	101	80 - 120		05/11/23 08:58	1
4-Bromofluorobenzene	114	76 - 120		05/11/23 08:58	1

Lab Sample ID: LCS 460-908406/3

Matrix: Water

Analysis Batch: 908406

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

14

1

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	20.0	20.1		ug/L		101	68 - 133	
cis-1,2-Dichloroethene	20.0	20.0		ug/L		100	78 - 121	
Tetrachloroethene	20.0	19.6		ug/L		98	70 - 127	
trans-1,2-Dichloroethene	20.0	20.5		ug/L		103	74 - 126	
Trichloroethene	20.0	19.2		ug/L		96	71 - 121	
Vinyl chloride	20.0	18.5		ug/L		92	55 - 144	

	LUS	LUS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 128
Dibromofluoromethane (Surr)	92		77 - 124
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene	115		76 - 120

Lab Sample ID: LCSD 460-908406/4

Matrix: Water

Analysis Batch: 908406

Client Sample II): Lab	Contr	ol San	nple Dup
		Prep	Type:	Total/NA

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	20.0	20.0		ug/L		100	68 - 133	1	30
cis-1,2-Dichloroethene	20.0	19.4		ug/L		97	78 - 121	3	30
Tetrachloroethene	20.0	19.8		ug/L		99	70 - 127	1	30
trans-1,2-Dichloroethene	20.0	19.5		ug/L		97	74 - 126	5	30
Trichloroethene	20.0	18.7		ug/L		93	71 - 121	3	30
Vinyl chloride	20.0	18.1		ug/L		90	55 - 144	2	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 128
Dibromofluoromethane (Surr)	92		77 - 124
Toluene-d8 (Surr)	102		80 - 120

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Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: LCSD 460-908406/4 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 908406

LCSD LCSD

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene 115 76 - 120

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

Lab Sample ID: MB 460-907549/8

Matrix: Water

Analysis Batch: 907549

MB MB

Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.86 1,4-Dioxane Ū 2.0 ug/L 05/07/23 00:11 2.0

MB MB

Limits Surrogate %Recovery Qualifier Prepared Analyzed Dil Fac 4-Bromofluorobenzene 105 75 - 133 05/07/23 00:11

Lab Sample ID: LCS 460-907549/4 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 907549

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits

1,4-Dioxane 5.00 4.09 82 57 - 124 ug/L

LCS LCS

Surrogate %Recovery Qualifier Limits

4-Bromofluorobenzene 107 75 - 133

Lab Sample ID: LCSD 460-907549/5 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Matrix: Water

Analysis Batch: 907549

Spike LCSD LCSD **RPD** %Rec Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit 1.4-Dioxane 5.00 4.20 ug/L 57 - 124

LCSD LCSD

Surrogate %Recovery Qualifier Limits

75 - 133 4-Bromofluorobenzene 108

Lab Sample ID: MB 460-908058/8

Analysis Batch: 908058

MB MB

Analyte Result Qualifier RL **MDL** Unit Prepared Analyzed Dil Fac 1,4-Dioxane 2.0 U 2.0 0.86 ug/L 05/09/23 23:34

MB MB

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene 75 - 133 05/09/23 23:34 115

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5/17/2023

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

QC Sample Results

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Lab Sample ID: LCS 460-908058/4

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

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analysis Batch: 908058

Matrix: Water

 Analyte
 Added 1,4-Dioxane
 Result 5.00
 4.68
 Unit ug/L
 D yer
 %Rec Limits Limits ug/L
 Limits For - 124

LCS LCS

Surrogate%RecoveryQualifierLimits4-Bromofluorobenzene10675 - 133

Lab Sample ID: LCSD 460-908058/5

Client Sample ID: Lab Control Sample Dup
Matrix: Water

Prep Type: Total/NA

Matrix: Water
Analysis Batch: 908058

Spike LCSD LCSD %Rec RPD
Analyte Added Result Qualifier Unit D %Rec Limits RPD Limit

 Analyte
 Added
 Result qualifier
 Unit ug/L
 D
 %Rec with width
 Limits
 RPD with result
 Limits
 RPD with result
 Limits
 ST - 124
 0
 30

LCSD LCSD
Surrogate %Recovery Qualifier Limits

4-Bromofluorobenzene 110 75 - 133

3

4

6

0

10

11

13

14

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QC Association Summary

Client: ARCADIS US Inc Job ID: 240-184563-1 Project/Site: Ford LTP - Off Site

GC/MS VOA

Analysis Batch: 907549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184563-2	MW-215S_050123	Total/NA	Water	8260D SIM	
MB 460-907549/8	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-907549/4	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-907549/5	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

Analysis Batch: 908058

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184563-3	MW-223S_050123	Total/NA	Water	8260D SIM	
MB 460-908058/8	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-908058/4	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-908058/5	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

Analysis Batch: 908406

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184563-1	TRIP BLANK_04	Total/NA	Water	8260D	
240-184563-2	MW-215S_050123	Total/NA	Water	8260D	
240-184563-3	MW-223S_050123	Total/NA	Water	8260D	
MB 460-908406/8	Method Blank	Total/NA	Water	8260D	
LCS 460-908406/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-908406/4	Lab Control Sample Dup	Total/NA	Water	8260D	

Lab Chronicle

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Date Received: 05/03/23 08:00

Client Sample ID: TRIP BLANK_04

Lab Sample ID: 240-184563-1 Date Collected: 05/01/23 00:00 **Matrix: Water**

Batch Batch Dilution Batch Prepared **Prep Type** Method **Factor** Number Analyst or Analyzed Type Run Lab 05/11/23 10:41 Total/NA Analysis 8260D 908406 SZD EET EDI

Client Sample ID: MW-215S_050123

Lab Sample ID: 240-184563-2

Matrix: Water

Date Collected: 05/01/23 11:00 Date Received: 05/03/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	908406	SZD	EET EDI	05/11/23 16:22
Total/NA	Analysis	8260D SIM		1	907549	KLB	EET EDI	05/07/23 03:47

Client Sample ID: MW-223S 050123 Lab Sample ID: 240-184563-3

Date Collected: 05/01/23 12:10 **Matrix: Water**

Date Received: 05/03/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	908406	SZD	EET EDI	05/11/23 16:45
Total/NA	Analysis	8260D SIM		1	908058	KLB	EET EDI	05/10/23 00:17

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Laboratory: Eurofins Edison

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

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-23
Massachusetts	State	M-NJ312	06-30-23
New Jersey	NELAP	12028	06-30-23
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

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Company Name	190 rest	Test America Laboratory location: Brighton — 10448 Cita	Chain of Custody Record 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763		LESTAMENCO
	Client Contact	_	RCRA		Test America Laboratories Inc
Constructions Construction	Address 28550 Cabat Drive Suite 500	Client Project Manager: Kris Hinskey		o Contact: Mike DelMonico	COC No:
Prince Suppose Prince Suppose Prince	Cita/Sun-Zin-Novi MI 48277	Telephone: 248-994-2240		lephone: 330-497-9396	
TEB BLANK-SH Test Weight Test	the same one same	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	
1 1 1 1 1 1 1 1 1 1	Phone: 248-994-2240 Project Name: Ford LTP Off-Site Project Number: 30167538.402.04	eme	vecks vecks		Walk-in client Lab sampling
Sumple Continuing	PO # 30167538.402.04		ole (Y / Merabers) Grabers	8 8 S 8 S 8 S 8 S 8 S 8 S 8 S 8 S 8 S 8	Job/SDG No:
TBIP BLANK \$1 TSP	Sample Identification	Sample Time Scalment Scalment	Continuer:	Trans-1,2-DC TCE 8260B Vinyl Chloride	Sample Specific Notes / Special Instructions:
MW-2135_050123 MW-2235_050123	IBIP BLANK_SH TREP BLANK		× Ø Z	× × × ×	1 Trip Blank
RW-3235_05 0123 Peoble Heard dentification Peoble Heard dentification People Heard	MW-2158-050123	0011	L C	XXXXX	3 VOAs for 8260B 3 VOAs for 8260B SIM
Possible Hazerd Identification Foundation of Constitution Note the part of the internation of Constitution Note the part of the internation of Constitution Note the part of the internation of Constitution Note the part of the par	MW-2235_05 0123	1210	Z Z	X	
Pushle Hazard dentification Pushle Hazard de					
Possible Heard Identification Second Identification Second Identification Second Identification Second Identification Archive For F Months Submit all resolution generates Comments: Submit all resolution generates Comments: Possible Heard Identification Submit Identification Archive For F Months Record By: Company Record By: Company Record By: Company Record By: Company Record By: Record By: Company Record By: Record B					
Possible Hazard Identification Vanctification Vanctification Vanctification Vanctification Vanctification Vanctification Vanctification Value Interval Interv				240-184563 Chain of Custody	
Possible Hazard Identification Possible Hazard Identification Non-Hazard No					
Special Instructions/OC Requirements: Sample Address: 350 00 My mouth Red Submit all results through Cadena #E203631 Level IV Reporting requested. Level IV Reporting requested. Level IV Reporting requested. Relinquished by: Received in Laboratory by: Relinquished by: Relinquished by: Received in Laboratory by: Relinquished by: Relinquished by: Received in Laboratory by: Relinquished by: Reli	Possible Hazard Identification Non-Hazard Flammable Skin Irrit		Sample Disposal (Afee may be assessed if samples a Return to Client Disposal By Lab	are retained longer than 1 month) Archive For Months	
Relinquished by 20 h was Length Company Company Company. Relinquished by March Company. Received in Laboratory by: Rece	Special Instructions/QC Requirements & Comments: LSS SO OV VM out the Sample Address: SSS SO OV VM out the Submit all results through Cadena at Itomalia@cadenacc Level IV Reporting requested.				
Relinquished by the Company RCACITS 1005 Received in Laboratory by: Company Date/Time: 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS 1005 Received in Laboratory by: Company Date/Time: 1005 STATS		Date/Time:	Received by: Cold S	Company	23
12-3-401 Ett 5/425 1105 John 1870 LEID 5-3-43	Mr.	Date/	S Receive	Company	
	3	4 5/2	7		93

1645,2
Eurofins - Canton Sample Receipt Form/Narrative Login # : 1895 (2)
Barberton Facility
Client Arcadi Site Name Cooler Received on 5-3-23 Opened on 5-3-23 Cooler unpacked by:
occide recorded on
FedEx: 1st Grd Exp UPS FAS Clipper 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: Foam Plastic Bag None Other
COOLANT: Wet Ice Blue Ice Dry Ice Water None 1. Cooler temperature upon receipt See Multiple Cooler Form
1. Cooler temperature upon receipt See Multiple Cooler Form IR GUN #
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity -Were the seals on the outside of the cooler(s) signed & dated? Tests that are not checked for pH by
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? -Were tamper/custody seals intact and uncompromised? Receiving:
3. Shippers' packing slip attached to the cooler(s)? VOAs
 3. Shippers' packing slip attached to the cooler(s)? 4. Did custody papers accompany the sample(s)? Yes No Vidas Oil and Grease
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? YE No
7. Did all bottles arrive in good condition (Unbroken)?
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC? (Fes) 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?
11. Sufficient quantity received to perform indicated analyses?
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? No NA pH Strip Lot# HC208070
14. Were VOAs on the COC?
15. Were air bubbles >6 mm in any VOA vials? Larger than this. 25 Ves No NA
16. Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 6055 (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
19. SAMPLE CONDITION
Sample(s) were received after the recommended holding time had expired.
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):
I ime preserved: Preservative(s) added/Lot number(s):
VOA Sample Preservation - Date/Time VOAs Frozen:

180 S. Van Buren Avenue Barberton, OH 44203 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record

🔅 eurofins

Environment Testing

N - None
O - AsNaO2
P - Na2O45
Q - Na2SO3
R - Na2SSO3
S - H2SO4
T - TSP Dodecatydrate Special Instructions/Note: Z - other (specify) U - Acetone V - MCAA M - Hexane W - pH 4-5 Preservation Codes G - Amchlor H - Ascorbic Acid COC No: 240-167460.1 240-184563-1 A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH Page: Page 1 of 1 I - Ice J - DI Water K - EDTA L-EDA 9 X Total Number of containers State of Origin: Michigan **Analysis Requested** E-Mail: Michael. DelMonico@et.eurofinsus.com Accreditations Required (See note) × × Lab PM: DelMonico, Michael 3000 SIM/2030C × × × SEODISOSOC (MOD) VOCs (Short List) (oh to set) GBM/BM miohes Preservation Code: (W=water, S=solid, O=waste/oii, BT=Tissue, Water Water Water A=Atr) Type (C=comp, G=grab) Sample Sample Eastern Eastern 12:10 Eastern 11:00 AT Requested (days): Due Date Requested: 5/16/2023 Sample Date 5/1/23 5/1/23 5/1/23 Project #: 24015353 hone: # OM # Oc Client Information (Sub Contract Lab) Sample Identification - Client ID (Lab ID) Eurofins Environment Testing Northeast, 732-549-3900(Tel) 732-549-3679(Fax) MW-215S_050123 (240-184563-2) MW-223S_050123 (240-184563-3) TRIP BLANK_04 (240-184563-1) 777 New Durham Road Shipping/Receiving Project Name: Ford LTP - Off Site State, Zip: NJ, 08817 Edison mail

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyse & accreditation compliance upon our subcontract laboratory or other instructions will be provided. Any changes to laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/lests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC. Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Mont Archive For Possible Hazard Identification Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	<u> </u>	Special Instructions/QC Requirements:	i i	
Ematy Kir Relinquished by:	Date:	Time:		Method of Shipment:	
Reling Care by:	arsi eesin	Company	Received by: Portific	Date Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No			Cooler Temperature(s) °C and Other Remarks:	11.20	

Client: ARCADIS US Inc Job Number: 240-184563-1

Login Number: 184563 List Source: Eurofins Edison
List Number: 2 List Creation: 05/04/23 12:14 PM

Creator: Armbruster. Chris

Creator: Armbruster, Chris		
Question	Answer	Comment
Radioactivity wasn't checked or is = background as measured by a survey meter.</td <td>N/A</td> <td></td>	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
s the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Eurofins Cleveland

DATA VERIFICATION REPORT



May 18, 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: 184563-1 Sample date: 2023-05-01

Report received by CADENA: 2023-05-18

Initial Data Verification completed by CADENA: 2023-05-18

Number of Samples:3 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, LCS/LCD 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.
В	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.
Е	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 - Cleveland

Laboratory Submittal: 184563-1

		Sample Name:	TRIP BLA	NK_04			MW-21	5S_0501	23		MW-223	3S_0501	23	
		Lab Sample ID:	2401845	5631			2401845	5632			2401845	633		
		Sample Date:	5/1/202	3			5/1/202	.3			5/1/202	3		
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSW-826	<u>OD</u>													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		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		ND	1.0	ug/l	
OSW-826	<u>ODSIM</u>													
	1,4-Dioxane	123-91-1					ND	2.0	ug/l		ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-184563-1

CADENA Verification Report: 2023-05-18

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49769R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-184563-1 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 Collection		Ana	lysis
Sample ID	Lab ID	Matrix	Date	Parent Sample	voc	VOC SIM
TRIP BLANK_04	240-184563-1	Water	05/01/23		Х	
MW-215S_050123	240-184563-2	Water	05/01/23		X	X
MW-223S_050123	240-184563-3	Water	05/01/23		Х	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

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

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.
 - 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.

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 was not collected for samples from this SDG.

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 VALIDATION CHECKLIST FOR VOCs

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

Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Dilip Kumar

SIGNATURE:

DATE: June 12, 2023

PEER REVIEW: Andrew Korycinski

DATE: June 21, 2023

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

MICHIGAN 190

0.2/0.2

Chain of Custody Record

Client Contact	Regulat	tory program:	:		T 10	W		NPDES	S	T	RCF	RA	-	Othe	r										
Company Name: Arcadis	1						lau.																		TestAmerica Laboratories,
Address: 28550 Cabot Drive, Suite 500	Client Project	Manager: Kris	Hinsi	ey			Site	ontac	t: Ch	ristin	a We	aver				l.ab (ontac	t: Mi	ke De	Monic	0				COC No:
	Telephone: 248	-994-2240					Telep	ohone:	248-	994-22	240					Telep	hone:	330-4	197-93	96					600
City/State/Zip: Novi, MI, 48377	Email: kristoff	er.hinskey@ar	cadis.	.com			7	nalysi	is Tur	narou	and T	ime							A	nalys	ses				1 of 1 COCs For lab use only
Phone: 248-994-2240			_				TAT	d differe					7												Walk-in client
Project Name: Ford LTP Off-Site	Sampler Name	ica E	0 14/	Di	10				T	3 w															walk-in client
Project Number: 30167538.402.04	Method of Ship		MI.	-	-		10	day	9	2 we											_				Lab sampling
							1		F	2 da	iys		2	ab=G		m	8260B			88	SIM				
PO # 30167538.402.04	Shipping/Track	ding No:								1 da	ıy		mple (Y / N)	/Grab	8	cis-1,2-DCE 8260B	€ 82(82608	8260B	1			Job/SDG No:
					Matri	x		Contai	ners &	k Prese	ervati	ves	I È	Ĵ	8260B	SE 8	-DC	8	<u>@</u>	ride	ne 8				L. William Toller
				á	ii.		2	_	170		S		Pe S	posit	CE	2-D(5-1,2	8260B	8260B	SH	ioxa				Sample Specific Notes /
Sample Identification	Sample Date	Sample Time	Air	Aqueon	Sediment	Other	H2SO4	HNO3	NaOH	ZnAc	Unpre	Other	Filte	Composite	1.1-DCE	Is-1	Trans-1,2-DCE	PCE	100	Vinyl Chloride	1,4-Dioxane				Special Instructions:
								1	+				+								1	(á)	_		47:01
TRIP BLANK_SH TRIP BLANK_04	5/1/23			1					_	_			IN	G	X	Х	X	X	X	X	~	\square			1 Trip Blank
MW-2158-050123	05/0423	1100		6				1					1	6	X	X	X	X	X	X	X				3 VOAs for 8260B 3 VOAs for 8260B SIM
MW-2235-050123	3/01/13	1210						1					1	6	X	X	X	×	×	X	X				
1, 0,000,000	1 100	(000	+	6	+			1/4		+			-	H	,	-				-	-		-	+	
					\vdash	+		+	+	+		-	+	H			-			-		-	_ 1		
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																- 111				1111111	HILL	tody	118 8110		
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			\vdash		\vdash	-	+	-	+	+			+-	\vdash					_		+	1	-	+	
Possible Hazard Identification ✓ Non-Hazard Flammable Skin Irrita	nt Poiso	on B	Unk	nowr	1		Sa			sal (A o Clic		may be	asses Dispos			les ar		ined le		than I		h) onths			
Special Instructions/QC Requirements & Comments: Sample Address: 35000 Nymouth Fd																					.,,	Ottilis			
Sample Address: 550 00 rymoun kd. Submit all results through Cadena at Itomalia@cadenaco	com Cadena i	tF203631																							
Level IV Reporting requested.																									
Relinquished by: Lehina Ferreim	Company	cadic		Date	Time	123	1	7:10	O Re	cejve	by:	11	Coli	d	She	ova	gl		Com	рап	Ca	rdi	3		Date/Time: 05/01/23 171
Relinquished by	Company;			Date	/Time	22			D.	ceive	i by:		11.	0			0		Com	pany:					1-
Relinquished by Relinquished b	Company:	CACITS			12/	65/	10) OŠ		K	بد	abora	Ha	~	5				+	50	F				Date/Time: 5/2/23/ 1005
	ii amnany			Date	/Fing				IRe	CAVA	= in l	shors	inry h	V:	11				Com	pany:		-			Date/Time:











180 S. Van Buren Avenue

Barberton, OH 44203 Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



eurofins

Environment Testing

Client Information (Sub Contract Lab)	Sampler:			Lab PM: DelMon	ico	Mich	a ol				Carrier Tra	acking N	o(s):		COC No: 240-167460.1	
Client Contact:	Phone:			E-Mail:	iico,	IVIICITE	201				State of C	Origin:			Page:	
Shipping/Receiving				Michae						om	Michiga	n			Page 1 of 1	
Company: Eurofins Environment Testing Northeast,				Ac	credita	ations f	Required	l (See n	ote):						Job #: 240-184563-1	
Address:	Due Date Requeste	ed:													Preservation Cod	
777 New Durham Road, , City:	5/16/2023			00000	Energenia I			1A	nalysi	s Req	uestec	1			A - HCL	M - Hexane N - None
Edison	TAT Requested (da	ıys):													B - NaOH C - Zn Acetate	O - AsNaO2
State, Zip:	1			35											D - Nitric Acid	P - Na2O4S Q - Na2SO3
NJ, 08817 Phone:	PO #:			- 8											E - NaHSO4 F - MeOH	R - Na2S2O3 S - H2SO4
732-549-3900(Tel) 732-549-3679(Fax)	PO #:			6		List)	- 1								G - Amchlor H - Ascorbic Acid	T - TSP Dodecahydrate
Email:	WO #:		· 	Ž	2								-	633	I - Ice	U - Acetone V - MCAA
Project Name:	Drainet #			- 8	or No)	Sho								tainers	J - DI Water K - EDTA	W - pH 4-5
Ford LTP - Off Site	Project #: 24015353			5		ပ္မွ	- 1							İtai	L - EDA	Y - Trizma Z - other (specify)
Site:	SSOW#:			- B	MS/MSD (Ye	8260D/5030C (MOD) VOCs (Short								8	Other:	
			ı mat	TX S	8	<u>§</u>	မ္တ							0 7		
			Sample (w=w	iter,	S	စ္က	SIM/5030C							를		
		0	Type S=so	e/oii,	E	05/0	<u>s</u> ,							2		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	(C=comp, BT=Tb G=grab) A=A	8	Perform	3560	8260D							Total Number	Special In	structions/Note:
The second secon	><	><	Preservation Co	-	X									×	Series III	Structions/Mote.
TRIP BLANK_04 (240-184563-1)	5/1/23	Eastern	Was	er		х								1		
MW-215S_050123 (240-184563-2)	5/1/23	11:00 Eastern	Wa	er	П	х	х							6		
MW-223S_050123 (240-184563-3)	5/1/23	12:10 Eastern	Wa	er	П	х	x							6		
		Lustom														
												\Box				
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					Н			\dagger				H	$\exists \exists$			
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Note: Since laboratory accreditations are subject to change, Eurofins Environmental laboratory does not currently maintain accreditation in the State of Origin listed at	ove for analysis/tests	/matrix being	analyzed, the samples	must be sh	peggin	d back t	to the Eu	rofins E	Environm	ent Testin	na North C	entral I	I C laborato	ory or oth	er instructions will be r	provided Any changes to
accreditation status should be brought to Eurofins Environment Testing North Ce	ntral, LLC attention in	nmediately. If	all requested accredita	ions are c	urrent	t to date	e, return	the sign	ned Chai	n of Cust	ody attesti	ing to sai	d complian	ce to Eu	rofins Environment Tes	sting North Central, LLC.
Possible Hazard Identification					San	mple l	Dispos	al (A	fee m	ay be a	ssesse	d if san	nples are	e retair	ned longer than 1	month)
Unconfirmed					L	J _{Re}	turn To	Clier	nt		isposal	By Lab	,	Arc	hive For	Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank:	2		Spe	ecial li	nstructi	ions/Q	C Req	uiremer	nts:					
Empty Kit Relinquished by:		Date:		Tir	me:						Met	hod of Si	hipment:	P	edev	
Relincorrect by:	Pate Firme	16	Compan	1	Y	Receiv	red by:	140	122	gin	_		Date/Time:	23	1010	Company
Relinqปั๊shed by:	Date/Time:		Compan	y		Receiv	red by:					C	Date/Time:		· · · ·	Company
Relinquished by:	Date/Time:		Compan	у		Receiv	ed by:				-	C	Date/Time:			Company
Custody Seals Intact: Custody Seal No.:	1					Cooler	Temper	ature(s)) °C and	Other Re	marks:					
Δ TES Δ NO							I	24	7	(- 2	-C	1.	2 C			

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_04

Date Collected: 05/01/23 00:00 Date Received: 05/03/23 08:00 Lab Sample ID: 240-184563-1

Matrix: Water

Method: SW846 8260D - Vo	olatile Organic	Compound	ds 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			05/11/23 10:41	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/11/23 10:41	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 10:41	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/11/23 10:41	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 10:41	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/11/23 10:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 128					05/11/23 10:41	1
Dibromofluoromethane (Surr)	98		77 - 124					05/11/23 10:41	1
Toluene-d8 (Surr)	101		80 - 120					05/11/23 10:41	1
4-Bromofluorobenzene	113		76 - 120					05/11/23 10:41	1

Eurofins Cleveland

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Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-215S_050123

Lab Sample ID: 240-184563-2 Date Collected: 05/01/23 11:00

Matrix: Water Date Received: 05/03/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/07/23 03:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	106		75 - 133					05/07/23 03:47	1
Method: SW846 8260D - Vo	latile Organic	Compound	ds bv GC/MS						
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/11/23 16:22	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/11/23 16:22	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:22	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/11/23 16:22	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:22	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/11/23 16:22	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			70 - 128					05/11/23 16:22	1
Dibromofluoromethane (Surr)	98		77 - 124					05/11/23 16:22	1
Toluene-d8 (Surr)	101		80 - 120					05/11/23 16:22	1
4-Bromofluorobenzene	120		76 - 120					05/11/23 16:22	1

Client: ARCADIS US Inc Job ID: 240-184563-1

Project/Site: Ford LTP - Off Site

Lab Sample ID: 240-184563-3 Client Sample ID: MW-223S_050123

Date Collected: 05/01/23 12:10 **Matrix: Water**

Date Received: 05/03/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/10/23 00:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	110		75 - 133			•		05/10/23 00:17	1
Method: SW846 8260D -	Volatile Organic	Compound	ds by GC/MS						
		•	•	MDI	11!4		Droporod	Analyzed	Dil Fac
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Allalyzeu	DII Fac

Analyte	Result	Qualifier	KL	MDL	Unit	ט	Prepared	Analyzed	DilFac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/11/23 16:45	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/11/23 16:45	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:45	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/11/23 16:45	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/11/23 16:45	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/11/23 16:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac

;	Surrogate	%Recovery	Qualifier	Limits	Prepared Analyzed	Dil Fac
1	1,2-Dichloroethane-d4 (Surr)	110		70 - 128	05/11/23 16:45	1
	Dibromofluoromethane (Surr)	97		77 - 124	05/11/23 16:45	1
	Toluene-d8 (Surr)	101		80 - 120	05/11/23 16:45	1
L.	4-Bromofluorobenzene	118		76 - 120	05/11/23 16:45	1