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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 3:29:54 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-185011-1

Eurofins Cleveland 180 S. Van Buren Avenue Barberton OH 44203



Eurofins Cleveland

Job Notes

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Authorization

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Authorized for release by Michael DelMonico, Project Manager I <u>Michael.DelMonico@et.eurofinsus.com</u> (330)497-9396 Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site Laboratory Job ID: 240-185011-1

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	12
QC Sample Results	13
QC Association Summary	16
Lab Chronicle	17
Certification Summary	18
Chain of Custody	19
Receipt Checklists	23

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13

14

Definitions/Glossary

Client: ARCADIS US Inc Job ID: 240-185011-1

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.

Listed under the "D" column to designate that the result is reported on a dry weight basis

%R Percent Recovery
CFL Contains Free Liquid
CFU Colony Forming Unit
CNF Contains No Free Liquid

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac Dilution Factor

DL Detection Limit (DoD/DOE)

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

DLC Decision Level Concentration (Radiochemistry)

EDL Estimated Detection Limit (Dioxin)

LOD Limit of Detection (DoD/DOE)

LOQ Limit of Quantitation (DoD/DOE)

MCL EPA recommended "Maximum Contaminant Level"

MDA Minimum Detectable Activity (Radiochemistry)

MDC Minimum Detectable Concentration (Radiochemistry)

MDL Method Detection Limit
ML Minimum Level (Dioxin)
MPN Most Probable Number
MQL Method Quantitation Limit

NC Not Calculated

ND Not Detected at the reporting limit (or MDL or EDL if shown)

NEG Negative / Absent
POS Positive / Present

PQL Practical Quantitation Limit

PRES Presumptive
QC Quality Control

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

RPD Relative Percent Difference, a measure of the relative difference between two points

TEF Toxicity Equivalent Factor (Dioxin)
TEQ Toxicity Equivalent Quotient (Dioxin)

TNTC Too Numerous To Count

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Case Narrative

Client: ARCADIS US Inc

Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Job ID: 240-185011-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-185011-1

Receipt

The samples were received on 5/9/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 2.0° C, 2.8° C, 3.3° C and 4.3° C

GC/MS VOA

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

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Method Summary

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

Job ID: 240-185011-1

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

Protocol References:

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

Laboratory References:

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

Sample Summary

Client: ARCADIS US Inc

Project/Site: Ford LTP - Off Site

Job ID: 240-185011-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-185011-1	TRIP BLANK_100	Water	05/04/23 00:00	05/09/23 10:30
240-185011-2	MW-137S_050423	Water	05/04/23 11:50	05/09/23 10:30
240-185011-3	DUP-11	Water	05/04/23 00:00	05/09/23 10:30

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Detection Summary

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_100

No Detections.

Client Sample ID: MW-137S_050423

No Detections.

Client Sample ID: DUP-11

Lab Sample ID: 240-185011-3

Job ID: 240-185011-1

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Client: ARCADIS US Inc

No Detections.

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_100

Lab Sample ID: 240-185011-1 Date Collected: 05/04/23 00:00

Matrix: Water

Date Received: 05/09/23 10:30

Method: SW846 8260D - Volati	le Organic Comp	ounds 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			05/16/23 01:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 01:35	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 01:35	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 01:35	1

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		70 - 128	_		05/16/23 01:35	1
Dibromofluoromethane (Surr)	112		77 - 124			05/16/23 01:35	1
Toluene-d8 (Surr)	100		80 - 120			05/16/23 01:35	1
4-Bromofluorobenzene	94		76 - 120			05/16/23 01:35	1

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-137S_050423

Date Collected: 05/04/23 11:50 Date Received: 05/09/23 10:30

Toluene-d8 (Surr)

4-Bromofluorobenzene

Lab Sample ID: 240-185011-2

05/16/23 16:12

05/16/23 16:12

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			05/17/23 14:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133			_		05/17/23 14:18	1

1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L		05/16/23 16:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		05/16/23 16:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L		05/16/23 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		05/16/23 16:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L		05/16/23 16:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L		05/16/23 16:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 128				05/16/23 16:12	1
Dibromofluoromethane (Surr)	110		77 - 124				05/16/23 16:12	1

80 - 120

76 - 120

108

103

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Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: DUP-11

Lab Sample ID: 240-185011-3

Matrix: Water

Date Collected: 05/04/23 00:	00
Date Received: 05/09/23 10:	30

Method: SW846 8260D SIM -	· Volatile Organic C	ompounds	(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			05/17/23 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133			-		05/17/23 14:40	1

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

Method: SW846 8260D - Volatil	e Organic Comp	ounas by GC/	INIO						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/16/23 04:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 04:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 04:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 04:44	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115	70 - 128		05/16/23 04:44	1
Dibromofluoromethane (Surr)	116	77 - 124		05/16/23 04:44	1
Toluene-d8 (Surr)	104	80 - 120		05/16/23 04:44	1
4-Bromofluorobenzene	96	76 - 120		05/16/23 04:44	1

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Surrogate Summary

Client: ARCADIS US Inc Job ID: 240-185011-1 Project/Site: Ford LTP - Off Site

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

Matrix: Water Prep Type: Total/NA

				Percent Sur	rrogate Rec
		DCA	DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(70-128)	(77-124)	(80-120)	(76-120)
240-185011-1	TRIP BLANK_100	112	112	100	94
240-185011-2	MW-137S_050423	110	110	108	103
240-185011-3	DUP-11	115	116	104	96
LCS 460-909279/3	Lab Control Sample	99	96	99	91
LCS 460-909432/3	Lab Control Sample	106	102	103	98
LCSD 460-909279/4	Lab Control Sample Dup	105	100	105	99
LCSD 460-909432/4	Lab Control Sample Dup	106	101	101	97
MB 460-909279/9	Method Blank	114	109	103	96
MB 460-909432/9	Method Blank	110	109	101	96

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)	
240-185011-2	MW-137S_050423	95	
240-185011-3	DUP-11	95	
LCS 460-909650/5	Lab Control Sample	94	
LCSD 460-909650/6	Lab Control Sample Dup	97	
MB 460-909650/9	Method Blank	96	
Surregate Lagand			

BFB = 4-Bromofluorobenzene

Client: ARCADIS US Inc Job ID: 240-185011-1 Project/Site: Ford LTP - Off Site

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

Lab Sample ID: MB 460-909279/9

Matrix: Water

Analysis Batch: 909279

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			05/15/23 21:44	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/15/23 21:44	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/15/23 21:44	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/15/23 21:44	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/15/23 21:44	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/15/23 21:44	1

	MB	MB					
Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 128	-		05/15/23 21:44	1
Dibromofluoromethane (Surr)	109		77 - 124			05/15/23 21:44	1
Toluene-d8 (Surr)	103		80 - 120			05/15/23 21:44	1
4-Bromofluorobenzene	96		76 - 120			05/15/23 21:44	1

Lab Sample ID: LCS 460-909279/3

Matrix: Water

Analysis Batch: 909279

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	20.0	15.5		ug/L		77	68 - 133	
cis-1,2-Dichloroethene	20.0	17.1		ug/L		86	78 - 121	
Tetrachloroethene	20.0	19.5		ug/L		98	70 - 127	
trans-1,2-Dichloroethene	20.0	17.0		ug/L		85	74 - 126	
Trichloroethene	20.0	17.7		ug/L		88	71 - 121	
Vinyl chloride	20.0	16.2		ug/L		81	55 - 144	

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		70 - 128
Dibromofluoromethane (Surr)	96		77 - 124
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene	91		76 - 120

Lab Sample ID: LCSD 460-909279/4

Matrix: Water

Analysis Batch: 909279

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	16.7		ug/L		83	68 - 133	8	30
cis-1,2-Dichloroethene	20.0	17.5		ug/L		88	78 - 121	2	30
Tetrachloroethene	20.0	20.4		ug/L		102	70 - 127	4	30
trans-1,2-Dichloroethene	20.0	18.0		ug/L		90	74 - 126	5	30
Trichloroethene	20.0	18.2		ug/L		91	71 - 121	3	30
Vinyl chloride	20.0	16.9		ug/L		85	55 - 144	4	30

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	105		70 - 128
Dibromofluoromethane (Surr)	100		77 - 124
Toluene-d8 (Surr)	105		80 - 120

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Page 13 of 23

Job ID: 240-185011-1

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

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

Lab Sample ID: LCSD 460-909279/4

Matrix: Water

Analysis Batch: 909279

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

LCSD LCSD

Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 99 76 - 120

Lab Sample ID: MB 460-909432/9 Client Sample ID: Method Blank **Matrix: Water**

Analysis Batch: 909432

Prep Type: Total/NA

мв мв Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 05/16/23 08:49 cis-1,2-Dichloroethene 1.0 U 1.0 05/16/23 08:49 0.46 ug/L Tetrachloroethene 1.0 U 1.0 0.44 ug/L 05/16/23 08:49 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 05/16/23 08:49 Trichloroethene 1.0 U 1.0 0.44 ug/L 05/16/23 08:49 Vinyl chloride 1.0 U 1.0 0.45 ug/L 05/16/23 08:49

мв мв

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 128	_		05/16/23 08:49	1
Dibromofluoromethane (Surr)	109		77 - 124			05/16/23 08:49	1
Toluene-d8 (Surr)	101		80 - 120			05/16/23 08:49	1
4-Bromofluorobenzene	96		76 - 120			05/16/23 08:49	1

Lab Sample ID: LCS 460-909432/3

Matrix: Water

1,1-Dichloroethene

Tetrachloroethene

Trichloroethene

Vinyl chloride

cis-1,2-Dichloroethene

trans-1,2-Dichloroethene

Analyte

Analysis Batch: 909432

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

LCS LCS %Rec Spike Added Result Qualifier Unit %Rec Limits 82 20.0 16.4 68 - 133 ug/L 20.0 16.7 ug/L 83 78 - 121 20.9 20.0 105 70 - 127 ug/L 20.0 17.2 ug/L 86 74 - 126 20.0 18.3 91 71 - 121 ug/L 20.0 17.0 ug/L 85 55 - 144

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 128
Dibromofluoromethane (Surr)	102		77 - 124
Toluene-d8 (Surr)	103		80 - 120
4-Bromofluorobenzene	98		76 - 120

Lab Sample ID: LCSD 460-909432/4

Matrix: Water

Analysis Batch: 909432

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	16.4		ug/L		82	68 - 133	0	30
cis-1,2-Dichloroethene	20.0	18.0		ug/L		90	78 - 121	8	30
Tetrachloroethene	20.0	20.7		ug/L		103	70 - 127	1	30
trans-1,2-Dichloroethene	20.0	17.5		ug/L		87	74 - 126	2	30
Trichloroethene	20.0	17.9		ug/L		90	71 - 121	2	30

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Page 14 of 23

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

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

Lab Sample ID: LCSD 460-909432/4

Matrix: Water

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

Analysis Batch: 909432

	Spike	LCSD	LCSD				%Rec		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Vinyl chloride	20.0	16.6		ug/L		83	55 - 144	2	30	

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 128
Dibromofluoromethane (Surr)	101		77 - 124
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene	97		76 - 120

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

Lab Sample ID: MB 460-909650/9

Client Sample ID: Method Blank
Matrix: Water

Prep Type: Total/NA

Analos Patalos

Analysis Batch: 909650

MB MB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dioxane	2.0	U	2.0	0.86	ug/L			05/17/23 08:57	1
	MB	MB							

 Surrogate
 %Recovery
 Qualifier
 Limits
 Prepared
 Analyzed
 Dil Fac

 4-Bromofluorobenzene
 96
 75 - 133
 05/17/23 08:57
 1

Lab Sample ID: LCS 460-909650/5

Matrix: Water

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

A I I D I I

Analysis Batch: 909650

	Opike	LOS	LUU			/orvec	
Analyte	Added	Result	Qualifier	Unit	%Rec	Limits	
1,4-Dioxane	5.00	4.96		ug/L	99	57 - 124	

LCS LCS

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene
 94
 75 - 133

Lab Sample ID: LCSD 460-909650/6

Matrix: Water

Analysis Batch: 909650

	Spike	LCSD	LCSD				%Rec		RPD
Analyte	Added	Result	Qualifier U	Init	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	5.00	5.77	u	g/L		115	57 - 124	15	30

	LCSD LCSD	
Surrogate	%Recovery Qualifier	Limits
4-Bromofluorobenzene	97	75 - 133

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Prep Type: Total/NA

Client Sample ID: Lab Control Sample Dup

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QC Association Summary

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

Job ID: 240-185011-1

GC/MS VOA

Analysis Batch: 909279

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185011-1	TRIP BLANK_100	Total/NA	Water	8260D	
240-185011-3	DUP-11	Total/NA	Water	8260D	
MB 460-909279/9	Method Blank	Total/NA	Water	8260D	
LCS 460-909279/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-909279/4	Lab Control Sample Dup	Total/NA	Water	8260D	

Analysis Batch: 909432

Lab Sample ID 240-185011-2	Client Sample ID MW-137S_050423	Prep Type Total/NA	Matrix Water	Method Prep Batch 8260D
MB 460-909432/9	Method Blank	Total/NA	Water	8260D
LCS 460-909432/3	Lab Control Sample	Total/NA	Water	8260D
LCSD 460-909432/4	Lab Control Sample Dup	Total/NA	Water	8260D

Analysis Batch: 909650

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185011-2	MW-137S_050423	Total/NA	Water	8260D SIM	·
240-185011-3	DUP-11	Total/NA	Water	8260D SIM	
MB 460-909650/9	Method Blank	Total/NA	Water	8260D SIM	
LCS 460-909650/5	Lab Control Sample	Total/NA	Water	8260D SIM	
LCSD 460-909650/6	Lab Control Sample Dup	Total/NA	Water	8260D SIM	

ID 040 405044 4

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Lab Chronicle

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_100

Date Collected: 05/04/23 00:00

Matrix: Water

Lab Sample ID: 240-185011-1

Date Received: 05/09/23 10:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	909279	SZD	EET EDI	05/16/23 01:35

Client Sample ID: MW-137S_050423 Lab Sample ID: 240-185011-2

Date Collected: 05/04/23 11:50 **Matrix: Water**

Date Received: 05/09/23 10:30

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Type	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	909432	MZS	EET EDI	05/16/23 16:12
Total/NA	Analysis	8260D SIM		1	909650	SZD	EET EDI	05/17/23 14:18

Client Sample ID: DUP-11 Lab Sample ID: 240-185011-3

Date Collected: 05/04/23 00:00 **Matrix: Water**

Date Received: 05/09/23 10:30

Batch Batch Dilution Batch Prepared Prep Type Method Туре Run Factor **Number Analyst** or Analyzed Lab 05/16/23 04:44 Total/NA 8260D 909279 SZD Analysis EET EDI Total/NA Analysis 8260D SIM 909650 SZD EET EDI 05/17/23 14:40 1

Laboratory References:

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

Accreditation/Certification Summary

Client: ARCADIS US Inc

Project/Site: Ford LTP - Off Site

Job ID: 240-185011-1

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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Date/Time: 5/8/23 bSD
Date/Time: 05-04-13 b330 1005

Date/Time: 5/5/33

Company: Coldi Company:

Stolage

Novi Cold

1005

Date Time: 5/5/23

Received by

teceived by

1050

Date/Time: 5/8/23, Date/Time: 5/8/23/

2502

Receiyed in Laboratory by:

CONT T NC

Chain of Custody Record

MICHIGAN 190

TestAmerica

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

TestAmerica Laboratories, Inc. COC No: 3 VOAs for 8260B 3 VOAs for 8260B SIM Sample Specific Notes / Special Instructions: 1 Trip Blank for lab use only Walk-in client guildmes de ob/SDG No: Months 240-185011 Chain of Custody X MIS 803S8 ansxoid-4, X Lab Contact: Mike DelMonico X Vinyl Chloride 8260B Telephone: 330-497-9396 X X Sample Disposal (A fee may be assessed if samples are retained to Return to Client Sposal By Lab Archive For CE 8500B X × OCE 8500B \succ (305-1,2-DCE 8260B) × NGX × X 12-1,2-DCE 8260B 1-DCE 8500B Other N 6 G Composite-C / Grab-G Z Site Contact: Christina Weaver Analysis Turnaround Time :падто RCRA soadu) 3 weeks 1 week 2 days 1 day Telephone: 248-994-2240 Contabers & Preser HOs TAT if different from below \a∧n\ HOEN NPDES IJH 0 0 10 day CONH tOS7H Orpeus MO pilos шаштра Email: kristoffer.hinskey@arcadis.com Unknown 0 2 Sampler Name: Twines Client Project Manager: Kris Hinskey 11A Regulatory program: Sample Time Method of Shipment/Carrier: 1150 Telephone: 248-994-2240 Shipping/Tracking No: Poison B 5/4/23 5/4/23 Sample Date 5/4/23 Skin Irritant Special Instructions/QC Requirements & Comments:
Sample Address: Row BREWSTER 050423 Client Contact Address: 28550 Cabot Drive, Suite 500 Project Number: 30167538,402.04 Project Name: Ford LTP Off-Site TRIP BLANK_ 100 Possible Hazard Identification City/State/Zip: Novi, MI, 48377 om W-1375 Company Name: Arcadis Page 19 of 23 PO # 30167538.402.04 Phone: 248-994-2240

Company Company: Cadis Submit all results through Cadena at Homalia@cadenaco.com, Cadena #E203631 Company MUL Level IV Reporting rea Relinguished by: Relimpuished by: Relinquished by

\$2008. Teakingtica Laboratoria. Inc.: Alignia reserved. Teaking co.a. & Design "I are assimunts of treshments Laboratories. Inc.

5/19/2023

Eurofins - Canton Sample Receipt Form/Narrative Login #: 1850 11 Barberton Facility								
A 1			Colonianialia					
Client Accadis	Site Name	202	Cooler unpacked by:					
Cooler Received on 05-09-2			Lear- M. & mull					
FedEx: 1st Grd Exp UPS			ner					
Receipt After-hours: Drop-off D	ate/Time	Storage Location						
Eurofins Cooler # E C	Foam Box Client Cooler	Box Other						
Packing material used: But COOLANT: Wet Ice	ble Wrap Foam Plastic Ba Blue Ice Dry Ice Wa	ag None Other						
1. Cooler temperature upon rece		See Multiple Cooler For	m					
	F + O() Observed Coo	oler Temp°C C	Corrected Cooler Temp°C					
-Were tamper/custody seals -Were tamper/custody seals 3. Shippers' packing slip attached 4. Did custody papers accompan 5. Were the custody papers relin 6. Was/were the person(s) who co 7. Did all bottles arrive in good co 8. Could all bottle labels (ID/Dat 9. For each sample, does the CO 10. Were correct bottle(s) used for 11. Sufficient quantity received to 12. Are these work share samples	de of the cooler(s) signed & dated on the bottle(s) or bottle kits (LI intact and uncompromised? de to the cooler(s)? yethe sample(s)? quished & signed in the appropriate collected the samples clearly identicondition (Unbroken)? te/Time) be reconciled with the CC specify preservatives (V/N), # or the test(s) indicated? perform indicated analyses? and all listed on the COC? been checked at the originating late at the correct pH upon receipt?	d? LHg MeHg)? Yes Yes Yes ate place? tified on the COC? Yes OC? of containers (Y)N), and sa Yes Aboratory. Yes Yes Yes Yes Yes Yes Yes Ye	No N					
Contacted PM I	Date by	via Verbal V	oice Mail Other					
Concerning								
18. CHAIN OF CUSTODY & S	AMPLE DISCREPANCIES	additional next page	Samples processed by:					
19. SAMPLE CONDITION								
Sample(s)	were received af	ter the recommended holdi	ng time had expired					
Sample(s)		were received	in a broken container.					
Sample(s)								
20. SAMPLE PRESERVATION	v.							
Sample(s)	· · · · · · · · · · · · · · · · · · ·	were fur	ther preserved in the laboratory.					
Sample(s)P	reservative(s) added/Lot number(s	s):						
VOA Sample Preservation - Date								

Login #: [850k1]

	Eurofins - Cantor	Sample Receipt Mu	ultiple Cooler Form	
Cooler Description	IR Gun #	Observed	Corrected	Coolant
(Circle)	(Circle)	Temp °C	Temp °C	(Circle)
EC Client Box Other	IR GUN #:	2.7	2.8	Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:	3.2	3.3	Water None
EC Client Box Other	IR GUN #:	1.9	2.0	Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:	4.2	4.3	Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
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EC Client Box Other	IR GUN #:		The second of th	Wet ice Blue ice Dry ice Water None
EC Client Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice Water None
EC Cilent Box Other	IR GUN #:			Wet Ice Blue Ice Dry Ice
EC Client Sox Other	IR GUN #:			Water None Wet ice Blue ice Dry ice
				Water None

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

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Chain of Custody Record

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

Barberton, OH 44203

Eurofins Cleveland 180 S. Van Buren Avenue

💸 eurofins

Environment Testing

T - TSP Dodecahydrate Special Instructions/Note: Z - other (specify) M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4 V - MCAA W - pH 4-5 Y - Trizma U - Acetone Preservation Codes: A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MaOH
G - Amchlor
H - Ascorbic Acid COC No: 240-167888.1 240-185011-1 Page 1 of 1 J - DI Water K - EDTA L - EDA Total Number of containers 9 9 Carrier Tracking No(s) State of Origin: Michigan **Analysis Requested** Michael.DelMonico@et.eurofinsus.com Accreditations Required (See note) 8560D_SIM/5030C × × Lab PM: DelMonico, Michael × × 8260D/5030C (MOD) VOCs (Short List) × Perform MS/MSD (Yes or No) Fleid Filtered Sample (Yes or No) E-Mail: (W=water, S=solid, O=waste/oil, BT=Tissue, Preservation Code: Water Water Water A=Air) Type (C=comp, G=grab) Sample Sample Eastern Eastern Eastern Time 11:50 Due Date Requested: 5/22/2023 TAT Requested (days): Sample Date 5/4/23 5/4/23 5/4/23 Project #: 24015353 # OM Phone: # Od Client Information (Sub Contract Lab) Sample Identification - Client ID (Lab ID) Eurofins Environment Testing Northeast, 732-549-3900(Tel) 732-549-3679(Fax) MW-137S_050423 (240-185011-2) RIP BLANK_100 (240-185011-1) 777 New Durham Road, **Q**UP-11 (240-185011-3) Shipping/Receiving Project Name: Ford LTP - Off Site ient Contact: State, Zip: NJ, 08817 Edison

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 laboratory or other instructions will be provided. Any changes to laboratory maintain accreditation in the State of Origin listed above for analysis/Rests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other 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 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.

Possible Hazard Identification		Sai	nple Disposal (A fee may be asses:	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Unconfirmed			Return To Client Disposal By Lab	al By Lab Archive For Months	v
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	Spe	Requ		
Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Right of the by:	No Eas	Company	Received by:	1.2 Falk Date Sill 123 1030 FEB ES	El.
Refinduished by:	Date/Time:	Company	Received by:	Date/Time: Company	
Selinquished by:	Date/Time:	Company	Received by:	Date/Time: Company	
Custody Seals Intact: Custody Seal No.: 70 C	5		Cooler Temperature(s) °C and Other Remarks:	1.4/1.4° 2.7/2.7°C IRY	TPC

Login Sample Receipt Checklist

Client: ARCADIS US Inc Job Number: 240-185011-1

List Source: Eurofins Edison
List Number: 2
List Creation: 05/11/23 01:12 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	
Residual Chlorine Checked.	N/A	

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DATA VERIFICATION REPORT



May 23, 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: 185011-1 Sample date: 2023-05-04

Report received by CADENA: 2023-05-23

Initial Data Verification completed by CADENA: 2023-05-23

Number of Samples:3 Sample Matrices:Water Test Categories:GCMS VOC

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

There were no significant QC anomalies or exceptions to report.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, LCS/LCD RPD, Blank Contamination and Hold Time Exception were reviewed as part of our verification.

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

The definitions of the qualifiers used for this data package are defined in the analytical report. CADENA valid qualifiers are defined in the table below. To view and download a PDF copy of the laboratory analytical report access the CADENA CLMS at http://clms.cadenaco.com/index.cfm.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
В	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was greater than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the reported concentration. For Inorganic methods the sample concentration was greater than the RDL and less than 10x the blank concentration and is considered non-detect at the reported concentration.
Е	The analyte / Compound reported exceeds the calibration range and is considered estimated.
EMPC	Estimated Minimum Potential Contamination - Dioxin/Furan analyses only.
J	Indicates an estimated value. This flag is used either when estimating a concentration for a tentatively identified compound or when the data indicates the presence of an analyte / compound but the result is less than the sample Quantitation limit, but greater than zero. The flag is also used in data validation to indicate a reported value should be considered estimated due to associated quality assurance deficiencies.
J-	The result is an estimated quantity, but the result may be biased low.
JB	NON-DETECT AT THE CONCENTRATION REPORTED AND ESTIMATED
JH	The sample result is considered estimated and is potentially biased high.
JL	The sample result is considered estimated and is potentially biased low.
JUB	NON-DETECT AT THE REPORTING LIMIT AND ESTIMATED
NJ	Tentatively identified compound with approximated concentration.
R	Indicates the value is considered to be unusable. (Note: The analyte / compound may or may not be present.)
TNTC	Too Numerous to Count - Asbestos and Microbiological Results.
U	Indicates that the analyte / compound was analyzed for, but not detected.
UB	The analyte / compound was detected in the associated blank. For Organic methods the sample concentration was less than the RDL and less than 5x (or 10x for common lab contaminates) the blank concentration and is considered non-detect at the RDL. For Inorganic methods the sample concentration was less than the RDL and less than 10x the blank concentration and is considered non-detect at the RDL.
UJ	The analyte / compound was not detected above the reported sample Quantitation limit. However, the Quantitation limit is considered to be approximate due to associated quality assurance results and may or may not represent the actual limit of Quantitation to accurately and precisely report the analyte in the sample.

Analytical Results Summary

CADENA Project ID: E203631

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 185011-1

		Sample Name:	TRIP BLA	TRIP BLANK_100			MW-13	7S_0504	23	DUP-11				
		Lab Sample ID:	2401850	0111			2401850	0112			2401850	0113		
		Sample Date:	5/4/202	.3			5/4/202	3			5/4/202	3		
				Report		Valid		Report		Valid		Report		Valid
	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC														
OSV	<u>V-8260D</u>													
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l		ND	1.0	ug/l	
OSV	<u>V-8260DSIM</u>													
	1,4-Dioxane	123-91-1					ND	2.0	ug/l		ND	2.0	ug/l	



Ford Motor Company – Livonia Transmission Project

Data Review

Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-185011-1

CADENA Verification Report: 2023-05-23

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49926R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-185011-1 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 Co		Sample Collection		Analysis				
Sample ID	Lab ID	Matrix	Date	Parent Sample	voc	VOC SIM			
TRIP BLANK_100	240-185011-1	Water	05/04/23		Х				
MW-137S_050423	240-185011-2	Water	05/04/23		X	X			
DUP-11	240-185011-3	Water	05/04/23	MW-137S_050423	X	X			

ANALYTICAL DATA PACKAGE DOCUMENTATION

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

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

ORGANIC ANALYSIS INTRODUCTION

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

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

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

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

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

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

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

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

All samples were analyzed within the specified holding time criteria.

2. Mass Spectrometer Tuning

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

System performance and column resolution were acceptable.

3. Calibration

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

3.1 Initial Calibration

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

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

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

3.2 Continuing Calibration

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

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

4. Internal Standard Performance

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

All internal standard responses were within control limits.

5. Field Duplicate Analysis

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

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
MW-137S_050423/DUP-11	All target compounds	U	U	AC

Notes:

AC - Acceptable

U - Non detect

The calculated RPDs between the parent sample and field duplicate were acceptable.

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	
Ion 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		X	
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

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Chain of Custody Record



TestAmerica Laboratory location: Brighton -- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763 Client Contact Regulatory program: NPDES RCRA Other Company Name: Arcadis TestAmerica Laboratories, Inc. Client Project Manager: Kris Hinskey COC No: Site Contact: Christina Weaver Lab Contact: Mike DelMonico Address: 28550 Cabot Drive, Suite 500 Telephone: 330-497-9396 Telephone: 248-994-2240 Telephone: 248-994-2240 City/State/Zip: Novi, MI, 48377 1 of 1 COCs Email: kristoffer.hinskey@arcadis.com Analysis Turnsround Time Analyses For lab use only Phone: 248-994-2240 Sampler Name: Turner TAT if different from below Walk-in client 3 weeks Project Name: Ford LTP Off-Site → 2 weeks Lab sampling Project Number: 30167538.402.04 Method of Shipment/Carrier: 1 week te-C/Grab-G ,4-Dioxane 8260B SIM 2 days Jinyl Chloride 8260B PO # 30167538.402.04 Shipping/Tracking No: I day Job/SDG No: 1-DCE 8260B Matrix Containers & Preservatives Sample Specific Notes / H2SO4 Solid Other: NaOH Special Instructions: Sample Identification Sample Date | Sample Time TRIP BLANK_ 100 5/4/23 G X X 1 Trip Blank 6 3 VOAs for 8260B 6 · MW-1375_050423 5/4/23 1150 3 VOAs for 8260B SIM 6 6 G Possible Hazard Identification Sample Disposal (A fee may be assessed if samples are retained and ✓ Non-Hazard Flammable Skin Irritant Poison B Unknown Return to Client Disposal By Lab Archive For Months Special Instructions/QC Requirements & Comments: Sample Address: ROW BREWSTER Submit all results through Cadena at itomalia@cadenaco.com, Cadena #E203631 Level IV Reporting requested Arcadis Date/Time: 5/5/23 1005 Company: Acadis Received by: Date/Time: Novi Cold Storage 5/5/23 1005 Relinquished by Date/Time: 5/8/23 5/8/23 05-09-23 1030











Eurofins Cleveland

180 S. Van Buren Avenue Barberton, OH 44203

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

Chain of Custody Record



eurofins

Environment Testing

Client Information (Sub Contract Lab)	Sampler:	ampler: Lab PM: DelMonico, M												Carrier Tracking No(s):				COC No: 240-167888.1			
Client Contact: Shipping/Receiving	Phone:			E-Ma Mich		امر الم	lonico	@et.eur	ofinell	r com		tate of O				Page: Page 1 of 1					
Company:				IVIIC				quired (Se			<u> </u>	Michiga	n			Job #:					
Eurofins Environment Testing Northeast, Address:	Due Date Requeste	ed:			-											240-185011 Preservation					
777 New Durham Road, ,	5/22/2023								Anal	ysis	Requ	iestec	1			A - HCL	1 Cou	M - Hexan	e		
City: Edison	TAT Requested (da	iys):														B - NaOH C - Zn Acetate	e	N - None O - AsNaC			
State, Zip: NJ, 08817																D - Nitric Acid E - NaHSO4		P - Na2O4 Q - Na2SC R - Na2S2	03		
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:					1	(s)									F - MeOH G - Amchlor H - Ascorbic A	N oid	S - H2SO4			
Email:	WO #:				or No										20	I - Ice J - DI Water	ıcıa	U - Aceton V - MCAA	ne		
Project Name: Ford LTP - Off Site	Project #: 24015353				• (1)	MON YOC. (Short	208 (31								containen	K - EDTA L - EDA		W - pH 4-5 Y - Trizma Z - other (s			
Site:	SSOW#:				Samp	N G) (0)								of con	Other:			,,		
		Sample	Sample (v	Matrix W=water, S=solid, rwaste/oil, T=Tissue,		R260D/5030C /M	8260D/5030C (MCI 8260D SIM/5030C								tal Number						
Sample Identification - Client ID (Lab ID)	Sample Date	Time	G=grab)	A=Air)	院	۽ ا	82,								Total	Speci	al Ins	struction	s/Note:		
D P P ANIC 400 (040 405044 4)			Preservation		Y		0.00	1 2 3 5		1000			1995	200	X						
TRIP BLANK_100 (240-185011-1)	5/4/23	Eastern 11:50		Nater	11	-	×	\perp							1						
W-137S_050423 (240-185011-2)	5/4/23	Eastern	l v	Nater	Ш	1	x x		\perp	Ш					6						
9UP-11 (240-185011-3)	5/4/23	Eastern	V	Water	\coprod	1	x x								6						
					\coprod	+		11	\perp	Ш	1										
					Н	_		++					\sqcup								
					Ш	_	\bot	11		\Box	\perp										
					Щ		\perp	\perp					\sqcup								
					Щ		\perp					\perp	Щ								
Note: Since laboratory accreditations are subject to change, Eurofins Environmen laboratory does not currently maintain accreditation in the State of Origin listed ab accreditation status should be brought to Eurofins Environment Testing North Cer	ove for analysis/tests	s/matrix being a	analyzed, the sample	les must b	e shipp are cum	ped ba ent to	ack to to date, i	the Eurofir return the	ns Envir signed (onment Chain of	Testing f Custor	North C dy attesti	entral, L ng to sa	LLC labora aid complia	atory or oth ance to Eur	er instructions w rofins Environme	vill be po ent Test	rovided. Ar ting North C	ny changes to		
Possible Hazard Identification					s	amp	ole Di	sposal	(A fee	may						ned longer th	an 1				
Unconfirmed Deliverable Requested: I, II, III, IV, Other (specify)	Primary Delivera	able Rank:	2					m To Cl		Require		sposal i s:	By Lal	b	Arc	hive For		Month	18		
Empty Kit Relinquished by:		Date:			Time) 9:						Meth	hod of S	Shipment:							
Relinatished by:	Bates (ime: 13	CI	Com	pany			eceived	by:				- 1		Date/Time	7. 10	2 162		Company	-/		
Refinduished by:	Date/Time:	7 -11	Com		NC	Re	eceived	by:	V	بكر		000		Date/Time		3 103	<u></u>	Company	50		
₽elinquished by:	Date/Time:		Com	pany		\perp	eceived							Date/Time							
				parry		-		oy.										Company			
Custody Seals Intact: Custody Seal No.: 10)					Co	ooler Te	emperatur	e(s) °C	and Oth	er Rem	arks:	1-4	4/1.	40,	2. 7/	Z-	700	IRY		













Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: TRIP BLANK_100

Lab Sample ID: 240-185011-1 Date Collected: 05/04/23 00:00

Matrix: Water

Date Received: 05/09/23 10:30

Method: SW846 8260D - Volati	le Organic Comp	ounds 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			05/16/23 01:35	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 01:35	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:35	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 01:35	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:35	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 01:35	1

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	112		70 - 128	_		05/16/23 01:35	1
Dibromofluoromethane (Surr)	112		77 - 124			05/16/23 01:35	1
Toluene-d8 (Surr)	100		80 - 120			05/16/23 01:35	1
4-Bromofluorobenzene	94		76 - 120			05/16/23 01:35	1

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: MW-137S_050423

Date Collected: 05/04/23 11:50 Date Received: 05/09/23 10:30

Toluene-d8 (Surr)

4-Bromofluorobenzene

Lab Sample ID: 240-185011-2

05/16/23 16:12

05/16/23 16:12

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			05/17/23 14:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133			_		05/17/23 14:18	1

1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L		05/16/23 16:12	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L		05/16/23 16:12	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L		05/16/23 16:12	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L		05/16/23 16:12	1
Trichloroethene	1.0	U	1.0	0.44	ug/L		05/16/23 16:12	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L		05/16/23 16:12	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 128				05/16/23 16:12	1
Dibromofluoromethane (Surr)	110		77 - 124				05/16/23 16:12	1

80 - 120

76 - 120

108

103

14

Client: ARCADIS US Inc Job ID: 240-185011-1

Project/Site: Ford LTP - Off Site

Client Sample ID: DUP-11

Lab Sample ID: 240-185011-3

Matrix: Water

Date Collected: 05/04/23 00:	00
Date Received: 05/09/23 10:	30

Method: SW846 8260D SIM -	· Volatile Organic C	ompounds	(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			05/17/23 14:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	95		75 - 133			-		05/17/23 14:40	1

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

Method: 5W846 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			05/16/23 04:44	1
	cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 04:44	1
	Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:44	1
	trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 04:44	1
	Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:44	1
	Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 04:44	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115	70 - 128		05/16/23 04:44	1
Dibromofluoromethane (Surr)	116	77 - 124		05/16/23 04:44	1
Toluene-d8 (Surr)	104	80 - 120		05/16/23 04:44	1
4-Bromofluorobenzene	96	76 - 120		05/16/23 04:44	1

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