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ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 5/19/2023 10:59:53 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-184792-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



Eurofins Cleveland

Job Notes

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Authorization

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Generated 5/19/2023 10:59:53 AM

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Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-184792-1

Table of Contents

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
QC Sample Results	12
QC Association Summary	14
Lab Chronicle	15
Certification Summary	16
Chain of Custody	17
Receipt Checklists	21

3

4

8

9

11

12

14

Definitions/Glossary

Client: ARCADIS US Inc Job ID: 240-184792-1

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 abbreviations may or may not be present in this report.
--------------	---

Eisted 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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Page 4 of 21 5/19/2023

Case Narrative

Client: ARCADIS US Inc

Job ID: 240-184792-1 Project/Site: Ford LTP - Off Site

Job ID: 240-184792-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-184792-1

Receipt

The samples were received on 5/5/2023 @ 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 1.8°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: 240-184792-1

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

Job ID: 240-184792-1 Project/Site: Ford LTP - Off Site

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-184792-1	TRIP BLANK_153	Water	05/03/23 00:00	05/05/23 08:00
240-184792-2	MW-112S_050323	Water	05/03/23 15:35	05/05/23 08:00

Detection Summary

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_153 Lab Sample ID: 240-184792-1

No Detections.

No Detections.

5

7

10

12

4 4

45

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_153

Date Collected: 05/03/23 00:00 Date Received: 05/05/23 08:00 Lab Sample ID: 240-184792-1

Matrix: Water

Method: SW846 8260D - Vo	latile 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			05/13/23 19:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/13/23 19:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 19:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/13/23 19:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 19:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/23 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 128					05/13/23 19:21	1
Dibromofluoromethane (Surr)	87		77 - 124					05/13/23 19:21	1
Toluene-d8 (Surr)	105		80 - 120					05/13/23 19:21	1
4-Bromofluorobenzene	86		76 - 120					05/13/23 19:21	1

Page 9 of 21

Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-112S_050323

Date Collected: 05/03/23 15:35 Date Received: 05/05/23 08:00

Surrogate

Toluene-d8 (Surr)

4-Bromofluorobenzene

1,2-Dichloroethane-d4 (Surr)

Dibromofluoromethane (Surr)

Lab Sample ID: 240-184792-2

Prepared

Matrix: Water

Method: SW846 8260D SI Analyte		anic Comp Qualifier	ounds (GC/M RL	S) MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L		-	05/16/23 14:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133					05/16/23 14:02	1
Method: SW846 8260D - V		•	•	MDI	l Init	ь	Dranarad	Anglyzod	Dil Eo
Mathadi SW946 9260D - \	Iolotila Organia	Compoun	de by CC/MC						
Method: SW846 8260D - V Analyte 1,1-Dichloroethene		Qualifier	ds by GC/MS RL 1.0	MDL 0.49		<u>D</u>	Prepared	Analyzed 05/13/23 23:30	Dil Fac
Analyte	Result	Qualifier U	RL		ug/L	<u>D</u>	Prepared		Dil Fac
Analyte 1,1-Dichloroethene	1.0	Qualifier U U	1.0 —	0.49	ug/L ug/L	<u> </u>	Prepared	05/13/23 23:30	Dil Fac 1 1 1
Analyte 1,1-Dichloroethene cis-1,2-Dichloroethene	1.0 1.0	Qualifier U U U	1.0 1.0	0.49 0.46	ug/L ug/L ug/L	<u>D</u>	Prepared	05/13/23 23:30 05/13/23 23:30	Dil Fac 1 1 1
Analyte 1,1-Dichloroethene cis-1,2-Dichloroethene Tetrachloroethene	Result 1.0 1.0 1.0	Qualifier U U U U	RL 1.0 1.0 1.0	0.49 0.46 0.44 0.51	ug/L ug/L ug/L	<u>D</u>	Prepared	05/13/23 23:30 05/13/23 23:30 05/13/23 23:30	Dil Fac 1 1 1 1

Limits

70 - 128

77 - 124

80 - 120

76 - 120

%Recovery Qualifier

107

86

102

89

Analyzed Dil Fac 05/13/23 23:30 1 05/13/23 23:30 1 05/13/23 23:30 1

05/13/23 23:30

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Surrogate Summary

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

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

Matrix: Water Prep Type: Total/NA

			Pe	ercent Surro	ogate Reco
		DCA	DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-128)	(77-124)	(80-120)	(76-120)
240-184792-1	TRIP BLANK_153	107	87	105	86
240-184792-2	MW-112S_050323	107	86	102	89
LCS 460-909017/3	Lab Control Sample	101	81	104	88
LCSD 460-909017/4	Lab Control Sample Dup	102	82	105	88
MB 460-909017/8	Method Blank	107	84	104	86
Surrogate Legend	Woulde Blank	107	0.1		00

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)	
240-184792-2	MW-112S_050323	95	
LCS 460-909423/3	Lab Control Sample	96	
LCSD 460-909423/4	Lab Control Sample Dup	91	
MB 460-909423/7	Method Blank	92	

Surrogate Legend

BFB = 4-Bromofluorobenzene

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Page 11 of 21

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: MB 460-909017/8

Matrix: Water

Analysis Batch: 909017

Client Sar	nple ID: Method Blank	
	Prep Type: Total/NA	

MB MB Analyte Result Qualifier RL **MDL** Unit Prepared Dil Fac Analyzed 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 05/13/23 18:58 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 05/13/23 18:58 1.0 U 0.44 ug/L Tetrachloroethene 1.0 05/13/23 18:58 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 05/13/23 18:58 Trichloroethene 1.0 U 1.0 0.44 ug/L 05/13/23 18:58 Vinyl chloride 1.0 U 1.0 0.45 ug/L 05/13/23 18:58

	MB	MB				
Surrogate	%Recovery	Qualifier	Limits	Prepare	ed Analyzed	Dil Fac
,2-Dichloroethane-d4 (Surr)	107		70 - 128		05/13/23 18:58	1
Dibromofluoromethane (Surr)	84		77 - 124		05/13/23 18:58	1
oluene-d8 (Surr)	104		80 - 120		05/13/23 18:58	1
-Bromofluorobenzene	86		76 - 120		05/13/23 18:58	1
	.2-Dichloroethane-d4 (Surr) bibromofluoromethane (Surr) bluene-d8 (Surr)	urrogate %Recovery 2-Dichloroethane-d4 (Surr) 107 iibromofluoromethane (Surr) 84 oluene-d8 (Surr) 104	2-Dichloroethane-d4 (Surr) 107 bibromofluoromethane (Surr) 84 bluene-d8 (Surr) 104	urrogate %Recovery Qualifier Limits .2-Dichloroethane-d4 (Surr) 107 70 - 128 sibromofluoromethane (Surr) 84 77 - 124 oluene-d8 (Surr) 104 80 - 120	urrogate %Recovery Qualifier Limits Prepare .2-Dichloroethane-d4 (Surr) 107 70 - 128 sibromofluoromethane (Surr) 84 77 - 124 soluene-d8 (Surr) 104 80 - 120	urrogate %Recovery Qualifier Limits Prepared Analyzed .2-Dichloroethane-d4 (Surr) 107 70 - 128 05/13/23 18:58 ribromofluoromethane (Surr) 84 77 - 124 05/13/23 18:58 roluene-d8 (Surr) 104 80 - 120 05/13/23 18:58

Lab Sample ID: LCS 460-909017/3

Matrix: Water

Analysis Batch: 909017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

LCS LCS Spike %Rec Analyte Added Result Qualifier D %Rec Limits Unit 1,1-Dichloroethene 20.0 18.3 ug/L 91 68 - 133 20.0 cis-1,2-Dichloroethene 18.7 ug/L 94 78 - 121 Tetrachloroethene 20.0 16.6 83 70 - 127 ug/L trans-1,2-Dichloroethene 20.0 18.6 74 - 126 ug/L 93 Trichloroethene 20.0 18.8 ug/L 94 71 - 121 Vinyl chloride 20.0 22.0 ug/L 110 55 - 144

	LUS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		70 - 128
Dibromofluoromethane (Surr)	81		77 - 124
Toluene-d8 (Surr)	104		80 - 120
4-Bromofluorobenzene	88		76 - 120

Lab Sample ID: LCSD 460-909017/4

Matrix: Water

Analysis Batch: 909017

Client Sample ID: Lab Control Sample 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	19.2		ug/L		96	68 - 133	5	30
cis-1,2-Dichloroethene	20.0	18.9		ug/L		95	78 - 121	1	30
Tetrachloroethene	20.0	17.2		ug/L		86	70 - 127	3	30
trans-1,2-Dichloroethene	20.0	19.1		ug/L		95	74 - 126	3	30
Trichloroethene	20.0	19.4		ug/L		97	71 - 121	3	30
Vinyl chloride	20.0	23.2		ug/L		116	55 - 144	5	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		70 - 128
Dibromofluoromethane (Surr)	82		77 - 124
Toluene-d8 (Surr)	105		80 - 120

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Page 12 of 21

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5/19/2023

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: LCSD 460-909017/4 Client Sample ID: Lab Control Sample Dup

Matrix: Water

Analysis Batch: 909017

LCSD LCSD

%Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene 88 76 - 120

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

Lab Sample ID: MB 460-909423/7

Matrix: Water

Analysis Batch: 909423

MB MB

Analyte Result Qualifier RL **MDL** Unit D Analyzed Dil Fac Prepared 0.86 1,4-Dioxane Ū 2.0 ug/L 05/16/23 09:43 2.0

MB MB

Limits Surrogate %Recovery Qualifier Prepared Analyzed Dil Fac 4-Bromofluorobenzene 92 75 - 133 05/16/23 09:43

Lab Sample ID: LCS 460-909423/3 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

Analysis Batch: 909423

Spike LCS LCS %Rec Analyte Added Result Qualifier Unit D %Rec Limits 1,4-Dioxane 5.00 5.34 107 57 - 124 ug/L

LCS LCS

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 96 75 - 133

Lab Sample ID: LCSD 460-909423/4

Matrix: Water

Analysis Batch: 909423

Spike LCSD LCSD **RPD** %Rec Analyte Added Result Qualifier Unit %Rec Limits RPD Limit 1.4-Dioxane 5.00 5.66 ug/L 113 57 - 124

LCSD LCSD

Surrogate %Recovery Qualifier Limits 75 - 133 4-Bromofluorobenzene 91

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Prep Type: Total/NA

Prep Type: Total/NA

Prep Type: Total/NA

Client Sample ID: Method Blank

Client Sample ID: Lab Control Sample Dup

QC Association Summary

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

Job ID: 240-184792-1

GC/MS VOA

Analysis Batch: 909017

Lab Sample ID 240-184792-1	Client Sample ID TRIP BLANK_153	Prep Type Total/NA	Matrix Water	Method 8260D	Prep Batch
240-184792-2	MW-112S_050323	Total/NA	Water	8260D	
MB 460-909017/8	Method Blank	Total/NA	Water	8260D	
LCS 460-909017/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-909017/4	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 909423

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184792-2	MW-112S_050323	Total/NA	Water	8260D SIM	
MB 460-909423/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-909423/3	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-909423/4	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

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Lab Chronicle

Client: ARCADIS US Inc Job ID: 240-184792-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_153 Lab Sample ID: 240-184792-1

Date Collected: 05/03/23 00:00 Matrix: Water

Date Received: 05/05/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	909017	SZD	EET EDI	05/13/23 19:21

Date Collected: 05/03/23 15:35

Date Received: 05/05/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	909017	SZD	EET EDI	05/13/23 23:30
Total/NA	Analysis	8260D SIM		1	909423	SZD	EET EDI	05/16/23 14:02

Laboratory References:

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

ID: 040 404700 4

Matrix: Water

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Accreditation/Certification Summary

Client: ARCADIS US Inc Job ID: 240-184792-1

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: Areadis	Keguiatory program: DW	NPDES RCRA Other		
	Client Project Manager: Kris Hinskey	Site Contact: Christina Weaver	Lab Contact: Mike Del Monico	TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500			THE CONTROL OF THE POST OF THE	
City/State/Zip: Novi, MI, 48377	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
Phone: 7/8 404 2740	Email: kristoffer.hinskey@arcadis.com	Asalysis Terratround Time	Analyses	For lab use only
Project Name: Ford LTP Off-Site	11	TAT if different from below 3 weeks		Walk-in client
Project Number: 30167538.402.04	Method of Shipment/Carrier:	(Lab sampling
PO#30167538.402.04	Shipping/Tracking No:	-quo	8560B 8260B	Job/SDG No:
	Matrix	13-	E 82	
Sample Identification	Sample Date Sample Time Advecors Scalinerat Sould Other:	17-DCE 8: Combolite Combol	sis-1,2-DC: Frans-1,2-I Free 82605 Free 82605 Free 82605 Free 82605	Sample Specific Notes / Special Instructions:
& TRIP BLANK_ 153	5/3/3 11	Z	× × × ×	1 Trip Blank
· MW-1125-050323	5/3/13 1535 6	200	X	3 VOAs for 8260B 3 VOAs for 8260B SIM
Pag				
e 17				
of 2				
1				NAGIHO
		270 0072		150
		240-184/92 Chain of Custody	App	2
Possible Hazard Identification • Non-Hazard Flammable Skin Irritant	nt Poison B Unknown	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) Return to Client Disposal By Lab	ples are retained longer than I month) Archive For	
Special Instructions/QC Requirements & Comments: Sample Address: 34955 Nodswo HY Submit all results through Cadena at jiometha@cadenaco.com. Cadena #E203631 Level IV Reporting requested.			conton to take a	
lope	Company: Date/Time: 5/3/23	1800 Received by: CIF	Company:	Date/Time:
That I	Company Date/Time: 5/4/73 /	1035 Received by:	Company	14/72
Reimquished by:	Date/Time:	10; 40 Received in Laboratory by;	3 les company	5.23 8
02008, Techniques Legoratories, hr. Alstryku, neumet. Techniques à Design in gra traditional of Insoftwards Leboratories inc.				

TestAmerica

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

Chain of Custody Record

	184797						
Eurofins - Canton Sample Receipt Form/Narrative Barberton Facility	Login #:						
Client AYCOUS Site Name	Cooler unpacked by:						
Cooler Received on 5.5.23 Opened on 5.5	-23 Manalely Bl						
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off I							
Receipt After-hours: Drop-off Date/Time	Storage Location						
Eurofins Cooler # Foam Box Client Cooler Bo	ox Other						
Packing material used: Bubble Wrap Foam Plastic Bag COOLANT: Wellce Blue Ice Dry Ice Water	None Other						
	See Multiple Cooler Form						
IR GUN # (CF°C) Observed Cooler	Temp°C Corrected Cooler Temp°C						
 Were tamper/custody seals on the outside of the cooler(s)? If Yes -Were the seals on the outside of the cooler(s) signed & dated? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/-Were tamper/custody seals intact and uncompromised? Shippers' packing slip attached to the cooler(s)? Did custody papers accompany the sample(s)? Were the custody papers relinquished & signed in the appropriate p Was/were the person(s) who collected the samples clearly identified Did all bottles arrive in good condition (Unbroken)? Could all bottle labels (ID/Date/Time) be reconciled with the COC? For each sample, does the COC specify preservatives (Y)N), # of coll. Were correct bottle(s) used for the test(s) indicated? Sufficient quantity received to perform indicated analyses? Are these work share samples and all listed on the COC? If yes, Questions 13-17 have been checked at the originating labora Were all preserved sample(s) at the correct pH upon receipt? Were VOAs on the COC? Were air bubbles >6 mm in any VOA vials?	MeHg)? Yes No NA Yes No NA Yes No NA Yes No NA Yes No Olace? d on the COC? No Ontainers (YN), and sample type of grab/comp(YN)? Yes No No Yes No Yes No No Yes No Yes No No Yes No No Yes No No Yes No N						
Contacted PM by	via Verbal Voice Mail Other						
Concerning							
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES							
10 CAMBLE CONDITION							
19. SAMPLE CONDITION Sample(s) were received after the	he recommended holding time had evnired						
Sample(s) were received after the sample(s)							
Sample(s)							
Sample(s) were received	with outfore to their in diameter. (Notity FWI)						
20. SAMPLE PRESERVATION							
Sample(s)	were further preserved in the laboratory.						
Sample(s) Preservative(s) added/Lot number(s):							
VOA Sample Preservation - Date/Time VOAs Frozen:							

Login #: 184792

Cooler De	escription	Eurofins - Canton	Observed	Corrected	Coolant
	escription cle)	(Circle)	Temp °C	Temp °C	(Circle)
		(Circle)	7		Wet ice Blue ice Dry
Ed Client	Box Other	IR GUN #: 22	1.0	1.0	Water None
EC Client	Box Other	IR GUN #: 20	1.8	1.8	Wet ice Blue ice Dry Water None
EC Client	Box Other	IR GUN #:			Wet Ice Sive Ice Dry Water None
EC Client	Box Other	IR GUN #:			Wet ice Blue ice Dry Water None
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WI-NC-099 Cooler Receipt Form Page 2 - Multiple Coolers

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Eurofins Cleveland

180 S. Van Buren Avenue Barberton, OH 44203

Phone: 330-497-9396 Fax: 330-497-0772

Environment Testing

🔅 eurofins

Chain of Custody Record

Note: Since abovatory 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 abovatory or 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 alternitor instructions will be provided. Any changes to accreditation status should be brought 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 TSP Dodecahydrate Special Instructions/Note: Z - other (specify) P - Na204S Q - Na2SO3 R - Na2S2O3 U - Acetone V - MCAA Months O - AsNaO2 W - pH 4-5 S - H2SO4 Y - Trizma Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return To Client Disposal By Lab Archive For Mon Company Company Preservation Codes H - Ascorbic Acid 10130 240-184792-1 COC No: 240-167789.1 C - Zn Acetate D - Nitric Acid E - NaHSO4 Page: Page 1 of 1 J - DI Water K - EDTA G - Amchlor A - HCL B - NaOH F - MeOH L - EDA Archive For 1 - Ice 9 Total Number of containers Date/Time: Jate/Time: Method of Shipment: Camer Tracking No(s). State of Origin: Michigan **Analysis Requested** Cooler Temperature(s) °C and Other Remarks: Special Instructions/QC Requirements Lab PM: DelMonico, Michael E-Mait: Michael.DelMonico@et.eurofinsus.com C Levisor Accreditations Required (See note) Received by: × × × SEOD/SO30C (MOD) VOCs (Short List) Time: HOM TO BOY (YOU OF NO) Filtered Sample (Yes of No) Preservation Code: Sesolid, Orwaste/oil, BTrTissue, Water Water A=At Company G=grab) (C=comp, Sample Type Primary Deliverable Rank: 2 Eastern Sample Eastern 15:35 Date: (days) Due Date Requested: Sample Date 5/3/23 5/3/23 Project #: 24015353 5/18/2023 Date/Time: SSOW#: Phone: #OM Client Information (Sub Contract Lab) Deliverable Requested: I, II, III, IV, Other (specify) Custody Seals Intact: Custody Seal No. Sample Identification - Client ID (Lab ID) Eurofins Environment Testing Northeast, 732-549-3900(Tel) 732-549-3679(Fax) MW-112S_050323 (240-184792-2) TRIP BLANK_153 (240-184792-1) Possible Hazard Identification Empty Kit Relinquished by: 777 New Durham Road, ∆ Yes ∆ No Shipping/Receiving Ford LTP - Off Site elinquished by: Unconfirmed Client Contact: State, Zip: NJ, 08817 Edison 5/19/2023 Page 20 of 21

Client: ARCADIS US Inc Job Number: 240-184792-1

Login Number: 184792 List Source: Eurofins Edison
List Number: 2 List Creation: 05/09/23 01:20 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	
Is 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	

N/A

Residual Chlorine Checked.

DATA VERIFICATION REPORT



May 19, 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: 184792-1 Sample date: 2023-05-03

Report received by CADENA: 2023-05-19

Initial Data Verification completed by CADENA: 2023-05-19

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, 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: 184792-1

		Sample Name: Lab Sample ID: Sample Date:	Lab Sample ID: 2401847921							
				Report		Valid Report				Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
OSW-826	<u>0D</u>									
	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		ND	1.0	ug/l	
OSW-826	<u>ODSIM</u>									
	1,4-Dioxane	123-91-1					ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-184792-1

CADENA Verification Report: 2023-05-19

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49789R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-184792-1 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_153	240-184792-1	Water	05/03/23		Х	
MW-112S_050323	240-184792-2	Water	05/03/23		X	X

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

Items Reviewed	Rep	orted		mance ptable	Not
	No	Yes	No	Yes	Required
Sample receipt condition		Х		Х	
2. Requested analyses and sample results		X		X	
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		Х	
8. Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
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	Perfo Acce	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 16, 2023

PEER REVIEW: Andrew Korycinski

DATE: June 19, 2023

NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

CHAIN OF CUSTODY CORRECTED SAMPLE ANALYSIS DATA SHEETS

Chain of Custody Record

<u>TestAmerica</u>

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

Client Contact	Regulat	ory program:	:		DW		N	DES		1	RCR	A	1	Othe	er [_				
Company Name: Arcadis	Client Project	Januager Krie	Hinel	AN			Rito Co	ontact: Christina Weaver													TestAmerica Laboratories, Inc.					
Address: 28550 Cabot Drive, Suite 500	Client Project Manager: Kris Hinskey																Conta	et: M	ike De		COC No:					
City/State/Zip: Novi, MI, 48377	Telephone: 248					Telephone: 248-994-2240							Tele	Telephone: 330-497-9396												
	Emsil: kristoffer.hinskey@arcadis.com						As	alyais	Turn	THIOT	nd Ti	me		12.		_		_	-		1 of 1 COCs For lab use only					
Phone: 248-994-2240	Complete No.						TAT if a	L.CT			3 1 2		1	55				T				T	T	T		
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Sample Identification	Sample Date	Sample Time	ŧ	₹ .	S S	ŏ	3 5	HCI	Ž.	ZnAc/ NaOH	5	ŏ	E	ပိ	1.	Cis	F	<u> </u>	15	ξ	4.					Special instructions:
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5/49/2023 10:59 AM

Eurofins Cleveland

180 S. Van Buren Avenue Barberton, OH 44203

10:59 AM

Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record



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Environment Testing

Client Information (Sub Contract Lab)	Sampler: Lab P						Mich	ael				C	arrier	Trackin	g No(s)	:		COC No: 240-167789.1					
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City: Edison	TAT Requested (da	ys):																B - NaOH C - Zn Acetate		N - None O - AsNaO2			
State, Zip:																		D - Nitric Acid		P - Na2O4S Q - Na2SO3			
NJ, 08817 Phone:	PO #:																	E - NaHSO4 F - MeOH		R - Na2S2O3 S - H2SO4	3		
732-549-3900(Tel) 732-549-3679(Fax)	PO #:				ि		<u>š</u>											G - Amchlor H - Ascorbic Ad	rid	T - TSP Dod	ecahydrate		
Email:	WO #:				O N	6	(MOD) VOCs (Short List)											I - Ice J - DI Water		U - Acetone V - MCAA			
	Project #:				3	8	s (S										iner	K - EDTA L - EDA		W - pH 4-5 Y - Trizma			
	24015353 ssow#:					9	Š										onta			Z - other (spe	ecify)		
Site.	55UVV#:				Sam	SD	<u>@</u>	2									ofo	Other:					
			Sample	(W=wate		100	<u>@</u>	/203									Pe						
			Туре	S=solid	農	1	1503	SIS									N N						
Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	(C=comp, G=grab)	BT=Tissu A=Air)		8	8260D/5030C	8260D_SIM/5030C									Total	Specie	al Inc	tructions/	Notes		
Comprehensive Control (Lab 15)	Cample Date		Preservat		e: X	X											×	Specia	31 1113	tructions/	Note.		
TRIP BLANK_153 (240-184792-1)	5/3/23	Eastern		Wate	,		х										1						
W-112S_050323 (240-184792-2)	5/3/23	15:35 Eastern		Wate	,	T	×	x	+								6						
																	8						
3						\vdash		+	_	+		\vdash	+	+	+	\vdash	93		*				
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Note: Since laboratory accreditations are subject to change, Eurofins Environment laboratory does not currently maintain accreditation in the State of Origin listed about the control of	ve for analysis/tests	/matrix being a	analyzed, the s	amples mu	ust be st	hippe	d back	to the	Eurofins	Enviro	nment	Testino	North	Centra	I. LLC I	aborato	rv or oth	ner instructions wil	l be pr	ovided. Any	changes to		
accreditation status should be brought to Eurofins Environment Testing North Cer	tral, LLC attention in	nmediately. If	all requested a	ccreditatio	ns are c	urren	t to dat	te, retu	m the sig	gned C	chain o	f Custo	dy atte	sting to	said co	mpliand	e to Eu	rofins Environmer	nt Testi	ng North Cei	ntral, LLC.		
Possible Hazard Identification						Sai	_				may					es are	_	ned longer th	an 1	month)			
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	blo Book: '	2			5-2			To Clie					al By L	.ab		Arc	hive For		Months			
	•							nstruc	ctions/0	QC R	equir	emeni											
Empty Kit Relinquished by:		Date:			Ti	me:							М	ethod o	f Shipm	nent:	Re	dey					
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Belinquished by:	Date/Time:			Company		Received by:									Date	/Time:				Company			
ω																							
Custody Seals Intact: Custody Seal No.: Δ Yes Δ No				210			Cooler Temperature(s) °C and Other Remarks:																
Custody Seals Intact: Custody Seal No.:	Date/Time: Company Date/Time: Company							Received by: Cooler Temperature(s) °C and Other											Company				

Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184792-1 Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_153 Lab Sample ID: 240-184792-1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/13/23 19:21	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/13/23 19:21	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 19:21	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/13/23 19:21	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 19:21	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/23 19:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 128			•		05/13/23 19:21	1
Dibromofluoromethane (Surr)	87		77 - 124					05/13/23 19:21	1
Toluene-d8 (Surr)	105		80 - 120					05/13/23 19:21	1
4-Bromofluorobenzene	86		76 - 120					05/13/23 19:21	1

Client Sample ID: MW-112S_050323 Lab Sample ID: 240-184792-2

Date Collected: 05/03/23 15:35 Date Received: 05/05/23 08:00

Method: SW846 8260D SIM	- Volatile Orga	platile 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			05/16/23 14:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133			-		05/16/23 14:02	1

Method: SW846 8260D - \	lethod: 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			05/13/23 23:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/13/23 23:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 23:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/13/23 23:30	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/13/23 23:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/13/23 23:30	1
Surrogate	%Recovery	Qualifier	l imite				Propared	Analyzed	Dil Fac

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
1,2-Dichloroethane-d4 (Surr)	107		70 - 128		05/13/23 23:30	1	
Dibromofluoromethane (Surr)	86		77 - 124		05/13/23 23:30	1	
Toluene-d8 (Surr)	102		80 - 120		05/13/23 23:30	1	
4-Bromofluorobenzene	89		76 - 120		05/13/23 23:30	1	

Matrix: Water

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ANALYTICAL REPORT

PREPARED FOR

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

Generated 5/20/2023 11:22:39 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-184790-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



Eurofins Cleveland

Job Notes

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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

(330)497-9396

Generated 5/20/2023 11:22:39 AM

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Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-184790-1

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
Receipt Checklists	22

11

12

4

4 E

Definitions/Glossary

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Qualifiers

GC/MS VOA

Qualifier **Qualifier Description**

LCS and/or LCSD is outside acceptance limits, high biased. U Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly	y used abbreviations may	y 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**

Detection Limit (DoD/DOE) DΙ

DL, RA, RE, IN Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample

Decision Level Concentration (Radiochemistry) DLC

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 MLMinimum Level (Dioxin) Most Probable Number MPN 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**

Relative Error Ratio (Radiochemistry) RER

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) Toxicity Equivalent Quotient (Dioxin) **TEQ**

TNTC Too Numerous To Count

Eurofins Cleveland

Page 4 of 22 5/20/2023

Case Narrative

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

Job ID: 240-184790-1

Job ID: 240-184790-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-184790-1

Receipt

The samples were received on 5/5/2023 @ 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 1.0°C and 1.8°C

GC/MS VOA

Method 8260D: The laboratory control sample duplicate (LCSD) for analytical batch 460-909111 recovered outside control limits for the following analytes: cis-1,2-Dichloroethene and trans-1,2-Dichloroethene. These analytes were biased high in the LCSD and were not detected in the associated samples; therefore, the data have been reported.

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: 240-184790-1

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

5/20/2023

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Sample Summary

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

Job ID: 240-184790-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-184790-1	TRIP BLANK_152	Water	05/03/23 00:00	05/05/23 08:00
240-184790-2	MW-217S 050323	Water	05/03/23 16:50	05/05/23 08:00

Detection Summary

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_152 Lab Sample ID: 240-184790-1

No Detections.

Lab Sample ID: 240-184790-2 Client Sample ID: MW-217S_050323

No Detections.

Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_152

Date Collected: 05/03/23 00:00 Date Received: 05/05/23 08:00 Lab Sample ID: 240-184790-1

Matrix: Water

Method: SW846 8260D - Vo Analyte		Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L		-	05/14/23 20:19	1
cis-1,2-Dichloroethene	1.0	U *+	1.0	0.46	ug/L			05/14/23 20:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/14/23 20:19	1
trans-1,2-Dichloroethene	1.0	U *+	1.0	0.51	ug/L			05/14/23 20:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/14/23 20:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/14/23 20:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 128					05/14/23 20:19	1
Dibromofluoromethane (Surr)	120		77 - 124					05/14/23 20:19	1
Toluene-d8 (Surr)	91		80 - 120					05/14/23 20:19	1
4-Bromofluorobenzene	108		76 - 120					05/14/23 20:19	1

Page 9 of 22

Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-217S_050323

Date Collected: 05/03/23 16:50 Date Received: 05/05/23 08:00

Dibromofluoromethane (Surr)

Toluene-d8 (Surr)

4-Bromofluorobenzene

Lab Sample ID: 240-184790-2

05/17/23 12:23

05/17/23 12:23

05/17/23 12:23

Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/16/23 13:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		75 - 133					05/16/23 13:40	1
- Method: SW846 8260D - Vo	olatile Organic	Compoun	ds by GC/MS						
Analyte	_	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/17/23 12:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/17/23 12:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 12:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/17/23 12:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 12:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/17/23 12:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 128					05/17/23 12:23	

77 - 124

80 - 120

76 - 120

115

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Surrogate Summary

Client: ARCADIS US Inc Job ID: 240-184790-1

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)
240-184790-1	TRIP BLANK_152	104	120	91	108
240-184790-2	MW-217S_050323	94	115	98	96
LCS 460-909111/4	Lab Control Sample	97	115	93	110
LCS 460-909652/3	Lab Control Sample	99	117	100	102
LCSD 460-909111/5	Lab Control Sample Dup	98	114	90	109
LCSD 460-909652/4	Lab Control Sample Dup	97	123	97	100
MB 460-909111/11	Method Blank	101	121	93	108
MB 460-909652/30	Method Blank	94	114	97	98

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)

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

			Percent Surrogate Recovery (Acceptance Limits)
		BFB	
Lab Sample ID	Client Sample ID	(75-133)	
240-184790-2	MW-217S_050323	93	
LCS 460-909423/3	Lab Control Sample	96	
LCSD 460-909423/4	Lab Control Sample Dup	91	
MB 460-909423/7	Method Blank	92	

Surrogate Legend

BFB = 4-Bromofluorobenzene

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Client: ARCADIS US Inc

Project/Site: Ford LTP - Off Site

Job ID: 240-184790-1

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

Lab Sample ID: MB 460-909111/11

Matrix: Water

Analysis Batch: 909111

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

MB MB Result Qualifier RL **MDL** Unit Analyzed Dil Fac Analyte D Prepared 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 05/14/23 13:11 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 05/14/23 13:11 1.0 U 0.44 ug/L Tetrachloroethene 1.0 05/14/23 13:11 0.51 ug/L trans-1,2-Dichloroethene 1.0 U 1.0 05/14/23 13:11 Trichloroethene 1.0 U 1.0 0.44 ug/L 05/14/23 13:11 Vinyl chloride 1.0 U 1.0 0.45 ug/L 05/14/23 13:11

MB MB Surrogate %Recovery Qualifier Limits Prepared Dil Fac Analyzed 70 - 128 1,2-Dichloroethane-d4 (Surr) 101 05/14/23 13:11 Dibromofluoromethane (Surr) 121 77 - 124 05/14/23 13:11 93 80 - 120 05/14/23 13:11 Toluene-d8 (Surr) 4-Bromofluorobenzene 108 76 - 120 05/14/23 13:11

Lab Sample ID: LCS 460-909111/4

Matrix: Water

Analysis Batch: 909111

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Spike LCS LCS %Rec Added Analyte Result Qualifier Unit D %Rec Limits 1,1-Dichloroethene 20.0 21.8 109 68 - 133 ug/L 20.0 cis-1,2-Dichloroethene 222 ug/L 111 78 - 121 Tetrachloroethene 20.0 20.0 100 ug/L 70 - 127 74 - 126 trans-1.2-Dichloroethene 22.2 20.0 ug/L 111 ug/L Trichloroethene 20.0 17.8 89 71 - 121 Vinyl chloride 20.0 18.6 ug/L 93 55 - 144

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 70 - 128 Dibromofluoromethane (Surr) 115 77 - 124 Toluene-d8 (Surr) 93 80 - 120 76 - 120 4-Bromofluorobenzene 110

Lab Sample ID: LCSD 460-909111/5

Matrix: Water

Analysis Batch: 909111

Client Sample ID: Lab Control Sample 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	24.9		ug/L		124	68 - 133	13	30
cis-1,2-Dichloroethene	20.0	24.9	*+	ug/L		125	78 - 121	12	30
Tetrachloroethene	20.0	22.9		ug/L		114	70 - 127	13	30
trans-1,2-Dichloroethene	20.0	25.5	*+	ug/L		128	74 - 126	14	30
Trichloroethene	20.0	20.6		ug/L		103	71 - 121	15	30
Vinyl chloride	20.0	20.4		ug/L		102	55 - 144	9	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	98		70 - 128
Dibromofluoromethane (Surr)	114		77 - 124
Toluene-d8 (Surr)	90		80 - 120

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Page 12 of 22

2

3

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7

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Client: ARCADIS US Inc Job ID: 240-184790-1 Project/Site: Ford LTP - Off Site

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

Lab Sample ID: LCSD 460-909111/5

Matrix: Water

Analysis Batch: 909111

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

LCSD LCSD

%Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene 109 76 - 120

Lab Sample ID: MB 460-909652/30

Matrix: Water

Analysis Batch: 909652

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/17/23 10:30	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/17/23 10:30	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 10:30	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/17/23 10:30	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 10:30	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/17/23 10:30	1

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 128		05/17/23 10:30	1
Dibromofluoromethane (Surr)	114		77 - 124		05/17/23 10:30	1
Toluene-d8 (Surr)	97		80 - 120		05/17/23 10:30	1
4-Bromofluorobenzene	98		76 - 120		05/17/23 10:30	1

Spike

Added

20.0

20.0

20.0

20.0

20.0

20.0

22.0

22.0

20.9

22.0

17.5

17.7

ug/L

ug/L

Lab Sample ID: LCS 460-909652/3

Matrix: Water

1,1-Dichloroethene

Tetrachloroethene

Trichloroethene

Vinyl chloride

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

Analyte

Analysis Batch: 909652

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

71 - 121

55 - 144

LCS LCS %Rec Result Qualifier Unit %Rec Limits ug/L 110 68 - 133 ug/L 110 78 - 121 104 70 - 127 ug/L ug/L 110 74 - 126

88

89

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 128
Dibromofluoromethane (Surr)	117		77 - 124
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene	102		76 - 120

Lab Sample ID: LCSD 460-909652/4

Matrix: Water

Analysis Batch: 909652

Client Sample ID: Lab Control Sample 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	23.5		ug/L		117	68 - 133	6	30
cis-1,2-Dichloroethene	20.0	22.5		ug/L		113	78 - 121	3	30
Tetrachloroethene	20.0	20.9		ug/L		104	70 - 127	0	30
trans-1,2-Dichloroethene	20.0	23.3		ug/L		116	74 - 126	6	30
Trichloroethene	20.0	18.4		ug/L		92	71 - 121	5	30

Eurofins Cleveland

Page 13 of 22 5/20/2023 Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: LCSD 460-909652/4 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 909652

LCSD LCSD **RPD** Spike %Rec Analyte Added Result Qualifier Unit %Rec Limits **RPD** Limit Vinyl chloride 20 O 19 7 ug/L 98 55 - 144 10 30

LCSD LCSD Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 97 70 - 128 Dibromofluoromethane (Surr) 123 77 - 124 Toluene-d8 (Surr) 97 80 - 120 4-Bromofluorobenzene 100 76 - 120

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

Lab Sample ID: MB 460-909423/7 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 909423

MB MB Result Qualifier Analyte RL MDL Unit Prepared Analyzed Dil Fac 1.4-Dioxane 2.0 U 20 05/16/23 09:43 0.86 ug/L MB MB Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene 92 75 - 133 05/16/23 09:43

Lab Sample ID: LCS 460-909423/3 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 909423

Spike LCS LCS %Rec %Rec Analyte Added Result Qualifier Unit Limits 1.4-Dioxane 5.00 5.34 ug/L 107 57 - 124

LCS LCS %Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene 96 75 - 133

Lab Sample ID: LCSD 460-909423/4 Client Sample ID: Lab Control Sample Dup Prep Type: Total/NA

Matrix: Water

Analysis Batch: 909423

LCSD LCSD %Rec **RPD** Spike Added Analyte Result Qualifier Unit D Limits **RPD** Limit %Rec 1,4-Dioxane 5.00 5.66 ug/L 113 57 - 124

LCSD LCSD Limits Surrogate %Recovery Qualifier 75 - 133 4-Bromofluorobenzene 91

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QC Association Summary

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

Job ID: 240-184790-1

GC/MS VOA

Analysis Batch: 909111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-184790-1	TRIP BLANK_152	Total/NA	Water	8260D	
MB 460-909111/11	Method Blank	Total/NA	Water	8260D	
LCS 460-909111/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-909111/5	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 909423

Lab Sample ID 240-184790-2	Client Sample ID MW-217S 050323	Prep Type Total/NA	Matrix Water	Method 8260D SIM	Prep Batch
MB 460-909423/7	– Method Blank	Total/NA	Water	8260D SIM	
LCS 460-909423/3	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-909423/4	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

Analysis Batch: 909652

Lab Sample ID 240-184790-2	Client Sample ID MW-217S 050323	Prep Type Total/NA	Matrix Water	Method 8260D	Prep Batch
MB 460-909652/30	Method Blank	Total/NA	Water	8260D	
LCS 460-909652/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-909652/4	Lab Control Sample Dup	Total/NA	Water	8260D	

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Lab Chronicle

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_152

Lab Sample ID: 240-184790-1 Date Collected: 05/03/23 00:00 **Matrix: Water** Date Received: 05/05/23 08:00

Batch Batch Batch Dilution Prepared Method **Prep Type** Run **Factor** Number Analyst or Analyzed Type Lab 05/14/23 20:19 Total/NA Analysis 8260D 909111 AAT EET EDI

Client Sample ID: MW-217S_050323 Lab Sample ID: 240-184790-2

Date Collected: 05/03/23 16:50 **Matrix: Water**

Date Received: 05/05/23 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	909652	CJM	EET EDI	05/17/23 12:23
Total/NA	Analysis	8260D SIM		1	909423	SZD	EET EDI	05/16/23 13:40

Laboratory References:

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

Eurofins Cleveland

Accreditation/Certification Summary

Client: ARCADIS US Inc Job ID: 240-184790-1

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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Client Contact	Regulatory program: DW	NPDES RCRA Other		
Company Name: Arcadis	Cient Project Manager: Kris Hinskey	Site Contact: Christian Weaver	Part Content Mile Balderies	TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500			Lab Cumact: Wike Letynomeo	COC No:
City/State/Zin: Novi. Ml. 48177	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
Physics 246 604 3740	Email: kristoffer.binskey@arcadis.com	Abalysis Terrarround Time	Analyses	For lab use only
Project Name: Ford LTP Off-Site	Sampler Name: Red Lason	TAT if different from below Weeks Oussiles		Walk-in client
Project Number: 30167538.402.04	Method of Shipment/Carrier:	l week		Lab sampling
PO#30167538.402.04	Shipping/Tracking No:	(CAV)	85608	Joh/SDG No:
	Matrix	D-31	OB OB	
Sample Identification	Sample Date Attended Time Attended Sample Time Solid Solid Solid Others	HT2O4 HT2O4 HT2O4	Cis-1,2-D Trans-1,2 TCE 8260 Vinyl Chio Vinyl Chio	Sample Specific Notes / Special Instructions:
TRIP BLANK 152	5/3/23 11	7 0	<u> </u>	1 Trip Blank
* MW-2175-050323	5/3/23 1650 6	N C N	\(\lambda\)	3 VOAs for 8260B 3 VOAs for 8260B SIM
Page 18 of 2				
		240-184790 Chain of Custody		HIGAN 190
Possible Hazard Identification Non-Hazard Flammable Skin Irritant	tant Poison B Unknown	Sample Disposal (A fee may be assessed if sam Return to Client	may be assessed if samples are retained longer than 1 month) Disposal By Lab Archive For Months	
omments				
Relinguished by.		1864 Received by: Cold S	Company:	Date/Time: / 1914
Relinquished by: My Honey	Company: Datertime; 5/4/23	1035 Received by:	Company:	1 22 //
Relinquished by:		10740 Meetived in Laboratory My	sh cent	15-23
OCCIO. Tenévopica Lebradora. Nr. Ad 1950; marved. Tenévorana & Denip - an tenévorana of Tenévorana Laborator es. Inc.				

TestAmerica

Test America Laboratory location; Brighton — 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Chain of Custody Record

E C O I O I D I I E O I	18430
Eurofins - Canton Sample Receipt Form/Narrative Barberton Facility	Login # : 189 190
Client AYCOUS Site Name	Cooler unpacked by:
Cooler Received on 5 · 5 · 23 Opened on 5 · 5 · 23	ManalynBl
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins C	
	e Location
	ther
Packing material used: <u>Bubble Wrap</u> Foam Plastic Bag None COOLANT: Wet Ice Blue Ice Dry Ice Water None	Other
	tiple Cooler Form
	°C Corrected Cooler Temp°C
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity	<u></u>
-Were the seals on the outside of the cooler(s) signed & dated?	No. No. NA. Tests that are not
-Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	Yes Co Receiving:
-Were tamper/custody seals intact and uncompromised?	Cyps No NA
3. Shippers' packing slip attached to the cooler(s)?	(Yes No VOAs Oil and Grease
4. Did custody papers accompany the sample(s)?	TOC
5. Were the custody papers relinquished & signed in the appropriate place?6. Was/were the person(s) who collected the samples clearly identified on the Co	OC? (Ye No
7. Did all bottles arrive in good condition (Unbroken)?	OC? (Yes No (Yes No
8. Could all bottle labels (ID/Date/Time) be reconciled with the COC?	No No
9. For each sample, does the COC specify preservatives (YN), # of containers (
10. Were correct bottle(s) used for the test(s) indicated?	Ye 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.	v v 6 v v v v v v v v v v v v v v v v v
13. Were all preserved sample(s) at the correct pH upon receipt? 14. Were VOAs on the COC?	Yes No (NA pH Strip Lot# HC208070
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 #	
17. Was a LL Hg or Me Hg trip blank present?	Yes (No
Contacted PM Date by v	ia Verbal Voice Mail Other
Concerning	
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional r	next page Samples processed by:
19. SAMPLE CONDITION	
Sample(s) were received after the recomm	nended holding time had expired.
Sample(s)w	ere received in a broken container.
Sample(s) were received with bubb	ble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION	
Sample(s)	were further preserved in the laboratory.
Sample(s) Preservative(s) added/Lot number(s):	were further preserved in the laboratory.
VOA Sample Preservation - Date/Time VOAs Frozen:	

Login #: 184740

Description ircle)	IR Gun #	Observed		
irolol		Observed	Corrected	Coolant
ii cie)	(Circle)	Temp °C	Temp °C	(Circle)
Box Other	IR GUN #:	1.0	/.0	Wet ice Blue ice Dry ice
Box Other	IR GUN #: 20	1.8	1.8	Wet ice Blue ice Dry ice Water None
Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
Box Other	IR GUN #:			Wet ice Blue ice Dry ice
Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
Box Other	IR GUN #:			Water None Water Blue Ice Dry Ice
	IR GUN #:			Water None Wet ice Blue ice Dry ice
	IR GUN #:			Water None Wellice Blue Ice Dry Ice
	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
				Water Hone Wat Ice Sive Ice Dry Ice
				Water None Wet ice Blue Ice Dry Ice
				Water None Wet ice Blue ice Dry ice
-				Water Hone Wet Ice Sive Ice Dry Ice
Box Other			<u>.</u>	Water None
Box Other				Wet Ice Sive Ice Dry Ice Water Hone
Box Other				Wet ice Sive ice Dry ice Water None
Box Other				Wet ice Blue ice Dry ice Water None
Box Other				Wet Ice Stue Ice Dry Ice Water None
Box Other	IR GUN #:			Wet ice Sive ice Dry ice Water Mone
Box Other				Wet ice Blue ice Dry ice Water None
Box Other	IR GUN #:			Wet Ice Stue Ice Dry Ice Water None
Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
Box Other	IR GUN #:			Wellice Sive Ice Dry Ice Water None
Box Other	IR GUN #:			Wet Ice Stue Ice Dry Ice Water None
Box Other	IR GUN 0:			Wet ice Blue ice Dry ice Water None
Box Other	IR GUN #:			Wet ice Blue ice Dry ice
Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice
	IR GUN #:			Water None Wet Ice Stue Ice Dry Ice
	IR GUN #:			Water None Wet Ice Stue Ice Dry Ice
	IR GUN Ø:			Water Mone Wet Ice Blue Ice Dry Ice
				Water None Wet Ice Blue Ice Dry Ice
				Water None Wet Ice Blue Ice Dry Ice
				Water None Wet Ice Blue Ice Dry Ice
				Water None
Sox Other	IK OUN #:		☐ See Tem	Wet ice Blue ice Dry ice Water None perature Excursion Form
	Box Other Box Other	Box Other IR GUN #:	Box Other IR GUN #:	Box Other IR GUN 9:

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

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Eurofins Cleveland

Chain of Custody Record

Environment Testing

💸 eurofins

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

Client Information (Sub Contract Lab)	Sampler:			Lab PM: DelMo	Lab PM: DelMonico, Michael	ael		Ca	Carrier Tracking No(s):	:(s)c	COC No: 240-167789.	57789.1	
	Phone:			E-Mail	E-Mail:	10,000	o di di di		State of Origin:		Page:) of 1	
Chipping/receiving				MICH	del Delivior	na na man	Oliffisus.C	1	riigari		Lage 101	5	
Company: Eurofins Environment Testing Northeast,				,	Accreditations Required (See note):	Kequired (St	ee note):				Job #: 240-18	Job #: 240-184790-1	
Address: 777 New Durham Road, ,	Due Date Requested: 5/18/2023	ij					Analysi	Analysis Requested	sted		Preser	۱ĕ	ss: M - Hexane
City:	TAT Requested (days):	ys):									B - NaC		N - None
Edisori State, 27: NJ, 08817											C - Zn /	C - Zn Acetate D - Nitric Acid E - NaHSO4	P - Na204S Q - Na2SO3
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO#:				100 1100 1100 1100 1100 1100 1100 1100						F-MeC G-Am H-Ass		S - H2SO4 T - TSP Dodecahydrate
Email:	:# OM				(ON								U - Acetone V - MCAA
Project Name: Ford LTP - Off Site	Project #: 24015353				10.30						K - EDTA	⋖	w - pri 4-3 Y - Trizma Z - other (specify)
Site:	SSOW#:				ad (v)C					of coi		
Sample Identification - Client ID (Lab ID)	Sample Date	Sample	Sample Type (C=comp, G=grab)	(W=water, S=solid, O=waste/oll, BT=Thsue, A=Ar)	Field Filtered &	8260D_SIMIS_G03C					Total Number	Special Inst	Special Instructions/Note:
Pa	X	X	Preservat	Preservation Code:	-							Λ	
TRIP BLANK_152 (240-184790-1)	5/3/23	Eastern		Water	×						1		
MW-217S_050323 (240-184790-2)	5/3/23	16:50 Eastern		Water	×	×					9		
22													
							1						
Note: Since laboratory accreditations are subject to change. Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not subcontract laboratory or other instructions will be provided. Any changes to	nment Testing North Centr	al, LLC places	the ownership	of method, and	alyte & accredit	tation complia	ance upon or	ur subcontrac	t laboratories.	This sample :	shipment is forw	arded under cl	hain-of-custody. If the ovided. Any changes to
Possible Hazard Identification	יו כפווימי רבי מופניונסן	mediately. II o	nescenhe i iii		Sample	Disposal	(A fee ma	ay be ass	attesting to sar	n compilance	ment to date, return the signed chain of costody attesting to said compilative to Eutomis Environment i esting north Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	ger than 1	ing north Central, LLC.
Unconfirmed					B	Return To Client	lient	Disg	Disposal By Lab		Archive For		Months
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	ible Rank: 2	01		Special	Instruction	Special Instructions/QC Requirements:	uirements					
Empty Kit Relinquished by:		Date:			Time:				Method of Shipment:	nipment:	4000	50	
Relinduished by:	Date/Time:	132	23	Company Company	71 Rece	Received by: Received by:	طكأنبه	A CO		Date/Time:	23 (0:	٥	Company
Relinquished by:	Date/Time:			Company	Rece	Received by:				Date/Time:			Company
Custody Seals Intact: Custody Seal No.:		1		11	9000	r Temperatu	Cooler Temperature(s) °C and Other Remarks:	Other Remai	- ks:				
		1	K 2	,	14	13	12	11	9	8	6	5	3

Client: ARCADIS US Inc Job Number: 240-184790-1

Login Number: 184790 List Source: Eurofins Edison
List Number: 2 List Creation: 05/09/23 01:20 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	
Is 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	

N/A

Residual Chlorine Checked.

DATA VERIFICATION REPORT



May 20, 2023

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

CADENA project ID: E203631

Project: Ford Livonia Transmission Project - OFF-SITE - Soil Gas and Groundwater

Project number: 30167538.402.04 off-site

Event Specific Scope of Work References: Sample COC Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory submittal: 184790-1 Sample date: 2023-05-03

Report received by CADENA: 2023-05-20

Initial Data Verification completed by CADENA: 2023-05-20

Number of Samples:2 Sample Matrices:Water Test Categories:GCMS VOC

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

The following minor QC exceptions or missing information were noted:

GCMS VOC batch LCS or LCSD recoveries but not both or RPD only were outliers so for CIS and TRANS-1,2-DICHLOROETHENE so were not used to qualify client sample results based on these QC outliers alone.

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 Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI $48108\ 517\text{-}819\text{-}0356$

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: 184790-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401847 5/3/202	7901	2		MW-217 2401847 5/3/202	_ 7902	23	
				Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
OSW-8260	<u>OD</u>									
	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		ND	1.0	ug/l	
OSW-8260	<u>ODSIM</u>									
	1,4-Dioxane	123-91-1					ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-184790-1

CADENA Verification Report: 2023-05-20

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49788R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-184790-1 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_152	240-184790-1	Water	05/03/23		Х	
MW-217S_050323	240-184790-2	Water	05/03/23		X	Х

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

Items Reviewed	Rep	orted		mance ptable	Not
	No	Yes	No	Yes	Required
Sample receipt condition		Х		Х	
2. Requested analyses and sample results		X		X	
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		Х	
8. Sample preservation verification (as applicable)		Х		Х	
Sample preparation/extraction/analysis dates		Х		Х	
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.

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	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 19, 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

Chain of Custody Record

<u>TestAmerica</u>

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

Address 18550 Cabot Drives, Sairs 200 Charter Project Adagogers for Site Residue Chysians 2850 Cabot Drives, Sairs 200 Telephones 246-99-2400 Telephones 246-99-2400 Telephones 246-99-240 Telephones 24	Client Contact	Regulat	ory program:	:	1	DW		NP	PDES		1 1	RCRA		1- (Other													
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ClipStates/Park Note Mit. 4877	Address: 28550 Cabot Drive, Suite 500																										COC No:	
Phone: 246-94-2366	City/State/Zip: Novi, MI, 48377	1 elephone: 248-	-994-2240														Telep	hone:	330-4	97-93	196						1 of 1	COCs
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Post Number 1940/758.402.04 Network of Shapement/Carrier: 1 Network 2 days 1 day 1	Project Name: Ford LTP Off-Site		Kent L	as	Ocr			10 d	lav				- 1														I ah cassalina	
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20/2023 1:22 AM

Eurofins Cleveland

180 S. Van Buren Avenue Barberton, OH 44203

Phone: 330-497-9396 Fax: 330-497-0772

Chain of Custody Record





Environment Testing

Client Information (Sub Contract Lab)	Sampler:				PM: Car elMonico, Michael										king N	lo(s):				COC No: 240-167789.1				
Client Contact: Shipping/Receiving	Phone:			E-M	ail:			@et.	ourof	ineue	com		State of		gin:				F	Page: Page 1 of 1	-			
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Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:				5	2 3	st)													G - Amchlor H - Ascorbic Acid		decahydrate		
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Client Sample Results

Client: ARCADIS US Inc Job ID: 240-184790-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_152

Lab Sample ID: 240-184790-1 Date Collected: 05/03/23 00:00 **Matrix: Water**

Date Received: 05/05/23 08:00

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/14/23 20:19	1
cis-1,2-Dichloroethene	1.0	U 🛰	1.0	0.46	ug/L			05/14/23 20:19	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/14/23 20:19	1
trans-1,2-Dichloroethene	1.0	U **	1.0	0.51	ug/L			05/14/23 20:19	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/14/23 20:19	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/14/23 20:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 128			-		05/14/23 20:19	1
Dibromofluoromethane (Surr)	120		77 - 124					05/14/23 20:19	1
Toluene-d8 (Surr)	91		80 - 120					05/14/23 20:19	1
4-Bromofluorobenzene	108		76 - 120					05/14/23 20:19	1

Client Sample ID: MW-217S_050323

Date Collected: 05/03/23 16:50

Date Received: 05/05/23 08:00

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/16/23 13:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		75 - 133			-		05/16/23 13:40	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/17/23 12:23	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/17/23 12:23	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 12:23	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/17/23 12:23	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/17/23 12:23	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/17/23 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	94		70 - 128		05/17/23 12:23	1
Dibromofluoromethane (Surr)	115		77 - 124		05/17/23 12:23	1
Toluene-d8 (Surr)	98		80 - 120		05/17/23 12:23	1
4-Bromofluorobenzene	96		76 - 120		05/17/23 12:23	1

Lab Sample ID: 240-184790-2

Matrix: Water