

Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Kristoffer Hinskey ARCADIS US Inc 28550 Cabot Drive Suite 500 Novi, Michigan 48377 Generated 5/19/2023 3:29:36 AM

JOB DESCRIPTION

Ford LTP - Off Site

JOB NUMBER

240-185009-1

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

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

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Qualifiers		
Quaimers		3
GC/MS VOA		
Qualifier	Qualifier Description	
U	Indicates the analyte was analyzed for but not detected.	
Glossary		5
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	0
CNF	Contains No Free Liquid	0
DER	Duplicate Error Ratio (normalized absolute difference)	
Dil Fac	Dilution Factor	9
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)	13
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

Job ID: 240-185009-1

Laboratory: Eurofins Cleveland

Narrative

Job Narrative 240-185009-1

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

Method 8260D: Internal standard (ISTD) response for 2-Butanone-d5 for the following sample in analytical batch 460-909279 was outside acceptance criteria: MW-83_050423 (240-185009-2). This ISTD does not correspond to any of the requested target compounds reported from this analytical batch; 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.

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

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

Protocol References:

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

Laboratory References:

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

Sample Summary

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

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
240-185009-1	TRIP BLANK_169	Water	05/04/23 00:00	05/09/23 10:30
240-185009-2	MW-83_050423	Water	05/04/23 12:02	05/09/23 10:30
240-185009-3	MW-83S_050423	Water	05/04/23 11:08	05/09/23 10:30

Detection Su	mmary
Client: ARCADIS US Inc Project/Site: Ford LTP - Off Site	Job ID: 240-185009-1
Client Sample ID: TRIP BLANK_169	Lab Sample ID: 240-185009-1
No Detections.	
Client Sample ID: MW-83_050423	Lab Sample ID: 240-185009-2
No Detections.	
Client Sample ID: MW-83S_050423	Lab Sample ID: 240-185009-3
No Detections.	

Client Sample ID: TRIP BLANK_169

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

Method: SW846 8260D - Volati	le Organic Comp	ounds by G	C/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 01:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 01:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 01:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 01:14	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120		70 - 128			-		05/16/23 01:14	1
Dibromofluoromethane (Surr)	115		77 _ 124					05/16/23 01:14	1
Toluene-d8 (Surr)	107		80 - 120					05/16/23 01:14	1
4-Bromofluorobenzene	104		76 - 120					05/16/23 01:14	1

Job ID: 240-185009-1

Matrix: Water

Lab Sample ID: 240-185009-1

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

Eurofins Cleveland

Client Sample ID: MW-83_050423

Date Collected: 05/04/23 12:02 Date Received: 05/09/23 10:30

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 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		75 - 133			-		05/17/23 13:31	1
Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/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 03:40	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 03:40	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 03:40	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 03:40	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 03:40	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 03:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		70 - 128			-		05/16/23 03:40	1
Dibromofluoromethane (Surr)	115		77 - 124					05/16/23 03:40	1
Toluene-d8 (Surr)	102		80 - 120					05/16/23 03:40	1
4-Bromofluorobenzene	94		76 - 120					05/16/23 03:40	1

Job ID: 240-185009-1

Matrix: Water

Lab Sample ID: 240-185009-2

Client Sample ID: MW-83S_050423

Date Collected: 05/04/23 11:08 Date Received: 05/09/23 10:30

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 13:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		75 - 133			-		05/17/23 13:53	1
Method: SW846 8260D - Volati	ile Organic Comp	ounds by G	C/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 04:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 04:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 04:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 04:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	125		70 - 128			-		05/16/23 04:01	1
Dibromofluoromethane (Surr)	124		77 - 124					05/16/23 04:01	1
Toluene-d8 (Surr)	110		80 - 120					05/16/23 04:01	1
4-Bromofluorobenzene	106		76 - 120					05/16/23 04:01	

5/19/2023

Matrix: Water

Lab Sample ID: 240-185009-3

5 6 7

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

Matrix: Water

Prep Type: Total/NA

9

				Percent Sur	ogate Recovery (Acceptance Limits)	
		DCA	DBFM	TOL	BFB	
Lab Sample ID	Client Sample ID	(70-128)	(77-124)	(80-120)	(76-120)	
240-185009-1	TRIP BLANK_169	120	115	107	104	
240-185009-2	MW-83_050423	114	115	102	94	
240-185009-3	MW-83S_050423	125	124	110	106	
_CS 460-909279/3	Lab Control Sample	99	96	99	91	
_CSD 460-909279/4	Lab Control Sample Dup	105	100	105	99	
MB 460-909279/9	Method Blank	114	109	103	96	
Surrogate Legend						

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

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

Matrix: Water

			Percent Surrogate Recovery (Acceptance Limits)
		BFB	
Lab Sample ID	Client Sample ID	(75-133)	
240-185009-2	MW-83_050423	93	
240-185009-3	MW-83S_050423	92	
LCS 460-909650/5	Lab Control Sample	94	
LCSD 460-909650/6	Lab Control Sample Dup	97	
MB 460-909650/9	Method Blank	96	

BFB = 4-Bromofluorobenzene

Prep Type: Total/NA

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

Matrix: Water Analysis Batch: 909279

	MB	МВ							
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/15/23 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	МВ				
Surrogate	%Recovery		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

	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

Spike LCSD LCSD %Rec RPD Added Limit Analyte **Result Qualifier** Limits RPD Unit D %Rec 20.0 1,1-Dichloroethene 16.7 ug/L 83 68 - 133 8 30 cis-1,2-Dichloroethene 20.0 17.5 78 - 121 ug/L 88 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 91 20.0 18.2 ug/L 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

Job ID: 240-185009-1

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

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

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

Lab Sample ID: LCSD 460-90 Matrix: Water Analysis Batch: 909279	09279/4						Clie	ent Sam	nple ID:	Lab Contro Prep T	l Samp ype: To	
	LCSD	LCSD										
Surrogate	%Recovery	Qualifie	r	Limits								
4-Bromofluorobenzene	99			76 - 120								
lethod: 8260D SIM - Vol	atile Organic	Com	poun	ds (GC/MS)								
Lab Sample ID: MB 460-909	650/9								Client S	ample ID:	Method	Blan
Matrix: Water											ype: To	
Analysis Batch: 909650												
		MB ME	3									
Analyte	Re	sult Qu	alifier	RL		MDL Unit		D P	repared	Analyz	ed	Dil Fa
1,4-Dioxane		2.0 U		2.0		0.86 ug/L				05/17/23	08:57	
		мв ме	3									
Surrogate	%Reco	very Qı	ualifier	Limits				P	repared	Analyz	ed	Dil Fa
4-Bromofluorobenzene		96		75 - 133						05/17/23	08:57	
Lab Sample ID: LCS 460-909	650/5							Client	Sample	ID: Lab Co	ontrol S	ampl
Matrix: Water										Prep T	ype: To	tal/N
Analysis Batch: 909650												
				Spike	LCS	LCS				%Rec		
Analyte				Added	Result	Qualifier	Unit	D	%Rec	Limits		
1,4-Dioxane				5.00	4.96		ug/L		99	57 - 124		
	LCS	LCS										
Surrogate	%Recovery	Qualifie	r	Limits								
4-Bromofluorobenzene	94			75 - 133								
Lab Sample ID: LCSD 460-9	09650/6						Clie	ent Sam	ple ID:	Lab Contro	I Samp	le Du
Matrix: Water									-		· 'ype: To	
Analysis Batch: 909650												
				Spike	LCSD	LCSD				%Rec		RP
Analyte				Added		Qualifier	Unit	D	%Rec	Limits	RPD	Lim
1,4-Dioxane				5.00	5.77		ug/L		115	57 - 124	15	3
	LCSD	LCSD										
Surrogate	%Recovery	Qualifie	r	Limits								
j	,,											

GC/MS VOA Analysis Batch: 909279

LCS 460-909650/5

LCSD 460-909650/6

Lab Control Sample

Lab Control Sample Dup

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185009-1	TRIP BLANK_169	Total/NA	Water	8260D	
240-185009-2	MW-83_050423	Total/NA	Water	8260D	
240-185009-3	MW-83S_050423	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: 9096	50				
Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-185009-2	MW-83_050423	Total/NA	Water	8260D SIM	
240-185009-3	MW-83S_050423	Total/NA	Water	8260D SIM	
MB 460-909650/9	Method Blank	Total/NA	Water	8260D SIM	

Total/NA

Total/NA

Water

Water

8260D SIM

8260D SIM

Client Samp	le ID: TRIP E	BLANK_169						Lab Sample ID:	240-185009-1
Date Collected	: 05/04/23 00:0	0 —						-	Matrix: Water
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 01:14	
Client Samp	le ID: MW-83	 050423						Lab Sample ID:	240-185009-2
Date Collected	: 05/04/23 12:0	2							Matrix: Water
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 03:40	
Total/NA	Analysis	8260D SIM		1	909650	SZD	EET EDI	05/17/23 13:31	
Client Samp	le ID: MW-83	S_050423						Lab Sample ID:	240-185009-3
Date Collected	: 05/04/23 11:08	 B							Matrix: Wate
Date Received	: 05/09/23 10:30)							
_	Detak	Detab		Dilution	D-4 1			Durante	
	Batch	Batch	_	Dilution	Batch			Prepared	
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed	
Total/NA		8260D			909279	-	EET EDI	05/16/23 04:01	

1

909650 SZD

EET EDI

05/17/23 13:53

Laboratory References:

Analysis

Total/NA

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

8260D SIM

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Accreditation/Certification Summary

Client: ARCADIS US Inc 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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T est America			Client
MICHIGAN 190	Client Contact	ny Name: Arcadis	ss: 28550 Cabot Drive, Suite 500

Chain of Custody Record

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ca I.aboratory location: Brighton --- 10448 Citation Drive, Suite 200 / Brighton, MI 48116 / 810-229-2763

Client Contact	Regulatory program: DW	NPDES RCRA Other		
Company Name: Arcadis	Clear Project Manager: Kris Hinskey	Site Contact: Christina Weaver	ll ah Cantaat: Nika DalMaajaa	TestAmerica Laboratories, Inc.
Address: 28550 Cabot Drive, Suite 500			LAD CORRECT WILKE DEIMONICO	CUC N0:
1	Telephone: 248-994-2240	Telephone: 248-994-2240	Telephone: 330-497-9396	
CHARACTER TOTAL STATE 403.11	Email: kristoffer.hinskey@arcadis.com	Analysis Turnaround Time	Analyses	For lab use only
Phone: 248-994-2240	Construction of London	TAT software from below		
Project Name: Ford LTP Off-Site	- rehue temply	10 dav ~ 2 weeks		walk-in client
Project Number: 30167538.402.04	Carrier:	1 week 2 dave	1	Sumptime or t
PO#30167538.402.04	Shipping/Tracking No:	/ X) ə	85608 85608 85608 5608	Job/SDG No:
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Sample Identification	Sample Date Sample Time Air Air Air	Сомрозія <u>bilieced S</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Composia</u> <u>Comp</u>	1,1-DCE 8 cis-1,2-DC PCE 8260 Yinyl Chio 1,4-Dioxar	Sample Specific Notes / Special Instructions:
• TRIP BLANK_ (60	1 22/20/50	1 N G		1 Trip Blank
124020-28-MM.	9 2021 cg/ha/so	92	XXXXXXX	3 VOAs for 8260B 3 VOAs for 8260B SIM
01 10 202 - 05 WW -	9 8011 52/ha/sa	92	XXXXXXXX	
18 0				
f 22				
			240-185009 Chain of Com	
Possible Hazard Identification	rritant 🔽 Poison B 🖉 Unknown	Sample Disposal (A fee muy be assessed if samples are retained longer than 1 month) Return to Client Disposal (A return to Monosal BV Lab	tamples are retained longer than 1 month) and Archive For Months	
s/OC Requirements & Comment STARK ROW i through Cadena at ftomalia@				
Relinquished by Centern	F. Arcadin	16-30 Ruce red by Cold	Storage approach	12:01 22/20/201
Relinquisped by Reaf LL	COMPANY: ARCAUIS 12/8/23	OSO Received by: Hall	Company: EETA	Date/Lime 5/8/23 / 1050
Relinduistical by:	Company: Date/Line:	Received in Laboralory by:	Mith Common 2002 EETNC	Date/Tim
				00 10 0 A

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Eurofins - Canton Sample Receipt Form/Narrative	Login # : 185001
Barberton Facility	· · · · · · · · · · · · · · · · · · ·
Client Arcadis Site Name	Cooler unpacked by:
Cooler Received on 05-09-23 Opened on 05-09-23	Leal- M. Smith
FedEx: 1st Grd Exp UPS FAS Clipper Client Drop Off Eurofins C	
	e Location
	ther
Packing material used: Bubble Wrap Foam Plastic Bag None COOLANT: Wet Ice Blue Ice Dry Ice Water None	Other
	tiple Cooler Form
IR GUN # (CF $+O_1$ °C) Observed Cooler Temp.	
2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity_	Tests that are not
-Were the seals on the outside of the cooler(s) signed & dated? -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)?	checked for pH by
-Were tamper/custody seals intact and uncompromised?	Yes No (NA) Receiving:
3. Shippers' packing slip attached to the cooler(s)?	VOAs VOAs
4. Did custody papers accompany the sample(s)?	No Oil and Grease
5. Were the custody papers relinquished & signed in the appropriate place?	No TOC
6. Was/were the person(s) who collected the samples clearly identified on the Co	
7. Did all bottles arrive in good condition (Unbroken)?	(Tes) No (Tes) No
 Could all bottle labels (ID/Date/Time) be reconciled with the COC? For each sample, does the COC specify preservatives (V/N), # of containers (
10. Were correct bottle(s) used for the test(s) indicated?	des No
11. Sufficient quantity received to perform indicated analyses?	Ves No
12. Are these work share samples and all listed on the COC?	Yes No
If yes, Questions 13-17 have been checked at the originating laboratory.	
13. Were all preserved sample(s) at the correct pH upon receipt?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 $#62112$	
17. Was a LL Hg or Me Hg trip blank present?	Yes No
Contacted PM Date by v	via Verbal Voice Mail Other
Concerning	
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES additional	next page Samples processed by:
16. CHAIN OF CUSTOD'I & SAMPLE DISCREPANCIES D'additional	Samples processed by.
• • • • • • • • • • • • • • • • • • • •	
19. SAMPLE CONDITION Sample(s) were received after the recomm	mended holding time had expired.
Sample(s) where received unter the received where received unter the received and received unter the received and received unter the receiv	
Sample(s) were received with bub	oble >6 mm in diameter. (Notify PM)
20. SAMPLE PRESERVATION	
Sample(c)	were further preserved in the laboratory
Sample(s) Time preserved: Preservative(s) added/Lot number(s):	were further preserved in the laboratory.
VOA Sample Preservation - Date/Time VOAs Frozen:	

Login	#	•	18500
Login	Ħ	•	10000

	Eurofins - Canto	n Sample Receipt M	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 Water None
EC Client Box Other	IR GUN #:	4.2	4.3	Wet Ice Blue Ice Dry Ice
EC Client Box Other	IR GUN #:	1.0	115	Water None Wet ice Blue ice Dry ice
	IR GUN #:	میرون در است. از این در مان برای در است. مربع		Water None Wet Ice Blue Ice Dry Ice
EC Client Box Other	IR GUN #:	- <u></u>		Water None Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:			Water None Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:			Water None
EC Client Box Other				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
EC Client Box Other	IR GUN #:			Water None Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
EC Client Box Other	IR GUN #:	······································		Water None Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
EC Client Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry ice
EC Client Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
EC Client Box Other				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 Sive ice Dry ice Water None
EC Client Box Other	IR GUN #:	an a		Wet Ice Blue Ice Dry Ice
EC Client Box Other	IR GUN #:			Water None Wet Ice Blue Ice Dry Ice
	IR GUN #:			Water None Wet ice Blue ice Dry ice
EC Client Box Other				Water None Wet ice Blue ice Dry ice
EC Client Box Other	IR GUN #:			Water None Wet ice Blue ice Dry ice
EC Client Box Other				Water None
EC Client Box Other	IR GUN #:			Wet ice Blue ice Dry ice Water None
	IR GUN #			Wetlice Blue ice Dovice

Eurofins - Canton Sample Receipt Multiple Cooler Form

IR GUN #:

IR GUN #:

EC

EC

Client

Client

Box

Box

Other

Other

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

See Temperature Excursion Form

Wet Ice

Wet Ice

Blue ice

Blue Ice

Water

Water

None

None

Dry Ice

Dry Ice

Eurofins Cleveland 180 S. Van Buren Avenue

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Barberton, OH 447.50 Phone: 330.457-6336 Fax: 330.497-0772	5	Chain (ot Cus	in of Custody Record	ord				suronna 🐝	S Environment Testing	
Client Information (Sub Contract Jab)	Sampler:			Lab PM:			Carrier Tracking No(s)	king No(s):	COC No:		_
	Dhone:				Delmonico, Michael		-0,		240-167888.1		
Shipping/Receiving				Michael.	elMonico	⊏-ma⊪: Michael.DelMonico@et.eurofinsus.com	state of Ungin: s.com Michigan	:uf	Page 1 of 1		
Company: Eurofins Environment Testing Northeast,				Accre	ditations Re	Accreditations Required (See note):			Job #: 240_185000_1		-
Address: 777 New Durham Road, ,	Due Date Requested: 5/22/2023	:pe				Anal	Analvsis Requested		Preservation Codes:	:odes: M - Hexane	-
City: Edison	TAT Requested (days):	:(s/e							B - NaOH	N - None O - AsNaO2	
State, Zp: NJ, 08817	1				Caller 1				D - Zin Actid	P - Na204S Q - Na2S03 P MJ2503	_
Phone: 732-549-3900(Tel) 732-549-3679(Fax)	PO #:			(c	(}s				F - MeOH G - Amchlor		
Email:	:# OM										_
Project Name: Ford LTP - Off Site	Project #: 24015353									W - pH 4-5 Y - Trizma 7 _ other (concife.)	_
Site:	:#MOSS				ov (a				f con		_
Samula Identification - Clinet ID /I ak ID/		Sample	Sample Type (C=comp,	S benetili biel	9000 2110 2000 (WC				o redmuk listo		
			Preserval		8					Special Instructions/Note:	
TRIP BLANK_169 (240-185009-1)	5/4/23	Eastern		Water	×				< -		
MW-83_050423 (240-185009-2)	5/4/23	12:02 Eactor		Water	×				9		
WW-83S_050423 (240-185009-3)	5/4/23	11:08 Eastern		Water	×				9		
		Lasielli									
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 aboratory does not currently maintain accreditation in the State of Origin listed above for analysis/lestis/matinx 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 State of Origin Structions 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 basicoty attesting according Statement and Statement Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody Attesting North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody Attesting North Central, LLC attention immediately. If all requested accreditations are current to add at return to a compliance to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to add at return to a complex attention testing North Central, LLC attention immediately. If all requested accreditations are current to add at return to accurate the State According State attention testing Contract at	nt Testing North Centr bove for analysis/tests intral, LLC attention in	al, LLC places /matrix being a mediately. If a	the ownership nalyzed, the s all requested a	of method, analyte 8 amples must be ship ccreditations are cum	accreditatio ed back to th ent to date, n	n compliance upo he Eurofins Envir etum the signed	in our subcontract laborate onment Testing North Cen Chain of Custody attesting	bries. This sample strail, LLC laboratory to said compliance	hipment is forwarded und or other instructions will b to Eurofins Environment	ler chain-of-custody. If the e provided. Any changes to festing North Central 11.C	
Possible Hazard Identification				S	ample Dis	sposal (A fee	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	f samples are i	etained longer than	1 month)	-
Unconfirmed					Retur	Return To Client	Disposal By Lab	/Lab	Archive For	Months	
Deliverable Requested: I, II, III, IV, Other (specify)	Primary Deliverable Rank: 2	able Rank: 2		S	pecial Inst	ructions/QC F	Special Instructions/QC Requirements:				
Emery Kit Relinquished by:		Date:		Time:			Metho	Method of Shipment:			-
	RECULC	5	$\underline{\vee}$	見てく	Received by:	by:	vin Fall	E Date/Time:	123 1030	COMPANY FU.	
gelintµuis∳ed°by® →	Date/Time:			Company	Received by:	by:		Date/Time:			
Belinquished by:	Date/Time:			Company	Received by:	by:		Date/Time:		Company	

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5.

Cooler Temperature(s) °C and Other Remarks:

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Custody Seals Intact: Custody Seal No.:

14

Client: ARCADIS US Inc

Login Number: 185009 List Number: 2

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	

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: 185009-1 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.

The following minor QC exceptions or missing information were noted:

GCMS VOC QC batch INTERNAL STANDARD response outliers as noted in the laboratory submittal case narrative were not used to qualify client sample results as part of this level 2 data package verification review.

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 <u>http://clms.cadenaco.com/index.cfm</u>.

Please contact me if you have any questions.

Sincerely,

Jim Tomalia

Project Scientist

CADENA Inc, 1099 Highland Drive, Suite E, Ann Arbor, MI 48108 517-819-0356

CADENA Valid Qualifiers

Valid Qualifiers	Description
<	Less than the reported concentration.
>	Greater than the reported concentration.
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: 185009-1

		Sample Name: Lab Sample ID: Sample Date:	TRIP BLA 2401850 5/4/202	0091)		MW-83 240185 5/4/202				MW-839 2401850 5/4/202	_ 0093	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														
<u>OSW-826</u>	<u>60D</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	
<u>OSW-826</u>	60DSIM													
	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 # 240-185009-1 CADENA Verification Report: 2023-05-23

Analyses Performed By: Eurofins North Canton, Ohio

Report # 49925R Review Level: Tier III Project: 30167538.402.02

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-185009-1 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_169	240-185009-1	Water	05/04/23		Х	
MW-83_050423	240-185009-2	Water	05/04/23		Х	Х
MW-83S_050423	240-185009-3	Water	05/04/23		Х	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
1. Sample receipt condition		Х		Х	
2. Requested analyses and sample results		Х		Х	
3. 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	
9. Sample preparation/extraction/analysis dates		Х		Х	
10. Fully executed Chain-of-Custody (COC) form		Х		Х	
11. Narrative summary of Quality Assurance or sample problems provided		х		Х	
12. Data Package Completeness and Compliance		Х		Х	

DATA REVIEW

ORGANIC ANALYSIS INTRODUCTION

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

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

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

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

DATA VALIDATION CHECKLIST FOR VOCs

VOCs: 8260D/8260D-SIM		orted		rmance ptable	Not Required
	No	Yes	No	Yes	Required
GAS CHROMATOGRAPHY/MASS SPECTROMETRY (G	C/MS)				
Tier II Validation					
Holding times/Preservation		Х		X	
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

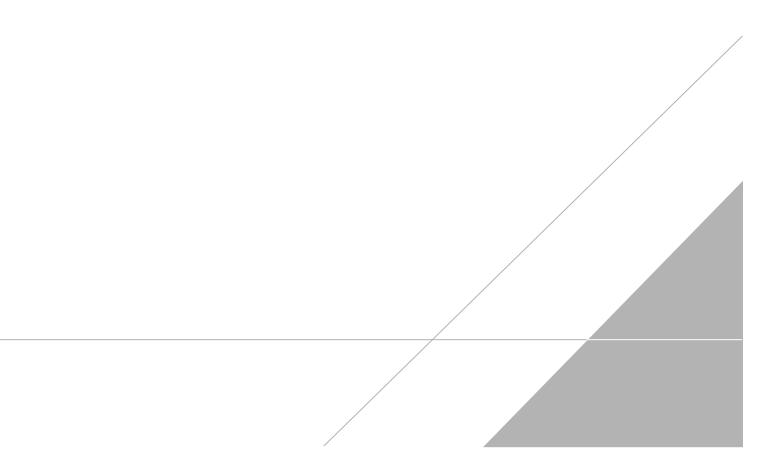
- RPD Relative percent difference
- %D Percent difference

VALIDATION PERFORMED BY:	Dilip Kumar
SIGNATURE:	Pertmit
DATE:	June 19, 2023

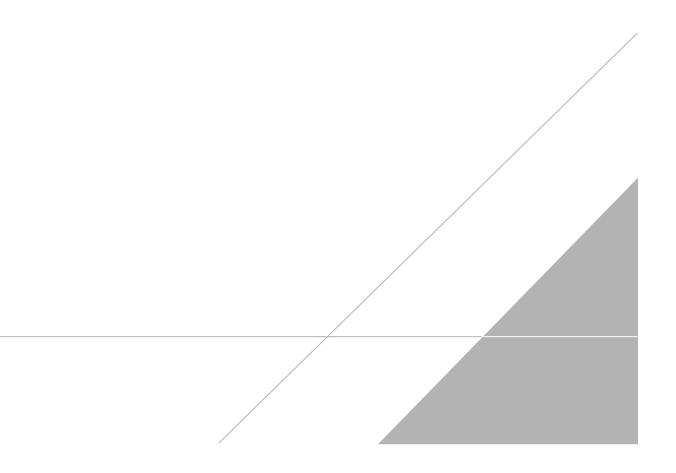
PEER REVIEW: Andrew Korycinski

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



THE LEADER IN ENVI

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

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Address: 28550 Cabot Drive, Suite 500																				0			COC No:	_
City/State/Zip: Novi, MI, 48377	Telephone: 248	-994-2240					Teleph	ione: 2	48-99	94-224	0				Telep	hone	330-4	97-93	196				1 of 1	COCs
Phone: 248-994-2240	Email: kristoff	er.hinskey@ar	cadis.	com			An	alysis	Turn	aroun	d Time					-		A	nalys	es		1 1	For lab use only	
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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)				Lab PM: DelMo	ab PM: DelMonico, Michael						Carrier Tracking No(s):				COC No: 240-167888.1	
Client Contact:	Phone:			E-Mail:							State of	Drigin:			Page:	
Shipping/Receiving Company:							_		finsus.c	om	Michiga	an			Page 1 of 1	
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732-549-3900(Tel) 732-549-3679(Fax) Email:	WO #:			or No)		List									H - Ascorbic Acid	T - TSP Dodecahydrate U - Acetone
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			Type S=	water, d	a m	5030	SIM							E S		
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Note: Since laboratory accreditations are subject to change, Eurofins Environment	t Testing North Cent	ral, LLC places	s the ownership of me	thod, analy	te & a	ccredit	tation co	ompliand	e upon o	ur subco	ntract labo	atories	This sam	ple shipme	ent is forwarded und	er chain-of-custody. If the
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Client Sample ID: TRIP BLANK_169

Date Collected: 05/04/23 00:00

Date Received: 05/09/23 10:30

Mathada OM/046 0000D Valatila Organia Organia da ha	
Method: SW846 8260D - Volatile Organic Compounds by G	3C/IVIS

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 01:14	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 01:14	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:14	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 01:14	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 01:14	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 01:14	1

Surrogate	%Recovery Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	120	70 - 128		05/16/23 01:14	1
Dibromofluoromethane (Surr)	115	77 - 124	(05/16/23 01:14	1
Toluene-d8 (Surr)	107	80 - 120	(05/16/23 01:14	1
4-Bromofluorobenzene	104	76 - 120	(05/16/23 01:14	1

Client Sample ID: MW-83_050423 Date Collected: 05/04/23 12:02 Date Received: 05/09/23 10:30

Date Received: 05/09/23 10	0:30								
Method: SW846 8260D SI	IM - Volatile Orga	anic Comp	ounds (GC/N	IS)					
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 13:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	93		75 - 133					05/17/23 13:31	1

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

Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1.0	U	1.0	0.49	ug/L			05/16/23 03:40	1
1.0	U	1.0	0.46	ug/L			05/16/23 03:40	1
1.0	U	1.0	0.44	ug/L			05/16/23 03:40	1
1.0	U	1.0	0.51	ug/L			05/16/23 03:40	1
1.0	U	1.0	0.44	ug/L			05/16/23 03:40	1
1.0	U	1.0	0.45	ug/L			05/16/23 03:40	1
	1.0 1.0 1.0 1.0 1.0 1.0	Result Qualifier 1.0 U 1.0 U	1.0 U 1.0 1.0 U 1.0	1.0 U 1.0 0.49 1.0 U 1.0 0.46 1.0 U 1.0 0.44 1.0 U 1.0 0.44 1.0 U 1.0 0.51 1.0 U 1.0 0.44	1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L	1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L	1.0 U 1.0 0.49 ug/L 1.0 U 1.0 0.46 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.44 ug/L 1.0 U 1.0 0.51 ug/L 1.0 U 1.0 0.44 ug/L	1.0 U 1.0 0.49 ug/L 05/16/23 03:40 1.0 U 1.0 0.46 ug/L 05/16/23 03:40 1.0 U 1.0 0.46 ug/L 05/16/23 03:40 1.0 U 1.0 0.44 ug/L 05/16/23 03:40 1.0 U 1.0 0.44 ug/L 05/16/23 03:40 1.0 U 1.0 0.51 ug/L 05/16/23 03:40 1.0 U 1.0 0.44 ug/L 05/16/23 03:40 1.0 U 1.0 0.44 ug/L 05/16/23 03:40

Surrogate	%Recovery Qual	lifier Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114	70 - 128		05/16/23 03:40	1
Dibromofluoromethane (Surr)	115	77 - 124		05/16/23 03:40	1
Toluene-d8 (Surr)	102	80 - 120		05/16/23 03:40	1
4-Bromofluorobenzene	94	76 - 120		05/16/23 03:40	1

Client Sample ID: MW-83S_050423 Date Collected: 05/04/23 11:08 Date Received: 05/09/23 10:30

Method: SW846 8260D SIM	Volatile Orga	anic Comp	ounds (GC/N	IS)				
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 13:53	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	92		75 - 133				05/17/23 13:53	1

Matrix: Water

Lab Sample ID: 240-185009-1 Matrix: Water

Lab Sample ID: 240-185009-2

Lab Sample ID: 240-185009-3

Matrix: Water

Client Sample ID: MW-83S_050423

Date Collected: 05/04/23 11:08

Date Received: 05/09/23 10:30

Lab Sample ID: 240-185009-3 Matrix: Water

Method: SW846 8260D - Vo	latile Organic	Compound	ds by GC/MS						
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	1.0	U	1.0	0.49	ug/L			05/16/23 04:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			05/16/23 04:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			05/16/23 04:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			05/16/23 04:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			05/16/23 04:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	125		70 - 128					05/16/23 04:01	1
Dibromofluoromethane (Surr)	124		77 - 124					05/16/23 04:01	1
Toluene-d8 (Surr)	110		80 - 120					05/16/23 04:01	1
4-Bromofluorobenzene	106		76 - 120					05/16/23 04:01	1