# PREPARED FOR

Attn: Ms. Megan Meckley Arcadis US Inc. 28550 Cabot Drive Suite 500 Novi, Michigan 48377

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# **JOB DESCRIPTION**

Ford LTP

# **JOB NUMBER**

240-230392-1

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 Michael.DelMonico@et.eurofinsus.com (330)966-9783

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Client: Arcadis US Inc. Project/Site: Ford LTP

Laboratory Job ID: 240-230392-1

# **Table of Contents**

Cover Page	1
Table of Contents	3
Definitions/Glossary	4
Case Narrative	5
Method Summary	6
Sample Summary	7
Detection Summary	8
Client Sample Results	9
Surrogate Summary	11
	12
QC Association Summary	16
Lab Chronicle	17
Certification Summary	18
Chain of Custody	19

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# **Definitions/Glossary**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

**Qualifiers GC/MS VOA** 

Qualifier **Qualifier Description** 

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

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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)

Estimated Detection Limit (Dioxin) EDL LOD Limit of Detection (DoD/DOE) Limit of Quantitation (DoD/DOE) LOQ

EPA recommended "Maximum Contaminant Level" MCL 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 **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

**Eurofins Cleveland** 

# **Case Narrative**

Client: Arcadis US Inc. Project: Ford LTP

Job ID: 240-230392-1 Eurofins Cleveland

Job Narrative 240-230392-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

### Receipt

The samples were received on 8/8/2025 8:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.8°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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Job ID: 240-230392-1

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# **Method Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230392-1

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

### Protocol References:

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

### Laboratory References:

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

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# **Sample Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230392-1

Lab Sample ID Client Sample ID Sample Origin Matrix Collected Received TRIP BLANK\_65 240-230392-1 Water 08/06/25 00:00 08/08/25 08:00 Michigan MW-184S\_080625 240-230392-2 Water 08/06/25 12:15 08/08/25 08:00 Michigan

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# **Detection Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230392-1

Client Sample ID: TRIP BLANK\_65

Lab Sample ID: 240-230392-1

No Detections.

No Detections.

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# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_65

Date Received: 08/08/25 08:00

Lab Sample ID: 240-230392-1 Date Collected: 08/06/25 00:00

**Matrix: Water** 

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac 1.0 1,1-Dichloroethene 1.0 U 0.49 ug/L 08/11/25 14:49 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/11/25 14:49 Tetrachloroethene 1.0 U 1.0 0.44 ug/L 08/11/25 14:49 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 08/11/25 14:49 Trichloroethene 1.0 U 1.0 0.44 ug/L 08/11/25 14:49 Vinyl chloride 0.45 ug/L 1.0 U 1.0 08/11/25 14:49 %Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 104 62 - 137 08/11/25 14:49 4-Bromofluorobenzene (Surr) 85 08/11/25 14:49 56 - 136 93 78 - 122 08/11/25 14:49 Toluene-d8 (Surr) Dibromofluoromethane (Surr) 102 73 - 120 08/11/25 14:49

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

Toluene-d8 (Surr)

Dibromofluoromethane (Surr)

**Client Sample ID: MW-184S\_080625** 

Date Collected: 08/06/25 12:15 Date Received: 08/08/25 08:00 Lab Sample ID: 240-230392-2

08/12/25 20:01

08/12/25 20:01

Matrix: Water

Method: SW846 8260D SIM - \	/olatile 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			08/11/25 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		68 - 127			-		08/11/25 16:17	1
Method: SW846 8260D - Volat	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			08/12/25 20:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/12/25 20:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 20:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/12/25 20:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 20:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/12/25 20:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			62 - 137			-		08/12/25 20:01	1
4-Bromofluorobenzene (Surr)	92		56 <sub>-</sub> 136					08/12/25 20:01	1

78 - 122

73 - 120

97

110

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# **Surrogate Summary**

Client: Arcadis US Inc. Job ID: 240-230392-1 Project/Site: Ford LTP

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

Matrix: Water Prep Type: Total/NA

				Percent Su	rrogate Rec
		DCA	BFB	TOL	DBFM
Lab Sample ID	Client Sample ID	(62-137)	(56-136)	(78-122)	(73-120)
240-230382-A-3 MS	Matrix Spike	93	96	93	94
240-230382-F-3 MSD	Matrix Spike Duplicate	96	98	95	96
240-230392-1	TRIP BLANK_65	104	85	93	102
240-230392-2	MW-184S_080625	111	92	97	110
LCS 240-667098/5	Lab Control Sample	99	103	102	101
LCS 240-667296/4	Lab Control Sample	100	103	103	97
MB 240-667098/9	Method Blank	108	93	100	110
MB 240-667296/7	Method Blank	109	96	97	101

### Surrogate Legend

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

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

DBFM = Dibromofluoromethane (Surr)

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

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

			Percent Surrogate Recovery (Acceptance Limits)
		DCA	
Lab Sample ID	Client Sample ID	(68-127)	
240-230370-A-2 MS	Matrix Spike	106	
240-230370-A-2 MSD	Matrix Spike Duplicate	109	
240-230392-2	MW-184S_080625	97	
LCS 240-667123/5	Lab Control Sample	98	
MB 240-667123/7	Method Blank	99	

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

Client: Arcadis US Inc. Job ID: 240-230392-1

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

Lab Sample ID: MB 240-667098/9

**Matrix: Water** 

Project/Site: Ford LTP

Analysis Batch: 667098

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

MB MB Dil Fac Analyte Result Qualifier RLMDL Unit Prepared Analyzed 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 08/11/25 12:03 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/11/25 12:03 1.0 U 1.0 0.44 ug/L 08/11/25 12:03 Tetrachloroethene trans-1,2-Dichloroethene 1.0 U 08/11/25 12:03 1.0 0.51 ug/L Trichloroethene 1.0 U 1.0 0.44 ug/L 08/11/25 12:03 Vinyl chloride 1.0 U 1.0 0.45 ug/L 08/11/25 12:03

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		62 - 137		08/11/25 12:03	1
4-Bromofluorobenzene (Surr)	93		56 - 136		08/11/25 12:03	1
Toluene-d8 (Surr)	100		78 - 122		08/11/25 12:03	1
Dibromofluoromethane (Surr)	110		73 - 120		08/11/25 12:03	1

Lab Sample ID: LCS 240-667098/5

**Matrix: Water** 

Analysis Batch: 667098

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	25.0	27.5		ug/L		110	63 - 134	
cis-1,2-Dichloroethene	25.0	26.3		ug/L		105	77 - 123	
Tetrachloroethene	25.0	26.7		ug/L		107	76 - 123	
trans-1,2-Dichloroethene	25.0	26.2		ug/L		105	75 - 124	
Trichloroethene	25.0	25.3		ug/L		101	70 - 122	
Vinyl chloride	25.0	22.1		ug/L		89	60 - 144	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	99		62 - 137
4-Bromofluorobenzene (Surr)	103		56 <sub>-</sub> 136
Toluene-d8 (Surr)	102		78 - 122
Dibromofluoromethane (Surr)	101		73 - 120

Lab Sample ID: 240-230382-A-3 MS

**Matrix: Water** 

Analysis Batch: 667098

Client Sampl	le ID: Matrix Spike
Pr	rep Type: Total/NA

	Sample	Sample	Spike	MS	MS				%Rec	
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	1.0	U	25.0	23.3		ug/L		93	56 - 135	
cis-1,2-Dichloroethene	1.0	U	25.0	23.1		ug/L		92	66 - 128	
Tetrachloroethene	1.0	U	25.0	20.6		ug/L		82	62 - 131	
trans-1,2-Dichloroethene	1.0	U	25.0	22.2		ug/L		89	56 - 136	
Trichloroethene	1.0	U	25.0	20.9		ug/L		83	61 - 124	
Vinyl chloride	1.0	U	25.0	17.1		ug/L		68	43 - 157	

W/S	MO
%Recovery	Qualifie

MC MC

Surroyate	Mecovery	Qualifier	Lillits
1,2-Dichloroethane-d4 (Surr)	93		62 _ 137
4-Bromofluorobenzene (Surr)	96		56 - 136
Toluene-d8 (Surr)	93		78 - 122

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Page 12 of 21

Client: Arcadis US Inc. Job ID: 240-230392-1

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

Lab Sample ID: 240-230382-A-3 MS

**Matrix: Water** 

Project/Site: Ford LTP

Analysis Batch: 667098

Client Sample ID: Matrix Spike

Prep Type: Total/NA

MS MS

Surrogate %Recovery Qualifier Limits Dibromofluoromethane (Surr) 94 73 - 120

Lab Sample ID: 240-230382-F-3 MSD

**Matrix: Water** 

Analysis Batch: 667098

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,1-Dichloroethene	1.0	U	25.0	25.3		ug/L		101	56 - 135	8	26
cis-1,2-Dichloroethene	1.0	U	25.0	24.7		ug/L		99	66 - 128	7	14
Tetrachloroethene	1.0	U	25.0	22.1		ug/L		89	62 - 131	7	20
trans-1,2-Dichloroethene	1.0	U	25.0	23.6		ug/L		94	56 - 136	6	15
Trichloroethene	1.0	U	25.0	22.7		ug/L		91	61 - 124	9	15
Vinyl chloride	1.0	U	25.0	19.4		ug/L		78	43 - 157	12	24

MSD MSD Qualifier Surrogate %Recovery Limits 1,2-Dichloroethane-d4 (Surr) 96 62 - 137 98 4-Bromofluorobenzene (Surr) 56 - 136 Toluene-d8 (Surr) 95 78 - 122 Dibromofluoromethane (Surr) 96 73 - 120

Client Sample ID: Method Blank Lab Sample ID: MB 240-667296/7 **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 667296

MB MB Result Qualifier Analyte RL MDL Unit Prepared Analyzed Dil Fac 1,1-Dichloroethene 1.0 U 1.0 0.49 ug/L 08/12/25 13:03 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/12/25 13:03 1.0 U 0.44 ug/L Tetrachloroethene 08/12/25 13:03 1.0 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 08/12/25 13:03 Trichloroethene 1.0 U 1.0 08/12/25 13:03 0.44 ug/L Vinyl chloride 1.0 U 1.0 0.45 ug/L 08/12/25 13:03

MB MB

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		62 - 137		08/12/25 13:03	1
4-Bromofluorobenzene (Surr)	96		56 - 136		08/12/25 13:03	1
Toluene-d8 (Surr)	97		78 - 122		08/12/25 13:03	1
Dibromofluoromethane (Surr)	101		73 - 120		08/12/25 13:03	1

Lab Sample ID: LCS 240-667296/4 **Client Sample ID: Lab Control Sample Matrix: Water** Prep Type: Total/NA

Analysis Batch: 667296

	Spike	LCS	LCS				%Rec	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
1,1-Dichloroethene	25.0	26.4		ug/L		106	63 - 134	
cis-1,2-Dichloroethene	25.0	26.1		ug/L		104	77 - 123	
Tetrachloroethene	25.0	25.4		ug/L		102	76 - 123	
trans-1,2-Dichloroethene	25.0	25.2		ug/L		101	75 - 124	
Trichloroethene	25.0	24.8		ug/L		99	70 - 122	

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8/13/2025

Page 13 of 21

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

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

**Matrix: Water** 

Vinyl chloride

Lab Sample ID: LCS 240-667296/4

Analysis Batch: 667296 Spike LCS LCS %Rec Analyte Added Result Qualifier Unit %Rec Limits D

13.7

ug/L

12.5

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 100 62 - 137 4-Bromofluorobenzene (Surr) 103 56 - 136 78 - 122 Toluene-d8 (Surr) 103 Dibromofluoromethane (Surr) 97 73 - 120

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

MB MB

Lab Sample ID: MB 240-667123/7 Client Sample ID: Method Blank **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 667123

мв мв Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac 1,4-Dioxane 20 U 2.0 0.86 ug/L 08/11/25 11:59

Surrogate %Recovery Qualifier Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 99 68 - 127 08/11/25 11:59

Lab Sample ID: LCS 240-667123/5 Client Sample ID: Lab Control Sample **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 667123

LCS LCS Spike %Rec Qualifier Analyte Added Result Unit %Rec Limits 1.4-Dioxane 10.0 8.55 ug/L 85 75 - 121

LCS LCS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 98 68 - 127

Lab Sample ID: 240-230370-A-2 MS Client Sample ID: Matrix Spike **Matrix: Water** Prep Type: Total/NA

Analysis Batch: 667123

Spike MS MS %Rec Sample Sample Analyte Result Qualifier Added Result Qualifier Unit D %Rec Limits 1,4-Dioxane 2.0 U 10.0 9.41 ug/L 20 - 180

MS MS Surrogate %Recovery Qualifier Limits 1,2-Dichloroethane-d4 (Surr) 68 - 127 106

Lab Sample ID: 240-230370-A-2 MSD Client Sample ID: Matrix Spike Duplicate Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 667123** 

•	Sample	Sample	Spike	MSD	MSD				%Rec		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
1,4-Dioxane	2.0	U	10.0	10.0		ug/L		100	20 - 180	6	20

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Client Sample ID: Lab Control Sample

60 - 144

110

Prep Type: Total/NA

# **QC Sample Results**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

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

Lab Sample ID: 240-230370-A-2 MSD

**Matrix: Water** 

Analysis Batch: 667123

MSD MSD

%Recovery Qualifier Surrogate Limits 1,2-Dichloroethane-d4 (Surr) 109 68 - 127 **Client Sample ID: Matrix Spike Duplicate** 

**Prep Type: Total/NA** 

# **QC Association Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230392-1

# **GC/MS VOA**

# Analysis Batch: 667098

<b>Lab Sample ID</b> 240-230392-1	Client Sample ID TRIP BLANK_65	Prep Type Total/NA	Matrix Water	Method Prep Batch 8260D
MB 240-667098/9	Method Blank	Total/NA	Water	8260D
LCS 240-667098/5	Lab Control Sample	Total/NA	Water	8260D
240-230382-A-3 MS	Matrix Spike	Total/NA	Water	8260D
240-230382-F-3 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D

# Analysis Batch: 667123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-230392-2	MW-184S_080625	Total/NA	Water	8260D SIM	
MB 240-667123/7	Method Blank	Total/NA	Water	8260D SIM	
LCS 240-667123/5	Lab Control Sample	Total/NA	Water	8260D SIM	
240-230370-A-2 MS	Matrix Spike	Total/NA	Water	8260D SIM	
240-230370-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	8260D SIM	

# Analysis Batch: 667296

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
240-230392-2	MW-184S_080625	Total/NA	Water	8260D	
MB 240-667296/7	Method Blank	Total/NA	Water	8260D	
LCS 240-667296/4	Lab Control Sample	Total/NA	Water	8260D	

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# **Lab Chronicle**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_65

Lab Sample ID: 240-230392-1 Date Collected: 08/06/25 00:00

Matrix: Water

Dilution Batch Batch Batch Prepared Prep Type Туре Method Run Factor **Number Analyst** Lab or Analyzed Total/NA 8260D 667098 R5XG EET CLE 08/11/25 14:49 Analysis

Client Sample ID: MW-184S\_080625 Lab Sample ID: 240-230392-2

Date Collected: 08/06/25 12:15 **Matrix: Water** 

Date Received: 08/08/25 08:00

Date Received: 08/08/25 08:00

	Batch	Batch		Dilution	Batch			Prepared
Prep Type	Туре	Method	Run	Factor	Number	Analyst	Lab	or Analyzed
Total/NA	Analysis	8260D		1	667296	LEE	EET CLE	08/12/25 20:01
Total/NA	Analysis	8260D SIM		1	667123	R5XG	EET CLE	08/11/25 16:17

Laboratory References:

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

# **Accreditation/Certification Summary**

Client: Arcadis US Inc.

Project/Site: Ford LTP

Job ID: 240-230392-1

**Laboratory: Eurofins Cleveland** 

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-0806	12-31-26		
Georgia	State	4062	02-27-26		
Illinois	NELAP	200004	08-31-26		
lowa	State	421	06-01-27		
Kansas	NELAP	E-10336	01-31-26		
Kentucky (UST)	State	112225	02-28-26		
Kentucky (WW)	State	KY98016	12-31-25		
Minnesota	NELAP	039-999-348	12-31-25		
New Hampshire	NELAP	225024	09-30-25		
New Jersey	NELAP	OH001	06-30-26		
New York	NELAP	10975	04-01-26		
North Dakota	State	R-244	02-27-26		
Ohio	State	8303	11-04-25		
Ohio VAP	State	ORELAP 4062	02-28-26		
Oregon	NELAP	4062	02-27-26		
Pennsylvania	NELAP	68-00340	08-31-26		
Texas	NELAP	T104704517-22-19	08-31-25		
US Fish & Wildlife	US Federal Programs	A26406	02-28-26		
USDA	US Federal Programs	P330-18-00281	01-05-27		
Virginia	NELAP	460175	09-15-25		
West Virginia DEP	State	210	12-31-25		
Wisconsin	State	399167560	08-31-25		

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# **Chain of Custody Record**

<u>TestAmerica</u>

TestA	merica Labora	tory location:	Farm	ington	Hills -	<b>- 3885</b>	5 Hills	Tec	h Dri	ve, Si	uite 60	0, Farn	ningtor	Hills	48331									THE LEA	DER IN ERVIA	ONMENT	AL TESTING		
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VOA Sample Preservation Date/Time VOAs Frozen
Sample(s) were further preserved in the laboratory Time preserved Preservative(s) added/Lot number(s) were further preserved in the laboratory
20. SAMPLE PRESERVATION
19 SAMPLE CONDITION  were received after the recommended holding time had expired  Sample(s)
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES [ ] additional next page   Labeled by   Labels Verified by
Сопсетилу
Contacted PM Date by via Verbal Voice Mail Other
15 Were air bubbles >6 mm in any VOA vials? Larger than this 16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # 0 4004  Yes (No) NA  Yes (No) NA  Yes (No)
Were all preserved sample(s) at the correct pH upon receipt?  Were VOAs on the COC?
For each sample, does the COC specify preservatives (YN), # of containers (YN), and sam  Were correct bottle(s) used for the test(s) indicated?  Yes
was/were me person(s) who collected the samples clearly identified on the COC?  Did all bottles arrive in good condition (Unbroken)?  Could all bottle labels (ID/Date/Time) be reconciled with the COC?
Did custody papers accompany the sample(s)?  Were the custody papers relinquished & signed in the appropriate place?  We have the paper of the custody papers relinquished & signed in the appropriate place?
NA
-  -
IR GUN# 13 (CF 10 5 °C) Observed Cooler Temp 2 3 °C Corrected Cooler Temp 2 8 °C
Wet be Blue Ice Dry Ice Water upon receipt
Foam Box Client Cooler Box Oth
UPS FAS Waspoint Client Drop Off E
Site Name Co
Eurofins - Cleveland Sample Receipt Form/Narrative  Barberton Facility  Login #

Page 20 of 21

8/8/2025

# Login Container Summary Report

Temperature readings			8
Client Sample ID	<u>Lab ID</u>	Container Type	Container Preservation Preservation pH Temp Added Lot Number
TRIP BLANK_65	240-230392-A-1	Voa Vial 40ml - Hydrochloric Acid	The state of the s
MW-184S_080625	240-230392-A-2	Voa Vial 40ml - Hydrochloric Acid	William Control of the Control of th
MW-184S_080625	240-230392-B-2	Voa Vıal 40ml - Hydrochloric Acıd	
MW-184S_080625	240-230392-C-2	Voa Viał 40ml - Hydrochloric Acıd	
MW-184S_080625	240-230392-D-2	Voa Vial 40ml - Hydrochloric Acid	
MW-184S_080625	240-230392-E-2	Voa Vial 40ml - Hydrochloric Acid	
MW-184S_080625	240 230392-F-2	Voa Vial 40ml - Hydrochloric Acid	The second secon

Page 1 of 1

240-230392

# DATA VERIFICATION REPORT



August 13, 2025

Megan Meckley Arcadis 28550 Cabot Drive Suite 500 Novi, MI US 48377

CADENA project ID: E203728

Project: Ford Livonia Transmission Plant - ON-SITE Soil Gas, Ground Water and Soil

Project number: 30251157.401.04 LTP

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

Laboratory submittal: 230392-1 Sample date: 2025-08-06

Report received by CADENA: 2025-08-13

Initial Data Verification completed by CADENA: 2025-08-13

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

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

There were no significant QC anomalies or exceptions to report.

Sample/MS/MSD Surrogate Recovery, Blank/LCS Surrogate Recovery, LCS/LCD Recovery, 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 <a href="http://clms.cadenaco.com/index.cfm">http://clms.cadenaco.com/index.cfm</a>.

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:** E203728

Laboratory: Eurofins Environment Testing LLC - Cleveland

Laboratory Submittal: 230392-1

	Sample Na Lab Sample Sample Da		8/6/202	3921 5			MW-184 240230 8/6/202	3922 5		
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	Analyte	Cas No.	Result	Limit	Units	Qualifier	Result	Limit	Units	Qualifier
GC/MS VOC										
OSW-8260	<u>)D</u>									
	1,1-Dichloroethene	75-35-4	ND	1.0	ug/l		ND	1.0	ug/l	
	cis-1,2-Dichloroethene	156-59-2	ND	1.0	ug/l		ND	1.0	ug/l	
	Tetrachloroethene	127-18-4	ND	1.0	ug/l		ND	1.0	ug/l	
	trans-1,2-Dichloroethene	156-60-5	ND	1.0	ug/l		ND	1.0	ug/l	
	Trichloroethene	79-01-6	ND	1.0	ug/l		ND	1.0	ug/l	
	Vinyl chloride	75-01-4	ND	1.0	ug/l		ND	1.0	ug/l	
OSW-8260	<u>DDSIM</u>									
	1,4-Dioxane	123-91-1					ND	2.0	ug/l	



# Ford Motor Company – Livonia Transmission Project

# **Data Review**

# Livonia, Michigan

Volatile Organic Compounds (VOC) Analysis

SDG # 240-230392-1

CADENA Verification Report: 2025-08-13

Analyses Performed By: Eurofins Cleveland Barberton, Ohio

Report # 60656R Review Level: Tier III Project: 30251157.401.02

# **SUMMARY**

This data quality assessment summarizes the review of Sample Delivery Group (SDG) # 240-230392-1 for samples collected in association with the Ford – Livonia, Michigan site. The review was conducted as a Tier III validation in addition to a verification/Tier II validation review performed by CADENA Inc. and included review of level IV laboratory data package completeness. Only elements of a Tier III validation effort (Tier III) include a detailed review of laboratory raw data to check for errors in calculation, calibration review, internal standard review and compound identification) and omitted deviations from the CADENA verification/Tier II report are documented in this report. Only analytical data associated with constituents of concern were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chain of custody. Analyses were performed on the following samples:

Sample ID	Lab ID	Matrix	Sample	Parent Sample	Ana	lysis
Sample ID	Labib	Matrix	Collection Date	raieiii Saiiipie	voc	VOC SIM
TRIP BLANK_65	240-230392-1	Water	08/06/2025		Х	
MW-184S_080625	240-230392-2	Water	08/06/2025		Х	X

# **ANALYTICAL DATA PACKAGE DOCUMENTATION**

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

Items Reviewed	Rep	orted	Perfori Accep		Not
	No	Yes	No	Yes	Required
Sample receipt condition		X		X	
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		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	
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 continuing calibrations were within the specified control limits.

# 4. Internal Standard Performance

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

All internal standard responses were within control limits.

# 5. Field Duplicate Analysis

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

A field duplicate sample was not collected for samples from this SDG.

# 6. Compound Identification

Compounds are identified on the GC/MS by using the analytes relative retention time and ion spectra.

No compounds were detected in the samples within this SDG.

# 7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

# **DATA VALIDATION CHECKLIST FOR VOCs**

Rep	orted			Not Required
No	Yes	No	Yes	Required
C/MS)				
	Х		Х	
	Х		Х	
	Х		Х	
	Х		Х	
	Х		Х	
	Х		Х	
	Х		Х	
X				Х
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	X		Х	
	Х		Х	
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# Notes:

%RSD Relative standard deviation

%R Percent recovery

RPD Relative percent difference

%D Percent difference

VALIDATION PERFORMED BY: Febin J S

SIGNATURE:

DATE: August 21, 2025

PEER REVIEW: Andrew Korycinski

DATE: September 5, 2025

# NO CORRECTIONS/QUALIFERS ADDED TO SAMPLE ANALYSIS DATA SHEETS

# **Chain of Custody Record**

<u>TestAmerica</u>

TestA	merica Labora	tory location:	Farmi	ington	Hills -	<b>- 3885</b>	5 Hills	Tec	h Dri	ve, S	Suite 60	0, Farn	ningto	n Hills	4833	1									THE LEADER	IN ENVIRON	MENTAL	DAITEST
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ddress: 28550 Cabot Drive, Suite 500															_			10 407	0206									-
hty/State/Zip: Novi, MI, 48377	Telephone: 248	-994-2240					Tele	phone	e: 242	8-994	l-2240					eleph	one: 3.	30-497								of 1	COC	s
	Email: megan.ı	neckley@arcad	is.com					Analy	sis T	urna	round'	lme	-		_	1			An	alyse	S				For lab	use only	-	4 7
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roject Name: Ford LTP	Amin	a TOI	NV	e	S		۱.,	0 day			weeks weeks		100												Lab san	nling	-	
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# **Definitions/Glossary**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

**Qualifiers GC/MS VOA** 

Qualifier **Qualifier Description** 

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

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

DER Duplicate Error Ratio (normalized absolute difference)

Dil Fac **Dilution Factor** 

Detection Limit (DoD/DOE) DL

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)

Estimated Detection Limit (Dioxin) EDL LOD Limit of Detection (DoD/DOE) Limit of Quantitation (DoD/DOE) LOQ

EPA recommended "Maximum Contaminant Level" MCL 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 **Quality Control** 

RER Relative Error Ratio (Radiochemistry)

RL Reporting Limit or Requested Limit (Radiochemistry)

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

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

**TNTC** Too Numerous To Count

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

Client Sample ID: TRIP BLANK\_65

Date Received: 08/08/25 08:00

Lab Sample ID: 240-230392-1 Date Collected: 08/06/25 00:00

**Matrix: Water** 

Method: SW846 8260D - Volatile Organic Compounds by GC/MS Result Qualifier RLMDL Unit D Prepared Analyzed Dil Fac 1.0 1,1-Dichloroethene 1.0 U 0.49 ug/L 08/11/25 14:49 cis-1,2-Dichloroethene 1.0 U 1.0 0.46 ug/L 08/11/25 14:49 Tetrachloroethene 1.0 U 1.0 0.44 ug/L 08/11/25 14:49 trans-1,2-Dichloroethene 1.0 U 1.0 0.51 ug/L 08/11/25 14:49 Trichloroethene 1.0 U 1.0 0.44 ug/L 08/11/25 14:49 Vinyl chloride 0.45 ug/L 1.0 U 1.0 08/11/25 14:49 %Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 1,2-Dichloroethane-d4 (Surr) 104 62 - 137 08/11/25 14:49 4-Bromofluorobenzene (Surr) 85 08/11/25 14:49 56 - 136 93 78 - 122 08/11/25 14:49 Toluene-d8 (Surr) Dibromofluoromethane (Surr) 102 73 - 120 08/11/25 14:49

# **Client Sample Results**

Client: Arcadis US Inc. Job ID: 240-230392-1

Project/Site: Ford LTP

Toluene-d8 (Surr)

Dibromofluoromethane (Surr)

**Client Sample ID: MW-184S\_080625** 

Date Collected: 08/06/25 12:15 Date Received: 08/08/25 08:00 Lab Sample ID: 240-230392-2

08/12/25 20:01

08/12/25 20:01

Matrix: Water

Method: SW846 8260D SIM - \	/olatile 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			08/11/25 16:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		68 - 127			-		08/11/25 16:17	1
Method: SW846 8260D - Volat	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			08/12/25 20:01	1
cis-1,2-Dichloroethene	1.0	U	1.0	0.46	ug/L			08/12/25 20:01	1
Tetrachloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 20:01	1
trans-1,2-Dichloroethene	1.0	U	1.0	0.51	ug/L			08/12/25 20:01	1
Trichloroethene	1.0	U	1.0	0.44	ug/L			08/12/25 20:01	1
Vinyl chloride	1.0	U	1.0	0.45	ug/L			08/12/25 20:01	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)			62 - 137			-		08/12/25 20:01	1
4-Bromofluorobenzene (Surr)	92		56 <sub>-</sub> 136					08/12/25 20:01	1

78 - 122

73 - 120

97

110

3

5

7

8

40

11

12